ISSN: 2149-2018

Applied Medical Research, 2025
VOL 12, NO. 7, PAGE 1 – 21
DOI: doi.org/10.47363/AMR/2025(12)266

RESEARCH ARTICLE

Open Access

Pilot Study: Testing Speech Therapists' Awareness Concerning Early Communication Intervention Services in Lebanon of Lebanese Bilingual Children that Age between 0 and 3 Years

Omar M Ghaboura

University of Warwick, Coventry, United Kingdom

ABSTRACT

Children are always developing their skills, yet the most crucial stage for a child's development when it comes to enriching communication and language abilities is the period from birth to 3 years. Since Speech and Language Pathologists are the main specialists to make sure that children undergo a typical development, a pilot study was conducted in order to detect Speech and Language Pathologists' awareness regarding Early Intervention Services. 20 SLP's across Lebanon participated in the study and were required to complete a questionnaire that includes their background information, type of practice and developmental milestones. After the results were obtained, they were analysed through Statistical Sciences and Fisher's Exact test. The outcome was that the most significant factor that influenced the therapists' awareness was their interest in the field of early intervention. This reinforces the importance of providing SLP's with well-developed programs taking into consideration the factors that impact their awareness in the field.

ARTICLE HISTORY

Received June 24, 2025
Accepted June 26, 2025
Published July 29, 2025

KEYWORDS

Early Intervention, Speech Therapist's Awareness, Language Developmental Milestones

Abbreviations

AAP: The American Academy of Pediatrics

AAC: Augmentative and Alternative Communication

ALO: Association Libanaise des Orthophonistes

EI: Early Intervention

IUL: Islamic University of Lebanon

LU: Lebanese University

PU: Phoenicia University

SLP: Speech and Language Pathologist

USJ: University of Saint Joseph

Introduction

The first three years of a child's life are considered the most vital years for the development of language. The importance lies in the progression of acquiring early language milestones till reaching a full language acquisition. These language capabilities flourish in an environment that is full of consistent exposure to other people's speech and language [1]. There is a vital part that neuroplasticity plays in the process of early language intervention. The brain's capacity to adapt to and change as a result of experiences and external stimuli is known as neuroplasticity. It refers to the brain's capacity to create neural connections and pathways in response to exposure to language in the context of language acquisition [2]. In the first few years of life, it is critical to pay attention to the child's communication abilities. This is because during this time the brain is most open to receiving language input. The child's brain is actively forming the neural connections and pathways that will assist their language development for years to come throughout this period. By observing the child's communication skills during this period, parents and caregivers can identify any potential delays or issues in their language development. Early detection of these problems can result in quicker intervention and treatment, which can be very beneficial for the child's overall health and language development in the long run. These communication skills include preverbal and nonverbal skills in which children acquire approximately at the age of one and are predictors of their verbal output in terms of speech and language later on [3]. Unfortunately, a lot of young children do not undergo this typical language development. This alteration might lead to the presence of a communication or speech and language delay [4]. In order to prevent the occurrence of communication and/or speech and language delays, children are requested to be a part of an early intervention program (EI). When it comes to stimulating a child's language and communication development through early intervention, the most ideal provider for this program is definitely a speech and language pathologist. This is due to the fact that these specialists have received specified training in evaluating and treating a wide range of speech and language disorders, including

Contact Omar M Ghaboura, University of Warwick, Coventry, United Kingdom.

difficulties with communication and language comprehension. Despite the vital role of speech and language pathologists in early intervention, there are a lot of misconceptions about their scope of work. These misconceptions are projected on the practice of early identification and intervention [5]. One of the conceptions is that is present is the decision whether to enrol a young child in therapy or not. If a toddler was sent for a speech and language consultation at 2 years old, one therapist might offer some recommendations and initiate the intervention after a year. Another therapist might start the intervention process without directly setting a diagnosis. It is true that each therapist has/her own way of assessing and treating children, yet this field remains unclear due to the ambiguity of language acquisition [6]. The consequences of having un experienced therapists with a certain population leads to misdiagnosis [7]. In other words, children who are at risk of developing language disorders might not receive therapy, or toddlers who are undergoing an atypical language development might receive intervention services that are not adequate for their case. This will alter their communication and language. Bilingualism in Lebanon also plays a major role in language acquisition among young children. Bilingual children that portray language and communication difficulties are most likely to represent a weak lexical repertoire. These children also lack the adequate learning strategies [8]. This hinders their word-finding capabilities. Lebanese bilingual young children demonstrate weak lexical acquisition in in their native and newly acquired language. These weaknesses are projected by multiple errors. Thus, it is important to address the factors that affect the awareness of speech and language pathologists in Lebanon. The process of identifying the factors is crucial to equip speech and language pathologists with guidelines regarding early intervention. These factors could be due to variability between university curriculums in Lebanon, years of experience in the field, enrolling in masters or higher education programs, or other unknown factors.

Literature Review

The Correlation between Nonverbal and Preverbal Skills and Oral language

Communication skills are considered predictors of future language acquisition. Thus, any stimulation will lead to better language out comes [9]. On the other hand, any delay in a preverbal and/or nonverbal skill will deteriorate the language development of the child. The American Academy of Pediatrics (AAP) has created recommendations for the observation of expressive language behaviors in an effort to support early intervention initiatives. These recommendations state that youngsters should be uttering their first words by the age of 15 months and their first word combinations by the age of 2 years. The goal of these recommendations is to propose a clearer insight to caregivers, doctors, child development specialists, speech and language pathologists and early interventionists in order to accomplish this aim. The first recommendation is to alert these experts to toddlers who might be experiencing language problems. This is significant because early detection of language deficiencies can result in earlier intervention and therapy, which can enhance long-term language results. The second suggestion is to underline how crucial early communication abilities are for later linguistic outcomes. Early language production and later language proficiency are substantially connected, according to studies. This implies that a child's language ability later in life may be significantly influenced by the language skills they acquire in their early years of life. The correlation between development of early language production and later language prominence is a subject that has been studied by different professionals. Nonetheless, this relationship remains unclear up until now [10]. There are a lot of skills that children use in order to communicate and express their demands. These skills include the usage of vocalizations, gestures, request, command, protest, and joint attention. The frequency of these skills that are a part of preverbal and nonverbal skills, are considered crucial in both the transitioning to early language communication and in predicting future verbal output [11]. Communication is built on the foundation of preverbal abilities like joint attention and turn-taking. These abilities allow newborns and young children to interact with others and gain a grasp the social rules of a communication, which is crucial for the development of speaking language. Similarly, preverbal abilities enable youngsters to well attain the rules of spoken language. Prior to composing words and phrases on their own, infants learn to comprehend them. Children develop a receptive language capacity through preverbal skills like attentive listening, identifying familiar sounds, and responding to verbal signals. This ability serves as the foundation for their eventual expressive language abilities.

The Dependency of Language Acquisition on Neuroplasticity and Brain Structures

The remarkable capacity of the human brain to change in response to environmental stimuli, cognitive demands, or behavioural experience is known as neuroplasticity in humans. In the past two decades, intriguing new discoveries on neuroplasticity at many different levels and across many different domains have been made as a result of cognitive brain research [12].

Important results that were derived from researching the way neuroplasticity affects language in individuals. Numerous neurocognitive studies have identified specific functional brain patterns in the process of acquiring a new language by utilizing neuroimaging techniques as functional magnetic resonance imaging, positron emission tomography, and electroencephalography or event-related potential [9,13]. This suggests that professionals and care givers should take advantage of the neurons that degenerate by time. Thus, stimulation or enhancement of a certain skill is done best at an early age in order to be grasped by the individual. It is harder to attain a new skill as an adult [14]. Recent studies have adopted the idea that speech processing in 4-month-olds occurs in the left lateral part of the brain [15]. Moreover, the neuronal basis of functional brain organization exists especially at the earliest stages of development. Difficulties in the development of several fundamental foundations including cognition, language, and speech are probably caused by underlying irregularities in the brain. These neurological structures are considered to be the main predictors of the functional organization of the human body [16]. Pinpointing the risk factors of development disorders by utilizing neuroimaging is the basis of understanding each case separately in young children.

Speech Therapists' Evaluations of Young Children in Early Intervention

Since the development of young children is unpredictable, it is hard to conduct a full standardized assessment. Speech and language pathologists depend on observations and/or parental reports and video recordings in order to evaluate young children's communication skills [17]. Speech and Language pathologists collect pertinent data by adapting existing standardized examinations created for somewhat older children, because there is no accurate testing specifically for kids under the age of three. To fit the lower age group, these changes may involve changing the tasks, norms, and scoring standards. These assessments focus on early language milestones, specifically, the emergence of word combinations during the first and second year of life [18]. Also, these assessments include children with hearing difficulties. In Pauline et al's study, examiners utilized Di-EL First Words to evaluate the rate of word acquisition among young children with hearing impairment. It was discovered that this tool, which employs a diary technique filled out by parents and instructors in partnership, correlates well with other measures of language progress.

Due to a lack of proper diagnostic methods, the field of speech and language therapy in Lebanon is still relatively inadequate and struggles to provide a reliable diagnosis [19]. In addition to misidentification due to lack of proper testing, another challenge that hinders the possibility of accurate evaluation is the diversity of language in Lebanon. A Lebanese youngster is exposed to at least 3 languages including Arabic, English and French. The majority of people in Lebanon (93.7% of the population) use Arabic as their first language, with 45% French and 40% English also being widely used as second languages [20]. Even the Arabic language is present as the spoken Arabic language and Modern Standard Arabic [21]. Numerous assessments in Lebanon that are regularly administered to preschoolers have come under fire [22]. This is due to the reliance on a model of functioning that is more suitable for an older kid or an adult than it is for a young child's milestones. Despite the profession's official recognition in April 2019, speech and language pathologists continue to function without any formal or best practice rules or pronouncements pertaining to their duty. In every instance, their collaborative position with school employees is frequently unclear and frequently conflated with language support instructors or even "shadow teachers." Another factor that might hamper the flow of assessment, is that young children cannot sustain their attention for a long period of time without moving. Hence, the assessment might be interrupted multiple times due to the age consideration. This emphasizes the idea that the process of diagnosing young children is affected by the flow of assessment.

Factors that Lead to Misconceptions in the Scope of Work

There are a lot of factors that limit speech and language pathologists' awareness regarding the field of early intervention. One of these factors might be due to insufficient training. The majority of medical and paramedical personnel lack formal training in child and adolescent psychiatry or have only minimal training [23]. This has a direct impact on their practice. Lebanese programs do not directly teach Speech therapy students methods and techniques that are used internationally to improve their practice and collaboration with professionals, nor do they instruct them on how to facilitate interventions that are educationally relevant [24]. Moreover, the duties of speech and language pathologists in Lebanon among young children are completely vivid. Another factor might be enrolling in a Master's or high education program. Not all Lebanese students in the field wish to enroll in a Master's program, and even if they do, universities in Lebanon only offer this degree in French up until this day. Thus, not all students have access to earning this degree. In order to create other Master's degree programs in various places that would prepare Masters and Doctors in the field, more courses were established and research was conducted [25]. There have been more graduates in other nations (not Lebanese) as a result of professionals looking for programs that concentrate on linguistics, psychology, education, and other fields in order to advance their work. Another factor might be the years of experience in the field. This has a direct effect on the flow of early intervention process, such as addressing parents' concerns. Parents have reported that the most important thing for them is having an experienced speech and language pathologist after their unpleasant history with unexperienced therapists [26]. Moreover, there are a lot of other unidentified factors that hinder the practice among young children.

Purpose Statement and Research Questions

Aim: The study under discussion aims to address the issue of widespread misconceptions in the early intervention field. The study intends to investigate the causes of the various myths that are prevalent in this field. Moreover, the study aims to learn more about speech and language pathologists' expertise in the area of early intervention in order to achieve this. Their opinions on how to handle the evaluation, diagnosis, and treatment of children under the age of three are included in this.

By identifying the causes of these misleading impressions, the study's main goal is to assess the knowledge of early intervention among Lebanese speech and language pathologists. Several important factors, such as (a) years of experience, (b) Master's or higher education programs, (c) university curriculum, (d) interest in the field itself, and other unidentified factors that will be depicted in the study are expected to be included in this group.

The goal of the study is to clarify these elements in order to better understand why and how these beliefs came to be. This information will be crucial for raising the standard of care provided to children under the age of three in Lebanon and for helping to create interventions and therapies that are more efficient for this population. In the end, the study hopes to advance a more accurate comprehension of early intervention among speech and language pathologists in Lebanon and around the world, which will assist kids and families who depend on these experts for their care and support.

Research Question: What are the factors that build up speech therapists' awareness of Early Intervention (EI) that affect their practice?

Summary and Implications

Ideally, speech and language pathologists are the pioneers in assessing, diagnosing, and treating young ages [27]. In other words, they are experts in dealing with cases that are below the age of 3 when it comes to speech and language and/or communication difficulties. They do not only deal with the patient himself/herself, but also, they address the parents' concerns regarding their child [28]. Thus, they promote and coordinate programs that establish effective communication models. Effective communication is essential to make these young children capable of being functionally active in the society, especially in a child's formative years. Children lose access to many of the educational opportunities that will shape them into adults if they are unable to speak and communicate adequately. Hence, speech and language pathologists ensure that children meet those opportunities through an early intervention program.

Another limitation that is outlined by this study is the difficulties that early intervention practitioners in Lebanon face. One of the biggest problems is that while working with young clients, therapists lack a defined set of guidelines to follow. As a result, diagnostic techniques are not consistently applied, and early intervention services in Lebanon frequently see late diagnoses [19].

The piece also mentions that Lebanese parents are sometimes unaware of the significance of getting their child an early diagnosis. Most of them believe that they should seek a diagnosis once their child turns 4 years old or older, which is not the best time for a successful intervention. A delay in therapy due to a lack of knowledge may have long-term effects on the development of the kid [29].

The child's development may be significantly impacted by the lack of standardization in diagnostic techniques and the delayed diagnoses. For children to overcome developmental impairments and reach their full potential, early intervention is essential. As a result, initiatives must be taken to address these issues and advance early intervention programs in Lebanon. This can be accomplished through promoting standardization in diagnostic techniques, raising knowledge among parents and therapists, improving resources and funding for evaluation instruments, and raising awareness among the general public. By doing this, young children can receive better care and the assistance they require to thrive and realize their full potential.

Thesis Organization

First of all, the proposed study will explain the importance of early intervention in determining the child's language and communication development. This will be explained through the importance of the services that the program has to offer. In addition to that, the study will continue to provide a vivid insight of the current misconceptions in Lebanon and the root for each problem. Examining current myths about early intervention services for kids' language and communication development in Lebanon will be one of the study's main objectives. Finally, this study will conclude with shedding lights on the significance of addressing the issue by identifying the underlying factors that lead to forming these misconceptions in Early Intervention services. The study is composed of 7 main chapters that target different aspects of the study.

Chapter 1: Introduces the topic of early intervention and demonstrates how important early intervention is in fostering children's language and communication development at their best. The need of early intervention in recognizing and treating speech and language problems in young children before they worsen and become more difficult to treat will be emphasized in the study's opening paragraph.

Chapter 2: Demonstrates the methodology that was followed in the study. Moreover, the criteria for recruiting the participants that engaged in this study. It also includes the material used which was based on an online questionnaire that was sent. The last part of this chapter aims to introduce the procedure that was followed in order to collect the data.

Chapter 3: Focuses on the process of obtaining results of the proposed study.

Chapter 4: Includes the discussed of the results that were obtained by analyzing them in order to compare them with the given data.

Chapter 5: Concludes the ideas and notions of this study and urges the need to target future study to provide further research on this topic.

Chapter 6: Includes the references of the information used in the study.

Chapter 7: Includes the appendices of the elements used in the proposed study.

Methodology

This chapter seeks to provide an overview of the research methodology used to address the research topic that aims to investigate the nature of SLP awareness towards Early Intervention as given in the previous chapter. The study's methodology and the criteria used to choose participants are presented in the first section. The data collection materials are displayed in the second part. The third section goes on the steps that were taken during the study's process. The study's methodological restrictions and ethical issues are discussed in the final part.

Participants

20 Speech and Language pathologists from different regions in Lebanon, such as North, Beirut and South participated in the proposed study 85% of the participants were females and 15% were males. These participants were distributed among three age groups. 80% of the participants were from the first age group that ranged from 21 to 30 years old. 15% of the participants belonged to the second age group that ranged from 31 to 40 years old. 5% of the participants were from the third age group ranged from 41 to 50 years old.

The criteria for recruiting Speech and language pathologist as participants of the proposed study are speech and language pathologists across Lebanon with variable and diverse backgrounds that should display different variables that are attributed to the purpose of the study.

The main criterion is based on including Speech and language pathologist that graduated and work in Lebanon. The therapists that were recruited are bilingual or trilingual (Arabic being their native language which is considered as L1) in order to be a part of this study.

Materials

The process of collecting variables will be done via online questionnaire that is composed of three main sections and provided in the English Language (see appendices). In order to form an accurate analysis, this questionnaire under the title of "Early Intervention Practice Among Speech Therapists Across Lebanon" consists of both open-ended and closed-ended questions that tackle the topic of therapists' awareness towards early intervention.

The first section includes the background information of the participants which will be the basis of assigning the factors such as their age, gender, years of experience and academic history such as mentioning the university that they have graduated from.

The second section is designed to include questions that are related to the field in terms of type of practice that includes and it highlights an important subjective question which includes whether they are interested in the field or not.

The third section is based on the speech and language developmental milestones. In this section the therapists are required to answer a set of multiple choice and true or false questions that target the linguistic and communication development that young children undergo.

Procedure

In order to ensure that the standards and aims are met, the process of data collection started by collecting the information of speech and language pathologists across Lebanon. This was done through utilizing the updated form of therapists in Lebanon that is established by the Association Libanaise des Orthophonistes. Moreover, the form mentioned above includes the personal information of each therapist recognized by the association including their numbers, email, work place, and region. This facilitated the process of reaching out to the therapists that were contacted via WhatsApp.

The aim of the study which is to detect the level of awareness of therapists across Lebanon concerning Early Intervention was explained to the participants. This explanation boosted the participation of individuals and encouraged more participants to take part of this study. The step mentioned above was done by sending an explanatory paragraph to the participants before sending the questionnaire itself. The paragraph included the topic of the study which is under the title of early intervention. In addition to that, the purpose of the study was clearly indicated in the mentioned paragraph. After explaining the goal of the study and taking the consent of participation of each individual, the speech and language pathologists were ready to take part in the study and the questionnaire was sent.

The study in question utilized a questionnaire that was created via Google forms. The creation of the questionnaire was a relatively straightforward process and the therapists involved in the study reported that it took them approximately 5-10 minutes to complete it. However, the participants did report encountering some difficulties with one particular question in the questionnaire, which was located in section 2. This question asked participants to mention the name of courses that were offered to them as students in their own universities when they were undergraduates that revolve around the topic of early intervention. The participants indicated that this question took them much more time than the expected rate, as they had to recall specific details about the courses they had taken. Furthermore, many of the therapists indicated that they had trouble recalling the name of each course, which added to the difficulty of answering this question. Despite these difficulties, the participants in the study provided valuable insights and feedback, which will be used to inform future research in this field.

Data Analysis

We displayed the participant's answers to the closed-ended questions in tables and bar charts. Conversely, based on the given data of impressions regarding the field of early intervention, the open-ended questions were converted into paragraphs that will be depicted in the discussion. The data was administered through SPSS with utilizing Kruskal Wallis Test, Spearman's rho's test and Mann-Whitney U test.

Ethics and Limitations

The first limitation would be the economic crisis. The economic crisis had a direct influence on the type of participants that submitted the questionnaire. It is well known that the major of speech therapy is considered to be recent when compared to other majors. Thus, the number of promotions that have graduated is very few. It should be noted that most of the older promotions have left the country to work abroad. This made it difficult to include individuals from the third age group. Also, this limited the diversity of participants such as finding therapists willing to participate from multiple regions.

Another limitation is the tool used. The survey was sent online. Thus, the level of having answers that are 100% credible is questionable due to the fact that the respondent might have used resources in order to jog up his/her memory. In other words, participants might have used the internet or asked a colleague for help with a certain question when having trouble in recalling it is answer.

In addition to that, the milestones that were utilized in the survey could not be generalized. This developmental screening tool is not a replacement for a standardized, approved developmental milestone checklist. These developmental milestones demonstrate what the majority of kids (75%) can perform at each age. These benchmarks were chosen by subject matter experts based on the information at hand and expert agreement. Furthermore, the milestones did not specifically address the Lebanese population. This might lead to speculations that the therapists might have answered depending on their practical experience when working with children younger than three years old. Thus, each therapist might have answered based on his/her own perspective or resource of milestones that might differ from the one used in the study.

Results

This chapter aims to display the results of the proposed study. Each variable will be portrayed along with the test used in order to denote the results according to the data that was obtained. In addition to that each variable will include a descriptive chart that is dependent on the type of variable studied.

Analysis of Factors

Impact of University Curriculum

According to Table 1, Kruskal Wallis Test was done to study the correlation between SLP's awareness and the university that they have graduated from. The universities that were encountered are LU (M= 10.43), PU (M= 10.58), IUL (M= 11.33), and USJ (M= 9.88). Knowing that the Significance is 0.99 is greater than 0.05, this means that there is no significant difference in total between the universities across Lebanon (Figure 1).

Appendix A

Table 1: Universities in which the Diploma of Speech Therapy was Obtained from

University		N	Mean Rank	Sig.
Ranks				
Total	Lebanese University	7	10.43	0.991
	Phoenicia University	6	10.58	
	Islamic University of Lebanon	3	11.33	
	University of Saint Joseph	4	9.88	
	Total	20		

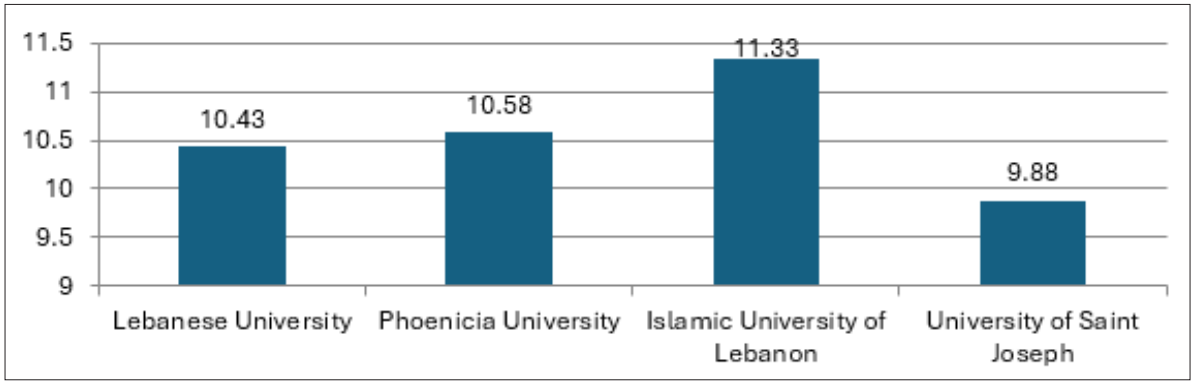

Figure 1: Universities in which the Diploma of Speech Therapy was Obtained from

Legend: x-axis represents the Universities across Lebanon; y-axis represents the mean of participants.

Impact of Academic Achievements

According to Table 2, Kruskal Wallis Test was done to study the correlation between SLP's awareness and their academic progress. The academic progress that was encountered is only earning a diploma in Speech Therapy (M= 11.96), earning a Master's degree (M= 9), earning a PHD (M= 4), and currently enrolled in a Master's program (M= 7.83). Knowing that the Significance is 0.413 is greater than 0.05, this means that there is no significant difference in academic achievements (Figure 2).

Appendix B

Table 2: Level of Current Academic Achievements of Participants

Ranks				
High Educational Degree		**N**	**Mean Rank**	**Sig.**
Total	Diploma in Speech and Language Pathology	13	11.96	0.413
	Earned a master degree	3	9.00	
	Earned a PHD	1	4.00	
	Currently enrolled in a master's program	3	7.83	
	Total	20		

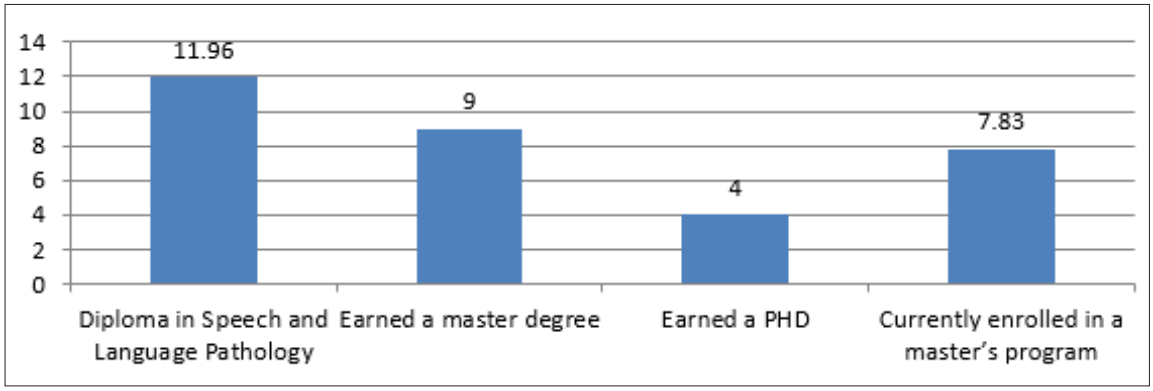

Figure 2: Level of Current Academic Achievements of Participants.

Legend: x-axis represents the academic achievements; y-axis represents the mean of participants.

Impact of Speciality in the Field

According to Table 3, Mann-Whitney U Test was done to study the correlation between SLP's awareness and their specialization. The respondents were asked to either answer Yes (M= 11) or No (M= 10.23). Knowing that the Significance is 0.556 is greater than 0.05, this means that there is no significant difference in their specializations (Figure 3).

Appendix C

Table 3: Specializations in the Field of Early Intervention

Are you specialized in the field of Early Intervention?		N	Mean	Std. Dev.	Sig.
Total	Yes	7	11.00	2.582	0.556
	No	13	10.23	2.774	

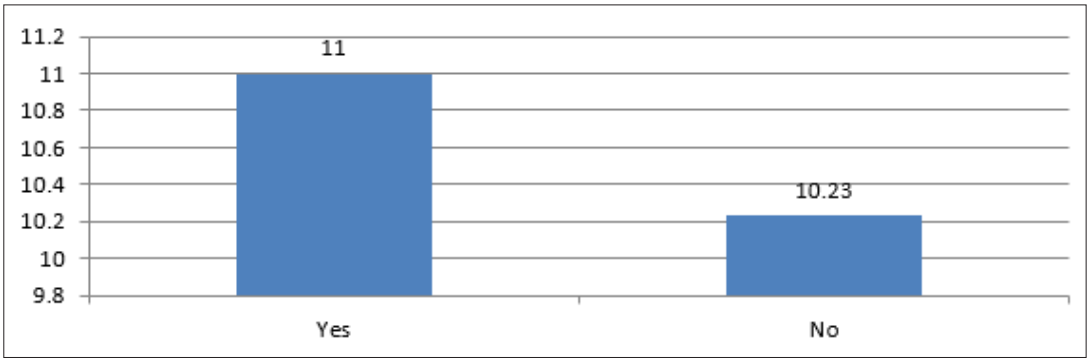

Figure 3: Specialization in the Field of Early Intervention.

Legend: x-axis represents specialization in the field, y-axis represents the mean of participants.

Impact of Workshops

According to Table 4, Mann-Whitney U Test was done to study the correlation between SLP's awareness and the workshops that they have attended that deal with cases 3 years and below. The respondents were asked to either answer Yes (M= 10.25) or No (M= 11.5). Knowing that the Significance is 0.290 is greater than 0.05, this means that there is no significant difference in total between who take part in any workshops that dealt with cases that are 3 years and/or less or not (Figure 4).

Appendix D

Table 4: Attending Workshops that deal with cases who are 3 years of age or below

Did you take part in any workshops that dealt with cases that are 3 years and/or less?		N	Mean	Std. Dev.	Sig.
Total	Yes	16	10.25	2.887	0.290
	No	4	11.50	1.291	

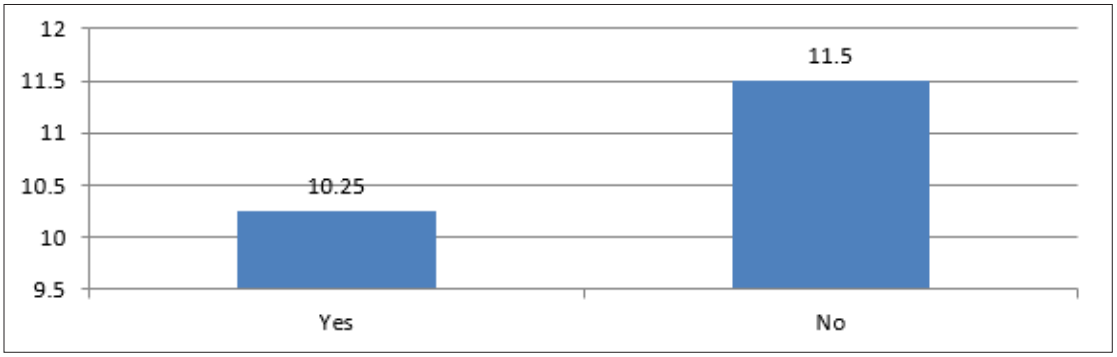

Figure 4: Attending Workshops that deal with cases who are 3 years of age or below.

Legend: x-axis represents the Universities across Lebanon, y-axis represents the mean of participants.

Impact of Professional Training

According to Table 5, Mann-Whitney U Test was done to study the correlation between SLP's awareness and their professional training workshops in the field of early intervention. The respondents were asked to either answer Yes (M= 11) or No (M= 9.89). Knowing that the Significance is 0.552 is greater than 0.05, this means that there is no significant difference in total between who receive any additional professional training after graduation that target early intervention or not (Figure 5).

Appendix E

Table 5: Receiving Professional Training Post-Graduation

Did you receive any additional professional training after graduation that target early intervention?		N	Mean	Std. Dev.	Sig.
Total	Yes	11	11.00	2.793	0.552
	No	9	9.89	2.522	

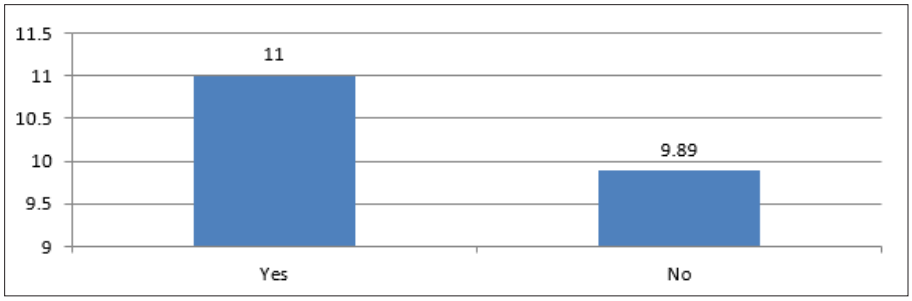

Figure 5: Receiving Professional Training Post-Gradu

Legend: x-axis represents professional training; y-axis represents the mean of participants.

Impact of Interest in the Field

According to Table 6, Mann-Whitney U Test was done to study the correlation between SLP's awareness and their interest in the field of Early Intervention. Knowing that the Significance is 0.039 is less than 0.05, this means that there is significant difference in total between who are interested in the field itself. Taking in consideration that the mean of who find it his/her interest to work in this field (M=11.06) is greater than who doesn't (M=8.25), we can say that finding it an interest to work cases that are 3 years and/or less increases the total (Figure 6).

Appendix F

Table 6: Interest in the Field of Early Intervention

Do you find it in your interest to work with cases that are 3 years and/or less?		N	Mean	Std. Dev.	Sig.
Total	Yes	16	11.06	2.594	0.039
	No	4	8.25	1.708	

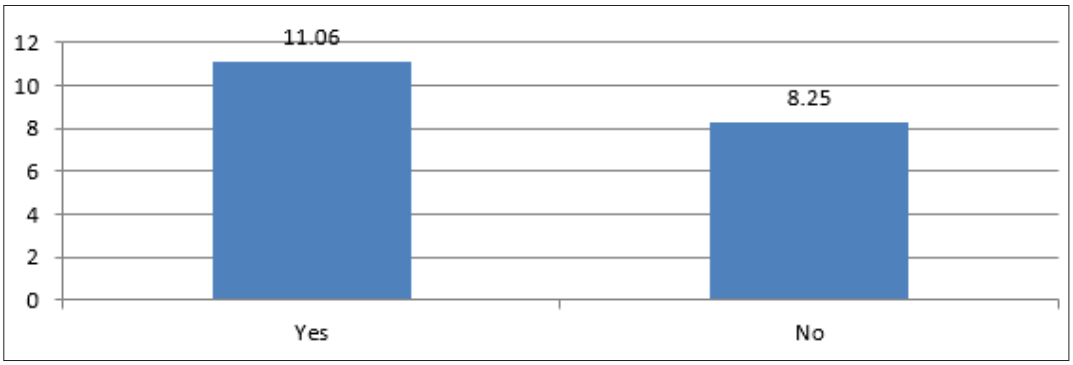

Figure 6: Interest in the Field of Early Intervention.

Legend: x-axis represents the interest in the field of Early Intervention, y-axis represents the mean of participants.

Impact of Working at a Nursery

According to Table 7, Mann-Whitney U Test was done to study the correlation between SLP's awareness and working in a nursery. The respondents were asked to either answer Yes (M= 10.27) or No (M= 10.78). Knowing that the Significance is 0.552 is greater than 0.05, this means that there is no significant difference in total between who worked at a nursery or not (Figure 7).

Appendix G

Table 7: Having the Experience of Working at a Nursery

Did you work/ are you working with children at a nursery?		N	Mean	Std. Dev.	Sig.
Total	Yes	11	10.27	2.453	0.552
	No	9	10.78	3.032	

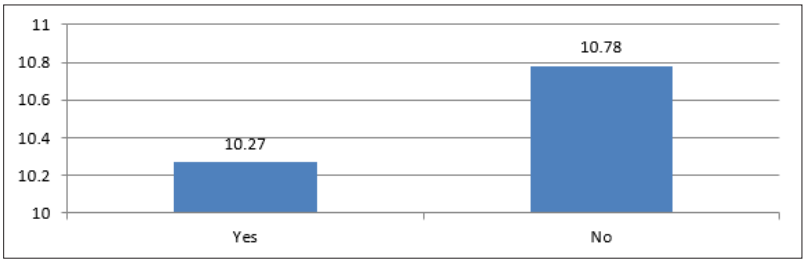

Figure 7: Having the Experience of Working at a Nursery.

Legend: x-axis represents working at a nursery, y-axis represents the mean of participants.

Impact of Number of Patients

According to Table 8, Mann-Whitney U Test was done to study the correlation between SLP's awareness and the number of patients they intervene with per week that are below the age of 3. The range of patients that was encountered is 1-4 patients per week (M= 10.7) and 5-8 patients per week (M= 11.5). Knowing that the Significance is 0.312 is greater than 0.05, this means that there is no significant difference in the range of patients intervened with per week who are below the age of 3 (Figure 8).

Appendix H

Table 8: Range of Patients Intervened with Per Week who are below the Age of 3

Approximately, state the number of patients younger than 3 years old that you work with per week		N	Mean	Std. Dev.	Sig.
Total	1-4 patients	14	10.07	2.814	0.312
	5-8 patients	6	11.50	2.168	

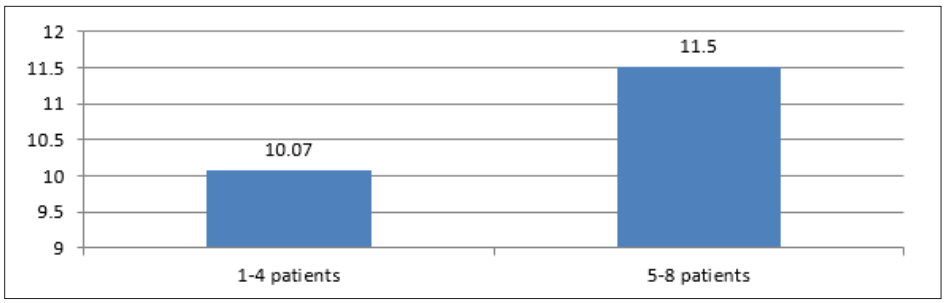

Figure 8: Range of Patients Intervened with Per Week who are Below the Age of 3

Legend: x-axis represents the number of patients; y-axis represents the mean of participants.

Impact of Type of Work

According to Table 9, Mann-Whitney U Test was done to study the correlation between SLP's awareness and the type of work done with young children. The type of work that was encountered is parental guidance (M= 10) and all types of work (M= 10.53). Knowing that the Significance is 0.900 is greater than 0.05, this means that there is no significant difference in total between therapists who are experienced only in parental guidance and who are experienced in all types of work (assessments, treatment and parental guidance) with children younger than 3 years (Figure 9).

Appendix I

Table 9: Type of Work in the Field of Early Intervention

Specify the type of work you experienced with children younger than 3 years		N	Mean	Std. Dev.	Sig.
Total	Parental Guidance	1	10.00	2.736	0.900
	All types	19	10.53		

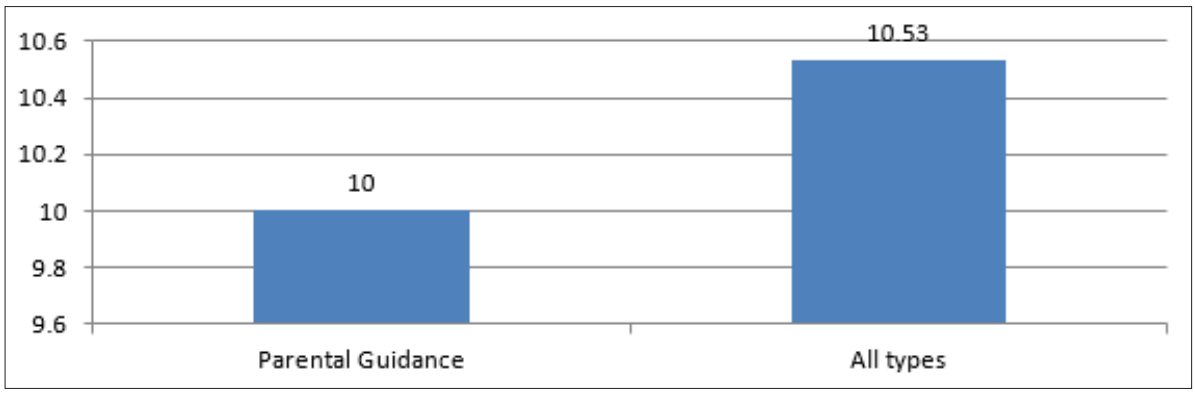

Figure 9: Type of Work in the Field of Early Intervention.

Legend: x-axis represents the type of work in the field of Early Intervention, y-axis represents the mean of participants.

Impact of Graduation Year

According to Table 10, Spearman's Rho's Test was done to study the correlation between SLP's awareness and their graduation year. Knowing that the Significance is 0.884 is greater than 0.05, this means that there is no significant correlation between graduation year and awareness regarding Early Intervention (Figure 10).

Appendix J

Table 10: Graduation Year after Completion of Diploma in Speech Therapy

Correlations				
			Total	Graduation Year
Spearman's rho	Total	Correlation Coefficient	1.000	.035
		Sig. (2-tailed)	.	.884
		N	20	20
	Graduation Year	Correlation Coefficient	.035	1.000
		Sig. (2-tailed)	.884	.
		N	20	20

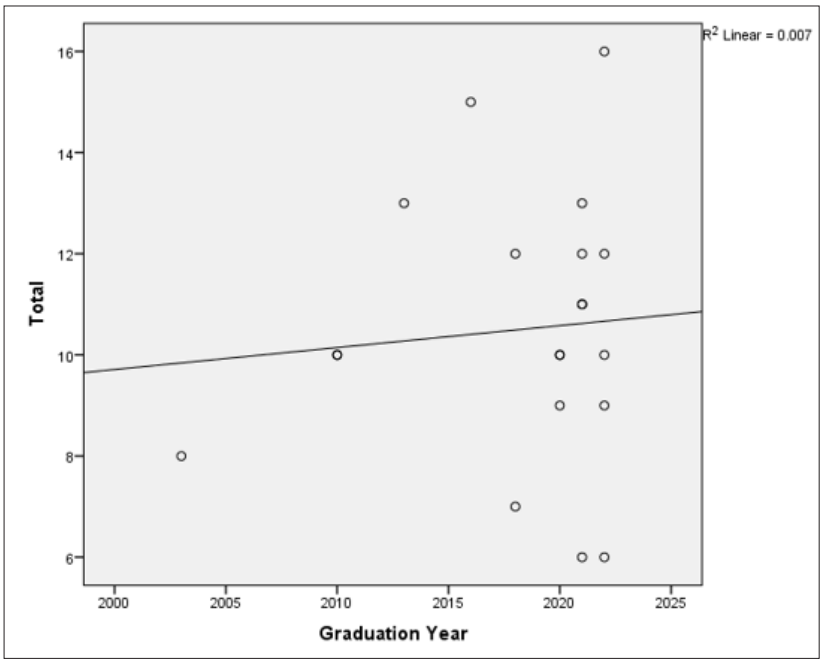

Figure 10: Graduation Year after Completion of Diploma in Speech Therapy.

Legend: x-axis represents the graduation year; y-axis represents the number of participants.

Impact of Years of Experience in the Field

According to Table 11, Spearman's Rho's Test was done to study the correlation between SLP's awareness and their years of experience in the field. Knowing that the Significance is 0.902 is greater than 0.05, this means that there is no significant correlation between years of experience and awareness regarding Early Intervention (Figure 11).

Appendix K

Table 11: Years of Experience in the Field of Early Intervention

Correlations				
			Total	Years of experience in the field
Spearman's rho	Total	Correlation Coefficient	1.000	.029
		Sig. (2-tailed)	.	.902
		N	20	20
	Years of experience in the field	Correlation Coefficient	.029	1.000
		Sig. (2-tailed)	.902	.
		N	20	20

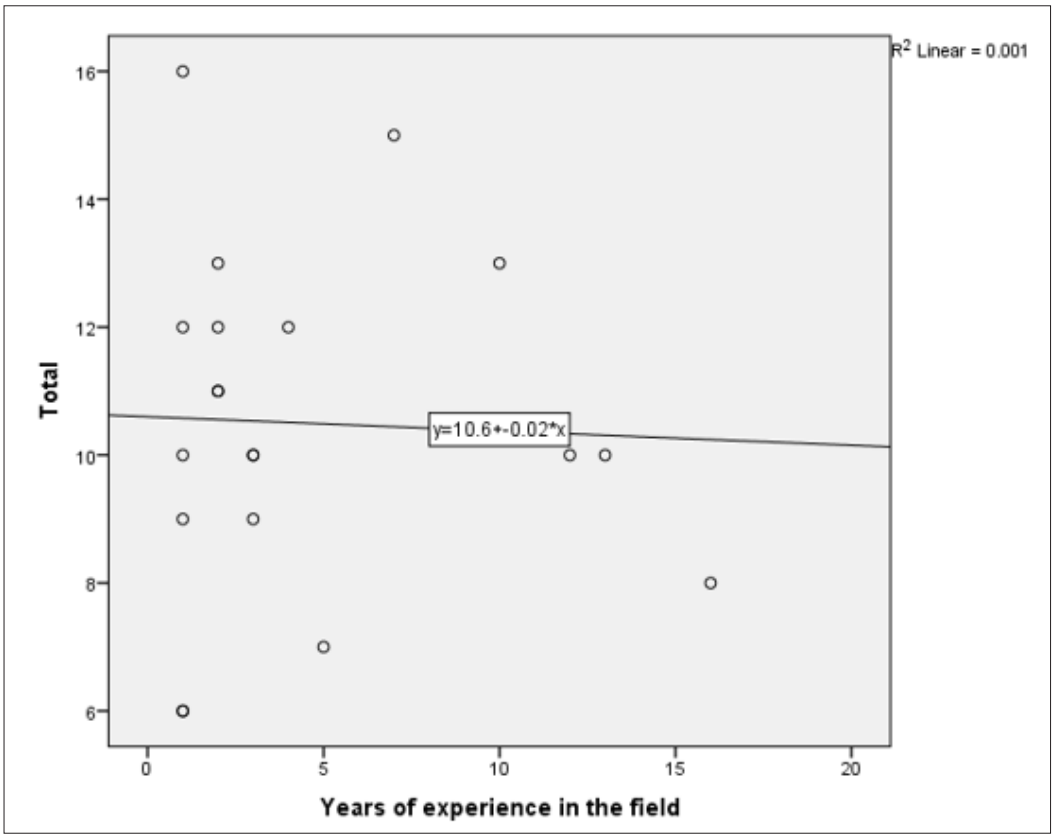

Figure 11: Years of Experience in the Field of Early Intervention.

Legend: x-axis represents the years of experience in the field; y-axis represents the number of participants.

Impact of Courses

According to Table 12, Spearman's Rho's Test was done to study the correlation between SLP's awareness and the courses that they were given that include early intervention. Knowing that the Significance is 0.657is greater than 0.05, this means that there is no significant correlation between courses that include early intervention and awareness regarding Early Intervention (Figure 12).

Appendix L

Table 12: Courses that Include Early Intervention that were given as Undergraduates

Correlations				
			Total	Number of courses offered that include Early Intervention
Spearman's rho	Total	Correlation Coefficient	1.000	-.106-
		Sig. (2-tailed)	.	.657
		N	20	20
	Number of courses offered that include Early Intervention	Correlation Coefficient	-.106-	1.000
		Sig. (2-tailed)	.657	.
		N	20	20

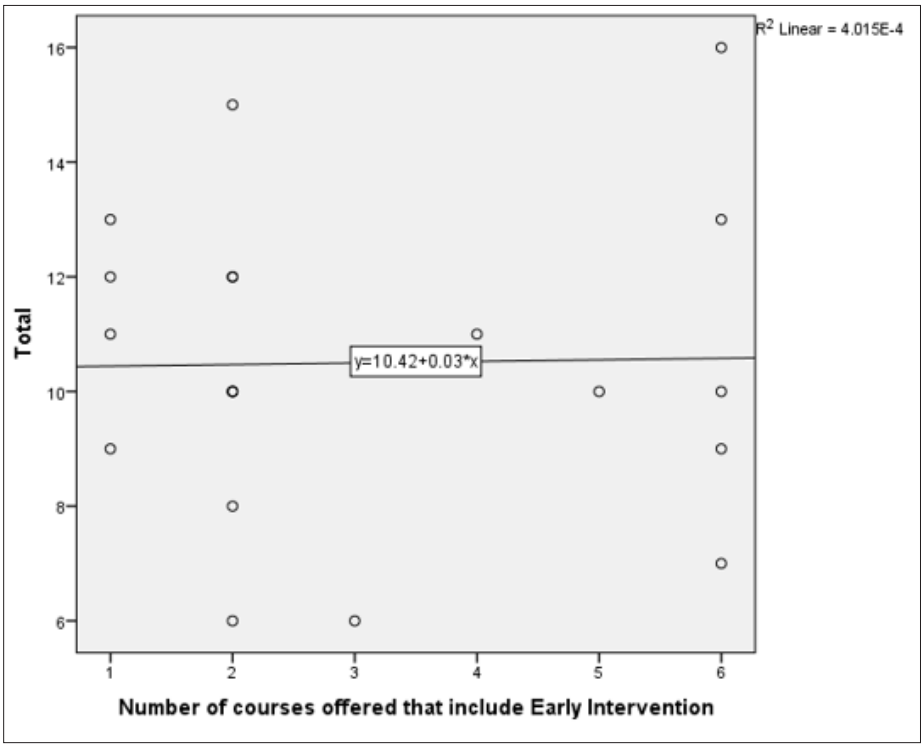

Figure 12: Courses that Revolve Around Early Intervention that were given as Undergraduates.

Legend: x-axis represents the number of courses offered that include Early Intervention; y-axis represents the number of participants.

Discussion

Across literature, this study aimed to examine the knowledge of early intervention amongst speech and language pathologists in Lebanon. The survey conducted sought to determine the different factors (such as experience, interest in the field, university curriculum, and higher education programs) that build up the awareness of speech therapists of Early Intervention that influence their practice. Overall, 20 speech therapists answered the questionnaires.

Socio-Demographic Information

In the study, respondents of all ages were represented. Results of the study indicated that majority of the respondents were quite young. This is indicative that age could be indeed a factor that determines the awareness of speech therapists. Notably, youthful speech therapists imply that they lack the extensive knowledge compared to older respondents. As indicated in literature, this influences the sort of intervention that is provided for toddlers during speech and language consultations. As indicated by Van Schalkwyk et al, the implications of having therapists that lack experience is that it could result in a misdiagnosis [7]. The respondents all graduated from top universities in Lebanon including Lebanese University, Phoenicia University, University of Saint Joseph and

Islamic University of Lebanon. However, it is imperative to note that these universities have curriculums that are different and bear different courses that include early intervention. According to literature, the difference in curricula and teaching implies that this could affect the awareness of speech and language pathologists in Lebanon. Another factor that influenced the study is gender. Females were the most dominant gender in the study. This is due to the nature of the major that encourages females to enroll in the field. Furthermore, the therapists contacted were from different regions (Beirut, South, and North), yet most of them were from the South region. This influenced the flow of the study as well.

Qualifications of Respondents

Based on the responses of the speech therapists, 65% of the respondents had a pertinent degree attaining a Diploma in Speech and Language Pathology. This indicates that indeed interest and knowledge in the field is pertinent. In relation to the years of experience (see Table 11), the respondents in the study had a mean experience of 4.5 years with half of the participants having worked as speech therapists for more than 4 years. Based on this finding, it can be noted that majority of the speech therapists have experience in the field. The findings of the study demonstrated that in Lebanese universities, the number of courses offered that included early intervention had a mean average of 3.10 (see Figure 3.1.12). According to these findings it can be noted that the variation in courses incorporating early intervention is included in universities, there is a considerably greater need for Lebanese universities to increase the number of courses.

Further findings of the research demonstrated that 65 percent of the respondents were not specialized in the field of early intervention (see Figure 3.1.3). As indicated by Khan et al, majority of the professionals in Lebanon lack official training and expertise in both child and teen psychiatry or have very minimal training [23]. 80 percent of the respondents indicated that they took part in workshops dealing with cases of children 3 years or below (see Table 4). In addition, 55 percent of the respondents pointed out that they obtained extra professional training subsequent to graduating from university (see Table 5), which targeted early intervention. This is different from the findings by Kouba Hreich et al, who determined that Lebanese programs have a shortfall in terms of facilitating direct educational programs that teach speech therapy students [24]. 80 percent of the respondents indicated that they find it in their interest to work with cases that are 3 years or less (see Figure 3.1.6). Also, in relation to their present status, 55 percent of the respondents indicated that they work with children at a nursery (see Table 7). In terms of their workload, 70 percent of the respondent indicated that they work with about 1 – 4 patients younger than 3 years old on a weekly basis (see Table 8). Furthermore, the results of the study demonstrated that the respondents worked with all kinds of work in their experience with children aged 3 years and below.

Factors Impacting Awareness of Speech Therapists

Hypothesis 1

The study hypothesized that one of the key factors that build up the awareness of speech therapists of Early Intervention that influence their practice considered in the study is professional training and education. There are numerous factors that confine speech and language pathologists' awareness in relation to the field of early intervention, with one of them being due to insufficient training. As seen in Figure 3.1,6, the results of this study determined that taking part in workshops and that receiving additional professional training after graduation that targets early intervention were greater than 0.05 meaning that they are statistically insignificant. Therefore, the null hypothesis is not rejected.

These findings provided contrasting perspective in relation to existing literature. A significant number of healthcare providers and paramedics in the field of child and adolescent psychiatry lack proper education or have very limited training [23]. Consequently, their professional performance is adversely affected. Lebanese educational programs fail to provide speech therapy students with comprehensive instruction on internationally recognized methods and techniques, hindering their ability to enhance their practice and effectively collaborate with other professionals.

Furthermore, these programs do not equip students with the necessary knowledge to implement educationally relevant interventions [24]. Zimmerman et al. ascertained that additional education and training is pivotal in facilitating effective outcomes for speech therapists working in early intervention [30]. In addition, such training facilitates the therapists in working in different settings and other professionals. A study conducted by Greenwell and Walsh indicated that speech therapists' lack of suitable training and resources adversely impacted their confidence in determining the most ideal practices when dealing with clients [31]. According to Guo et al, it is pivotal for graduate training programs by universities to come up with and support the development of evidence-based practice skills not only theoretically but also in terms of practice [23].

Hypothesis 2

The study hypothesized that the speech therapists' interest to work is a significant factor that impacts their awareness. As demonstrated in figure 3.1.6, There is a significant difference between the therapists who find interest to work in the early intervention field. Therefore, the null hypothesis is rejected.

These findings are in alignment with existent literature. Stone and Pellowski examined different factors influencing individuals who select speech-language pathology as a career choice [32]. The findings of the study determined that indirect and direct interest in working in the field and exposure can be a significant influencing factor. In addition, previous research studies have showed that the desire and interest to work in a helping professional field such as speech therapy has been ascertained to be a fundamental factor

influencing decision to pursue a career and attain awareness (Bryne, 2007).

Similarly, Keshishian and McGarr made an effort ascertain the fundamental factors that influenced undergraduate students at an American university in selecting major in communication science and disorders [33]. They assessed different motivational factors and grouped them into classifications such as intrinsic motivation, content-related factors, association with others, scientific aspects, practical considerations, and social factors. According to their findings, the most significant factor was intrinsic motivation, which referred to the appealing aspects of the major, such as engaging in interesting work and collaborating with individuals in a clinical environment. Moreover, a study conducted by Lass et al. (1995) substantiated these perspectives by indicating that personal experiences and interests, such as encountering someone with a communication disorder (CD) or having acquaintances who are students or professionals in the field, were significant factors in educating individuals about the fields of speech-language pathology and audiology.

Hypothesis 3

The study hypothesized that the speech therapists' experience is not a significant factor that impacts their awareness. In examining the sort of work that the speech therapists experienced with children younger than 3 years, there is no significant difference in total between who experienced only parental guidance and who experienced all types of work (assessments, treatment and parental guidance) with children younger than 3 years (see figure 3.1.9). Therefore, the null hypothesis is not rejected.

These findings provide a contrasting perspective contrasted against existent literature. Zimmerman et al, determined that speech therapists with more training and knowledge and those who have experienced continuing education are more effective in facilitating child development [30]. In a similar study, Klatte et al, demonstrated that speech therapists who have collaborated with parents have demonstrated more optimal outcomes for children [31]. Effective partnership between parents and speech and language therapists is deemed to be a fundamental aspect of family-centered approaches. Working in tandem can generate satisfactory results for both parents and children in terms in relation to their overall well-being and advancement.

Kent and McDonald determined that speech therapists with more experience are deemed to have more awareness in dealing with different circumstances [32]. That is, effective implementation is less dependent on the kind of setting but rather more on the attributes of the speech therapists and their level of experience. Moreover, Ortega examined the key contributing factors of effectiveness in speech fluency therapy [34]. Research findings demonstrated that experience is pivotal not only in terms of having insight on therapy techniques, but also the comfortability level between the therapist and the child is an aspect that is crucial in speech therapy.

Hypothesis 4

The study hypothesized that the speech therapists' number of students is not a significant factor that impacts their awareness. There is not significant difference in total between who works with 1-4 patients and who works with 5-8 patients (see Figure 3.1.8). Therefore, the null hypothesis is not rejected.

These findings provide different perspectives contrasted against existing literature. Over the years, the workloads and also caseloads in speech therapy have progressively increased. The number of children necessitating services from speech therapists with speech and language issues have continued to grow. Furthermore, speech therapists necessitate to spend a greater amount of time with the children in terms of consent forms, providing notifications to parents, conducting evaluation and re-evaluation reports and paper work for progress updates. Furthermore, due to a shortage of qualified speech therapists on learning institutions make work to be increasingly stressful. This increases the likelihood of experiencing burnout.

Scholarly studies have substantiated that the number of patients is a key aspect due to the fact that increasingly more patients result to greater job stress and higher burnout levels [35]. According to Edgar and Rosa-Lugo, speech therapists can be particularly susceptible to high levels of stress owing to the expansion of their roles and also progressively massive caseloads. Brito-Marcelino et al, indicate that the significant influence of workload experienced by speech-language therapists makes them vulnerable to burnout and influence their professional awareness [36]. Speech therapists may also face stressful working circumstances, professional deflation, occupational overload, ineffective management and other conditions that can have a substantial impact on mental and emotional well-being.

Limitations of the Study

While the present study provides meaningful insight into the factors impacting the awareness of speech therapists in early intervention, it is imperative to note a number of limitations. First, the sample size of the research study present generalization challenges. The study solely has 20 research participants, which is a small sample size. This implies that the results of the study cannot be generalized. It would be pivotal to exercise discretion when generalizing the findings beyond the participants. Secondly, the study focuses on Lebanese speech therapist. In general, every nation has its unique university curriculum, work experience expectations and also educational expectations, meaning that findings from this study may not be representative of other nations.

The quantitative approach also hinders generalization. Taking into consideration the sample size used, together with the lack of qualitative techniques, the findings of this study face limitations. The incorporation of a qualitative analysis in addition to the survey conducted, it could have been possible to conduct a much broader analysis, attain greater objectivity and precision, and provide stronger evidence and greater confidence in the findings.

Questionnaire research also has some inherent limitations as discussed earlier [37]. Questionnaire research, even though an efficient data collection tool, which is also very cost-effective does have some limitations. Even though the participants are asked to respond accurately, some may not answer accurately due to several inherent biases. The information provided was based on data that individuals reported themselves and was not verified by an independent source. This could have led to bias in the responses and an inaccurate representation of the opinions of the entire population. When individuals self-report, there is a possibility of socially desirable responding (SDR), where participants tend to present themselves in a positive light through questionnaires [38]. In this case, speech therapists might have given answers they believed to be favourable in order to avoid portraying a negative impression of their ideological systems.

Future Studies

There are key recommendations that can be considered for future research. First of all, studies evaluating the factors that impact speech therapist professionals could be conducted with a larger population. For instance, surveys and questionnaires should be administrated to increasingly more professionals within the early intervention field representing a greater demographical area. Importantly, this would unquestionably provide additional insights pertaining to the different factors that build up the awareness of speech therapists in Early Intervention that impact their practice. Secondly, future studies can further elaborate on this study by incorporating qualitative approaches such as interviews and surveys. This can help in understanding the human experience of the speech therapists, extending knowledge and comprehension into the thoughts, sentiments, and behaviors of individuals. For example, interviews could provide extensive insight into why some speech therapists should be considered effective in spite of not undertaking Master's Degree or PhD.

Future research studies can also consider extending the timeline of the study considering the therapy sessions and the survey conducted. In particular, the researchers can consider implementing longitudinal studies with research designs encompassing incessant observations from the participants for long periods of time such as 30 months. This research design would be advantageous in that the researcher would be able to ascertain developments or changes in the attributes of the target population, not only for the individuals but also as a group. This would facilitate delving into the practical work of the speech therapists. Future studies could also consider implementing cross-sectional studies considering the perspectives of parents and early intervention institutions in considering their perspectives on key factors of speech therapists. Certainly, by having greater understanding of these different factors, better measures can be taken in recruiting, selecting, and working with professional speech therapists in the early intervention field. This will guarantee more effective early intervention services in Lebanon who can guarantee proper assessment, diagnosis, and treatment of children below the age of 3 years [39-45].

Conclusion

Summary and Conclusion

Childhood is a period of fast-paced growth and development. Early intervention speech therapy is pivotal during this phase as it capitalizes on the child's brain development. Speech therapy in early intervention helps children to develop into more efficacious communications which diminishes frustration and augments the outcomes relating to their speech, language and communication capabilities. This demonstrates that the awareness of speech therapists plays a fundamental role. The aim of this study was to examine the different factors that build up the awareness of speech therapists in Early Intervention that impact their practice. The key factors that were taken into consideration include years of experience, university curriculum, Master's or higher education programs, and interest in the field itself.

Based on the survey conducted with 20 speech therapists in Lebanon, the study determined that interest in the early intervention field was the only key significant factor. This implies that speech therapists' interest in the field pushes them to gain more awareness into early intervention practice. The study findings demonstrate that other factors such as experience, number of patients and professional training and education are not significant. These findings are largely in contrast with existent literature, and therefore it is suggested that future research studies should consider this aspect. When it comes to promoting a child's language and communication development through early intervention, the optimal choice for this program is unquestionably a speech and language pathologist. These professionals possess specialized training in assessing and addressing various speech and language disorders, encompassing challenges related to communication and language understanding. Despite the crucial role speech and language pathologists play in early intervention, there are numerous misunderstandings regarding the extent of their responsibilities and scope of practice. The findings of this study demonstrate that interest in work is the significant factor influencing the awareness of speech therapists in their practice. The findings of this study have crucial implications for different stakeholders in the field.

One of the key practice implications is associated with learning institutions. Presently, there are not as many learning institutions offering clear roles for speech therapists as desired. The few educational institutions that do offer positions that are frequently unclear and frequently conflated with language support instructors or even "shadow teachers." Learning institutions can do more by providing clear roles to speech therapists in the educational contexts and working in tandem with professionals that are interested in the field to give them roles in child early intervention. Parents are also key stakeholders in addressing key factors relating to speech therapists. Considering parents are actively involved in working together with speech therapists, it is imperative to not only consider education and experience, but also to take into account the interests of the professional to work and help the children in advancing their speech and language development.

The government of Lebanon has been devoted to assisting children in their assessments and also determining suitable frameworks for speech therapists. These initiatives go a long way in advancing child development. However, there is still room for improvement. First of all, given that speech therapy is important for development of children at an early stage, it is important for the government to partner with speech therapists to develop formal or best practice rules or pronouncements pertaining to their duty. With official best practices, it would be easier to recruit the most ideal speech therapists and determine the most ideal practices in the profession.

References

[1] Le Monda TSC, Cristofaro NT, Rodriguez TE, Bornstein HM. Early Language Development: Social Influences in the First Years of Life, APA Psyc Net. 2006; 2: 79-108.

[2] Mundkur N. Neuroplasticity in children, Indian Journal of Pediatrics. 2005; 72: 855-857.

[3] Paul D, Roth FP. Guiding principles and clinical applications for speech-language pathology practice in early intervention, PubMed. 2011; 42: 320-330.

[4] Paul R, Roth FP. Characterizing and predicting outcomes of communication delays in infants and toddlers: implications for clinical practice, PubMed. 2011; 42: 331-340.

[5] Sices L, Feudtner C, McLaughlin JR, Drotar D, Williams MA. How Do Primary Care Physicians Manage Children with Possible Developmental Delays? A National Survey with an Experimental Design, Pediatrics. 2004; 113: 274-282.

[6] Bruner JS. Child's Talk: Learning to Use Language. Child Language Teaching and Therapy, Sage Journals Home. 1985; 1: 111-114.

[7] Van Schalkwyk GI, Peluso F, Qayyum Z, McPartland JC, Volkmar FR. Varieties of Misdiagnosis in ASD: An Illustrative Case Series. Journal of Autism and Developmental Disorders, Springer Nature Link. 2015; 45: 911-918.

[8] Santos CD, Ferré S. A Nonword Repetition Task to Assess Bilingual Children's Phonology, Language Acquisition: A Journal of Developmental Linguistics. 2018; 25: 58-71.

[9] Ramsook KA, Welsh JA, Bierman KL. What you say, and how you say it: Preschoolers' growth in vocabulary and communication skills differentially predict kindergarten academic achievement and self-regulation, Social Development. 2020; 29: 783-800.

[10] Moyle MJ. Longitudinal Relationships Between Lexical and Grammatical Development in Typical and Late-Talking Children, PubMed Central (PMC). 2007; 50: 508-528.

[11] Calandrella AM, Wilcox MJ. Predicting Language Outcomes for Young Prelinguistic Children with Developmental Delay, Journal of Speech Language and Hearing Research. 2000; 43: 1061-1071.

[12] Li P, Legault J, Litcofsky KA. Neuroplasticity as a function of second language learning: Anatomical changes in the human brain, Cortex. 2014; 58: 301-324.

[13] Perani D, Abutalebi J. The neural basis of first and second language processing, Current Opinion in Neurobiology. 2005; 15: 202-206.

[14] Costa A, Sebastián Gallés N. How does the bilingual experience sculpt the brain?, Nature Reviews Neuroscience. 2014; 15: 336-345.

[15] Knowland VCP, Thomas M. Educating the adult brain: How the neuroscience of learning can inform educational policy, International Review of Education. 2014; 60: 99-122.

[16] Minagawa Kawai Y, Van Der Lely HKJ, Ramus F, Sato YS, Mazuka R, et al. Optical Brain Imaging Reveals General Auditory and Language-Specific Processing in Early Infant Development, Cerebral Cortex. 2011; 21: 254-261.

[17] Vandormael C, Schoenhals L, Hüppi PS, Filippa M, Tolsa CB. Language in Preterm Born Children: Atypical Development and Effects of Early Interventions on Neuroplasticity, Neural Plasticity. 2019; 2019: 1-10.

[18] Nott P, Brown P, Cowan R, Wigglesworth G. What's in a diary? Di-EL first words, Deafness & Education International. 2005; 7: 98-116.

[19] Rowland CF, Clark EV. First language acquisition. Cambridge: Cambridge University Press, 2003. Pp. xvi+515. ISBN 0521629977, Journal of Child Language. 2003; 30: 925-940.

[20] Saliby CKA, Santos CD, Hreich EK, Messarra C. Assessing Lebanese bilingual children: The use of Cross-linguistic Lexical Tasks in Lebanese Arabic, Clinical Linguistics & Phonetics. 2017; 31: 874-892.

[21] Leclerc J. L'am□nagement linguistique dans le monde, page d'accueil. 2015; https://www.axl.cefan.ulaval.ca/monde/.

[22] Banat H. The status and functions of English in contemporary Lebanon, World Englishes. 2021; 40: 268-279.

[23] Guo R, Bain BA, Willer J. Results of an assessment of information needs among speech-language pathologists and audiologists in Idaho, Journal of the Medical Library Association. 2008; 96: 138-144.

[24] Khan F, Shehzad RK, Chaudhry HR. Child and adolescent mental health services in Pakistan: current situation, future directions and possible solutions, International Psychiatry. 2008; 5: 86-88.

[25] Hreich EK, Messarra C, Martinez Perez TMPT, Richa S, Maillart C. Supporting language development in Lebanese preschools: SLT and pre-KT practice and perception of roles, International Journal of Language & Communication Disorders. 2020; 55: 988-1004.

[26] Ferreira LP. Speech Therapy in Brazil: Forty Years of Existence, Two Decades of Recognition, Folia Phoniatrica Et Logopaedica. 2002; 54: 103-105.

[27] Alighieri C, Peersman W, Bettens K, Van Herreweghe V, Van Lierde K. Parental perceptions and expectations concerning speech therapy-related cleft care - a qualitative study, Journal of Communication Disorders. 2020; 87: 106028.

[28] Campbell PH, Chiarello LA, Wilcox MJ, Milbourne S. Preparing Therapists as Effective Practitioners in Early Intervention, Infants and Young Children. 2009; 22: 21-31.

[29] Davies K, Marshall J, Brown L, Goldbart J. SLTs' conceptions about their own and parents' roles during intervention with preschool children, International Journal of Language & Communication Disorders. 2019; 54: 596-605.

[30] Akoury Dirani L, Alameddine M, Salamoun MM. Validation of the Lebanese Childhood Autism Rating Scale-Second Edition-Standard Version, Research in Autism Spectrum Disorders. 2013; 7: 1097-1103.

[31] Greenwell T, Walsh BA. Evidence-Based Practice in Speech-Language Pathology: Where Are We Now?, American Journal of Speech-language Pathology. 2021; 30: 186-198.

[32] Stone L, Pellowski MW. Factors Affecting Career Choice Among Speech-Language Pathology and Audiology Students, Communication Disorders Quarterly. 2016a; 37: 100-107.

[33] Hassan KE, Maluf G. An Application of Multiple Intelligences in a Lebanese Kindergarten, Early Childhood Education Journal. 1999; 27: 13-20.

[34] Zimmerman E, Borkowski C, Clark S, Brown P. Educating speech-language pathologists working in early intervention on environmental health, BMC Medical Education. 2018; https://doi.org/10.1186/s12909-018-1266-3.

[35] Klatte IS, Lyons R, Davies K, Harding SA, Marshall J, McKean C, Roulstone S. Collaboration between parents and SLTs produces optimal outcomes for children attending speech and language therapy: Gathering the evidence, Wiley Online Library. 2020; 55: 618-628.

[36] Kent J, McDonald SD. What are the experiences of speech and language therapists implementing a staff development approach in early years settings to enhance good communication practices?, Child Language Teaching and Therapy. 2021; 37: 85-97.

[37] Ortega E. Contributing Factors of Success in Speech Fluency Therapy, Scholarship & Creative Works @ Digital UNC. 2013; 3.

[38] Marante L. School-Based Speech-Language Pathologists' Stress and Burnout: A Cross-Sectional Survey at the Height of the COVID-19 Pandemic, Lang Speech Hear Serv Sch. 2023; 54: 456-471.

[39] Brito Marcelino A, De Oliva Costa EF, Sarmento SCP, Carvalho AB. Burnout syndrome in speech-language pathologists and audiologists: a review, Revista Brasileira De Medicina Do Trabalho. 2020; 18: 1-6.

[40] Choy LT. The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches, IOSR Journal of Humanities and Social Science. 2014; 19: 99-104.

[41] Steenkamp JE, De Jong MG, Baumgartner H. Socially Desirable Response Tendencies in Survey Research, Journal of Marketing Research. 2010; 47: 199-214.

[42] Du J. Caseload/workload study of speech language pathologists in Missouri public schools, Scholars' Mine. 2015; https://scholarsmine.mst.edu/masters_theses/7502/.

[43] Duncan P, Pirretti A, Earls MF, Stratbucker W, Healy JA, et al. Improving Delivery of Bright Futures Preventive Services at the 9- and 24-Month Well Child Visit, Pediatrics. 2015; 135: e178-e186.

[44] Edgar DL, Rosa Lugo L. The Critical Shortage of Speech-Language Pathologists in the Public School Setting: Features of the Work Environment That Affect Recruitment and Retention, Research Gate. 2007; 38: 31-46.

[45] Keshishian F, McGarr NS. Motivating factors influencing choice of major in undergraduates in communication sciences and disorders, International Journal of Speech-Language Pathology. 2012; 14: 174-182.

Appendices

Appendix A

Online Questionnaire

Early Intervention Practice Among Speech Therapists Across Lebanon

Section One: Personal Information

Age:

- 21-30 years old
- 31-40 years old

- 41-50 years old

Gender:

- Male
- Female

Region:

- Beirut
- North
- South

University:

- Lebanese University
- University of Saint Joseph
- Phoenicia University
- Islamic University of Lebanon

Graduation Year:

High Educational Degree:

- Diploma in Speech and Language Pathology
- Earned a master degree
- Earned a PHD
- Currently enrolled in a master's program
- Currently enrolled in a PHD program

Years of experience in the field:

Number of courses offered that include Early Intervention:

- One course
- Two courses
- Three courses
- Four courses
- Five courses
- More than Five courses

Specify the Name of the Courses:

Section Two: The Practice of Early Intervention

Are you specialized in the field of Early Intervention?

- Yes
- No

Did you take part in any workshops that dealt with cases that are 3 years and/or less?

- Yes
- No

Did you receive any additional professional training after graduation that target early intervention?

- Yes
- No

Do you find it in your interest to work with cases that are 3 years and/or less?

- Yes
- No

Did you work/ are you working with children at a nursery?

- Yes
- No

Approximately, state the number of patients younger than 3 years old that you work with per week

- 1-4 patients
- 5-8 patients
- 9-12 patients
- more than 12 patients

Specify the type of work you experienced with children younger than 3 years

- Assessments
- Treatment
- Parental Guidance
- All of the above

- None of the above

In a few words describe your personal impression regarding early intervention:

Section Three: Early Language Developmental Milestones

The child smiles or laughs when you play peek-a-boo by the age of 9 months:

- True
- False

The child plays with more than one toy at the same time, like putting toy food on a toy plate by the age of 12-18 months:

- True
- False

The child waves "bye-bye" by the age of 9 months:

- True
- False

The child starts looking for objects when dropped out of sight (like a spoon) by the age of 12-18 months:

- True
- False

The child uses more gestures than just waving and pointing, like blowing a kiss or nodding yes by the age of 9 months:

- True
- False

The child uses things to pretend, like feeding a block to a doll as if it was food by the age of 30 months:

- True
- False

Children move their eyes child in the direction of sounds:

- Birth – 3 months
- 9 months
- 12- 18 months

The child startles at loud sounds:

- Birth – 3 months
- 6 months
- 9 months

The child looks when you call his/ her name by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child understands "no" (pauses briefly or stops when you say it) by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child follows directions given with/ without a gesture. For example, he gives you a toy when you say, "give me the toy" with/ without a gesture by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child names things in a book when you point and ask, "What is this?" by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child calls a parent "mama" or another name by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child says at least two words together, like "more milk" by the age of:

- 9 months

- 12- 18 months
- 24-30 months

The child makes different sounds like "mamamama" and "babababa" by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child says three or more words other than "mama" or "dada" like "ba" for ball or "da" for dog:

- 9 months
- 12- 18 months
- 24-30 months

The child says about 50 words by the age of:

- 9 months
- 12- 18 months
- 24-30 months

The child uses k, g, f, t, d, and n in words by the age of:

- 12- 18 months
- 24-30 months
- 30 months and above