

Research Article

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Parents' Perspectives on Speech and Articulation Impediments among Basic Stage Students in Jordan: An Analysis of Contributing Variables

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Abstract

Background/Purpose. The research study investigated speech and language disorders in primary school students in Jordan, where the connections with anxiety, social phobia, and parental acceptance or rejection are regarded through the lens of parents.

Materials/Methods. The research design adopted was a descriptive survey using three questionnaires, which were valid and reliable, and filled in by parents. The participants were 599 students in 23 classrooms of public schools in Marka, Wadi al-Sir, and Madaba chosen through purposive sampling. Correlation, t-tests, and multiple regression analyses were used to analyze the data.

Results. Speech and language problems were more prevalent among older students (9th-10th grades) than among younger students, and gender did not play a significant role. Social phobia and anxiety were positive predictors of speech disorders and parental rejection was a negative predictor. Meaningful intercorrelations were identified between the three study instruments.

Conclusion. Age, anxiety, social phobia, and parental rejection affect the speech and language disorders in primary school students. Prompt intervention, intervention programs, and facilitating parental and educational support conditions are essential in enhancing communication abilities and minimizing speech-related challenges.

1. Introduction

Language plays a pivotal role in the development of societies, serving both as a means of communication and as an essential aspect of individual identity. It facilitates interaction, meets needs, expresses emotions, and supports thought processes, reading, and connection. Educators emphasize the importance of teaching various language skills across all societal groups and educational stages to ensure learners can use language effectively for communication and comprehension (Nor & Razali, 2019).

The study of language is not a new phenomenon; it has been explored for centuries. For example, Ibn Jinni in his work (*Al-Khasa'is*) examined the Arabic language and its meanings, describing it as "sounds used by people to express their needs" (Ibn Jinni, 1952, p. 33). Ibn Khaldun (2004), in his *Muqaddimah*, argued that languages can be learned and mastered like any other skill, acquired through education, practice, and repetition. He viewed language as an inherent trait that people develop through learning, allowing them to articulate their thoughts and goals. In contrast, Sapir (Moore, 2009) saw language as a human construct for communicating ideas, emotions, and desires through deliberate symbols, while Chomsky (2002) believed that language is innate, developing naturally when provided with the appropriate environment.

Language forms the basis for cognition, social interaction, self-expression, and comprehension of others. It involves more than just spoken sounds, symbols, and signs (Rosario, 2001), with speech being just one aspect whether whole or partial. Speech consists of "meaningful sounds" articulated to express specific ideas. Successful communication depends on both language and speech, alongside other related skills such as reading, writing, conversing, and listening (Shibli, 2022; Abdullah, 2008; Mustafa et al., 2004).

People vary in their language skills and communication abilities, which are influenced by their psychological makeup. Mastery of these skills significantly impacts personal development and behavior (Taqtqa, 2022; Abdel-Nabi, 2007). Studies by Qathafi (2022) and Yusuf (1991) have shown notable differences in language skills between typical and neurotic students, with typical students performing better. Lower instances of speech and language difficulties were found among those without language impairments, and disorders affecting fluent speech impact various psychological and social aspects (American Speech-Language-Hearing Association, ASHA Schools Survey 2018).

Further research (Snowling et al., 2006; Bishop et al., 2004) supports findings from Qathafi (2022) and Yusuf (1991), indicating that psychological issues were less common in children without speech impediments by age (5.5). Those with persistent speech problems often experience social phobia and attention deficits compared to those who have overcome these issues during primary education.

Children's language skills do not mature uniformly; some may experience difficulties such as speech delays or impaired language development (Ibrahim, 2008). Such issues might require specialized therapeutic or educational interventions and can range from mild to severe. These challenges can impact people of any age, potentially resulting in social withdrawal and depression (Gharib, 1995; Catherine et al., 2014). Research indicates that speech problems, such as stuttering, may be associated with social disturbances, particularly those related to family tensions (Foster et al., 2023; Bogels & Mansell, 2004; Hamaguchi, 1995).

Different approaches to classifying speech impediments exist: some researchers focus on symptoms, while others consider the causes, such as neurotic or organic disorders (Jarrold et al., 2009). Others categorize speech difficulties based on articulation, understanding, and contextual use (Schuster et al., 2006). Parenting styles significantly impact language development, with specific interaction patterns either promoting or hindering language acquisition. Effective parental feedback

and engagement can improve language skills, while poor interaction can exacerbate speech problems (Jensen et al., 2021; Jamieson, 1995; Lewis et al., 2007).

Speech and language disorders, including issues like deletion, addition, substitution, distortion, and various voice and fluency problems, can affect a child's ability to handle social situations, leading to negative self-perceptions and potential depression (Habib, 2021). Research has found that anxiety can worsen speech issues, with physical and emotional symptoms such as sweating and rapid heartbeat during social interactions (Nor & Razali, 2019; Goldman et al., 1996). Social phobia can further impede communication abilities, potentially leading to avoidance of speaking situations (Ghamdi, 2021; Cornwell et al., 2006; Mahr & Torosian, 1999).

Investigating speech and language challenges among primary school students from the perspective of parents in Jordan is essential. It helps increase awareness, accelerate treatment for speech issues, and predict challenges related to anxiety, social phobia, and parental acceptance or rejection. Students in the basic education phase experience two sequential developmental stages: late childhood and early adolescence. During these phases, they require appropriate levels of language and communication skills to interact effectively with others through speaking and verbal expression. Deficiencies in these skills can restrict a student's ability to fulfill their psychological and social needs and hinder meaningful interactions (Qathafi, 2022; Gharib, 1995b).

Consideration of issues like speech anxiety (Mahr & Torosian, 1999) and general anxiety (Catherine et al., 2014; Yairi et al., 1996; Goldman et al., 1996) and parental acceptance or rejection (Ibrahim, 2008; Lewis et al., 2007) can add to the complexity of treating the speech and language challenges posed by Kassnawi (2008). Based on observations during teaching and supervisory roles to basic education students and facilitating the hands-on training of university students enrolled in the university bachelor, higher diploma and masters training programs, it is evident that a relatively large number of the basic education students as well as trainee teachers show signs of weaknesses in the domain of speech and language disorders. These disorders include the disorders of the voice, particularly stuttering, cluttering, and hesitation, and phonological disorders in the form of substitution, distortion, omission, and aphasia. It is not uncommon when such hardship is coupled with manifestations of fear, anxiety, and phobia, e.g., rapid heartbeat, sweating of the face, and its reddening. In addition, there has been a significant shortage of proper training of basic education teachers regarding the mechanisms to recognize and control such disorders. In other situations, a lack of early intervention and sub-optimal teacher management of speech and language issues exacerbates these issues.

This research study seeks to examine speech and language disorders among the students of basic education in Jordan through their parents in regard to the factors that relate to such disorders in terms of anxiety levels, social phobia, the issue of parental acceptance or rejection, and the educational level of the child. Moreover, the paper aims to determine the possibility of predicting these disorders on the basis of these variables. To this end, the following research questions are meant to be answered:

1. Are there statistically significant differences at the level of ($\alpha \leq 0.05$) in speech and language disorders, and the effects of anxiety, social phobia, and parental acceptance or rejection among basic education students from the perspective of their parents, attributed to variables such as gender (mother) and educational stage (fourth and fifth grades versus ninth and tenth grades)?
2. To what extent does family treatment help in predicting speech and language disorders, as well as anxiety and speech phobia, among basic education students according to their parents' perspective?

Furthermore, the study sought to investigate speech and language disorders among basic education students (fourth and fifth grades, as well as ninth and tenth grades) from the perspective of their parents in Jordan. It also sought to investigate the relationship between these disorders and variables such as anxiety, social phobia, maternal acceptance or rejection, and educational stage. Additionally, the study aimed to determine the extent to which these disorders can be predicted and addressed. Due to the scarcity of research on the causes, prediction, and treatment of speech and language disorders, and their impact on prevalence, this study aims to highlight issues faced by students with special needs related to these disorders and explore strategies for early identification and intervention. The theoretical importance of this study lies in its investigation of how parental treatment, depression, anxiety, and speech phobia affect speech and language disorders in basic education students. Gaining insights into these factors could help uncover underlying causes, improve diagnostic and treatment methods, and better reveal the speech and language challenges faced by students, previous research (Catherine et al., 2014; Yairi et al., 1996; Goldman et al., 1996) suggests that speech phobia, , anxiety and parental rejection are significant indicators of such disorders and can negatively impact academic performance in basic education.

From a practical perspective, this study provides a new questionnaire for assessing speech phobia and a record sheet for documenting speech and language disorders, which were used with the study sample. These tools are innovative and needed for similar research. The findings aim to direct experts and educators to address speech and language problems, which may affect reading, writing, and overall language development. The results can inform the development of educational programs and curricula to effectively address and reduce speech and language disorders in basic education students.

1.1. Terminology and Definitions

- **Speech Disorders:** Impairment in the pronunciation of certain sounds, where they do not emerge from their correct articulatory position. This appears as omissions of sounds or syllables, substitution of one sound for another, distorted pronunciation, or the misplacement of sounds within words" (Feshawy et al., 2022, p. 1152). Operationally defined as: The score a student receives on the speech disorders questionnaire used in this study.

- **Language Disorders:** The inability to use spoken language effectively for communication with others, using agreed-upon verbal symbols within the child's community. This can cause embarrassment or discomfort, leading the child to avoid such situations" (Ali, 2022, p. 5). Operationally defined as: The score a student receives on the language disorders questionnaire used for this study.

- **Social Phobia:** A feeling of incapacity to face others and the expectation of lacking personal and physical abilities necessary for confrontation, often due to childhood experiences where the individual could not face certain situations or was conditioned by others to believe they are weak and incapable" (Ismail, 2022, p. 88). Operationally defined as: The score a student achieves on the social phobia scale, whether it pertains to general or specific situations.

- **Parental Treatment:** The range of methods and practices employed by parents, as seen by their children, for raising them throughout all stages of development. This encompasses both verbal and non-verbal strategies, including various instructions, gestures, commands, and restrictions designed to foster psychological adjustment and facilitate integration and adaptability (Shibli, 2022, p. 5), operationally defined as: The score a student receives on the parental treatment scale in this study.

- **Anxiety:** A feeling of discomfort, such as tension or fear, which can range from mild to severe and may affect anyone. Generalized Anxiety Disorder (GAD) is a long-term condition where an

individual experiences anxiety concerning multiple situations and issues instead of a specific occurrence and can cause psychological (mental) and physical symptoms" (Ministry of Health, Saudi Arabia, 2024). Operationally defined as: The score a student receives on the anxiety questionnaire used for this study.

- **Basic Education Stage:** The compulsory educational period for children of school age (6-16 years), focused on studying and developing essential knowledge, skills, and attitudes needed to face present challenges, current conditions, and future aspirations. It consists of three stages: the first (grades 1-3), the second (grades 4-6), and the upper stage (grades 7-10) (Ministry of Education, Jordan, 2024).

2. Literature Review

Research studies, in recent times, have given a complex insight on speech and language disorders (SLDs) and how they may have been affecting children and young adults in diverse cultural and educational backgrounds. Foster, Choo, and Smith (2023) explored the nature of interplay between academic achievement, social-emotional development, and the severity of SLD among monolinguals and multilinguals in the United States. Based on the parent-based information provided in the National Survey of Children's Health (2018/2020), researchers found that students with SLDs who spoke multiple languages experienced more difficulties, including lower school engagement, more significant impairment, and fewer positive outcomes, compared to their monolingual peers. Interestingly, these students were less bullied, although they might miss days at school more often and the interaction between school involvement, well-being, and language skills is more complex. Technology has also had an increasing interest in the treatment of SLDs. Feshawy et al. (2022) tested the efficacy of digital game-based stimuli in electronic learning among the students of first grade in Bahrain. The results of their experimental study involving an experimental and control group showed a high level of improvement of the symptoms of the speech disorder after the intervention with a long-term follow-up. In a similar manner, Metwally (2021) found the usefulness of a training program based on school media in the improvement of language skills and speech of primary students in Egypt. His observations showed significant differences in the way of speech and language performance after the intervention and no gender-related deviations, which implies that properly planned media-specific activities could be used safely as a universal and efficient assistive device.

Some studies in Saudi Arabia paid special attention to SLDs in a school setting. Taqatqa (2022) investigated the knowledge and use of verbal behavior analysis by speech therapy teachers in Mecca. The teachers showed good theoretical knowledge, and their practical knowledge was only average; hence, more in-service training was recommended. The article by Thaqafi (2022) focused on linguistic activities that enriched primary students with learning difficulties, helping to mitigate speaking anxiety. His results showed a large percentage of anxiety levels among the students (61.6), which strengthened the argument that a properly designed linguistic intervention is necessary to reduce the anxiety levels and promote language-appropriation.

Psychosocial outcomes of SLDs have also been linked to general behavior and emotion. Still, some study is focused on the impacts of domestic violence among the students at Saudi universities, i.e., positive significant relationships between domestic violence, social phobia, and aggressive behavior (Ismail, 2022). His results indicated that the presence of social phobia alone continued to build up the problem of aggression, and the presence of both issues created a great vulnerability in the students who were affected by trauma and communication disorders. Habib (2021) used a similar approach in Kuwait and revealed the negative correlation between SLDs and child self-esteem. Thus, the more severe speech and language problems were observed in children, the lower their self-esteem was recorded. But no substantial variations were identified on basis of gender.

The knowledge of SLDs continues to expand through parental views. Qualitative research was carried out by Jensen et al. (2021) in ten English-speaking countries which included the opinions of parents regarding the problems with speech and language of their children. The parents always recognized the social and behavioral impacts of SLD and gave regard to the involvement of expert advice and hearing the reactions of the students. Likewise, Ghamdi (2021), in a study in the city of Jeddah, evaluated the parental sensations of the manifestations of SLD in children with ADHD. Results indicated that the most common of the disorders was substitution disorder, followed by the occurrence of distortion, omission, and addition disorders, with no significant differences between genders.

Adebayo and Mabuku (2014) conducted a research study on the impact of SLDs on academic achievement and socialization of pupils in Zambian primary schools. In their study, they found that students with SLDs had poor academic success and moderate peer interactions. Interestingly, in SLDs, individuals with less severe cases achieved better in academics, which shows a need to correct the symptoms of more severe forms through an early diagnosis and response in the disorders. Overall, all of these studies contribute to the significance of the scope of the impacts of speech and language disorders that impact not only communication but also academic, emotional, interpersonal, and family attitudes. Insights generated indicate the increased requirement of early intervention, teacher education, culturally relevant programming, and interdisciplinary cooperation in meeting the various needs of children and youth with SLDs in different places around the world.

Additionally, several previous studies have examined different facets of speech and language disorders. For example, Habib (2021) explored the link between these disorders and self-confidence, while Adebayo (2014) and Foster (2023) investigated their impact on students' academic performance. Faisalawi (2022) and Thaqafi (2022) assessed the effectiveness of digital game-based interventions in e-learning settings for addressing speech disorders. Ismail (2022) looked into the effects of domestic violence on social anxiety, while Metwally (2021) and Jensen (2021) focused on parental perspectives regarding speech and language disorders. Additionally, Taqatqa (2022) and Ghamdi (2021) studied the symptoms of these disorders in children with ADHD.

These studies varied in their sample populations, with some focusing on high school or university students (Adebayo, 2014; Foster, 2023; Jensen, 2021) while the current study specifically examines primary school students in Amman and Madaba governorates in Jordan. It employs a descriptive and survey-based methodology.

The researchers drew on these previous studies to develop their theoretical framework, select their sample, and design their research tools. They also reviewed past results and recommendations, including the statistical methods used, to ensure the appropriateness of their descriptive survey approach and to gain insights from relevant literature.

The current study is notable for being among the few that include a broad sample from government schools in the Marka and Wadi al-Sir districts of Amman, as well as the Madaba education directorate. It encompasses primary school students in grades 4, 5, 9, and 10 and is one of the few studies in Jordan that examines speech and language disorders from the perspective of parents.

3. Study Methodology and Procedures

3.1. Research Design

The research study used a descriptive survey design, which is one of the most common designs used in the field of educational and social science research in investigating and describing a phenomenon as it exists without any control of variables. Creswell and Creswell (2018), as well as Fraenkel, Wallen, and Hyun (2019), state that the descriptive survey design enables researchers to

attain a systematic quantitative data-gathering of a specified population so that they can analyze and interpret the relationships between variables, current conditions, and attitudes. The design is especially appropriate when the objective is to have a proper representation of the views of the participants and their behaviors. Following past research, which has employed a similar technique effectively (Ismail, 2022; Manzoor & Mohd, 2019; Qasim, 2002), the descriptive approach of survey allowed gathering the necessary data concerning the investigated variables. It is particularly useful for finding trends and relationships in large groups, making it a suitable and scientifically based selection for this study.

3.2. Study Population and Sample

The study population consisted of students in the 4th, 5th, 9th, and 10th grades enrolled in public schools under the supervision of the Marka and Wadi al-Sir education directorates in Amman, as well as the Madaba education directorate. Eleven public schools (serving both boys and girls) were selected in Marka and Wadi al-Sir, and 7 public schools (also for both boys and girls) from the Madaba area.

A non-probability purposive sampling method was employed. The schools were intentionally selected because their principals and teachers expressed willingness to arrange meetings with parents, facilitate training on the use of study tools, and assist in the data collection process.

The total number of students enrolled in these schools was 2,283, as follows:

- 4th grade: 615 students
- 5th grade: 563 students
- 9th grade: 521 students
- 10th grade: 584 students

A purposive sample of 599 students was selected from this group who were enrolled in 23 primary classrooms. Following interactions with parents at their children's schools and securing their consent, along with support from school principals, educational counselors, and participating teachers, the study tools were deployed, and data collection began.

3.3. Study Boundaries

- Temporal Boundaries: This study was conducted during the first and second semesters of the (2023-2024) academic year.
- Geographical Boundaries: The study was limited to public schools under the education directorates of Marka District, Wadi al-Sir District in the capital governorate of Amman, and Madaba District.
- Human Boundaries: The study focused on a sample of parents of primary school students (cooperating parents) with children in grades 4, 5, 9, & 10, totaling 599 participants.
- Subject Boundaries: This study aimed to investigate speech and language disorders among primary school students from the perspective of their parents in Jordan and their relationship with variables such as anxiety, social phobia, parental acceptance or rejection, educational stage (grades 4th, 5th, 9th, 10th), and gender, as well as the potential for predicting these disorders.

3.4. Study Instruments

3.4.1. Questionnaire for Recording Speech and Language Difficulties

The questionnaire comprised (33) items distributed across three dimensions:

- Fluency Difficulties: 17 items

- Voice Difficulties: 8 items
- Articulation Difficulties: 8 items

These dimensions were selected based on findings from studies by Barker et al. (2013), Lewis et al. (2007), Cornwell et al. (2006), Mahr & Torosian (1999), and Yairi et al. (1996). The questionnaire was found effective in preliminary studies for highlighting academic performance issues, reading stuttering, and school dropout due to the anxiety and social phobia induced by these difficulties.

The questionnaire is completed by the student's parents (without any personal identification) over five days. Parents are asked to rate the extent to which each item matches their child's behavior using a four-point scale: often, sometimes, rarely, not noticeable. Scores for "often," "sometimes," and "rarely" are 1, 2, and 3, respectively, with "not noticeable" receiving no score. Thus, the maximum score possible is 99 (3*33), indicating high levels of speech and language skills, while the minimum score is 33, representing the lowest levels of these skills.

3.4.2. Validity and Reliability of the Instruments

To ensure validity and reliability, the tool was reviewed by 12 faculty members from the Special Education and Curriculum and Instruction departments at various Jordanian universities, including seven professors and 5 associate professors. Based on their feedback, 7 items were revised for language and content, and 3 items were removed due to low discrimination values, resulting in a final total of 33 items. The split-half reliability coefficient was 0.79. After confirming no significant variance between the test halves, the split-half reliability was adjusted using the Spearman-Brown formula to 0.85, deemed acceptable for the study's purposes. To improve clarity, all items were presented in a positive direction rather than a mix of positive and negative.

For further validation, researchers, the school principal, educational counselor, and cooperating teachers observed a pilot sample of students (n=201) and parents (n=89) outside the study sample. The correlation coefficient between these evaluations ranged from 0.69 to 0.86, indicating high significance. Internal consistency was confirmed by calculating correlations between scores on sub-dimensions and the total score, as shown in Table 1.

Table 1. Correlation Coefficients of Domain Scores with the Total Score on the Speech and Language Difficulties Observation Questionnaire

No.	Domain	Correlation Coefficient with Total Score
1	Fluency Difficulties	** 0.85
2	Voice Difficulties	** 0.71
3	Articulation Difficulties	** 0.75

***Significant at the 0.05 level ($\alpha \geq 0.05$)*

Table 1 indicates that the Speech and Language Difficulties Observation Questionnaire has internal consistency, as all correlation coefficients are significant at a level less than or equal to 0.05. Exploratory factor analysis using principal components and orthogonal rotation revealed three factors that collectively account for 83.68% of the total variance: Factor 1 = 59.2%, Factor 2 = 13.3%, and Factor 3 = 11.18%. The loadings were significant according to Guilford's criterion (0.3), ranging from 0.71 to 0.85.

- Factor 1 represents: Fluency in speech and self-confidence (59.2%).
- Factor 2 represents: Voice modulation and its relation to the speaking situation (13.3%).
- Factor 3 represents: Accuracy of articulation and appropriateness of voice for the situation (11.18%).

- Factor loading ranged from 0.71 to 0.85, exceeding Guilford's (0.30) criterion.

Reliability was assessed using Cronbach's alpha for the sub-dimensions and the total score, with values ranging from 0.65 to 0.78, indicating high reliability of the questionnaire. The correlation coefficient between the halves of the questionnaire, corrected using the Spearman-Brown formula, was 0.91, which is significant at a level less than or equal to 0.05. Additionally, test-retest reliability was determined by re-administering the questionnaire to a sample of 201 students and 89 parents of students from grades 4, 5, 9, and 10, with a 4-week interval. The correlation coefficient between the scores of students after excluding those who missed the second administration (23 parents) was 0.87, which is significant at a level less than or equal to 0.05.

3.4.3. Anxiety Questionnaire for Children and Adolescents

The researchers created this questionnaire consisting of 31 items for parents to answer. Responses are given on a four-point scale: "Completely applicable," "Sometimes applicable," "Rarely applicable," and "Not applicable at all." The questionnaire was designed to be appropriate for both childhood and early adolescence. The dimensions for the items were developed based on various theoretical frameworks on anxiety, including Taylor (1953), Castaneda (1956), Oakhill & Kyle (2000), Roy-Byrne & Wagner (2004), The Latin American Diagnostic Statistical Manual for Mental Disorders (Berganza, Mezzich & Jorge, 2002) was also referenced, which outlines anxiety dimensions such as physiological symptoms, escape desires, avoidance of situations, sleep difficulties, self-talk, and distress with loss of pleasure.

The validity of the items was assessed by calculating empirical validity. Correlation coefficients were computed between the scores from the normative sample (n=201) and parents (n=89) on this questionnaire and their scores on the General Anxiety Test developed by Roy-Byrne & Wagner (2004). The resulting correlation coefficient was 0.79, indicating significance at a level of 0.01 or less. To ensure internal consistency, correlation coefficients were calculated between the scores on each item and the total score of the questionnaire. Table 2 shows these results.

Table 2. Correlation Coefficients between Each Item and the Total Score on the General Anxiety Test

Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient
1	** 0.76	9	** 0.82	17	** 0.76	25	** 0.75
2	** 0.77	10	** 0.77	18	** 0.82	26	** 0.73
3	** 0.71	11	** 0.73	19	** 0.79	27	** 0.81
4	** 0.76	12	** 0.78	20	** 0.77	28	** 0.77
5	** 0.78	13	** 0.8	21	**0.83	29	** 0.78
6	** 0.70	14	** 0.80	22	** 0.78	30	** 0.74
7	** 0.69	15	** 0.75	23	** 0.81	31	**0.78
8	** 0.72	16	** 0.71	24	** 0.78		

**At the significance level ($\alpha \geq 0.05$)

According to Table 2, all the correlation coefficients are significant at a level of less than or equal to 0.05. This suggests that the scale demonstrates a high degree of internal consistency. Reliability was assessed by calculating the correlation between the two halves of the scale. After applying the Spearman-Brown correction, the correlation coefficient between the halves was 0.83, which is

significant at a level of less than or equal to 0.01. Additionally, the correlation coefficient between test scores from a sample with a (4) week interval was computed. After excluding participants who missed the second test (N=201) and parents (N=12), the correlation coefficient was 0.79, significant at a level less than or equal to 0.05. Cronbach's Alpha for the test was 0.87, indicating high reliability.

3.4.4. Social Phobia Questionnaire for Children and Adolescents

This questionnaire consists of (28) items, all framed positively, with responses being either yes or no. The items cover five areas based on the analysis of previous studies, theoretical background, and the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association (DSM-IV-TR, 2000), as well as the statistical diagnostic manual for psychological and mental disorders in Latin America (Berganza et al., 2002). These dimensions encompass the physiological, emotional, and behavioral reactions an individual may experience when confronted with a speaking situation, including the impulse to flee, avoidance of such scenarios, and distorted irrational beliefs. The validity of the scale items was confirmed by presenting the questionnaire to 12 faculty reviewers from Jordanian universities. Items with an agreement rate of 85% were retained, and some items were rephrased. The internal consistency of the scale was verified, and the correlation of each item with the total scale score was calculated, as detailed in Table 3.

Table 3. Presents the correlation coefficients between each item's score and the total score on the Social Phobia Questionnaire

Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient
1	** 0.59	8	** 0.72	15	** 0.66	22	** 0.67
2	** 0.64	9	** 0.81	16	** 0.75	23	** 0.79
3	** 0.61	10	**0.64	17	**0.72	24	**0.65
4	**0.65	11	**0.78	18	**0.71	25	**0.81
5	** 0.78	12	**0.66	19	**0.77	26	**0.67
6	**0.69	13	**0.81	20	**0.67	27	**0.77
7	** 0.74	14	**0.72	21	**0.69	28	**0.69

**At the significance level ($\alpha \geq 0.05$)

The previous table indicates that all correlation coefficients are statistically significant at a level of less than or equal to 0.05. The correlation between the scores of the standardization sample on the current scale and the Liebowitz Social Anxiety Scale (LSAS) (Liebowitz, 1987)—a tool developed by Liebowitz to measure social anxiety—was 0.85, which is significant at a level of less than or equal to 0.05. Reliability was assessed using the test-retest method over a 4-week interval, with a correlation coefficient of 0.89 between scores from the two tests, also significant at a level of less than or equal to 0.05. Additionally, the correlation coefficient between the two halves of the scale, after adjusting with the Spearman-Brown formula, was 0.85, which is significant at a level of less than or equal to 0.05.

3.4.5. Parental Styles Scale: Parental Acceptance or Rejection

This scale, developed by Rohner (1977) and adapted by Salama (1988), was revised for clarity and understanding, reducing it to 37 items. It is a self-reporting instrument aimed at quantifying students' perceptions of their parents' acceptance or rejection. The scale contains (60) items

distributed across four sub-dimensions: warmth and perceived love (20 items), perceived unspecified rejection (10 items), perceived aggression and hostility (15 items), and indifference and neglect (15 items). Warmth and perceived love signify acceptance. The other three dimensions indicate parental rejection. Children respond to statements with one of four options: always, sometimes, rarely, or never, with scores assigned based on the statement's direction. The scale has shown strong validity and reliability in the U.S., with reliability coefficients between 0.72 and 0.86 for both test-retest and internal consistency using Alpha. Validity was confirmed through comparisons with other established tests (Rohner, E.C., 1980; Rohner, R.P., 1977, 1975). Salama (1988) found internal consistency for both sub-dimensions and total scores, with correlation coefficients ranging from 0.48 to 0.79, significant at a level less than or equal to 0.05. Factor analysis identified two main factors: perceived parental acceptance and warmth. Experimental validity was established by correlating scores from a sample of school students (N = 64) on this scale with scores on Ibrahim's (2008) academic achievement test, yielding a correlation coefficient of 0.77, significant at a level less than or equal to 0.05. Reliability was further confirmed with Cronbach's Alpha for sub-dimensions ranging from 0.85 to 0.92, indicating high stability. Test-retest reliability over a 4) week period resulted in a correlation coefficient of 0.88, also significant at a level less than or equal to 0.05.

3.5. Study Procedures

3.5.1. Selection of Schools

The study involved choosing (11) schools (both male and female) from public schools under the education directorates of Marka and Wadi Seer in the capital governorate of Amman, and (7) male and female schools from the Madaba education directorate. This selection was based on the willingness of school principals, teachers, and administrative staff to hold meetings with parents, apply study tools, and assist in data collection.

3.5.2. Data Collection Methods

The primary methods for monitoring and data collection included weekly meetings with school principals and cooperating teachers to implement study tools, bi-monthly meetings with parents at the cooperating schools, with the presence of the school principal, educational counselor, and cooperating teachers to discuss the implementation of study tools, and conducting interviews with parents either from the study sample or outside it. Additionally, communication via phone was used.

3.5.3. Workshops

A workshop was held on Wednesday, October 4, 2023, from 12:00 PM to 1:30 PM to train cooperating teachers and school principals on how to collect, record, and analyze data. Another workshop took place on Sunday, October 22, 2023, from 1:30 PM to 2:30 PM to train cooperating parents on handling study tools without writing any material that could reveal their identity, explaining that the study was for research purposes only.

3.5.4. Study Implementation

The study was conducted at the beginning of the first and second semesters of the academic year 2023/2024.

3.5.5. Data Processing

Meeting minutes, interview results, and observations were transcribed using forms prepared by the researchers.

3.5.6. Data Analysis

The researchers analyzed the study tools' results, calculating means, standard deviations, one-way ANOVA, mean squares, degrees of freedom, and significance levels.

3.5.7. Statistical Analysis

The researchers employed the following statistical methods: Pearson correlation coefficient, t-test for significance of differences between means of independent samples of unequal sizes, and multiple regression analysis. Previous studies have shown to be effective in such research (Ismail, 2022; Al-Tahir, 2005; Qasim, 2002).

4. Results

In this section, the results are given in relation to the research questions, based on the three instruments: (1) Speech and Language Disorders Questionnaire, (2) Anxiety and Social Phobia Scale, and (3) Parental Acceptance/Rejection Scale. Descriptive statistics are analyzed, ANOVA and t-tests to compare the groups, correlation analyses between the instruments and regression models to predict speech and language difficulties. To answer the first research question:

1. Are there statistically significant differences at the ($0.05 \leq \alpha$) level in speech and language disorders, the impact of anxiety and social phobia, and the level of parental acceptance or rejection among primary school students according to parents' perspectives, attributed to the variables: gender (mother) and primary school stage (4th and 5th grades vs. 9th and 10th grades)?

The Pearson correlation coefficient was calculated between the overall score of speech and language disorders and the variables of anxiety, speech phobia, and family acceptance or rejection. Table 4 presents the results obtained.

Table 4. Correlation Coefficients between Speech and Language Disorders and Study Variables

Item	Acceptance	Parental Rejection	Speech Phobia	Anxiety
Total Score of Speech and Language Disorders	0.06	** 0.13-	* 0.26	** 0.26

***At the significance level ($\alpha \geq 0.05$)*

Table 4 shows positive significant correlations at a level less than or equal to 0.05 between speech and language disorders and both anxiety and social phobia. There is a notable negative correlation between speech and language disorders and maternal rejection (-0.13). However, no significant correlation was observed between speech and language disorders and maternal acceptance, or with depression (0.06). These findings indicate that there are no significant variations in speech and language disorders among primary school students. The study also found no substantial differences in speech and language disorders among students at various stages of primary school. To test this aspect of the question, an independent sample t-test was conducted, and Table 5 presents the results obtained.

Table 5. T-Values for the Significance of Differences between Primary and Intermediate School Students in Speech and Language Disorders

Area	Grade	Number of Students	Average	Standard Deviation	T- Value	Level of Significance
Fluency Disorders	Forth	143	23.81	3.48	7.30	0.01
	Fifth	154	21.71	4.15		
	Ninth	149	24.36	3.55		
	Tenth	153	20.33	4.01		
Voice Disorders	Forth	143	11.08	2.44	12.4	0.01
	Fifth	154	9.96	2.07		
	Ninth	149	59.24	8.17		
	Tenth	153	51.53	8.82		
Articulation Disorders	Forth	143	21.02	3.55	8.16	0.01
	Fifth	154	22.36	3.21		
	Ninth	149	20.19	4.01		
	Tenth	153	10.06	2.50		
Total		599	9.86	3.02		0.01

Table 5 shows significant statistical differences between students in the 4th and 5th grades versus the 9th and 10th grades regarding fluency disorders ($t = 7.3$), voice disorders ($t = 12.4$), articulation disorders ($t = 8.16$), and the total score ($t = 9.86$), with differences favoring students in the 9th and 10th grades. This result leads to the rejection of the initial hypothesis.

To answer the second research question:

2. To what extent does family treatment help in predicting speech and language disorders, as well as anxiety and speech phobia, among basic education students according to their parents' perspective?

A multiple regression analysis (Stepwise Regression) was conducted, where variables with the strongest predictive power for the dependent variable are entered into the model first, followed by the next strongest variables, and so on, until all significant predictors are included. Variables with lower predictive power are not included (Pring, 2004). The results revealed three regression models that predict speech and language disorders in the following order: anxiety, anxiety and social phobia, anxiety, social phobia, and parental rejection. The correlation coefficients for these models are: (0.26, 0.3, 0.34), respectively. ANOVA results showed that the F-values for the three models are significant at the 0.05 level. Table 6 presents the results of the regression analysis and the F-values for the three models predicting speech and language disorders.

Table 6. Regression Analysis and F-Values for the Three Models Predicting Speech and Language Disorders

Source	Sum of Squares	Degrees of Freedom	Mean Square	F- Value	Significance Level
Between-Groups Anxiety	5498.65	1	5198.65	55.42	0.01
	69157.39	724	95.52		
Between-Groups Anxiety and Speech Phobia	6782.79	1	6782.79	72.68	0.01
	67983.25	724	93.33		
Between-Groups Anxiety, Social Phobia, and Parental Rejection	8512.097	1	8512.097	93.59	0.01
	65843.95	724	91.197		

Table 6 shows that anxiety is the most significant predictor of speech and language disorders, followed by speech phobia and parental rejection from the mother. The F-values indicate the validity of the multiple correlations, with all models showing significance at the 0.01 level. The Beta coefficients are as follows: Anxiety = 0.220, Speech Phobia = 0.197, Parental Rejection = -0.16. The total B value is 54.34. Thus, the prediction equation can be formulated as:

Speech and Language Disorders =

$$43.54 + 0.22 \times \text{Anxiety} + 0.197 \times \text{Speech Phobia} - 0.16 \times \text{Parental Rejection}$$

The results of the research showed that there were some notable patterns. Strong differences were found between grades, with older students (9th-10th grade) reporting more severe speech and language problems than younger students (4 th -5 grade). In comparison, gender showed no significant difference. Regression analyses revealed anxiety and social phobia to be significant in positive prediction of speech and language disorders, but parental rejection was found to be a negative predictor. Additionally, the three study instruments showed significant intercorrelations, which proved that although they serve to measure related constructs, each of the three items measures a different aspect of challenges faced by students.

5. Discussion of Results

The results of this paper present valuable information related to the associations among speech and language disorders, anxiety, and social phobia, and parental acceptance or rejection of primary school students. The findings of the research question one show that speech and language disorders, such as voice disorders, sentence formation problems, and fluency problems, are strongly interrelated with social phobia. Social phobia, characterized by fear and apprehension about speaking in front of people, may manifest as stuttering, voice strain, tremors, and breathlessness during speech. Such challenges disrupt proper communication and can be complicated by overall anxiety, depression, or discomfort. These experiences tend to develop the feeling that one can speak inferiorly in comparison with others, and this results in stress, dissatisfaction with oneself, and lack of self-belief. Students can avoid speaking scenarios because they are afraid of a negative

assessment, which strengthens social anxiety and speech problems. These results are similar to previous studies. Foster et al. (2023), Reyan (2001), and Goldman et al. (1996) found that students with social anxiety or fear of speaking before others exhibit increased physiological and psychological responses in social situations, which tend to influence speech fluency.

On the same note, positive correlations were found between voice disorders and general anxiety or psychological stress by Bishop et al. (2004) and Goldman et al. (1996). Hofman (1997) observed that social phobia is also associated with fluency problems, particularly in those scenarios involving the need to speak in public and Jensen et al. (2021) and Nor Razali (2019) have established that both social anxiety and social phobia have a positive relationship with stuttering. On the other hand, the results of a study conducted by Cornwell et al. (2006) established a negative correlation between speech quality and social anxiety, but there was no consistent relational correlation between general anxiety and speech quality. Collectively, these studies indicate that the underlying physiological and emotional causes of anxiety may interfere with speech patterns and cause noticeable speech impairments.

The academic and competitive contexts also found in the current study were found to have a greater impact on negative expectations, especially among older primary students (9th and 10th grade). According to Ranta et al. (2007), social phobia in speaking to an audience peak during the age of 10-16 years with a prevalence rate of around 2-3 percent of adolescents. In line with this, we have found that the level of speech and language difficulties is higher in older students, which points to the age and educational and developmental influence of age and educational stage on communication skills. On the issue of parental influence, the research observed no statistically significant relationship between maternal acceptance and speech and language disorders. This is possibly because the study concentrated on maternal acceptance and not on parental acceptance in general and social norms which may favor boys in the sample. Maternal rejection, on the contrary, was found to have a significant and negative correlation with speech disorders in favor of perceived parental negativity in worsening communication difficulties. There was no meaningful relationship between speech disorders and depression, perhaps because of the young age of sample and because there are no pronounced psychological consequences at this age.

There was an interesting development trend, suggesting that the intensity of speech and language pathology tends to decline with age and with the progress of education, even without any formal treatment. Communication skills can be improved as a result of interactions with peers and educational progress. Yairi et al. (1996) discovered that 32 percent of children who stuttered improved significantly without the intervention and 34 percent of the children who stuttered persisted in stuttering. In like manner, Card and Dodd (2006) and Reyan (2001) found that 68.2 percent of the children had improved as a result of natural progress in development. Another study carried out by Person (1997) also revealed that age and speech disorders constituted a significant inverse relationship in the age group of 4-12-year-olds. Nevertheless, not all of such stages can be succeeded by linear improvement, and some fluctuations in the environment or even in the school organization can increase the difficulties in the meantime. The results of the second research question demonstrate that anxiety, social phobia, and parental rejection significantly predict speech and language disorders. Social anxiety, anxiety toward public speaking in front of people, mixed feelings of either doing well or being judged negatively, are also causes of speech problems. Perceived parental rejection further intensifies these challenges. Adebayo (2014) and Vrana and Gross (2004) support these results by stating that anxiety and social phobia can even predict speech disorders. Other researchers, such as Mannai and Everett (2005), Foster et al. (2023), Janjua and Kyle (2002), and Allard and Williams (2008), have supported the fact that high anxiety, acute speech fears, and perceived parental rejection are effective predictors of speech and language problems. In general, the research highlights the multifaceted nature of interactions between developmental

stage, psychological variables and parental impact on speech and language outcomes. The results emphasize the significance of early diagnosis and early intervention in students with anxiety or social phobia, and the support of parents.

6. Limitations

This study is restricted in its results to a sample of primary school students and their parents in public schools in the Marka, Wadi al-Sir and Madaba districts and is founded on the particular data collection instruments that were used, together with the validity and reliability criteria of these instruments. As a result, the results might not be applicable to another population, area, and other dependent variables.

7. Recommendations

Based on the study's results, several recommendations can be made. Since the older primary students (9th-10th grade) exhibit more significant speech and language problems, schools should implement targeted support measures, including individual speech therapy and small-group interventions. Since anxiety and social phobia were important positive predictors of speech disorders, teachers and counselors are advised to implement strategies to minimize social anxiety and fears of speaking out, including cognitive-behavioral interventions, relaxation, and systematic exposure to speaking situations. The correlation between maternal rejection and speech outcomes is negative, which emphasizes the role of parental engagement; schools can arrange workshops that will enable mothers and fathers to create supportive, non-rejection motives that will strengthen the self-confidence of children in communication. In addition, the fact that speech problems would automatically improve with age and learning activities means that the teacher needs to promote interaction among the students through discussions, group projects, and after-school activities as a way of developing fluency and socializing. Lastly, since speech and language problems are interconnected with psychological and family-related issues, schools are encouraged to create comprehensive screening programs that would enable them to diagnose at-risk students at an early stage and offer combined treatment that will include speech therapy, psychological assistance, and parental counseling.

8. Declarations

Author Contributions. (B.Y.: Conceptualization, literature review, and research design, KH.F.: Methodology and data collection, S.F.: Writing – original draft preparation and editing, O.F.: Supervision, review, Methods, and final approval of the manuscript. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.)

Conflict of Interest. The authors declare no conflict of interest.

Ethical Approval. The study was carried out following the human participants' research ethics. This study was approved by Amman Arab University of with reference number [H124-5024]. All the participants consented to participating in the study with full awareness, and their answers can be characterized by the facts of privacy and confidentiality, as well as anonymity.

Data Availability Statement. The information that contributed to the results of the present study can be obtained by the corresponding author when a fair request is made.

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