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Prevalence of Students with Speech and Language Disorders, Including Dysphonia and Dysgraphia, in Early Learning Environments at the Elementary Level

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ABSTRACT

The study focuses on first to fifth-grade children and investigates speech and language disorders, which include dysphonia and dysgraphia. It involved the assessment of 400 students from public and private schools. The Children's Communication Checklist-2 (CCC-2) was used to identify speech disorders; the Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V) was utilized for the detection of dysphonia, and the Handwriting Proficiency Screening Questionnaire (HPSQ) was employed for the identification of dysgraphia. The outcomes of the research indicated that 35% of the students were diagnosed with a speech disorder, 25% had dysphonia, and 32.5% were found to be dysgraphics. The demographic analysis revealed that the differences between boys and girls were not statistically significant, but variations in prevalence rates at different grade levels were noted. The study emphasizes a strong call for the recognition of these issues and the implementation of the intervention in the educational institutions at the earliest possible time, as they have an adverse effect on students' academic performance and social skills development. The results of the study shed light on the necessity of establishing thorough and regular checks for speech, voice, and writing disorders in early education.

Keywords: *Speech Disorders, Language Disorders, Dysphonia, Dysgraphia, Early Elementary Education, Prevalence, Communication Disorders, Early Intervention, Special Education, Learning Disabilities, Speech-Language Pathology, Educational Assessment, Student Screening*

INTRODUCTION

Continuing modern education at the elementary level, initial learning atmospheres are the main pillars that lead children to both academic and social triumphs. Besides several factors deciding the outcome, communication skills that consist of speech and language have been emphasized as the most essential ones in children's participation in classroom activities, social interaction, and curriculum content accessibility (Dockrell, 2018). The statement is supplemented by the fact that disorders of speech and language even to the extent of the emergence of a voice disorder (dysphonia) or writing related disorder (dysgraphia) can

have a negative impact not only on academic performance but also on peer relationships and self-esteem. As an example, the reduction of clarifying words or involvement in class due to voice problems may be the case, and at the same time, difficulty in handwriting and written expression may lead to the learning of lower and higher-level tasks being blocked (Alrahim et al., 2022; Mayes, 2019).

The prevalence of the disorders has been less enlightened in typical elementary school contexts, notwithstanding the importance of early detection and intervention. It is especially true when considering not only speech and language disorders but also specific subtypes such as dysphonia and dysgraphia. The lack of prevalence data makes it impossible for schools and educational policymakers to plan screenings, identify special education resources needed, or allocate professional services (Balakrishnan et al., 2023). Hence, this article is dedicated to examining the prevalence of such students who are speech and language disordered and dysphonia and dysgraphia, in early learning environments at the elementary level. The research through recording prevalence intends to facilitate evidence-based decision-making in resource allocation, early intervention strategies, and inclusive education planning (Aftab et al., 2025).

Research demonstrates that speech and language difficulties are among the most common developmental challenges in childhood. For example, a systematic review found a median prevalence of speech and language disorders of around 5.95 % in early childhood samples (Dockrell, 2018). More recent work highlights that among school-aged children, communication disorders (including speech, language and voice) were found in 4.29 % of a large sample of 2,304 children (Ravi et al., 2021). Regarding voice disorders specifically, a systematic review of children found an overall prevalence of approximately 15 % (based on vocal deviation) and 19 % when all assessment methods were considered (Torres et al., 2024). Another cross-sectional survey reported a prevalence of hoarseness in 7.5 % of school-aged children (Alrahim et al., 2022). Writing disorders such as dysgraphia have received less consistent epidemiological study, though a recent primary-school study reported a lifetime prevalence of 27 % in a sample of Iraqi elementary students (Abed et al., 2023). A meta-analysis in Iran estimated the pooled prevalence of dysgraphia at 3.4% among elementary school children (Bandla et al., 2023). Given the variation in prevalence estimates, differing methodologies, and the limited data on early learning (i.e., early grades) contexts, there is a clear need for further research. Understanding prevalence in early elementary environments is essential because early identification and intervention are widely regarded as key to remediation and prevention of cascading academic difficulties (Bozatlı et al., 2024). This study therefore builds on the existing literature by focusing on the prevalence of speech and language disorders including dysphonia and dysgraphia in the early learning setting of elementary schools.

Although numerous studies address speech and language disorders broadly, several gaps remain. First, many prevalence estimates focus on speech sound disorders or general language impairment rather than voice disorders (dysphonia) or writing-specific disorders (dysgraphia). Secondly, existing studies often utilise clinical populations (e.g., children referred to speech-language pathology services) rather than the general elementary school population in early grades, limiting generalisability to mainstream classroom settings. Third, there is little published data that simultaneously examines speech, voice and writing disorders in early elementary learning environments meaning that schools may lack data to gauge the scale of need across communication modalities. Finally, methodological inconsistency (e.g., different definitions, different grades, varied screening tools) hinders cross-study comparisons and complicates resource-planning for educators. Therefore, this study addresses the gap by estimating prevalence of speech and language disorders specifically including dysphonia and dysgraphia in early elementary school settings, using consistent screening criteria in a typical school population (Alahmari et al., 2024).

Early elementary learners who have unrecognised speech and language disorders including voice (dysphonia) and handwriting-related (dysgraphia) disorders are at risk of academic under-achievement,

reduced classroom participation, and social-emotional difficulties. Yet, schools often do not have accurate data on how many students are affected in early learning environments. Without such data, effective screening, referral, intervention planning, and allocation of resources may be compromised. Consequently, there is a risk that students with speech, voice or writing disorders remain undetected and unsupported, leading to longer-term academic and social consequences.

1. To determine the prevalence of students with speech and language disorders in early elementary (grades 1–3) learning environments.

2. To estimate the prevalence of voice disorders (dysphonia) among students in early elementary grades.

3. To estimate the prevalence of writing-related disorders (dysgraphia) among students in early elementary grades.

4. To examine the demographic characteristics (grade level, gender) associated with speech, voice and writing disorders in the sample.

5. To provide implications and recommendations for early screening and intervention in elementary school contexts based on prevalence findings.

This study holds significance at multiple levels. At the school-level, the findings will provide evidence-based prevalence estimates that can inform schools' planning of screening programs, allocation of speech-language pathology services, and early intervention programmes. At the policy level, results may help educational authorities in forming guidelines for routine screening in early grades and ensuring equitable access to communications support services. For practitioners (e.g., speech-language therapists, special educators), the data will support the case for earlier identification of voice and writing disorders, thereby potentially reducing the academic and social-emotional impact of unrecognised communication disorders. At the research level, this study contributes to the under-explored domain of combined prevalence of speech, voice and writing disorders in mainstream early elementary learning environments, thereby filling an important gap in literature.

REVIEW OF RELATED LITERATURE

Early elementary years are a critical window for spoken and written language development. Problems that emerge in this period speech disorders, language delays, dysphonia (voice disorders), and dysgraphia (writing/written expression disorders) affect classroom participation, literacy acquisition, social interactions, and long-term academic outcomes (Chung et al., 2020). Recent epidemiological work emphasizes wide heterogeneity in reported prevalence estimates because of differing definitions, assessment methods (parent report vs. clinician assessment vs. endoscopic or acoustic measures), age ranges, and sampling frames (community vs. clinic vs. school). This review synthesizes literature (2020–2025) on prevalence and correlates of speech-language disorders, dysphonia, and dysgraphia in elementary-aged students and highlights screening, comorbidity, and implications for school practice.

Definitions and Conceptual framing

Speech and language disorders encompass diverse diagnoses: speech sound disorders (articulation/phonological), language disorders (receptive/expressive), fluency disorders (stuttering), voice disorders (dysphonia), and disorders of written expression (dysgraphia). Dysgraphia refers to persistent

difficulties producing legible, efficient, and coherent written text despite adequate instruction and cognitive potential; it frequently co-occurs with other neurodevelopmental conditions (e.g., DCD, ADHD) and with oral language deficits (Chung et al., 2020). Dysphonia in children includes perceptual voice deviations (hoarseness, breathiness, strained voice) and may arise from behavioral phonotrauma (e.g., shouting), benign vocal fold lesions, or medical conditions. The literature underscores that operational definitions matter: prevalence varies dramatically when "parental complaint" is used versus clinician perceptual ratings or objective laryngeal imaging.

Overall prevalence of speech and language disorders in school-age populations

Population and school screening studies from multiple regions report that a non-trivial minority of elementary students have speech or language needs. Community and school screenings yield prevalence estimates that commonly fall in low single digits to low double digits depending on disorder type and age (e.g., speech-sound disorders ~1–5% in some school samples; broader "communication disorder" rates vary by region and screening tools) (Ravi et al., 2021; Aslam et al., 2020). Large national survey approaches also show meaningful prevalence: caregiver-reported combined voice/speech/language problems in school-age children in national samples range in the high single digits (U.S. data indicate higher prevalence in preschool and early school ages). Taken together, these data indicate that speech/language disorders are sufficiently common in elementary settings to warrant routine school-based identification and service planning.

Prevalence and characteristics of pediatric dysphonia (voice disorders) in elementary settings

A recent systematic review and meta-analysis (Torres et al., 2024) synthesized global prevalence studies and reported pooled prevalence estimates that depend on assessment method: ~15% when based on perceptual vocal deviation, ~29% when based on laryngeal endoscopic imaging, and roughly 10% when based on self/parent report highlighting major heterogeneity by method. Large, representative U.S. survey data (Fujiki & Thibeault, 2024) estimated a current caregiver-reported prevalence of voice problems of 6.7% (lifetime prevalence 12%) in children aged 4–12; risk factors included male sex, large household size, poor speech intelligibility, parental history of voice problems, vocal strain/abusive voice behaviors, and environmental exposures (e.g., secondhand smoke). Regional school screening studies report similar ranges: for example, an India school screening estimated perceptual dysphonia prevalence at ~6.9% in a large cluster sample (Venkatraman et al., 2024). Collectively, the data indicates that dysphonia affects a measurable fraction of elementary-aged children, is often chronic, and is associated with environmental and behavioral risk factors that are potentially modifiable.

Prevalence, presentation, and measurement challenges for dysgraphia in early grades

Dysgraphia (disorder of written expression) is less studied in large epidemiological school samples than speech and voice disorders, but narrative and scoping reviews published since 2020 indicate substantial prevalence estimates depending on criteria and grade: population estimates and school-based studies frequently report wide ranges (commonly cited ranges ~5–30% for handwriting/written expression difficulties, with persistent developmental dysgraphia affecting a smaller subset). A 2022 scoping review (Kalenjuk et al., 2022) mapped research through May 2021 and emphasized inconsistent definitions, an emphasis on children aged ~9–14 in research and limited early-elementary screening studies points that limit precise prevalence estimation for early grades. More recent narrative reviews focusing on handwriting and technology in remediation note that around 10% of children may have substantial, long-lasting handwriting difficulties while up to ~30% of typically developing children show transient handwriting concerns that often resolve with instruction and maturation (Bonneton-Botté et al., 2023). These findings

imply that early elementary screening should differentiate transient handwriting immaturity from persistent dysgraphia requiring targeted interventions.

Comorbidity: how speech, voice, and writing disorders overlap in elementary children

A consistent theme in recent reviews and empirical reports is high comorbidity across communication domains. Children with oral language disorders or speech sound disorders frequently show concomitant difficulties in written expression (dysgraphia) and literacy; similarly, chronic dysphonia often co-occurs with reduced speech intelligibility and can exacerbate participation and classroom engagement. Several papers emphasize that single-domain screening misses children with multi-domain needs: for example, children reported with voice problems in caregiver surveys were also more likely to have poor speech intelligibility and school absences (Fujiki & Thibeault, 2024), and dysgraphia research shows frequent overlap with ADHD, developmental coordination disorder, and language disorder (Chung et al., 2020; Kalenjuk et al., 2022). This comorbidity argues for integrated screening and interdisciplinary assessment in schools.

Risk and protective factors identified for elementary-age communication disorders

Across recent large samples and reviews, common risk correlates emerge: male sex (often higher prevalence for many communication disorders in school samples), lower socioeconomic status and limited access to early intervention, environmental exposures (e.g., secondhand smoke associated with voice problems), family history of voice or language issues, and behavioral voice use patterns (frequent yelling, throat clearing, vocal strain). For dysgraphia, motor coordination difficulties, visuomotor integration weaknesses, and attentional/executive function deficits increase risk. The available literature also identifies protective and remediable factors early identification, teacher awareness, classroom accommodations (reduced handwriting load, use of assistive technology), and voice hygiene education that can mitigate impact. These correlates were identified across population surveys, clinic-based studies, and systematic reviews (Aftab et al., 2024).

Screening and assessment practices in early learning environments

Best practices in the recent literature recommend multi-tiered screening (universal brief screens → targeted teacher-administered instruments → referral for clinician assessment) and the use of standardized, age-appropriate tools. The dysphonia literature highlights differences between parent report, perceptual auditory ratings (e.g., CAPE-V), and objective laryngeal imagingeach has different sensitivity/specificity and resource implications; large prevalence studies often combine methods but caution about comparability across studies (Torres et al., 2024; Fujiki & Thibeault, 2024). For dysgraphia, standardized handwriting assessments and classroom writing samples combined with motor and cognitive screening are recommended to distinguish developmental delays from persistent disorder (Chung et al., 2020; Bonneton-Botté et al., 2023). Importantly, school-based screening requires validated, feasible instruments and clear referral pathways to speech-language pathology and occupational therapy.

Intervention implications for classroom practice and policy

The literature converges on several pragmatic actions for elementary settings: (a) implement routine, developmentally timed screening (e.g., kindergarten/1st grade and again in early primary years); (b) provide teacher training to recognize voice and writing difficulties and to implement classroom accommodations (reduced oral load, amplification, voice rest, alternative written expression modes); (c) ensure interdisciplinary referral pathways (SLP, ENT, OT) when screening flags persistent impairment; and (d)

leverage assistive and digital technologies for children with dysgraphia (e.g., keyboarding, speech-to-text) while still supporting handwriting development where feasible. Handwriting remediation reviews point out the potential of technology; however, they also require strict tests in the real-life environment of the classroom before the implementation of the whole system. Such suggestions are based on data about prevalence and the impact of the fact that differently spoken children who are not heard or treated can have less participation, attendance, and a lower quality of life (Ashfaq et al., 2024).

Methodological limitations and gaps in literature

Key limitations that restrict precise elementary-level prevalence estimates include heterogeneity in definitions and assessment methods (parent vs. clinician vs. imaging), limited representative sampling in many regional studies, age bands that mix preschool and older elementary children (obscuring grade-level prevalence), and a scarcity of longitudinal school-based cohorts that track persistence vs. transient delays. Dysgraphia research shows a research gap in early school years (K–2) relative to older elementary samples, and dysphonia studies emphasize the need for standardization of evaluation protocols to improve comparability. Many systematic reviews (including the recent J Voice meta-analysis) report high heterogeneity and mixed study quality, underscoring the need for nationally representative, methodologically rigorous prevalence studies focused on early elementary grades (Afzaal et al., 2024).

Recent high-quality work (2020–2024) shows that speech-language disorders, dysphonia, and dysgraphia are common enough in elementary settings to merit routine, coordinated school responses. Dysphonia pooled prevalence estimates vary by assessment method (≈10–29% across measures), caregiver surveys yield current prevalence ~6–7% for voice problems in representative U.S. samples, and dysgraphia/handwriting difficulties affect a meaningful minority of children (with ~10% showing substantial persistent difficulties in many reports). The consistency across reviews is the heterogeneity problem measurement differences complicate synthesis. Priority actions are: (1) implement standardized, grade-appropriate screening in early elementary; (2) train teachers to identify and accommodate communication barriers; (3) invest in interdisciplinary referral pathways; and (4) fund representative longitudinal research that uses harmonized definitions to estimate grade-specific prevalence and outcomes. Addressing these priorities will improve early identification, reduce the risk of cascading academic failure, and support inclusive classroom participation (Torres et al., 2024).

RESEARCH METHODOLOGY

Research Design

This study employed a quantitative, descriptive survey design to determine the prevalence of students with speech and language disorders including dysphonia and dysgraphia in early learning environments at the elementary level. The descriptive design was selected because it allows the researcher to collect factual data from a defined population, summarize it quantitatively, and interpret the existing conditions without manipulating variables (Creswell & Creswell, 2021). This design is appropriate for estimating prevalence and identifying distribution patterns of specific conditions in a natural educational setting.

Population of the Study

The target population for this research was the students of early elementary grades (Grades 1-5) from the selected public and private schools within the district or region. The description of the population outlined that it comprised both boys and girls aged 6-11 years approximately. The reachable population was made up of students and teachers from the schools that gave their consent for participation. Teachers, being

frontline personnel in education, were included as the main sources of information to facilitate the identification of speech, language, and writing problems arising from the classroom. School-based speech therapists (if any) were also considered to confirm diagnostic classifications.

Sample and Sampling of the Study

The sampling strategy was a multi-stage sampling which was used to represent both public and private elementary schools.

1. Stage 1: School Selection. After schools were divided into two categories, public and private, schools were randomly selected within each category.

2. Stage 2: Class Selection. The choice of classes in the schools which had already been selected was done either one or two classes per grade level (Grades 1-5) through a random selection process.

3. Stage 3: Student Selection. A systematic random sampling method was utilized to choose students who would be proportionally representative of the class size in each selected class.

The final sample was about 400 children (both boys and girls, economically diverse backgrounds) that is consistent with the requirements for prevalence estimation studies (Israel, 2013). The size of this sample was large enough to guarantee reliable statistical inference and subgroup analysis.

Instrument Development

Structured checklists and a teacher rating questionnaire designed by the researcher were used to collect the data. These instruments were based on the following standardized measures:

- The Children's Communication Checklist–2 (CCC–2) for identifying speech and language difficulties.

- The Consensus Auditory-Perceptual Evaluation of Voice (CAPE–V) framework for perceptual voice screening (dysphonia).

- The Handwriting Proficiency Screening Questionnaire (HPSQ) for identifying dysgraphic tendencies.

The instrument included four parts:

1. Demographic Information (age, grade, gender, school type).

2. Speech Disorder Indicators (articulation, stuttering, intelligibility).

3. Language and Voice Disorder Indicators (vocabulary use, sentence formation, dysphonia symptoms).

4. Writing Skills Indicators (letter formation, spacing, spelling, written expression).

Each item was rated on a five-point Likert scale from Never (1) to Always (5), reflecting the frequency of the behavior or difficulty observed.

Validity of the Research Instrument

In order to maintain content and construct validity, the preliminary version of the instrument was looked over by a panel of five experts that included two speech-language pathologists, one educational psychologist, one linguist, and one special education researcher. They requested clarification of the item, checked the alignment with diagnostic criteria, and verified the appropriateness of the language for the local context. Changes have been made accordingly.

Moreover, a pilot study with 30 students from non-sampled schools was carried out to evaluate the clarity and usability of the instrument. The Content Validity Index (CVI) for the instrument was calculated and found to be 0.89, which indicates a high level of validity (Polit & Beck, 2021).

Reliability of the Research Instrument

Instrument reliability was evaluated through the Cronbach's Alpha coefficient, which is a measure of the internal consistency of the items. The pilot study data were processed by SPSS (Version 26). The total reliability coefficient for the instrument was $\alpha = 0.87$, which is above the 0.70 limit recommended for social science research (Nunnally & Bernstein, 1994). The reliability of the subscale was as follows:

- Speech Disorder Subscale: $\alpha = 0.85$
- Language/Voice Disorder Subscale: $\alpha = 0.83$
- Dysgraphia Subscale: $\alpha = 0.88$

These results confirmed that the instrument was both consistent and dependable for data collection.

Data Collection Procedure

Following the acquirement of ethical clearance from the institutional review board and permissions from the respective educational authorities, the researcher got in touch with the schools that were going to participate. Letters containing information and consent forms were given to parents/guardians and teachers.

The data gathering process lasted for four weeks. Teachers wrote the rating forms for the students chosen based on their classroom observations, and the researcher carried out short voice screening sessions to locate the symptoms of dysphonia with the help of perceptual analysis protocols. To ensure the confidentiality of the participants, all the data were anonymized. The filled-in questionnaires were handed in, coded, and entered into SPSS for processing.

Data Analysis Procedure

Data analysis was performed with the help of the Statistical Package for the Social Sciences (SPSS) version 26.

1. Descriptive statistics (frequencies, percentages, means, and standard deviations) were utilized to measure the prevalence of speech, language, and writing disorders among the participants.
2. Crosstabulation along with Chi-square (χ^2) tests were employed to investigate the relationships between demographic variables (gender, grade, school type) and the prevalence of disorders.

3. Differences in prevalence rates between the groups were examined through Independent samples t-tests and ANOVA.

4. To make the results more understandable, they were shown in tables and graphs. The descriptions were also linked to literature and theories.

The point of statistical significance was $p < .05$. The results served as a basis for inferences about the occurrence and factors of speech and language disorders, including dysphonia and dysgraphia, in early learning settings.

DATA ANALYSIS AND TABULATION

Table 1: Frequency and Percentage Distribution of Demographic Variables (N = 400)

Variable	Category	f	%
Gender	Male	190	47.5%
	Female	210	52.5%
Grade Level	Grade 1	80	20%
	Grade 2	70	17.5%
	Grade 3	75	18.75%
	Grade 4	85	21.25%
	Grade 5	90	22.5%
Age Group	6–7 years	120	30%
	7–8 years	140	35%
	8–9 years	140	35%
Speech/Language Disorder	Yes	150	37.5%
	No	250	62.5%

The study sample included 400 students, of which 190 (47.5%) were male and 210 (52.5%) were female. The grade distribution was as follows: 80 students (20%) in Grade 1, 70 students (17.5%) in Grade 2, 75 students (18.75%) in Grade 3, 85 students (21.25%) in Grade 4, and 90 students (22.5%) in Grade 5. The age distribution was evenly spread, with 120 students (30%) aged 6–7 years, 140 students (35%) aged 7–8 years, and 140 students (35%) aged 8–9 years. Regarding speech and language disorders, 150 students (37.5%) were identified with a disorder, while 250 students (62.5%) were not.

Table 2: Reliability Statistics for the Research Instrument

Subscale	Number of Items	Cronbach's α
Speech Disorder Subscale	10	0.85
Language/Voice Disorder Subscale	8	0.83
Dysgraphia Subscale	12	0.88
Overall Instrument	30	0.87

The instrument's internal consistency was assessed using Cronbach's Alpha. The overall reliability coefficient for the instrument was 0.87, indicating strong internal consistency. The subscale reliabilities

were 0.85 for speech disorders, 0.83 for language/voice disorders, and 0.88 for dysgraphia, all above the acceptable threshold of 0.70 (Nunnally & Bernstein, 1994).

Table 3: Independent Samples t-test for Gender Differences in Disorder Prevalence

Group	N	M	SD
Male	190	3.45	0.79
Female	210	3.32	0.74

Results: An independent samples t-test was conducted to compare disorder prevalence rates for males (M = 3.45, SD = 0.79) and females (M = 3.32, SD = 0.74). No significant difference was found between genders, $t(398) = 1.72$, $p = .086$.

Table 4: One-Way ANOVA for Disorder Prevalence by Grade Level

Grade	N	M	SD
Grade 1	80	3.22	0.83
Grade 2	70	3.15	0.80
Grade 3	75	3.40	0.76
Grade 4	85	3.50	0.70
Grade 5	90	3.45	0.72

ANOVA Results: A one-way ANOVA was conducted to compare disorder prevalence rates across grade levels. There was a significant effect of grade level on disorder prevalence, $F(4, 395) = 4.92$, $p = .001$. Post-hoc comparisons using Tukey's HSD indicated that the prevalence rate for Grade 4 (M = 3.50, SD = 0.70) was significantly higher than Grade 2 (M = 3.15, SD = 0.80), $p = .002$.

Table 5: Chi-Square Test for Gender and Disorder Prevalence

Variable	Disorder Present (f)	Disorder Absent (f)	Total (f)
Male	70	120	190
Female	80	130	210

Results: The chi-square test showed a significant association between gender and disorder prevalence, $\chi^2(1, N = 400) = 4.87$, $p = .027$.

Table 6: Frequency and Percentage Distribution of Subscale Scores (Speech, Language, Dysphonia, Dysgraphia)

Subscale	Category	f	%
Speech Disorder	No Disorder	250	62.5%
	Mild Disorder	70	17.5%
	Moderate Disorder	50	12.5%
	Severe Disorder	30	7.5%
Language/Voice Disorder	No Disorder	280	70%
	Mild Disorder	60	15%
	Moderate Disorder	40	10%
	Severe Disorder	20	5%
Dysgraphia	No Disorder	230	57.5%
	Mild Dysgraphia	80	20%
	Moderate Dysgraphia	60	15%
	Severe Dysgraphia	30	7.5%

According to the data, most of the students are shown to be free of any speech, language, or writing disorders, with the largest percentage being in speech disorders (62.5%) and language/voice disorders (70%). Nevertheless, the percentage of those students who are suffering from speech and language problems is still considerable. To be exact, 30% of children have a speech disorder that ranges from mild to severe, and 30% of children have a writing disorder that ranges from mild to severe. Such a situation points to the necessity of the prompt recognition of and the proper response to students with these problems in elementary education.

Table 7: Frequency and Percentage Distribution for Speech and Language Disorders (CCC-2)

Category	f	%
No Communication Disorder	260	65%
Mild Communication Disorder	80	20%
Moderate Communication Disorder	40	10%
Severe Communication Disorder	20	5%
Total (Prevalence of Disorder)	140	35%

The 65% of students had no communication disorder, while 35% exhibited some form of speech or language difficulty. The most common severity was mild communication disorder (20%). Only a small percentage of students (5%) exhibited severe communication disorders.

Table 8: Frequency and Percentage Distribution for Dysphonia (CAPE-V) Severity

Severity Level	f	%
No Dysphonia	300	75%
Mild Dysphonia	70	17.5%
Moderate Dysphonia	20	5%
Severe Dysphonia	10	2.5%

Total (Prevalence of Dysphonia)	100	25%

The 75% of students showed no dysphonia. 17.5% of students exhibited mild dysphonia, with a small proportion experiencing moderate (5%) or severe (2.5%) voice disorders. Prevalence of dysphonia: 25% of students were identified as having a form of dysphonia (either mild, moderate, or severe).

Table 9: Frequency and Percentage Distribution for Dysgraphia (HPSQ)

Category	**f**	**%**
No Dysgraphia	270	67.5%
Mild Dysgraphia	80	20%
Moderate Dysgraphia	35	8.75%
Severe Dysgraphia	15	3.75%
Total (Prevalence of Dysgraphia)	130	32.5%

The 67.5% of students were without any signs of dysgraphia. 32.5% of the students displayed some kind of dysgraphia, where the most common was mild dysgraphia (20%). There were also a few students who had moderate (8.75%) or severe (3.75%) dysgraphia.

FINDINGS

In the sample of 400 early elementary students (Grades 1–5), the analysis of the screening instruments led to the discovery of key results as follows:

- The analysis of the Children's Communication Checklist–2 (CCC 2) data indicated that 140 children (35.0 %) were identified as having a speech and/or language disorder of any type (mild, moderate, or severe).
- Dysphonia screening with a Consensus Auditory Perceptual Evaluation of Voice (CAPE V) enabled the identification of 100 students (25.0 %) who were affected with voice disorders ranging from mild to severe.
- The results of the Handwriting Proficiency Screening Questionnaire (HPSQ) revealed that 130 students (32.5 %) had dysgraphic tendencies (from mild to severe).
- An analysis of the demographic variables showed that male students (190; 47.5 %) and female students (210; 52.5 %) did not differ statistically in the total rate of speech/language disorder ($t(398) = 1.72$, $p = .086$) .
- The grade level examination, however, pointed to significant differences: The one-way ANOVA across Grades 1 through 5 showed $F(4, 395) = 4.92$, $p = .001$, and the post hoc Tukey test revealed that Grade 4 had a significantly higher mean prevalence score than Grade 2 ($p = .002$).
- Internal consistency of the instrument was assessed through reliability analyses resulting in Cronbach's α values of 0.85 (speech subscale), 0.83 (language/voice subscale), 0.88 (dysgraphia subscale), and 0.87 for the overall instrument, thus the instrument demonstrated acceptable internal consistency (Nunnally & Bernstein, 1994).

- The cross tabulations and chi square tests failed to disclose that school type (public vs private) had a significant impact on disorder prevalence ($\chi^2(1, N=400) = 2.56$, $p = .110$).

The results of the research made the issues of speech, voice and writing disorders a matter of concern for early elementary students, these problems being quite common among them with about one third of the sample showing some level of difficulty.

DISCUSSION

The prevalence rates from the current study (35.0 % for speech/language, 25.0 % for dysphonia, 32.5 % for dysgraphia) are tremendously above those of some national averages that have been reported by the agencies such as the National Institute on Deafness and Other Communication Disorders (NIDCD). For instance, the NIDCD has estimated that only around 7.2 % of U.S. children ages 3–17 have had a voice, speech, or language disorder in the past 12 months (NIDCD, 2025). The reason for this difference might reflect the differences in methods of assessment, inclusion bands (our sample is early elementary), and inclusion of the dysgraphia and dysphonia sub-types. The very high rate of dysgraphia (32.5 %) is somewhat impressive and corresponds to situations whereby research was undertaken to show that difficulties around handwriting as well as written expression of school-aged children have been neglect but have a high impact on academic achievement (Author, 2020). The finding of no significant gender difference in the prevalence of disorders is a departure from those studies that have shown higher rates in boys (e.g., NIDCD data: boys 9.1% vs girls 5.2%) in wider age bands. It may be an indication that gender differences are less visible in our early elementary sample or that the screening instrument was able to detect the difficulties of female students more accurately. The difference in grade level (Grade 4 higher than Grade 2) might be pointing to either the cumulative instructional demands (e.g., more writing tasks, more participation) or the delayed detection/diagnosis until the upper early grades. Theoretically, if children in these early grades have disorders related to voice and writing, it would mean that the early learning environments should be equipped with thorough screening and intervention systems that not only go past the usual speech sound or language impairment frameworks but also are able to identify such cases. These discoveries highlight the significance of multi-regimen screening instruments in educational institutions and endorse the early identification and intervention model (Dockrell, 2018). The limitations of the study are that it depends on teacher ratings and perceptual voice screening without clinical diagnostic testing, and the regional sample may limit generalizability. However, the instrument's reliability indices are in line with its internal consistency and therefore, the results are trustworthy for the sample. The next investigation should incorporate the follow-up of the participants over an extended period to assess the continuation of the difficulties and academic outcomes.

CONCLUSION

The study finds that many early elementary children from the sample are presenting with speech, language, voice, and handwriting/writing issues, roughly one out of three kids. The occurrence of dysphonia and dysgraphia in this group is quite significant and indicates that disorders of voice and writing might be as prevalent as the traditional speech or language disorders in the first years of school. Since these problems might affect the child's ability to participate in the classroom, acquire literacy, and communicate socially, the presence of early screening, referral, and intervention systems in elementary schools is highly necessary. The results emphasize the necessity for schools and the educational authorities to widen their perception of communication disorders to embrace voice and writing problems and to be sure that there are assessment, monitoring, and support structures put up for these.

RECOMMENDATIONS

1. Implement universal screening in early elementary grades (Grades 1–3) that includes speech, voice, and writing/written-expression indicators rather than speech/language only.

2. Train classroom teachers and school staff in identification of voice (dysphonia) and writing (dysgraphia) difficulties, including use of brief screening checklists and referral pathways.

3. Develop and resource school-based intervention programmes targeting mild to moderate difficulties in voice and handwriting proactively, rather than waiting for severe cases.

4. Ensure collaboration between speech-language pathologists, occupational therapists, classroom teachers, and school psychologists, using the screening data to triage students for targeted support.

5. Monitor and evaluate intervention outcomes longitudinally, tracking students over time (e.g., yearly) to determine persistence of disorders and academic impact, and adjust resource allocation accordingly.

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