



Original Article

An Analysis of Demographic Characteristics of Students at Risk for Learning Disorders in Nam Dinh Province

Tran Thanh Nam^{1,*}, Tran Van Cong¹, Nguyen Thi Hoai Phuong², Le Huy Duong²

¹VNU University of Education, 144 Xuan Thuy, Cau Giay, Hanoi, Vietnam

²Vietnam-France Psychology Institute, 54 Tran Quoc Vuong, Cau Giay, Hanoi, Vietnam

Received 26th October 2024

Revised 10th December 2024; Accepted December 2024

Abstract: Understanding early signs of learning disorders since children were in preschool combined with popular demographic characteristics helps detect and intervene on time and reduces harmful effects on their development. 554 parents and 38 homeroom teachers of grade 1st and 2nd students in Nam Dinh province participated in this study to describe family members, development, and academic achievement of students with a risk of learning disorders. The results showed that 11.7% of students had a risk of learning disorders, with 23 students having a type of LD, 17 students having two types, and 25 students having all three types of LD. The rate of male:female of the three groups was a range of 1.8-3.3:1. The mean age of the student's parents with risk for a type of LD was smaller than that of the two left student group's parents. The most common early symptom before engaging in elementary school was delayed speech and difficulty in pronunciation. In addition, the analyzed data revealed that the students in Nam Dinh City had a significantly higher percentage than those in Truc Ninh and Giao Thuy.

Keywords: Demographic characteristics, early symptoms, learning disorders, elementary students, Nam Dinh province.

1. Introduction

Of all the problems that imply educational challenges, academic underachievement is a significant issue of all time (Chere & Hlalele, 2014). Learning disorders (also known as learning disability) are considered one of the important barriers to academic achievement

among children. However, it often was unrecognized because of a lack of awareness among teachers and parents and limited resources in the community (Singh S, 2017). It was estimated that 5 to 15% of school-aged children experience learning difficulties (DSM-5). Boys are more commonly affected by LD, and the male:female ratio ranges from 2:1 to 3:1 (DSM-5). The prevalence of learning disorders varies across different countries. In Germany, a survey of school-aged children showed a proportion of reading disorders at 7.0%, writing

* Corresponding author.

E-mail address: tranthanhnam@gmail.com

<https://doi.org/10.25073/2588-1159/vnuer.5216>

disorders at 8.8%, and arithmetic disorders at 6.1% (Moll et al., 2014). In China, research estimated that 3% of school-aged children were classified as having dyslexia (Liu et al., 2016). In Brazil, a survey of students from grades 2 to 6 revealed an overall prevalence of learning disabilities at 7.6%, with difficulties in writing at 5.4%, arithmetic at 6.0%, and reading at 7.5% (Fortes et al., 2016). In the United Kingdom, among 2,421 children studied, 6% met the criteria for learning disorders according to DSM-5 (Morsanyi et al., 2018). In Vietnam, according to a report by the General Statistics Office (2020-2021), the rate of children aged 7-14 with basic reading and numeracy skills is 83.1% and 73.3%, respectively. This meant the rate of children in this age group without basic reading and numeracy skills is 16.9% and 26.7%, respectively. Although the report did not specifically reflect the reasons behind the figures of 16.9% and 26.7%, it could be understood that they might have difficulties in reading and numeracy. The summary also showed that 0.5% of children aged 10-14 and 0.6% of children aged 15-17 have learning disabilities (UNICEF & GSO Vietnam, 2021).

Among the major forms of learning disorders, some evidence suggests that dyslexia, or difficulty with reading, may be the most common form, accounting for 80% of all learning disability cases (Ferrer et al., 2010; Kohli et al., 2018). Besides, children with learning disorders often show other problems. Studies in Turkey indicated that 62% to 72% of children with LD had comorbid disorders. Attention deficit hyperactivity disorder (ADHD), anxiety disorders, mood disorders, and language disorders were often comorbid with LD. Of which, ADHD was the most common comorbid mental disorder in LD (54.9%) (Coskun, 2018; Büber, 2020).

If LD was not detected and intervened early, it could lead to issues such as low academic achievement, increased psychological stress, poorer mental health, school dropout, and difficulties in employment (Luna, 2024). Early and accurate diagnosis can result in earlier intervention and better outcomes

(Torgesen et al., 1999). Parents and teachers often noticed signs of LD (DeBrew, 2017; Denton et al., 2022). Early signs are often identified when children are still in preschool before entering first grade or during the early years of elementary school (Denton et al., 2022; Earey, 2013; Kelley, 2022). Some signs included early language delays, difficulties in learning letters, and other symptoms such as anxiety, stress, school refusal, and child reports of feeling dumb (Porter et al., 2020; Miesch, 2020). Some parents might sense something is wrong but do not know what it is (Owens, 2021; Woodcock, 2020).

Having a family member diagnosed with LD (Kelley, 2022), or other factors such as prenatal complications (Baird and Sadovnick, 1994); preterm birth (Johnson, Marlow, and Wolke, 2012); exposure to toxins (such as lead) (Grandjean & Landrigan, 2014) was considered an early warning sign that their child might have LD. The United States national data from 2010 indicated that, for children aged 5 to 17, the prevalence of LD in children from poor families was 2.6%, while those in average-income families was 1.5%. S. C. O'Connor, O. Spreen (1988) found a positive correlation between socioeconomic status (SES), parents' education level, and the educational and occupational achievements of children with learning disabilities (LD).

This study aims to describe the demographic characteristics of children at high risk for learning disorders in Nam Dinh as a basis for assessing and identifying the prevalence of learning disorders and warning signs in these children. Nam Dinh is a province in northern Vietnam known for its strong educational tradition. The academic achievements of Nam Dinh are consistently among the top in the country. The province has all the characteristic economic regions and is ranked 33rd out of 63 provinces and cities in Vietnam. However, research about disabilities, especially in learning disorders, is very limited. According to our search, there were only a few research on mental health or health services in general. Most studies in mental health in Nam

Dinh province are about symptoms, management and care for patients with schizophrenia, major depression or epilepsy (i.e. Truong & Le, 2023; Nguyen, 2023; Nguyen, Truong, & Le, 2024). Regarding developmental disorders, Pham & Nguyen (2022) explored the prevalence of children with autism spectrum disorder using screening scales in preschools in Nam Dinh city. No study on learning disorders in Nam Dinh was found. Hence, conducting the study here may allow the findings to be generalized to other provinces in Viet Nam regarding the prevalence of learning disorders and the warning signs in children.

2. Literature Review

Specific Learning Disorder (DSM-5, 2013), also known as learning disorder, is one of six types of neurodevelopmental disorders. These disorders begin during the developmental period (childhood) and are characterized by impairment in different areas, including personal, social, academic, and occupational functioning. Learning disorders are diagnosed when children have specific deficits in their abilities to effectively and accurately receive or process information, typically first appearing when they start elementary school.

In various places, the terms “learning disability” and “specific learning disorder” are simultaneously used. However, while “learning disability” is a legal term identified to help students access legal rights and benefits (specifically the rights to education), “learning disorder” is a diagnostic term referring to a mental condition based on scientific assessments. Currently, the term(s) of learning disorder/specific learning disorder, according to DSM-5, is the most widely defined.

Children's persistent and debilitating difficulties regarding their limited learning abilities are reflected in basic academic skills such as reading, writing and/or math. Reading difficulties (*Dyslexia*) are characterized by challenges in accurate word reading, reading rate or fluency and reading comprehension; writing difficulties (*Dysgraphia*) contain challenges with

spelling accuracy, grammar and punctuation accuracy and lack of clarity or organization of written expression; mathematical impairments (*Dyscalculia*) are displayed in limitations in understanding numerical values, memorizing arithmetic facts, lack of accuracy and fluency in calculation and accurate mathematical reasoning (DSM-5, 2013). These difficulties not only significantly impact the children's academic performance and daily activities but also make them feel unconfident, stressed and psychologically vulnerable. Children's academic skills are significantly lower than those of most people of the same age, and measured by standardized achievement tests. An onset of learning difficulties usually appears during the early school years and cannot be better explained by other disorders. Therefore, treatment for learning disorders is essential for children, helping them overcome learning difficulties and develop comprehensively.

2.1. Prevalence of Learning Disorders

According to the DSM-5, it is estimated that 5-15% of the world's population has at least one type of learning disorder, with prevalence rates varying among countries. For instance, in Germany, the prevalence of reading disorder is 7.0%, writing disorder is 8.8% and mathematical disorder is 6.1% (Moll et al., 2014). In China, the estimated prevalence of dyslexia among school-aged children is 3% (Liu et al., 2016). In Brazil, a survey of students of grades 2 to 6 in 2016 discovered a general learning disability prevalence of 7.6%, with 5.4% of the children having writing difficulties, 6.0% having mathematical difficulties and 7.5% having reading difficulties (Fortes et al., 2016). In the UK, among 2421 children surveyed, 6% met the DSM-5 criteria for a learning disorder, with 20% of them having language or communication disorders; some of them also had autism spectrum disorder and attention deficit hyperactivity disorder (Morsanyi et al., 2018). In the US, the National Health Interview Survey results showed that the prevalence of learning disorders was 10.1% among children aged 3-10

and 18.1% among children aged 11-17 (Zablotsky & Alford, 2020).

In Vietnam, types of disorders such as mathematical disorder, writing disorder or language-related disorders have yet to be thoroughly studied. According to a report by the General Statistics Office of Vietnam (conducted by UNICEF): The rate of children aged 2-4 who have difficulties performing learning functions is 0.4% and this rate for children aged 5-17 is 0.5%. The rate of children aged 7-14 with basic reading skills is 83.1% and with basic numeracy skills is 73.3%. This means 16.9% of the children lack basic reading skills and 26.7% lack basic numeracy skills. The rate of children aged 10-14 and 15-17 with learning disabilities is 0.5% and 0.6%, respectively.

A comprehensive survey of primary school children in Nam Dinh has yet to be conducted to determine the specific data. Learning difficulties are often recognized through the students' learning process and academic achievements. Meanwhile, there is limited research and interventions for learning difficulties, even specialists providing interventions for students with learning difficulties. Teachers who primarily take on identifying, intervening and supporting students generally lack experience in psychological assessments (Giang et al., 2021).

2.2. Demographic Characteristics of Children with Learning Disorders

Learning disorders are persistent disorders that can last a lifetime. It can occur in all cultures, languages, races, and socioeconomic conditions. However, clinical manifestations of these disorders can vary depending on some factors, including language symbol (speech and writing) systems in each country, cultural and educational activities, demands from the surrounding environment, severity of the disorders, individual's learning ability, comorbidities and also available support and intervention systems. Although learning disorders usually manifest during the elementary school period and

progress/develop into adulthood, some early manifestations can be perceived since early childhood, even before the child enters school. In preschool, they might lack interest in games or plays involving language sounds (such as games with word repetition or rhymes). Preschoolers with learning disorders often mispronounce words or struggle to remember letters, numbers, or days of the week. They may not recognize their names, be unable to write them, or find learning to count difficult. These children may also have difficulty breaking words into syllables, identifying rhymes, or connecting words to sounds (DSM-5).

In addition to early signs before entering school, family characteristics are also a factor that helps support the diagnosis of this disorder. Melekian's study (1990) shows that in families of children with specific learning disorders, fathers are mostly the head of the household (77.59%). Mothers account for 16.5%, while the remaining 6% of the family is headed by other male substitutes (usually stepfathers).

Concerning the parent's occupational distribution, according to Melekian's study, a large proportion of parents of children with dyslexia are "manual workers and domestic and service workers". In contrast, the rate of parents who work as professionals or top managers and have children with SLD is meager. In detail, 63% of mothers with children with severe reading disorders in Melekian's study have a regular occupation. However, those occupations are mainly non-professional and unskilled ones. The survey conducted by Okoli et al., (2022) shows that parents with an education level of high school education or less have a higher rate of having children with learning disorders than parents who graduated with college/university or postgraduate degrees.

According to Ramón and Garcia (2012), learning disorders have a genetic component, and the limited education of the parents may be one of the biological causes that explain the learning disabilities that the children inherit. Hewison and Tizard (1980) agreed with the idea, stating that the mother's education level affects the ability to guide (listen to) the

children with SLD in their study. Pohl, Soleilhavoup, and Ben Rezique (1983) believed that parents with low education levels often lack the motivation to learn, the ability to support their children's learning or a sense of suspicion of their children's learning disabilities, thereby usually causing delays in diagnosis and study support (Melekian, 1990). According to Ramón and Garcia (2012), parents with low educational attainment also create a less stimulating educational environment so that the children with learning disorders will have fewer opportunities to develop essential skills at home.

Regarding age at birth, following Melekian's (1990) study, the mother's age at birth ranged from 16 to 45, while the father's age ranged from 18 to 57. Mothers are usually younger. Most children with reading disorders were born when their parents were relatively young (70.5% of mothers and 59.2% of fathers are under 30 at birth). Nonetheless, the average age of parents when giving birth to children with SLD, according to Jayasekara and Street (1978), is over 30 years old. As a result, the age of parents at the time of giving birth to children with specific learning disorders may need further study and discussion.

Another demographic characteristic of children with learning disabilities is the number of siblings in their family. According to Melekian (1990), most children with dyslexia come from large families (62.7% of children are born into families with at least 3 children), where working mothers have an average of 2.7 children and stay-at-home moms have an average of 4.2 ones. Rutter et al., (1974, cited in Melekian, 1990) also found a significant association between reading difficulties and many siblings (sibship size) in the family.

Birth order is also a noticeable characteristic. Children who are firstborns or only children have a quite low percentage of having SLD, while children who are the middle ones (the second half of the siblings) or lastborns record a fairly high ratio (about 68%). The low prevalence of SLD in only children and firstborns and high prevalence in middle-to-last-born children has also been demonstrated in many other studies (Melekian, 1990).

Research by Okoli et al., (2022) shows that low-income families are more likely to have children with learning disorders than high-income ones. According to the authors' research data, about 40% of children with SLD in the United States belong to the lowest income group. Financial status (poverty) is considered a socioeconomic cause that affects the availability of food in households and their ability to access adequate health insurance and services.

Parental dissonance is also a factor that maintains and increases the persistent difficulties of children with dyslexia, as it causes insecurity and emotional disturbance (Klasen, 1977). According to Okoli et al. (2022), families with children with specific learning disorders also experience a variety of obstacles, such as marital problems, employment disruptions, and destructive influence on family career plans. Some behavioral problems may also arise with siblings of children with learning disorders since they may feel like they do not receive adequate attention from their parents as compared with their siblings with SLD.

3. Methodology

3.1. Participants

Table 1. Student's demographic information in Nam Dinh province

Characteristics of the object		Frequency	Percent
Gender	Male	283	51.1
	Female	271	48.9
Grade	Grade 1	270	48.7
	Grade 2	284	51.3

District/City	Truc Ninh District	185	33.4
	Giao Thuy district	190	34.3
	Nam Dinh city	179	32.3
Age	6	2	0.4
	7	263	47.9
	8	275	50.1
	9	8	1.5

Information on 554 students in grades 1 and grade 2 in Nam Dinh province was collected through their caregivers and homeroom teachers. Of these, there were 283 male students and 271 female students, with a proportion of 51.1% and 48.9%, respectively. The distribution of living areas was relative even among three districts/cities with 33.4% of total families living in Truc Ninh district, 34.3% living in Giao Thuy district and 32.3% living in Nam Dinh city. The mean age of students was 7.53 years; the oldest was 9 years and the youngest was 6 years old.

554 parents had children who were grade 1 and grade 2 students in Nam Dinh province and participated in this study. Of these, there were 116 fathers and 426 mothers with percentages of 21.4% and 78.5%, respectively.

Regarding the highest level of education, most parents had an educational level of bachelor's degree with a proportion of 32.3%, followed by high school with a percentage of 24.0%. Besides, 15 parents (accounting for 2.7%) had postgraduate degrees.

Table 2. Parents' demographic information

The characteristics of the objects of study are the parents of the students	Frequency	Percent
<i>Relationship with student</i>		
Father	116	21.4
Mother	426	78.5
<i>The highest educational level</i>		
Elementary school	10	1.8
Senior school	114	20.6
High school	133	24.0
College	103	18.6
Bachelor degree	179	32.3
Master/Doctor degree	15	2.7
<i>The average monthly income</i>		
Under 5.000.000 VND	45	8.1
5.000.000 – 10.000.000 VND	252	45.5
10.000.000 – 20.000.000 VND	200	36.1
20.000.000 – 30.000.000 VND	36	6.5
30.000.000 – 40.000.000 VND	9	1.6
40.000.000 VND or more	12	2.2

Regarding homeroom teachers, 38 teachers participated in this study to report on the learning difficulties of 554 students. Of these, there were 9 teachers in Truc Ninh district, 14 teachers in Giao Thuy district and 15 teachers in Nam Dinh city. All of the teachers were female. Their mean age was 41.34 years old,

the oldest was 56 and the youngest was 24. Most of the teachers had bachelor's degrees; 8 teachers graduated from colleges. In addition, the average number of years of experience in the education field was 18.53 years. The additional information was shown in the table below:

Table 3. Teachers' demographic information

The characteristics of the objects of study are the teachers of the students		Frequency	Percent	
Gender	Female	38	100.0	
District/City	Truc Ninh district	9	23.7	
	Giao Thuy district	14	36.8	
	Nam Dinh city	15	39.5	
The highest educational level	College	8	21.1	
	Bachelor degree	30	78.9	
	Min	Max	Mean	SD
Age	24	56	41.34	9.11
The number of experience year in education field	2	34	18.53	9.08
The number of month that teacher have known student	5	10	9.05	0.87

3.2. Measurement

The questionnaire was a main collecting data method of this study. The research team designed two versions of the questionnaire and delivered them to parents and teachers of 554 grade 1st and 2nd students in Nam Dinh province. Both questionnaires included two main sections that were (1) general information of reporters and students, and (2) screening scale for symptoms of learning disorders. Of which, reporters' general information included gender, age, relationship with students, educational level, monthly income, etc. Student's demographic information involved gender, grade, academic achievement, etc.

Regarding the screening scale for symptoms of learning disorders in grade 1st and 2nd students, the research team did the following phases:

Phase 1: Identifying measurement aspects based on DSM-5's definition and diagnostic

criteria on learning disorders. Those were reading skills, written expression and mathematics

Phase 2: Developing measurement items based on (1) referring two scales being Colorado Learning Difficulties Questionnaire (CLDQ) and Learning Disabilities Checklist, and (2) discussion results of four professionals on learning disorders in Vietnam. CLDQ was a parent-report rating scale designed to assess specific dimensions of functioning that were most often impaired in children with learning difficulties. The validation of this scale was identified through research of Willcutt et al., 2011 with a sample of 8,004 parents of children and adolescents in two clinics and two communities (twin sample and community sample) in the US. Meanwhile, the Learning Disabilities Checklist was a tool designed to screen symptoms of learning disabilities in

individuals from preschool to adult. This tool was developed by the National Center for Learning Disabilities, US. The first scale included 29 items with 13 symptoms of reading impairment, 8 symptoms of written expression impairment and 8 symptoms of mathematics impairment.

Phase 3: Conducting a second discussion round with participation of 4 professionals above. The scale was adjusted for the content and quantity of some items. The final scale included 37 items. Of these, there were 12 items describing impairment in reading skills, 11 items drawing impairment in written expression skills and 14 items describing impairment in mathematics skills. Reliability of this scale in two questionnaires for parent and teacher was shown in this table below:

Table 4. Reliability of screening learning disorder scale

Version	Cronbach's alpha			
	Reading (12 items)	Written expression (11 items)	Mathematics (14 items)	Total (37 items)
Parent version	0.97	0.97	0.98	0.99
Teacher version	0.98	0.98	0.98	0.99

Phase 4: Screening students who were at risk for learning disorders. Based on mean score and standard deviation, we divided risk level into three group as follow:

Skill	No risk	Low risk	High risk
Parents report			
Reading skill	≤ 27.31	27.32 - 36.22	≥ 36.23
Written	≤ 27.18	27.19 -	≥ 36.40

expression skill		36.39	
Mathematics skill	≤ 31.59	31.60 - 42.26	≥ 42.27
Teacher's report			
Reading skill	≤ 31.76	31.77 - 42.85	≥ 42.86
Written expression skill	≤ 30.23	30.24 - 40.80	≥ 40.81
Mathematics skill	≤ 36.45	36.46 - 49.15	≥ 49.16

4. Results

In this section, we presented demographic characteristics of student being at high risk of learning disorder in Nam Dinh province according to the following specific groups: i) Students at risk for any type of learning disorder (impairment in reading or written expression or mathematic); ii) Students at risk for any two types of learning disorders; and iii) Students at risk for all three types of learning disorders. The demographic characteristics determined in this research include General information, Family characteristics, Birth and developmental features before going to elementary school, and Academic achievement.

4.1. Demographic Characteristics of Students at Risk for Any Type of Learning Disorder

General information

There were 23 students determined as at risk for a type of learning disorder, accounting for 4.1% of total participants. Of which, 7 students had symptoms of dyslexia (impairment in reading), 5 students showed impairment in written expression and 11 students had difficulty in mathematics with a proportion of 1.3%, 0.9% and 2.0%, respectively. Besides, male students were nearly twice as many as female students. The other detailed information was shown in table below:

Table 5. General information of students with risk for a type of learning disorder

	Criteria	Frequency	Percent
Gender	Male	15	65.2
	Female	8	34.8
Grade	1 st	9	39.1
	2 nd	14	60.9
District/ City	Truc Ninh district	1	4.3
	Giao Thuy district	10	43.5
	Nam Dinh city	12	52.2

Family characteristic

Regarding these students' families, the data showed that the mean age of parents was 34.4 years old, the oldest was 49 years and the youngest was 27 years old. Among 23 parents, 6 people graduated from universities, 3 people graduated from colleges. In addition, there were 5 parents graduating from high school, 6 people graduated from middle school and elementary school graduates had 3 parents. Meanwhile, data on their average income was shown in the following table:

Table 6. The average income of student with risk for a type of learning disorder

Income level	Frequency	Percent
<i>Average income</i>		
Under 5.000.000 VND	1	4.3
From 5.000.000 to 10.000.000 VND	10	43.5
From 10.000.000 to 20.000.000 VND	10	43.5
From 20.000.000 to 30.000.000 VND	1	4.3
From 30.000.000 to 40.000.000 VND	1	4.3

When asked "Is there anyone in your family who has difficulties in learning?", most of the parents reported that no one in their family had these problems, accounting for 87% of total

participants. However, a parent said that the twin brother of a student in this group also had difficulties in learning. Additionally, another family reported learning difficulties in the kid's grandparents.

Birth and developmental features before going to elementary school

Besides the general information and family characteristics, we also collected data on students' birth and developmental features such as birth time, weight, and some aspects before attending primary school. The results indicated that most of the children in this group were born at the 39th and 40th week of pregnancy with the same proportion as 34.8%. In addition, there were 5 students born at the 38th week, 1 student born at the 37th week, and only one born at the 33rd week of pregnancy. Of the 23 students, only 8 had information on birth weight as follows: 5 students were born with weight of 3kg; 2 students with weight of 2.8kg and only one student weighed 3.4kg when born.

In this research, we put 9 early common symptoms of learning disorders on the parent's questionnaire such as speech delay, difficulties in pronunciation, clumsy, etc. The data revealed some remarkable results as follow:

Table 7. Developmental features of students with risk for a type of learning disorder

Developmental features	Frequency	Percent
Delayed speech	5	21.7
Being difficult in pronunciation (lisp)	8	34.8
Clumsy	3	13.0
Challenging in learning new words, slow-growing vocabulary	5	21.7
Struggled to perform fine motor skills and work with small or tiny objects such as stringing beads, tie shoelaces, buttons	6	26.1
Found difficulty in finding the correct word for communication	6	26.1

Difficulty in understanding and following one-step instructions	3	13.0
Difficulty in counting objects	1	4.3
Difficulty in or avoiding drawing, coloring, etc.	1	4.3

The data from the table above showed that 8/23 students in this group met challenges in pronunciation when they were kids, accounting for 34.8%. 6 students found difficulty in finding the correct word for communication (26.1%). Besides, 6 students struggled to perform fine motor skills and work with small or tiny objects such as stringing beads, tie shoelaces, and buttons. In addition, 5 students had difficulty in learning new words with slow-growing vocabulary (21.7%). Meanwhile, only one student was being limited or tended to avoid drawing, coloring, and another one struggled to count (accounting for 4.3%). In addition, 100% of parents in this group reported that their kids were cared for, educated and nurtured as kids of the same age.

Academic achievement

Regarding learning outcomes at the first semester in the 2023-2024 school year, the data collected from teachers showed that most students completed learning tasks of this semester (14 students, accounting for 60.9%). This meant that these students met the school year's basic requirements. Moreover, there were 6 students (accounting for 26.1%) who were proficient and 2 students (accounting for 8.7%) were advanced in performing assignments. However, one student (accounting for 4.3%) hadn't completed learning tasks.

4.2. Demographic Characteristics of Students at Risk for Any Two Types of Learning Disorder

General information

The data showed that 17 students were determined as being at risk for any two types of learning disorders, accounting for 3.1%. Those could be impairment in reading-writing skills or

reading - mathematical skills or mathematics - writing skills. Of 17 students in this group, there were 13 male students, accounting for 76.5%, three times more than the number of female students (4 students, 23.5%). However, the number of students between the two grades was relatively equivalent.

Notably, the result did not show any student who had impairment in written expression and mathematics simultaneously. On the contrary, 11 students showed difficulties in both reading and writing skills, a proportion of 64.7%. Moreover, 6 students (accounting for 35.3%) were identified as meeting challenges in reading and mathematics at the same time.

Family characteristic

In this group, the analyzed data showed that the average age of parents was 35.71 years old, the oldest was 48 years old and the youngest was 27 years old. Regarding the academic level, most parents graduated from high school (7 people, accounting for 41.2%), followed by the one who graduated from universities (4 people, accounting for 23.5%) and colleges (3 people with a proportion of 17.6%). Besides, 2 people had the highest level of education as master and/or doctor and one parent graduated from secondary school.

Table 8. General information of students at risk for any two types of learning disorder

Criteria		Frequency	Percent
Gender	Male	13	76.5
	Female	4	23.5
Grade	1 st	8	47.1
	2 nd	9	52.9
District/ City	Truc Ninh district	3	17.6
	Giao Thuy district	2	11.8
	Nam Dinh city	12	70.6

While the average income of previous group was within range of 5.000.000 – 10.000.000 VND and 10.000.000 – 20.000.000 VND, most of the families in this group had an

average income was from 5.000.000 VND to 10.000.000 VND with a percentage of 41.2%.

Table 9. The average income of student with risk for any two types of learning disorder

Income level	Frequency	Percent
Average income		
Under 5.000.000 VND	2	11.8
From 5.000.000 to 10.000.000 VND	7	41.2
From 10.000.000 to 20.000.000 VND	4	23.5
From 20.000.000 to 30.000.000 VND	3	17.6
From 30.000.000 to 40.000.000 VND	1	5.9

Similar to the above group, when asked if anyone in their family had difficulty studying, the majority of parents reported no family member struggling with learning (15 people, accounting for 88.2%). A parent revealed that the father didn't come to school, and the other family stated that their other kid met challenges in academics as well.

Birth and developmental features before going to elementary school

The most popular birth week in this group was the 39th week. There were 7 students born this week, accounting for 41.2%. The second most popular birth week was the 38th week with a proportion of 29.4% followed by the 37th and 40th week with the same quantity being 2 students. In addition, one student was born at 34th weeks of pregnancy. Regarding birth weight, there were only two students who had this information and both of them weighed 3 kg when birth.

Table 10. Developmental features of students with risk for any two types of learning disorder

Developmental features	Frequency	Percent
Delayed speech	5	29.4
Being difficult in pronunciation (lisp)	11	64.7
Clumsy	4	23.5

Challenging in learning new words, slow growing vocabulary	7	41.2
Struggled to perform fine motor skills and work with small or tiny objects such as stringing beads, tie shoelaces, buttons	4	23.5
Found difficulty in finding the correct word for communication	7	41.2
Difficulty in understanding and following one-step instructions	7	41.2
Difficulty in counting objects	1	5.9
Difficulty in or avoiding drawing, coloring, etc.	5	29.4

In this group, the most popular difficulty of students before going to school was also pronunciation. 11 students met these issues, accounting for 64.7%. The next three problems that were relatively common among these children included: struggling to understand and follow one-step directions, difficulty in finding the correct word for communication, and difficulty in learning new words with slow-growing vocabulary with the same percentage of 41.2%. In addition, 15 families (accounting for 88.2%) said that their kids were cared for, educated and nurtured as the same age kids, and 2 families reported that their kids hadn't been cared for, educated, or nurtured as the other kids.

Academic achievement

The result showed that 9 students in this group completed learning tasks in the first semester of 2023-2024, accounting for 52.9%. 6 students, accounting for 35.3%, were proficient, and one student was advanced in performing assignments. In addition, one student hadn't completed learning tasks this semester.

4.3. Demographic Characteristics of Students at Risk for Three Types of Learning Disorder

General information

The collected data indicated that 25 students had three types of learning disorders, accounting for 4.5%. Of these, there were 16

male students and 9 female students. It is noteworthy that there were 13 students, accounting for 52% of those who lived in Nam Dinh city. 8 students were living in Giao Thuy district and only 4 students were in Truc Ninh district.

Table 11. General information of students with risk for three types of learning disorder

Criteria		Frequency	Percent
Gender	Male	16	64.0
	Female	9	36.0
Grade	1 st	14	56.0
	2 nd	11	44.0
District/ City	Truc Ninh district	4	16.0
	Giao Thuy district	8	32.0
	Nam Dinh city	13	52.0

Family characteristic

Table 12. The average income of student with risk for three types of learning disorder

Income level	Frequency	Percent
Average income		
Under 5.000.000 VND	2	8.0
From 5.000.000 to 10.000.000 VND	14	56.0
From 10.000.000 to 20.000.000 VND	8	32.0
From 20.000.000 to 30.000.000 VND	1	4.0
From 30.000.000 to 40.000.000 VND	0	0

The average age of parents in this group was 35.54 years old, the oldest was 47, and the youngest was 28. Regarding family members, one parent reported that the mother met challenges in learning; another family had the father's brother who had difficulty learning, and one family said that their other kids were slow learners. In addition, in the remaining 22

families, no one had learning difficulties similar to the child reported in this study.

Most of the parents in this group graduated from universities, followed by parents graduating from senior school. There were 8 parents with the highest level of education being a bachelor and one person got a postgraduate degree. Besides, 3 parents were graduating from college, 5 parents graduating from high school, 7 parents graduating from senior schools, and one person graduating from elementary school. Similar to the second group, the average monthly income of families in this group was in a range of 5.000.000 - 10.000.000 VND.

Birth and Developmental Features Before going to Elementary School

There were only 5 students who had data on birth weight. Of these, one kid weighed 3.5kg and 4 kids weighed 3 kg when born. Meanwhile, regarding birth week, most of the students in this group were born at the 38th and 39th week of pregnancy with a proportion of 25.0% and 20.8%, respectively. In addition, 4 students were born in the 36th week, accounting for 16.7%. Noticeably, there was one student who was born at 27th week of pregnancy and one kid born at 42nd week.

Table 13. Developmental features of students with risk for three types of learning disorder

Developmental features	Frequency	Percent
Delayed speech	10	40.0
Being difficult in pronunciation (lisp)	8	32.0
Clumsy	8	32.0
Challenging in learning new words, slow growing vocabulary	12	48.0
Struggled to perform fine motor skills and work with small or tiny objects such as stringing beads, tie shoelaces, buttons	8	32.0

Found difficulty in finding the correct word for communication	8	32.0
Difficulty in understanding and following one-step instructions	8	32.0
Difficulty in counting objects	9	36.0
Difficulty in or avoiding drawing, coloring, etc.	7	28.0

The data from the table above showed that the two most common early symptoms of these students were delayed speech and difficulty in learning new words, slow growing vocabulary with percentages of 40% and 48%, respectively. The next common manifestation was difficulty in counting objects with a proportion of 36%. Regarding care for kids since they gave birth, the data showed that 23 families said that their kids were cared for, educated and nurtured well with a proportion of 92%. Besides, 2 families reported that their kids hadn't cared for, educated and nurtured as the other kids.

Academic achievement

Regarding learning outcomes in the first semester of the 2023-2024 school year, the results indicated that 16 students, accounting for 64%, completed learning tasks as the other classmates. However, 6 students in this group, accounting for 24%, hadn't completed studying assignments. In addition, 3 students (accounting for 12%) were identified as completing learning tasks at a proficient level.

5. Discussions and Conclusions

The present study reports some demographic features of students with high risk for learning disorders in Nam Dinh province, Vietnam. Three groups were determined based on the screening scale being developed by the research team respectively: students at risk for any type of LD; students at risk for any two types and students at risk for all three types. The core results are as follows:

Firstly, among 554 grade 1st and 2nd students, there were 11.7% with a high risk of learning disorders through reports by their parents and homeroom teachers. This result is lower than previous studies by Chordia, S. L, 2020 (22.7%); Bozatlı, L, 2024 (27.6%); Padhy, S. K, 2016 (33.6%) on the prevalence of children at high risk of LD. Of these, 23 students have a type of LD, 17 students with two types and 25 students with all three types. The male and female rates of the three groups ranged from 1.8 to 3.3:1. Notably, the students in Nam Dinh City had a significantly higher percentage in both groups than those in Truc Ninh and Giao Thuy.

Secondly, information on family characteristics revealed that the mean age of parents of students at risk for a type of LD was 34.4 years, which was smaller than the mean age of the parents of the two left student groups, which were 35.71 and 35.54 years. Thirdly, regarding characteristics during the developmental process, the students with a risk of only one type of LD had the latest birth week, followed by those with two types and three types of LD. In addition, the symptoms related to delayed speech or difficulty in pronunciation were reported to be the most popular among the three groups that are similar to DSM-5; Zhang, X, 2020; Miesch, 2020; Porter et al., 2020. Besides, some other popular manifestations include: found difficulty in finding the correct word for communication; struggle to perform fine motor skills and to work with small or tiny objects such as stringing beads, tying shoelaces, and buttons; difficulty in counting objects; difficulty in understanding and following one-step instructions; etc. These signs should be considered as warning indicators of LD in children, and teachers and caregivers need to monitor these signs during children's development.

Finally, the academic achievement of students who were at risk of three types of LD was lower than both students with one and two types of LD and this difference was statistically significant with $p < 0.01$. Meanwhile, there was no significant difference between groups with one type and two types. Support measures for

these students should focus on those at higher risk of multiple types of LD.

The current study also contains some limitations. First, all research results applied to children with learning disabilities in Nam Dinh province. Second, we did not explore family characteristics such as parents' occupations, the number of siblings in the family, the birth order of the child, or parental discord, which need further investigation. We also propose that future research explore this direction further.

Acknowledgements

This research was funded by the Science and Technology task of Nam Dinh Province People's Committee, phase II, 2023 (Decision No. 2227/QĐ-UBND).

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