

Analysis of the relationship between inferred gestational risk diagnosis and risk of altered language development

Análise das relações entre diagnóstico de risco gestacional inferido e risco para alterações no desenvolvimento de linguagem

Análisis de la relación entre el diagnóstico de riesgo gestacional inferido y el riesgo de alteraciones en el desarrollo del lenguaje

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Abstract

Introduction: Despite improvements in health indicators and public policies aimed at children, significant inequalities persist and demand urgent attention. **Objective:** To analyze maternal and child health risk factors, classify gestational risk, and investigate their impact on language disorders in children and adolescents. **Methods:** A total of 100 children and adolescents with speech and hearing complaints were recruited through convenience sampling, supplemented by the snowball technique. Due to the COVID-19 pandemic, guardians were contacted via telephone. Data on prenatal, neonatal, and postnatal health, as well as language development, were collected using a study-specific instrument. **Results:** A notable discrepancy emerged between the self-reported classification of gestational risk and the actual diagnoses recorded during prenatal care. The most prevalent risk factors identified were prematurity, low birth weight, gestational diabetes, unstable marital status, maternal mental health disorders, infectious diseases, alcohol and drug use, domestic violence, and neonatal/postnatal complications. **Conclusion:** The results indicate that maternal and child health risks are associated with language disorders and underscore significant gaps in prenatal care that may compromise the overall quality of maternal and child health services.

Keywords: Maternal and child health; Child health; High-risk pregnancy; Child language.

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Authors' contributions:

DCD: study design, methodology, data collection, article outline, and critical review.

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Resumo

Introdução: Apesar dos avanços nos indicadores de saúde e em políticas públicas direcionadas à população infantil, desigualdades persistem e necessitam ser abordadas. **Objetivo:** analisar os riscos materno-infantis, classificar o risco gestacional e investigar o impacto desses fatores nos distúrbios de linguagem em crianças e adolescentes. **Método:** foram selecionados, por meio de uma amostra de conveniência acrescida da técnica de snowball, 100 crianças/adolescentes com queixa fonoaudiológica; os responsáveis foram contatados via telefone em função do contexto pandêmico. Levantaram-se informações de saúde pré-natais, neonatais e pós-natais, e dados sobre o desenvolvimento de linguagem, utilizando o instrumento construído especificamente para este estudo. **Resultados:** constatou-se uma significativa imprecisão da classificação de risco gestacional autorreferida em relação ao diagnóstico durante a assistência pré-natal. Os fatores de risco de maior prevalência foram prematuridade, peso inadequado, diabetes gestacional, situação conjugal insegura, transtornos mentais, doenças infecciosas, uso de álcool e drogas, violência doméstica, intercorrência neonatal e pós-natal. **Conclusão:** os dados sugerem que os riscos materno-infantis têm impacto no distúrbio de linguagem e relevância na constatação da fragilidade do cuidado durante a gestação, repercutindo na qualidade da saúde materna- infantil.

Palavras-chave: Saúde materno-infantil; Saúde infantil; Gravidez de alto risco; Linguagem infantil.

Resumen

Introducción: A pesar de los avances en los indicadores de salud y en las políticas públicas dirigidas a la población infantil, las desigualdades persisten y necesitan ser abordadas. **Objetivo:** analizar los riesgos materno-infantiles, clasificar el riesgo gestacional y investigar el impacto de estos factores en los trastornos del lenguaje en niños y adolescentes. **Método:** se seleccionaron 100 niños/adolescentes con trastornos del habla y la audición mediante una muestra de conveniencia más la técnica de bola de nieve; se contactó con los tutores por teléfono debido al contexto pandémico. Se recogió información sanitaria prenatal, neonatal y postnatal, así como datos sobre el desarrollo del lenguaje, utilizando un instrumento específicamente diseñado para este estudio. **Resultados:** se encontró una inexactitud significativa en la clasificación del riesgo gestacional autoinformado en relación con el diagnóstico durante la atención prenatal. Los factores de riesgo más prevalentes fueron la prematuridad, el peso inadecuado, la diabetes gestacional, el estado civil inseguro, los trastornos mentales, las enfermedades infecciosas, el consumo de alcohol y drogas, la violencia doméstica y las complicaciones neonatales y postnatales. **Conclusión:** los datos sugieren que los riesgos maternos e infantiles repercuten en los trastornos del lenguaje y son relevantes para la fragilidad de la atención durante el embarazo, con repercusiones en la calidad de la salud materna e infantil.

Palabras clave: Salud materno-infantil; Salud infantil; Embarazo de alto riesgo; Lenguaje Infantil.

Introduction

In 2011, the Brazilian Ministry of Health launched the **Rede Cegonha** (Stork Network), as part of the broader Health Care Network (RAS) policy, established by Ministerial Ordinance No. 4,279. Grounded in the principles of the Unified Health System (SUS), this strategy aimed to ensure that all women received high-quality, safe care in reproductive planning, as well as humane and respectful assistance during pregnancy, childbirth, and the postpartum period. Additionally, the Rede Cegonha guaranteed comprehensive care for children from birth to 24 months of age, supporting their healthy growth and development¹.

In 2024, the federal government introduced the Rede Alyne (Alyne Network), a restructuring effort to replace the Rede Cegonha. This new program was designed to reduce maternal mortality in Brazil by 25%, enhancing the approach to humane and comprehensive care for pregnant women, women in labor, postpartum women, and young children².

Within the field of maternal and child health, the concepts of high-risk pregnancy and high-risk newborns are particularly relevant. While pregnancy is generally regarded as a natural physiological process that often unfolds without complications, approximately 20% of cases may involve conditions that jeopardize the health of the mother-baby dyad, thereby classifying the pregnancy as high-risk. Such situations may arise due to a range of clinical, obstetric, or social factors that compromise maternal and neonatal well-being and influence obstetric outcomes³.

The assessment of gestational risk is a practice recommended by the Brazilian Ministry of Health, which outlines specific factors to be evaluated. These are grouped into four categories: I. individual characteristics and unfavorable social and demographic conditions; II. previous reproductive history; III. obstetric complications during the current pregnancy; and IV. clinical conditions that may increase gestational risk^{3,4}.

The first category includes variables such as age (under 17 or over 35), occupation, instability in marital relationships, low educational level, height under 1.45 meters, and weight (less than 45 kg or more than 75 kg), as well as substance dependence. The second category considers events in the reproductive history, such as perinatal death, intrauterine growth restriction, preterm birth, recur-

rent miscarriage, and inadequate spacing between pregnancies. The third category includes conditions such as abnormal uterine growth, multiple fetuses, preterm labor, insufficient weight gain, and complications like preeclampsia. Finally, the fourth category covers systemic and infectious diseases that may affect pregnancy^{3,4}.

According to the Ministry of Health guidelines, high-risk newborns are those who meet at least one of the following criteria: living in high-risk areas; low birth weight (under 2,500g); gestational age under 37 weeks; severe birth asphyxia (Apgar score below 7 at the 5th minute of life); hospitalization or complications during the maternity stay; being born to a mother under 18 years old or with low educational level; or having a family history of infant mortality⁵.

Therefore, it is essential to assess and profile pregnant women in order to identify health determinants that may interfere with adequate gestational development. Such understanding enables healthcare teams to implement preventive strategies that enhance the quality of life for the dyad and optimize outcomes reflected in broader public health indicators.⁶ In this context, providing appropriate care requires an integrated care model supported by the collaboration of an interdisciplinary team.

The coordinated efforts of healthcare professionals, including speech-language pathologists, pediatricians, nurses, educators, psychologists, and occupational therapists play a critical role in promoting child development. Interdisciplinary collaboration not only broadens access to care but also enhances service effectiveness and strengthens the capacity of primary healthcare (PHC) teams. This approach helps to reduce care fragmentation, reinforces clinical responsibility, values interdisciplinary practice, and ensures more effective regulation of healthcare networks.⁴

Studies indicate that various prenatal, postnatal, and external factors can compromise child development. In this regard, the early identification of risks and the prevention of language development delays are imperative for the full development of children and adolescents. In this context, it is essential that health and education professionals understand the factors associated with such delays, ensuring timely and effective intervention.⁷ Thus, the early identification of language disorders, as well as the prevention of language development delays, is crucial. To this end, it is necessary for

both health and education professionals to be aware of the factors that may contribute to these delays⁸.

Thus, although progress has been made in child health indicators and in public policies targeting this population, persistent inequalities still need to be addressed. A strong commitment to the full development of all children is essential to ensure that they have the necessary conditions to exercise their citizenship and, consequently, contribute to achieving the targets of the 2015–2030 Sustainable Development Goals⁹.

In light of the above, the present study aims to analyze maternal and child risk factors, classify gestational risk, and investigate the impact of these factors on language disorders in children and adolescents.

Materials and Methods

Study Design and Setting

This is a cross-sectional, observational, descriptive study with a quantitative approach. It was carried out at the screening service of the Speech-Language Pathology Investigation Laboratory in Primary Health Care (LIF APS) of the School of Medicine at the University of São Paulo (FM-USP).

Population

The sample consisted of children and adolescents, along with their mothers or legal guardians, who were users of the LIF APS screening service, totaling 100 participants. A convenience sampling method was used, supplemented by the snowball technique. The initial respondents formed wave 1, and they subsequently referred additional participants¹⁰.

Inclusion and Exclusion Criteria

The inclusion criteria were: age between 1 and 19 years at the time of data collection; presence of a speech-language complaint; access to the LIF APS screening service; and signing of the Informed Consent Form (TCLE). The exclusion criterion was incomplete questionnaire responses.

Data Collection

The data collection instrument was developed by the study's authors, based on their practical experience in the Family Health Support Center (NASF) team and in the coordination of local health services. The questionnaire design also followed

technical guidelines from the Brazilian Ministry of Health related to high-risk pregnancies. The tool aimed to collect information about maternal health history, risk factors during the prenatal, neonatal, and postnatal periods, as well as data on language development from the family's perspective.

Additionally, a socioeconomic questionnaire based on the 2019 Brazilian Standard Economic Classification Criteria was applied, together with the ICF, as part of the data collection methodology. After initial contact with participants, a meeting was scheduled between the lead researcher and the parents or guardians. Due to the pandemic context, contact was conducted by telephone, respecting the participants' availability.

During these interactions, the researcher collected information regarding maternal health history and prenatal, neonatal, and postnatal risk factors using the customized questionnaire. To facilitate understanding, the questions were read aloud, and the researcher adopted more accessible language when necessary. After that, the socioeconomic questionnaire based on the 2019 Brazilian Standard Economic Classification Criteria was administered. Prior to the application of the questionnaires, the ICF was signed remotely by at least one legal guardian.

Data Analysis and Processing

Data were analyzed descriptively (totals and percentages), with a focus on the respondents' perceptions of gestational risk and the prenatal, perinatal, and postnatal periods of the subjects. These data were correlated with potential diagnoses of speech-language disorders. It is worth noting that this project was approved by the Ethics Committee of FM-USP, under approval number 4.764.883.

Results

The sample in this study, composed of 100 subjects, was divided into two pre-determined groups based on the presence or absence of a speech-language diagnosis (SLD), which in this case referred to a language disorder. The experimental group consisted of 70 cases with at least one SLD, accounting for 70% of the sample, while the comparative group included 30 cases without an SLD, representing 30%. The analysis aimed to identify factors associated with an increased occurrence of SLD.

The results of this study are organized into two sections: the first refers to sample characterization, and the second is titled “*Inferred Gestational Risk Stratification*”, which encompasses the markers and risk factors based on the risk classification proposed by the Brazilian Ministry of Health³.

Section 1. Sample Characterization

Table 1 presents the frequency distribution by group for the variables related to sample characterization.

Table 1. Variables related to the characterization of the sample. São Paulo/SP, Brazil, 2020

	Experimental group		Comparison group	
Gender	N=70	%	N=30	%
Male	48	69	15	50
Female	22	31	15	50
Race/Color	N=70	%	N=30	%
Yellow	2	3	-	-
White	44	63	20	67
Indigenous	-	-	-	-
Black/brown	24	34	10	33
Age group	N=70	%	N=30	%
Up to 5 years	6	8	10	33,5
6 to 10 years	20	29	10	33,5
11 to 15 years	28	40	6	20
16 years or older	16	23	4	13
Educational level	N=70	%	N=30	%
Early childhood education	10	14	9	30
Elementary education	44	63	14	47
High school education	12	17	3	10
Higher education	2	3	0	0
Not Specified/Reported	2	3	4	13
Type of school	N=70	%	N=30	%
Public	33	47	8	27
Private	34	49	18	60
Home Schools	1	1	-	-
Not Specified/Reported	2	3	4	13
Maternal gender	N=70	%	N=30	%
Female	70	100	30	100
Others	-	-	-	-
Maternal age group	N=70	%	N=30	%
31 to 40 years	26	37	12	40
41 to 50 years	36	51,5	18	60
51 years or older	8	11,5	-	-
Maternal race/color	N=70	%	N=30	%
Yellow	7	10	-	-
White	35	50	13	43,5
Indigenous	1	1,5	-	-
Black/brown	27	38,5	17	56,5
Maternal educational level	N=70	%	N=30	%
Complete or incomplete elementary education	5	7	1	3
Complete or incomplete high school education	24	34,5	7	23,5
Higher education	24	34,5	15	50
Postgraduate education	17	24	7	23,5

	Experimental group		Comparison group	
Paternal gender	N=70	%	N=30	%
Male	70	100	30	100
Others	-	-	-	-
Paternal race/color	N=70	%	N=30	%
Yellow	1	1	1	3
White	35	50	23	77
Indigenous	-	-	-	-
Black/brown	34	49	6	20
Paternal educational level	N=70	%	N=30	%
Complete or incomplete elementary education	11	15,5	2	7
Complete or incomplete high school education	27	38,5	7	23
Higher education	18	26	14	47
Postgraduate education	14	20	7	23
Paternal age group	N=70	%	N=30	%
Up to 30 years	-	-	2	6,5
31 to 40 years	10	14	11	36,5
41 to 50 years	36	51,5	17	57
51 years or older	17	24,5	-	-
Not Specified/Reported	7	10	-	-
Mother's marital status	N=70	%	N=30	%
Married	42	60	26	87
Separated	18	26	3	10
Widow	10	14	1	3
Number of siblings	N=70	%	N=30	%
Zero	13	19	4	13
1	33	47	15	50
2	13	19	5	17
3	8	11	-	-
4 or more	3	4	6	20
Provider	N=70	%	N=30	%
Both	2	3	5	16,5
Mother	31	44	3	10
Father	34	49	20	66,5
Others	3	4	2	7
Socioeconomic level	N=70	%	N=30	%
A	12	17	11	37
B1	10	14	7	23
B2	22	31,5	3	10
C1	13	18,5	3	10
C2	9	13	4	13
D	1	1,5	-	-
D-E	3	4,5	2	7

It is noteworthy that the experimental group has a higher percentage of male individuals compared to the comparative group (69% vs. 50%), with little difference in the number of siblings. Regarding the children's parents, the experimental group shows a lower percentage of mothers with higher education or postgraduate degrees (58% vs. 73%), and the same is observed for fathers' education levels (46% vs. 70%). As for the mother's marital status, a lower percentage of married women is found in the experimental group (60% vs. 87%).

Section 2. Inferred Gestational Risk Stratification

This section addresses inferred gestational risk. Initially, information regarding pregnancy risk was self-reported by participants; however, based on the Brazilian Ministry of Health's Guidelines for the Care of High-Risk Pregnancies, gestational risk can be stratified into low, intermediate, or high categories⁴.

Table 2. Comparison of self-reported and inferred pregnancy risk. São Paulo/SP, Brazil, 2020

	Inferred – Intermediate		Inferred – High	
	N = 19	%	N = 81	%
Self-reported				
Habitual	16	84	43	53
High	3	16	38	47

Table 2 presents the comparison between the two methods of pregnancy risk classification. It is noteworthy that all pregnancies were classified as having either intermediate or high inferred

risk, with no records of low (habitual) risk. This indicates a high inaccuracy in the self-reported gestational risk classification.

Table 3. Assessment of inferred pregnancy risk in cases with DF. São Paulo/SP, Brazil, 2020

Pregnancy Inferred Risk	N = 70	%
Intermediate	15	21
High	55	79

Table 3 displays the frequencies and percentages according to the inferred gestational risk within the experimental group; that is, pregnancies

that resulted in a child with a speech-language diagnosis. High-risk pregnancies were predominant, accounting for 79% of the cases.

Table 4. Presence of factors leading pregnancy to be classified as intermediate risk according to the presence or absence of DF. São Paulo/SP, Brazil, 2020

Factors	Experimental group		Comparison group	
	N = 15	%	N = 4	%
Occupational risk	10	67	2	50
Unstable marital status	6	40	2	50
Race – Brown	5	33	-	-
Mental disorders	5	33	4	100
Previous pregnancy miscarriage	4	27	-	-
Previous cesarean delivery	4	27	2	50
Interpregnancy interval	4	27	1	25
Alcohol	3	20	-	-
Mild lung disease	3	20	-	-
Inadequate weight gain	3	20	3	75
Gestational age > 35 years	2	13	-	-
Drugs	1	7	-	-
Gestational age < 15 years	1	7	-	-
Race – Black	1	7	2	50
Hemorrhagic syndrome	1	7	1	25
Hipo	-	-	2	50

Analyzing the total of 19 cases classified as having an intermediate inferred gestational risk, the associated factors were examined in relation to the presence or absence of a speech-language diagnosis, as shown in Table 4. The most prevalent

factors in the experimental group were occupational risk (67%) and unstable marital status (40%). In the comparative group, all cases presented maternal mental health disorders.

Table 5. Presence of factors leading pregnancy to be classified as high risk according to the presence or absence of DF. São Paulo/SP, Brazil, 2020

Factors	Experimental group		Comparison group	
	N = 55	%	N = 26	%
Prematurity	25	45	6	23
Infectious disease (acquired)	20	36	8	31
BMI > 40	16	29	4	15
Hemorrhage	11	20	6	23
Gestational diabetes	9	16	2	8
Perinatal death – previous pregnancy	6	11	-	-
Infectious disease (pre-existing)	6	11	1	4
Autoimmune disease (mother)	5	9	4	15
Prematurity – previous pregnancy	4	7	9	35
Malformed newborn	3	5	-	-
Anemia	2	4	-	-
Systemic arterial hypertension	2	4	3	12
Placenta	2	4	5	19
Miscarriage – previous pregnancy anterior	1	2	-	-
Thromboembolism	1	2	1	4
Eclampsia	1	2	-	-
Cervical insufficiency	1	2	-	-
Growth restrictions	1	2	-	-
Reduced amniotic fluid	1	2	0	0

Table 5 follows the same analytical approach, focusing exclusively on pregnancies classified as high risk (inferred). A high occurrence of factors such as prematurity, infectious diseases acquired during pregnancy, body mass index (BMI) over 40, and gestational diabetes was found in the experimental group.

Discussion

Approximately 250 million children living in low and middle-income countries are at increased risk of impaired development and/or reduced life potential due to the combined effects of extreme poverty and stunted growth¹¹. These disparities tend to persist over time, resulting in significant consequences for educational attainment, income generation, adult health, engagement in risk behaviors, and other dimensions of individual and social well-being¹². Additionally, losses associated with poor cognitive and educational performance in underprivileged children often lead to lower employability and income, as well as contributing to higher fertility rates and less effective parenting practices in the future¹³.

The relationship between socioeconomic status and social vulnerability is evident, highlighting how unfavorable economic conditions can exacerbate exclusion, insecurity, and limited access to basic rights and services. Studies show that social vulnerability can lead to neonatal complications such as prematurity, small for gestational age (SGA) infants, low birth weight (LBW), stillbirth, and severe maternal morbidity¹⁴. Other relevant variables include the child's sex and parental education level. Research has shown a higher incidence of language delays among male children, which may be attributed to slower central nervous system maturation, as well as the influence of testosterone, which has been associated with a greater risk of language development delays¹⁵.

The results also indicated that children whose parents had a university degree or higher presented a greater prevalence of diagnosed speech delay (46.3%; $p = 0.045$). This finding suggests that parents with higher education levels may be more likely to recognize speech difficulties in their children and seek professional support. This aligns with previous studies that identified an association between parental education level and speech delay¹⁶. On the other hand, lower parental education

is often correlated with lower socioeconomic status, which, as previously mentioned, is associated with an increased risk of speech delay¹⁷, further demonstrating that maternal illiteracy is a significant risk factor for speech and language impairments¹⁶.

Another relevant aspect is race/ethnicity, as significant racial and ethnic disparities exist in the diagnosis and treatment of language disorders. Children belonging to racial and ethnic minority groups often face greater challenges in accessing the appropriate diagnoses, commonly due to limited access to high-quality primary care services and a lower likelihood that their parents will be asked about developmental milestones or concerns¹⁸.

Parental marital status has a significant influence on child development. Several studies have expressed concern over the fact that children raised by single parents are more vulnerable to neonatal, nutritional, and mental health risks, as well as impairments in language, cognition, and motor skills¹⁹. Furthermore, evidence suggests that children born as second or later siblings have a higher likelihood of receiving a diagnosis of language development disorders compared to their older siblings²⁰.

The tables presented in the second section provide an analysis of inferred gestational risk stratification based on the data provided by the respondents. The primary aim of this stratification was to predict which women are more likely to experience adverse health events, to maximize the efficiency of resource allocation while ensuring equitable healthcare access. It is important to emphasize that high-risk pregnant women, in addition to receiving care within their local territories, should be referred to specialized and multidisciplinary health services, which may include secondary or tertiary health care centers. However, care coordination should remain under the supervision of Primary Health Care (PHC), ensuring longitudinal monitoring and continuous engagement with local health services⁴.

In this context, high-risk pregnancies are characterized by unexpected clinical, obstetric, and social conditions that pose a potential threat to the mother-infant dyad. These situations require lifestyle changes, technical support, hospitalization in some cases, and specialized follow-up for early diagnosis and appropriate perinatal care²¹. According to preliminary data from the Ministry of Health, in 2021 Brazil recorded an alarming ma-



ternal mortality rate of 107.53 deaths per 100,000 live births, compared to 55.31 in 2019 and 71.97 in 2020, representing a nearly 25% increase in a single year²².

In response to high maternal and infant mortality rates, Brazil's prenatal care system has undergone restructuring, promoting care plans, collaborative actions, teamwork, and effective negotiation in maternal care. High-risk pregnancies, in particular, require specialized prenatal care (PNAR) delivered by multidisciplinary teams. Although public health policies addressing high-risk pregnancies have advanced, they continue to rely predominantly on a centralized biomedical framework²³.

Group-based prenatal care has shown advantages over the traditional model, with evidence supporting its effectiveness in improving obstetric outcomes, such as reducing preterm births and improving breastfeeding rates, as well as psychosocial outcomes, including increased satisfaction and reduced stress. It also promotes shared responsibility in family health self-care²⁴.

Despite universal access to prenatal care, there are still gaps in adherence to the minimum standards established by the Prenatal and Birth Humanization Program (PHPN) and the Maternal and Child Care Network (RAMI)²⁵. Therefore, it is crucial to ensure effective care for women with gestational risk and provide access to high-risk outpatient services, aiming to minimize the consequences for maternal and neonatal health²⁶. Nevertheless, significant challenges persist in the implementation of a high-quality maternal and child health network, including social and racial disparities, underfunding, limited coverage, barriers to access, and the imperative to ensure comprehensiveness and quality in primary health care, as well as deficiencies in service integration and adequate monitoring.

Among the necessary strategies, priority should be given to expanding and universalizing the coverage of Family Health Strategy (ESF) teams across the entire national territory, aiming to reach 90% coverage by 2027. Additionally, promoting access to contraceptive methods and actions related to sexual and reproductive rights is essential. Equally vital is the strengthening of prenatal and postpartum care, as well as pediatric health monitoring, alongside the protection of breastfeeding and the regionalization of services for

normal childbirth and perinatal care. The delivery of specialized outpatient services for neonatal and pediatric follow-up should encompass a multidisciplinary team, including pediatricians, nurses, social workers, physiotherapists, occupational therapists, nutritionists, and speech-language therapists²⁵.

As previously noted, a range of gestational, perinatal, and postnatal factors, both protective and adverse, can influence child development. The identification of perinatal risk factors affecting language development facilitates early detection, diagnosis, and intervention for children at high risk of language delays. Such timely measures contribute to reducing the prevalence of language disorders and enhancing children's quality of life, underscoring the clinical and social significance of this issue²⁷.

Research has long shown that early life experiences are crucial in shaping children's health, well-being, and competencies throughout their lives. Early identification of developmental problems, timely diagnosis, and prompt intervention are essential to minimizing negative outcomes. Thus, developmental stimulation programs should begin as early as conception and continue through age three, a period marked by rapid brain development and heightened neuroplasticity, representing a window of opportunity for establishing key functions influencing lifelong health and development²⁸.

Accumulated evidence indicates that early intervention during early childhood yields significantly more favorable outcomes compared to interventions implemented after this critical period. Therefore, it is essential to focus attention on the early identification and intervention of language and speech disorders in children. To this end, it is imperative to intensify foundational research related to early recognition and intervention, including the development of assessment tools that enable early detection and the establishment of national guidelines. Moreover, new long-term follow-up studies are crucial to developing more effective intervention methods, establish a robust system for identification, referral, diagnosis, and early intervention, advance the optimal age for screening, and enhance the linguistic function of children with disabilities by employing interventions as early as possible.

Furthermore, it is critical to raise awareness about the specific needs of children with language and communication disorders in mainstream



schools. This includes training education professionals to understand and adequately respond to the challenges faced by these children through curriculum adaptations, additional support, and inclusive practices. These practical implications underscore the importance of a comprehensive and collaborative approach in caring for children with language and communication disorders, so that support services can be optimized to promote the well-being and inclusion of these children and their families²⁹.

Thus, early and comprehensive intervention, focused on the child and parental involvement, can lead to significant improvements in child development and social behavior skills. Understanding the clinical characteristics associated with language development delays, combined with early diagnosis and the implementation of comprehensive intervention measures, proves essential to support children in overcoming language difficulties. Through collaboration between professionals and families, it is possible to maximize these children's potential and achieve enhanced linguistic and social development³⁰.

Final considerations

This study aimed at analyzing maternal and child health risk factors, classify gestational risk, and investigate their impact on language disorders in children and adolescents. Although it was not possible to establish a strong statistical correlation, the findings suggest that certain maternal risk factors influence the incidence of childhood language disorders. Importantly, the results indicate that maternal and childcare remains below ideal standards, with negative repercussions for the integral health of women and children.

The pursuit of answers and the consolidation of scientific evidence are essential, as they encourage health professionals to reflect on the need for humanized and comprehensive health care. This health care model should consider not only clinical conditions but also psychosocial aspects, contributing directly to the improvement of care provided to women and children. Such an approach facilitates the identification of gestational and post-natal needs, promoting proactive work in the prevention of complications and the promotion of health, with an emphasis on early diagnosis and

intervention to support healthy and individualized child development.

Finally, despite the limitations inherent to the data collection context, the study yielded a substantial sample of 100 respondents, supporting the relevance of the issues addressed and the need for continued research in this field. The implementation of effective early intervention strategies is fundamental to mitigating the negative impacts of delayed language development, providing children with the opportunities they need to reach their full potential.

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