









# Clinical history speech-language pathology protocols: integrative review

## Protocolos fonoaudiológicos de história clínica: revisão integrativa

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### ABSTRACT

**Purpose:** to identify, collect and analyze in the scientific literature evidence of the existence of speech therapy protocols for collecting clinical history, according to risk classification, especially for oromyofunctional disorders, in infants and preschoolers. **Research Strategy:** We selected published studies, without temporal delimitation, in the electronic databases LILACS, SciELO and PUBMED; and in the gray literature (Google Academic). **Selection criteria:** available in full in Portuguese and English, which identify speech-language pathology protocols of clinical history applicable to infants (6 to 23 months of age) and preschoolers (24 to 71 months of age). Narrative and literature reviews (integrative, systemic, and scope) were excluded. **Results:** 1371 Brazilian publications were found in the period from 1980 to 2022. Of these, only five publications on speech therapy protocols were identified for collecting previous data from the clinical history of the age group between 6 and 71 months. Only two of these protocols have a risk classification for speech-language disorders, distributed in the areas of language and fluency. The other three are from the Orofacial Motricity (OM) area and do not carry a risk classification for orofacial myofunctional disorder. **Conclusion:** There are few speech therapy protocols for surveying the clinical history of infants and preschoolers, whether or not they contain risk classification, published in open access journals that have a complete validation process. Therefore there is a need for more research and publication of these instruments, including in the area of OM.

**Keywords:** Data Collection; Clinical History; Clinical Protocols; Speech, Language and Hearing Sciences; Infant; Child, Preschool; Medical History Taking; Risk Factors

### RESUMO

**Objetivo:** identificar, coletar e analisar, na literatura científica, evidências da existência de protocolos fonoaudiológicos de levantamento da história clínica, conforme classificação de risco, especialmente para distúrbios oromiofuncionais, em lactentes e pré-escolares. **Estratégia de pesquisa:** foram selecionados estudos publicados, sem delimitação temporal, nas bases de dados eletrônicas LILACS, SciELO e PubMed e na literatura cinza (Google Acadêmico). **Critérios de seleção:** estudos disponíveis na íntegra nas línguas portuguesa e inglesa, que identificassem protocolos fonoaudiológicos de história clínica aplicáveis a lactentes (6 a 23 meses de vida) e pré-escolares (24 a 71 meses de vida). Foram excluídas as revisões narrativas e de literatura (integrativa, sistêmica e escopo). **Resultados:** foram encontradas 1371 publicações brasileiras no período de 1980 a 2022. Destas, foram identificadas apenas cinco que tratavam de protocolos fonoaudiológicos para levantamento de dados pregressos a partir da história clínica da faixa etária de 6 a 71 meses. Apenas um desses protocolos possuía classificação de risco para distúrbios fonoaudiológicos, distribuídos na área de linguagem e fluência. Os outros três eram da área de motricidade orofacial (MO) e não continham classificação de risco para distúrbio miofuncional orofacial. **Conclusão:** existem poucos protocolos fonoaudiológicos para levantamento da história clínica de lactentes e pré-escolares que contenham, ou não, classificação de risco, publicados em revistas de acesso aberto e que passaram por processos completos de validação, sendo necessário ampliar estudos e publicações desses instrumentos, inclusive na área de MO.

**Palavras-chave:** Coleta de dados; História clínica; Protocolos clínicos; Fonoaudiologia; Lactentes; Pré-escolares; Anamnese; Fatores de risco

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## INTRODUCTION

Historically, the anamnesis was used as an investigative method in classical Greece<sup>(1)</sup>. It is a semi-structured interview with guiding questions about the complaint or reason for the consultation. It collects the data required for a chronological understanding of the subject's disease's progression, pointing to a possible diagnostic hypothesis<sup>(2)</sup>, which has traditionally been used in Western medicine.

The initial interview is defined as a listening moment that prioritizes the subject's life and health history, including social, cultural, and economic aspects inherent in the recognition of the complaint that brought him to the consultation<sup>(3)</sup>. It represents the start of the therapeutic process, assisting the clinician in understanding and developing reasoning about the subject and his symptoms<sup>(2)</sup>, and is based on the Psychology model.

There is a wide range of medical instruments available, each with its own set of characteristics. Screening identifies a disease/unknown risk factor using quick procedures (physical and laboratory tests)<sup>(4)</sup>, whereas screening is distinguished by identifying a risk for certain conditions in which the individual is at risk<sup>(5)</sup>. In addition to a clinical view of the disease/disorder, the use of diagnostic instruments frequently addresses issues of accuracy and statistical measures<sup>(6)</sup>.

In speech therapy clinical practice, it is critical to conduct a clinical history survey, which, along with the clinical examination, will form the reasoning that guides the development of the diagnostic hypothesis. The speech therapist will be able to select the instrument that he or she believes is most appropriate<sup>(7)</sup>, allowing for the development of an individualized therapeutic plan/plan.

The orofacial motricity (OM) speech therapy clinic includes assessment, diagnosis, and habilitation/rehabilitation of orofacial structures and functions of the stomatognathic system<sup>(8)</sup>. Changes in this system can have a significant impact on an individual's health, necessitating the monitoring of speech-language pathology as well as orofacial myofunctional disorders.

To better understand the emergence and progression of these disorders, it is recommended that the subject's clinical history be reviewed, looking for potential causes of orofacial myofunctional alterations that affect the stomatognathic system morphologically and functionally. The importance of using standardized protocols in Speech-Language Pathology and Audiology<sup>(9-11)</sup> has been discussed in this context.

As a result, a search in the literature for the recognition of existing clinical history protocols in Speech-Language Pathology and Audiology is justified, which may aid in clinical practice and leverage future research for the development of new instruments.

## PURPOSE

The purpose of this study was to search the scientific literature for clinical history speech therapy protocols based on risk classification, particularly for oromyofunctional disorders in infants and preschoolers.

## RESEARCH STRATEGY

This is an integrative literature review based on a method that describes six stages for such studies: formulation of the guiding question, literature research, data collection, critical analysis of studies, discussion of results, and presentation of the integrative review<sup>(12)</sup>.

The following were the guiding questions for this integrative review: 1) "Are there protocols in Speech-Language Pathology and Audiology for surveying clinical history in infants and preschoolers?" 2) "Do the clinical history-based assessment protocols present a risk classification for the disorder for the age group of infants and preschoolers?"

From October 2021 to January 2022, electronic databases were searched for studies in the literature: Latin American and Caribbean Literature in Health Sciences (LILACS), *Scientific Electronic Library Online* (SciELO), *National Library of Medicine* (NIH) via PubMed and in gray literature via Google Scholar.

There was a timely concern that instruments already recognized in the field of speech-language pathology would not be mistakenly excluded from the current study. As a result, a manual search for international and national protocols known to the researchers was also conducted, based on the title of the article via the *Sage Journals* database, and *AshaWire* and *CEFAC-Saúde e Educação*<sup>(13)</sup> journals until 2015 and *ABRAMO*<sup>(14)</sup> from 2016 onwards.

The databases were chosen for the investigation due to their national and international relevance, as they are in the health field and include research in speech-language pathology and audiology. The search was conducted without regard for time constraints in order to identify, collect, and analyze the scientific output produced over the years.

The Descriptors in Health Sciences/Medical Subject Headings (DeCS/MeSH)<sup>(15)</sup> in Portuguese were used: "levantamento", "história clínica", "protocolos", "fonoaudiologia", "lactentes", "pré-escolares", "anamnese", "fatores de risco"; and in English: "medical history taking", "protocols", "language and hearing sciences speech", "infant", "child preschool", "risk factors".

As shown in Chart 1, the descriptors and their terms were combined using the Boolean operators AND and OR, and the filter used was full text via online in all databases.

## SELECTION CRITERIA

The following inclusion criteria were considered: studies of speech-language pathology published in full in Portuguese and English that addressed clinical history speech-language pathology protocols applicable to infants (6 to 23 months) and preschoolers (24 to 71 months).

Studies that did not meet the inclusion criteria and were not fully available were excluded, such as narrative reviews and literature reviews (integrative, systemic, and statewide), as well as theses and dissertations.

## DATA ANALYSIS

All titles and abstracts of the results found were read through the search for descriptors with a critical analysis in the first stage

**Chart 1.** Combinations of descriptors with Boolean operators in Portuguese and English

"protocolos" AND "fonoaudiologia" AND "lactentes" OR "pré-escolares";	"protocols" AND "speech therapy" AND "infants" OR "preschoolers";
"história clínica" AND "fonoaudiologia"; "fonoaudiologia" AND "levantamento" AND "protocolos"; "história clínica" AND "lactentes"; "história clínica" AND "pré-escolares"; "fatores de risco" AND "protocolos" OR "fonoaudiologia"; "protocolos" AND "fatores de risco" OR "lactentes" OR "pré-escolares."	"clinical history" AND "speech therapy"; "speech therapy" AND "survey" AND "protocols"; "clinical history" AND "infants"; "clinical history" AND "preschoolers"; "risk factors" AND "protocols" OR "speech therapy"; "protocols" AND "risk factors" OR "infants" OR "preschoolers."

of the research to determine whether they would be classified according to the theme. The full texts were then read.

General characteristics were observed while reading the full texts, and the following data were extracted: year of publication, type of study, study objective, occurrence of a clinical history survey, risk classification, and age group of infants and preschoolers. The studies' findings and limitations were also examined. The findings were compiled using summarized information from the studies and analyzed in a descriptive manner.

## RESULTS

The flowchart summarizes the results of integrative review studies based on the stages of data collection (Figure 1).

According to the databases, 1371 publications were discovered in Brazil between 1980 and 2022. VHL (Virtual Health Library) - LILACS has 58 articles, SciELO has 605, PubMed has 500, and Google Scholar has 208. According to the title and abstract, 1322 studies were excluded from the total number of studies because they did not answer the guiding questions. For full reading, 49 articles were chosen. 44 of these were excluded because they did not address the clinical history survey and/or were not intended for infants and/or preschoolers. This review ultimately included five articles. They all addressed speech therapy protocols that collect previous clinical history data and cover the age range of 6 months to 71 months of life (Table 1).

The studies chosen presented SLP instruments in various specialties, with language being 1 of them<sup>(16)</sup>, 1 of fluency<sup>(17)</sup> and 3 of orofacial motricity<sup>(9,11,18)</sup>. The instruments were divided into only one assessment instrument for the neonatal to infant age group<sup>(18)</sup>, 1 assessment protocol exclusively for infants<sup>(9)</sup>, 1 screening instrument and a screening instrument, aimed exclusively at prenatal care preschoolers<sup>(16,17)</sup>, and 1 evaluation protocol for both groups: infants and preschoolers<sup>(11)</sup>.

The studies varied in design, with observational<sup>(17)</sup>, descriptive<sup>(11,16)</sup>, and cross-sectional<sup>(11,18)</sup> studies included, as well as three validation studies<sup>(9,11,17)</sup>. It is worth noting that all of these addressed the instrument's content validation stage.

In terms of the instruments that have been manually researched and are already recognized in the field of speech-language pathology, the Speech-Language Pathology Monitoring Protocol - Breastfeeding<sup>(19)</sup>; Children's Oral and Motor Proficiency Scale (chOMPS)<sup>(20)</sup> and Pediatric Feeding Assessment (Pedi-EAT)<sup>(21)</sup>, no content was found on the survey of clinical history in the infant and/or preschool age group, so this review was excluded.

As for the contents covered in the 5 protocols, all presented identification data<sup>(9,11,16-18)</sup> and the majority (80%) addressed family background<sup>(11,16-18)</sup>. Three (60%) addressed complaints,

pregnancy and postpartum complications and/or general motor and speech development<sup>(11,16,17)</sup>, and/or dietary aspects<sup>(9,11,18)</sup>, and/or oral functions and deleterious habits<sup>(9,11,16)</sup>, and/or respiratory and sleep aspects<sup>(9,11,17)</sup>. Two (40%) addressed hearing and health problems<sup>(11,16)</sup>, and/or linguistic and psychosocial aspects<sup>(16,17)</sup> and only 1 (20%) addressed the child's temperament<sup>(16)</sup> and another, oral communication, and voice<sup>(11)</sup>.

In dealing with the survey of risk factors, 3 instruments were identified<sup>(16-18)</sup> in different areas of speech therapy (Table 1). In the OM area, the evaluation protocol<sup>(18)</sup> indicates the alteration of the baby's lingual frenulum and defines the necessary intervention behaviors, based on the scores obtained. In the fluency area<sup>(17)</sup>, the screening instrument classifies the risk for developing stuttering based on individual characteristics and a previous history of signs and symptoms. In the area of language, the screening protocol<sup>(16)</sup> identifies risk factors for language and speech disorders for possible referral to speech-language pathology and audiology evaluation and conduct.

There are tables related to the survey of feeding history in one of the OM assessment instruments, the Orofacial Myofunctional Assessment Protocol with Expanded Scores (OMES-E Infants)<sup>(9)</sup>, in which the speech therapist records the mode (method) of offering, according to the periods (in months) of occurrence. Despite the fact that no scores were assigned, the authors reported that the interpretation of these preliminary data is critical to the composition of the assessment and diagnosis of the orofacial myofunctional condition.

Still in the OM domain, there is the MMBGR Protocol - Infants and preschoolers: instructional and clinical history<sup>(11)</sup>, which addresses clinical history investigation with the goal of assisting the professional in the oromyofunctional diagnosis. Although the specific clinical history protocol does not assign scores, it addresses critical data for understanding the individual's and his family's prior history.

It should also be noted that two of the instruments in the OM area<sup>(9,11)</sup> are for evaluation and come with an operational<sup>(9)</sup> or instructional<sup>(11)</sup> manual to help with protocol implementation.

Concerning the limitations mentioned by the authors, three (60%) of the studies examined<sup>(9,11,17)</sup> addressed the issue of the need to expand, advancing the steps of the respective instrument validation processes (Table 1).

## DISCUSSION

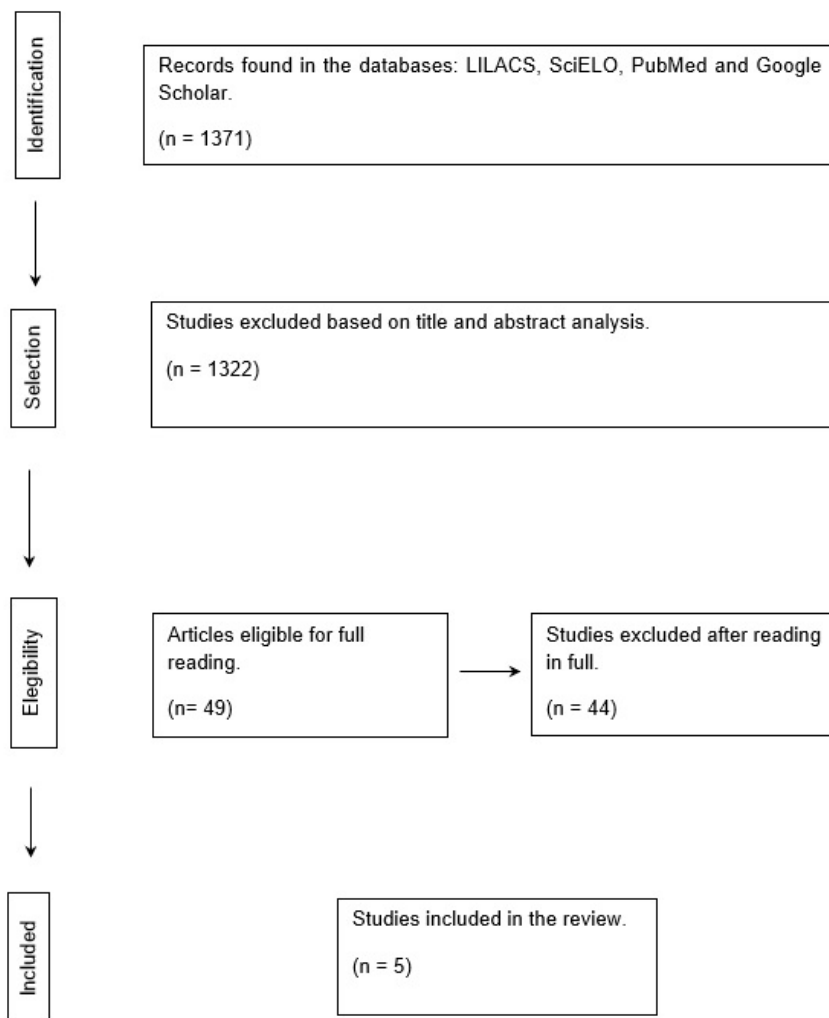
Given the research's inclusion criteria, all of the protocols included in this study have one thing in common: they all address the collection of clinical history data in infants and/or preschoolers.

**Table 1.** Characteristics of the included studies (n=5), according to qualitative synthesis

	Silva et al. (2013) <sup>(16)</sup>	Martinelli et al. (2013) <sup>(18)</sup>	Lima et al. (2021) <sup>(17)</sup>	Medeiros et al. (2021) <sup>(9)</sup>	Medeiros et al. (2022) <sup>(11)</sup>
<b>Study and respective instrument</b>	Protocol for Identification of Risk Factors for Language and Speech Disorder (PIFRAL)	Lingual Frenulum Assessment Protocol for Babies: relationship between anatomical and functional aspects	Screening Instrument for Developmental Stuttering (IRGD): Content Preparation and Validation	Myofunctional Assessment Protocol with Expanded Scores (OMES-E INFANTS)	MMBGR protocol- infants and preschoolers: Instructional and orofacial myofunctional clinical history
<b>Design, sample</b>	Descriptive, prospective N = 170 children and their guardians, who attended a teaching clinic.	Cross-sectional N = 100 babies, evaluated by 2 speech therapists specializing in OM.	Observational, analytical and transversal. Content validation performed. N = 10 fluency specialist speech therapists.	Validation study. Content validation performed. N = 10 speech therapists specialized in OM and with experience in infants.	Validation, descriptive and cross-sectional study N= 10 speech-language pathologists specializing in OM
<b>Study objectives</b>	Identify the child's risk factors that may be associated with speech-language disorders.	Check which characteristics of the lingual frenulum influence the sucking and swallowing functions in term babies and to propose adjustments in the previous protocol by Martinelli et al. (2012) <sup>(26)</sup>	To develop a screening instrument to identify the risk for developmental stuttering in preschool children.	Adapt and validate the content and appearance of the Orofacial Myofunctional Assessment Protocol with Expanded Scores (OMES-E) for infants from 6 months to 24 months of age.	Present the "Instructor" and the Orofacial Myofunctional Clinical History Protocol that make up the MMBGR Protocol - infants and preschoolers, highlighting the process of adaptation and content validation
<b>Content covered in the clinical history</b>	Sociodemographic and family data; Information on the prenatal, perinatal and postnatal periods; Child's temperament.	Identification data, family history and health problems; Breastfeeding data: time and pattern of breastfeeding.	Identification data; Development general and communication; linguistic aspects, speech and psychosocial motors.	Identification and clinical data; history of food and parafunctional habits.	Identification data; Chief Complaint and Other Complaints; Family history; Complications; Motor development and difficulties; Health problems; Breathing problems; Sleep; treatments; Breast-feeding; Feeding – introduction and current feeding; Chewing; Deglutition; Habits – oral, biting and posture; He speaks; Communication; Hearing; Voice and additional information.
<b>Study results</b>	Identifies risk factors for language alteration.	It defines characteristics indicative of alteration of the lingual frenulum in babies, adapting the previous protocol.	It proposes risk classification for stuttering based on psychometric measures.	It defines items that address the structural features that, together with the clinical examination, can better assess the orofacial myofunctional system.	It gathers data from the previous history, extrinsic aspects inherent to the subject, providing the professional with data that contemplate a clinical reasoning prior to the clinical examination.
<b>Risk rating</b>	It considers as risk factors: male gender, only child, family history, complications during pregnancy, prematurity, deleterious oral habits and long postnatal hospitalizations.	It assigns scores, considering the scores obtained in the clinical history part.	The instrument does not replace the speech-language pathology assessment and children identified at risk for developmental stuttering should be referred for evaluation and diagnosis by a speech-language pathologist.	It has no risk rating.	Não possui classificação de risco.
<b>Limitations according to the authors</b>	They do not cite limitations in the study.	They do not cite limitations in the study.	Limitations inherent to validation. Future studies should be proposed for the other stages of the validation process.	Limitations inherent to validation. Additional studies will be needed for construct and criterion validity, as well as accuracy.	Limitations inherent to validation, Studies must be proposed for the other stages of the validation process.

**Subtitle:** OM = orofacial motricity





**Figure 1.** Flowchart of the selection of studies, with description of the quantity, according to the data collection stages  
**Subtitle:** n = number of studies

Given the differences between the anamnesis and initial interview models, it was clear that the protocols included in this review use more directive questions related to the main complaint, approaching the anamnesis, a paradigm historically advocated by western medicine<sup>(2)</sup>.

The majority of the studies (60%) went through some sort of validation stage<sup>(9,11,17)</sup> in the parameters described in the literature<sup>(10)</sup>. There appears to be no concern with the validation of scientific production in the most distant history of speech-language pathology and audiology. The fact that the validation steps of the instruments are included in the most recent studies (2021<sup>(9)</sup>, 2022<sup>(11)</sup> and 2021<sup>(17)</sup>) demonstrates the most recent concern of researchers to attest greater scientificity to speech-language pathology through validation processes of clinical instruments, as recommended in the speech-language pathology literature<sup>(10)</sup>.

It is worth noting that the protocol for evaluating the lingual frenulum with scores for babies<sup>(18)</sup> was later validated completely<sup>(22)</sup>. However, the study containing the validation process<sup>(22)</sup> was not included in the current review because it lacked the protocol, which was already presented in the 2013 publication<sup>(18)</sup>, which was included in this review. The use of this instrument is critical when breastfeeding because the tongue is one of the stomatognathic system structures with

distension and movement ability, both of which are required for milk extraction<sup>(23)</sup>.

Furthermore, the other protocol in this integrative review did not go through any validation stages<sup>(16)</sup> and has an older date (2013). Nonetheless, the authors approached and attempted to analyze the causality and risk for speech-language disorders in the preschool age group, which can be regarded as an important differential of the study.

Identification data collection<sup>(9,11,16-18)</sup> was common in all instruments included in this review, corresponding to name, age, date of birth, gender, name of those responsible, address, and telephone, revealing what the Ministry of Health recommends in healthcare services, establishing principles of safety and care for the person for whom they are intended<sup>(24)</sup>. The service becomes reliable in terms of identifying and individualizing users in the health environment<sup>(25)</sup>.

Other protocol contents included family history<sup>(11,16-18)</sup>, complaints, pregnancy and postpartum complications, and/or aspects of general, motor, and speech development<sup>(11,16,17)</sup>. Given that the protocols are aimed at infants and preschoolers, there is a preponderance of items that directly impact child development, as measured by child quality of life indicators, which may serve to delineate behavior and related public

policies. the child's socioeconomic, environmental, and cultural/population aspects<sup>(26)</sup>.

Still on the content, most addressed dietary aspects<sup>(9,11,18)</sup> and/or oral functions and deleterious habits<sup>(9,11,16)</sup> and/or respiratory and sleep aspects<sup>(9,11,17)</sup>. In this regard, the predominance (60%) of the instruments analyzed in the OM area justifies the emphasis on issues inherent to oromyofunctional development.

In terms of risk classification analysis, only one instrument identified for surveying clinical history includes a risk classification for speech-language disorders and is in the fluency domain. The Screening Instrument for Developmental Stuttering (IRGD)<sup>(17)</sup> assigns scores in the clinical history to a risk classification in early childhood, covering the age group of preschoolers.

The authors' greater concern in creating instruments that serve as accurate measures for speech-language pathologists, assisting in the diagnosis (diagnostic instruments) of disorders may explain the scarcity of screening instruments in other areas of Speech-Language Pathology and Audiology.

In the area of language, the Protocol for Identification of Risk Factors for Language and Speech Disorders (PIFRAL)<sup>(16)</sup> highlights the inherent aspects for language disorders: only child, family history of speech-language disorders, prematurity, long-term hospitalizations, and detrimental oral habits, indicating to the professional that a child who has these risks has indications for speech-language disorders.

In general, the instruments in the OM area are for evaluation and do not have an oromyofunctional risk classification<sup>(9,11,18)</sup>, although the Lingual Frenulum Assessment Protocol for Babies<sup>(18)</sup> allows the diagnosis of alterations in the lingual frenulum, even emphasizing that this change impacts oral functions and, consequently, the baby's life.

Still in the OM area, it was important to note that some instruments<sup>(9,11)</sup> developed user manuals and/or instructions and have already begun<sup>(9,11)</sup> or completed<sup>(18)</sup> the instrument validation process. All of these factors point to an evolution and concern for greater scientificity in Speech-Language Pathology and Audiology, particularly in OM.

It is important to note that there are a variety of areas of activity in Speech-Language Pathology in childhood, as well as specializations in Audiology, Voice, and Educational Speech-Language Pathology. Knowledge of the past history is recommended in all of these areas to indicate possible risk for certain alterations/disorders/pathologies.

Despite this, no additional instruments from the various areas of Speech Therapy were discovered during the integrative review conducted here. It was assumed that this occurred because instruments specific to the realities of assistance services distributed in the country were used, which were not published in the open environment and were not subjected to the instrument validation process.

The authors also considered that protocols developed from studies in theses and dissertations would very likely be published in scientific journals following the completion and defense of the works, and would be covered in the survey of this integrative literature review. This survey is regarded as a study limitation.

This review is expected to highlight the need for the instruments used in specific services, in the various areas of action with the age group of infants and preschoolers, to be presented and submitted to the respective validation processes, thereby contributing to the expansion of research, such as the instrumentation of the speech therapy clinic.

The current study had some limitations, including the fact that searching an open database does not promote the coverage of protocols that are eventually published in book chapters and speech therapy treatises. It also prohibits access to instruments that investigate clinical history and are used in outpatient clinics and universities/colleges but have not yet been published in scientific journals. The same limitation applies to protocols developed in theses and dissertations but not published in an open access journal.

## CONCLUSION

There are few speech therapy protocols for surveying the clinical history of infants and preschoolers, and only one of them has a risk classification for speech disorders, not oromyofunctional aspects.

The majority of the instruments studied have undergone some level of validation<sup>(9,11,17,18)</sup>, demonstrating scientific rigor and greater scientificity to Speech-Language Pathology and Audiology. There is a need for research to develop and validate instruments aimed at infants and preschoolers, particularly to investigate their clinical history with their guardians.

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