

Respiratory diseases in newborns and infants: sources of information and parents' knowledge

Doenças respiratórias em recém-nascidos e lactentes: fontes de informação e conhecimentos dos pais
Enfermedades respiratorias en recién nacidos y lactantes: fuentes de información y conocimiento para los padres

Juliane Pagliari Araujo^{1,2} , Adriana Martins Gallo² , Denise Desconsi³ , Carolina Mathioli¹ ,
Jaqueline Aparecida Raminelli¹ , Sonia Silva Marcon⁴ , Adriana Valongo Zani¹ 

Corresponding author:

Juliane Pagliari Araujo

E-mail:

juliane.pagliari@ifpr.edu.br

¹Universidade Estadual de Londrina. Londrina, Paraná, Brasil.

²Instituto Federal do Paraná. Londrina, Paraná, Brasil.

³Universidade Estadual Paulista. Botucatu, São Paulo, Brasil.

⁴Universidade Estadual de Maringá. Maringá, Paraná, Brasil.

Abstract

Objective: To map the sources of information consulted by parents of newborns and infants with respiratory diseases to access information regarding the treatment and care of their children. **Methods:** A scoping review conducted according to JBI guidelines. Data were searched in the MEDLINE/PubMed, Scopus, EMBASE, PsycINFO, *Base de Dados de Enfermagem*, and *Literatura Latino-Americana e do Caribe em Ciências da Saúde* databases in December 2023. Independent peer review was conducted using inclusion criteria and a previously developed instrument, and the analysis was descriptive. **Results:** The sample comprised 11 studies, which identified healthcare professionals as the main source of information for parents regarding their children's diseases, followed by information and communication media, social media, the internet, and personal beliefs, respectively. The findings indicate that parents lack information about certain respiratory diseases, particularly regarding preventive measures such as vaccination. **Conclusion:** Healthcare professionals are the main source of information for parents regarding respiratory diseases. Furthermore, parental educational level is associated with information-seeking behavior and knowledge about care related to respiratory diseases.

Descriptors:

Access to Information. Infant, Newborn. Infant. Respiratory Tract Diseases. Information Sources. Parents.



How to cite this article:

Araujo JP, Gallo AM, Desconsi D, Mathioli C, Raminelli JA, Marcon SS, Zani AV. Respiratory diseases in newborns and infants: sources of information and parents' knowledge. *Rev. enferm. UFPI*. 2026 [Cited: ano mês abreviado dia];15:e6534. DOI: 10.26694/reufpi.v15i1.6534

Whats is already known on this?

Children are frequently affected by respiratory tract diseases, and their care requires parental effort and dedication, as insufficient knowledge and inadequate attitudes may lead to the persistence or worsening of symptoms.

What this study adds?

Healthcare professionals are the main source of information for parents regarding respiratory diseases, highlighting the importance of health education and the role of nurses in this context.

Resumo

Objetivo: Mapear as fontes de informação que os pais de recém-nascidos e lactentes com doenças respiratórias consultam para ter acesso a informações sobre o tratamento e o cuidado de seus filhos. **Métodos:** Revisão de escopo utilizando as orientações do JBI. A busca dos dados ocorreu nas bases de dados

MEDLINE/PubMed, Scopus, EMBASE, PsycINFO, Base de Dados de Enfermagem e Literatura Latino-Americana e do Caribe em Ciências da Saúde em dezembro de 2023. A revisão por pares independentes foi realizada com critérios de inclusão, utilizando um instrumento previamente elaborado, e a análise foi descritiva. **Resultados:** A amostra foi composta por 11 estudos, que apontaram os profissionais de saúde como a principal fonte de informação dos pais sobre as doenças de seus filhos, seguidos por meios de informação e comunicação, mídias sociais, internet e crenças próprias, respectivamente. Os achados sintetizam que os pais não têm informações sobre algumas doenças respiratórias, principalmente no que se refere a medidas de prevenção, como a vacinação. **Conclusão:** A principal fonte de informação dos pais sobre doenças respiratórias são os profissionais de saúde. Além disso, destaca-se que a escolaridade dos pais está associada à busca de informações e ao conhecimento sobre os cuidados relacionados às doenças respiratórias.

Descritores:

Acesso à Informação. Recém-nascido. Lactente. Doenças Respiratórias. Fonte de Informação. Pais.

Resumen

Objetivo: Mapear las fuentes de información que consultan los padres de recién nacidos y lactantes con enfermedades respiratorias para obtener información sobre el tratamiento y el cuidado de sus hijos. **Métodos:** Revisión exploratoria siguiendo las directrices de JBI. Se realizaron búsquedas de datos en las bases de datos MEDLINE/PubMed, Scopus, EMBASE, PsycINFO, Base de Datos de Enfermagem y Literatura Latino-Americana e do Caribe em Ciências da Saúde en diciembre de 2023. Se llevó a cabo una revisión por pares independiente utilizando criterios de inclusión, empleando un instrumento previamente desarrollado, y el análisis fue descriptivo. **Resultados:** La muestra consistió en 11 estudios, que señalaron a los profesionales de la salud como la principal fuente de información para los padres sobre las enfermedades de sus hijos, seguidos por los canales de información y comunicación, las redes sociales, internet y las creencias personales, respectivamente. Los hallazgos resumen que los padres carecen de información sobre algunas enfermedades respiratorias, especialmente en lo que respecta a medidas preventivas como la vacunación. **Conclusión:** La principal fuente de información para los padres sobre enfermedades respiratorias son los profesionales de la salud. Además, cabe destacar que el nivel educativo de los padres está asociado con la búsqueda de información y conocimientos sobre el cuidado de las enfermedades respiratorias.

Descriptores:

Acceso a la Información. Recién Nacido. Lactante. Enfermedades Respiratorias. Fuentes de Información. Padres.

INTRODUCTION

Children are frequently affected by respiratory tract diseases, especially newborns (NBs) and infants, who are at increased risk of developing severe forms of the disease,⁽¹⁾ thereby contributing to infant morbidity and mortality.⁽²⁾ Between January and March 2023, the Ministry of Health recorded more than 3,000 severe cases of severe acute respiratory syndrome caused by respiratory syncytial virus among children younger than 4 years of age.⁽³⁾

Both in low-income countries⁽⁴⁾ and in highly developed countries,⁽¹⁾ reducing infant mortality from preventable diseases should be a central priority for healthcare systems. Globally, researchers have devoted efforts to understanding the implications of respiratory tract diseases in early childhood for adult life,⁽⁵⁾ increasingly reinforcing the importance of early interventions, such as vaccination, for a healthier life.⁽²⁾

Some factors contribute to disease worsening and the need for specialized care, including seasonal variations, exposure to unfavorable environmental conditions, residence in remote areas, low income, and

parents' lack of information about the disease, that is, insufficient knowledge regarding the appropriate course of action.^(1,4,6)

Parental health practices influence child development and are associated with caregivers' level of knowledge; therefore, studies investigating the quality, quantity, and sources of information available to parents regarding diseases are needed to guide their implementation.⁽⁷⁾ When well informed, parents contribute to appropriate disease management and to child safety.⁽⁸⁾ A systematic review including data from the Middle East, Africa, Asia, and South America demonstrated that greater parental knowledge is associated with lower rates of self-medication in children,⁽⁹⁾ reinforcing the positive premise of promoting learning through the development of targeted content for parents.

The process of caring for a child affected by a respiratory disease requires parental effort and dedication, whereas insufficient knowledge and inadequate attitudes may lead to errors, persistence, or worsening of symptoms.⁽⁸⁾

In recent years, internet access, the use of social media, and the search for health information on websites and mobile applications (apps) have increased.^(10,11) The internet is characterized as a convenient and comprehensive source of information dissemination,⁽¹⁰⁾ as it is available to a large portion of the world's population. However, the search for children's health information should be conducted through reliable sources, with validation and support from healthcare professionals.⁽¹²⁾

Therefore, it is essential to identify parents' information needs. Understanding what they wish to learn in order to better manage the care of their children can provide insights and become an essential step toward promoting health literacy.

Thus, this study is justified by the importance of gathering scientific evidence on where parents seek information regarding their children's health, specifically concerning respiratory diseases and their knowledge about them. It is noteworthy that there are few studies on this topic in Latin America, highlighting the need to generate knowledge that may guide discussions and expand parental participation in childcare. Seeking information from sources lacking scientific evidence and insufficient access to information may result in inappropriate practices and care.

Given the above, the objective of this scoping review was to map the sources used by parents of NBs and infants with respiratory diseases to access information regarding the treatment and care of their children.

METHODS

This is a scoping review study, whose analysis and categorization processes were systematically conducted in six phases: 1) identification of the topic and formulation of a specific question; 2) establishment of inclusion and exclusion criteria for studies; 3) definition of the information to be extracted from the selected studies; 4) appraisal of the studies included in the scoping review; 5) interpretation of the evidence; and 6) presentation of the knowledge synthesis.⁽¹³⁾ The study was conducted with methodological rigor as recommended by JBI.⁽¹⁴⁾ The study protocol is available at: DOI 10.17605/OSF.IO/9K34U.

The structure of this study was developed using the PCC strategy⁽¹⁵⁾ to formulate the research question, considering the following acronyms: P (Population), parents; C (Concept), sources of information and parental knowledge; and C (Context), children with respiratory diseases. Thus, the following research question was formulated: what scientific evidence is available regarding the sources used by parents of NBs and infants with respiratory diseases to access information about treatment and to acquire knowledge regarding the care of their children?

The descriptors were selected from the Health Sciences Descriptors and Medical Subject Headings, using the Boolean operators AND and OR, resulting in the main search strategy: (Parents) AND: (Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "Health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange") AND ("Infant" OR "Newborn") AND ("Respiratory Tract Diseases").

On December 20, 2023, the following databases and portals were searched: Medical Literature Analysis and Retrieval System Online (MEDLINE), via the National Library of Medicine, National Institutes of Health (PubMed); Scopus; Excerpta Medica dataBASE (EMBASE); PsycINFO (American Psychological Association); *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS); and *Base de Dados de Enfermagem* (BDENF), via the *Biblioteca Virtual em Saúde* (BVS) portal. The studies were exported to the Mendeley® reference manager for subsequent analysis (Chart 1).

Chart 1. Search strategy and databases used in the scoping review. Londrina, PR, Brazil, 2023.

Databases	Search strategy	Total
MEDLINE	#1(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	45
	#2 (Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange" OR "Health Personnel") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	36
Scopus	#1(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	21
	#2(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange" OR "Health Personnel") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	23
EMBASE	#1(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	224
	#2(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange" OR "Health Personnel") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	1.750
PsycINFO	(Parents) AND ("Social Media" OR "Internet Use" OR "Information Technology" OR "Access to Information" OR "Digital Technology" OR "health literacy" OR "Attitude to health" OR "Information Seeking Behavior" OR "Internet Access" OR "Resource Guide" OR "Health Information Exchange") AND (Infant OR Newborn) AND ("Respiratory Tract Diseases")	4.529
LILACS	#1 (pais) AND ("mídia social" OR "uso da internet" OR "Tecnologia da Informação em Saúde" OR "tecnologia digital" OR "educação em saúde" OR "acesso à internet") AND (criança OR neonato) AND ("doenças respiratórias")	00
	#2(Pais) AND (mídia social) OR (Informação em Saúde) OR (fonte de informação) OR (educação em saúde) AND (recém-nascido) OR (lactente) AND (doenças respiratórias)	04
	#3 (Pais) AND (mídia social) OR (fonte de informação) OR (Informação em Saúde) OR (educação em saúde) OR (profissionais de saúde) AND (recém-nascido) OR (lactente) AND (doenças respiratórias)	01
BDENF	#1 (pais) AND ("mídia social" OR "uso da internet" OR "Tecnologia da Informação em Saúde" OR "tecnologia digital" OR "educação em saúde" OR "acesso à internet") AND (criança OR neonato) AND ("doenças respiratórias")	00
	#2(pais) AND (mídia social) OR (fonte de informação) OR (Informação em Saúde) OR (educação em saúde) AND (recém-nascido) OR (lactente) AND (doenças respiratórias)	28
	#3 (Pais) AND (mídia social) OR (fonte de informação) OR (Informação em Saúde) OR (educação em saúde) OR (profissionais de saúde) AND (recém-nascido) OR (lactente) AND (doenças respiratórias)	01

Source: prepared by the authors (2023).

The systematic search of descriptors in the databases and the double-blind literature screening were conducted by pairs of reviewers, guided by a previously developed checklist to avoid selection and interpretation bias, through a thorough reading of titles, abstracts, and full texts. A third reviewer was consulted when necessary, and disagreements were resolved by consensus. For study counting, the Mendeley® reference manager was used, ensuring that each reference was counted only once after duplicate removal.

Primary studies were included without language restrictions, provided they addressed parents' information-seeking regarding their children's respiratory diseases. Studies addressing respiratory diseases together with other topics, such as vaccination, were also included.

Regarding age, studies involving children aged 0 to 2 years were selected, as well as studies that included this age group together with other age groups in their population. Studies focusing exclusively on children older than 2 years were not selected.

Conference proceedings, editorials, theses, dissertations, and monographs were also excluded. The time frame was established between January 1, 2010, and December 20, 2023. This temporal limit was defined by the researchers because it corresponds to a milestone in the expansion of broadband internet access in Brazil and smartphone use, together with 3G technology, facilitating access to information.⁽¹⁶⁾ With the advent of the internet, it is believed that information-seeking patterns and the types of health information sought have undergone changes in recent years. All articles included in the study were available in full text and were accessed through the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior/Comunidade Acadêmica Federada* portal, using the login credentials of the higher education institution to which the research is affiliated.

In the first phase, two researchers independently examined the titles and abstracts of all studies retrieved from the databases and identified those meeting the inclusion criteria. At this stage, studies were excluded due to incompatibility of content or target population with the objectives of this review. In the second phase, the same researchers independently read the full texts of all selected studies and excluded those that did not answer the guiding research question. This phase also included the participation of a third researcher to resolve any discrepancies, who independently assessed the full text of the study.

Furthermore, after defining the selected studies, the reference lists of these articles were reviewed to expand the investigation and identify additional evidence, applying the inclusion criteria. As a result, new studies were selected and incorporated into the final sample.

The variables collected included authors, year, study design, level of evidence, quality of evidence, source of information, content, and parents' knowledge.

The level of evidence was classified as follows: level I – systematic reviews or meta-analyses; level II – evidence from at least one randomized controlled clinical trial; level III – evidence from well-designed clinical trials without randomization; level IV – evidence from well-designed cohort and case-control studies; level V – systematic reviews of descriptive and qualitative studies; and level VI – evidence from a single descriptive or qualitative study.⁽¹⁷⁾

The quality of evidence was inferred according to the GRADE system criteria: high – there is strong confidence that the true effect is close to the estimated effect; moderate – there is moderate confidence in the estimated result; low – confidence in the estimate is limited; and very low – confidence in the estimate is very limited. There is substantial uncertainty regarding the results.⁽¹⁸⁾

The results were presented descriptively, systematically summarizing the information from each selected study and presenting the evidence identified. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Systematic Reviews flowchart was used.⁽¹⁹⁾

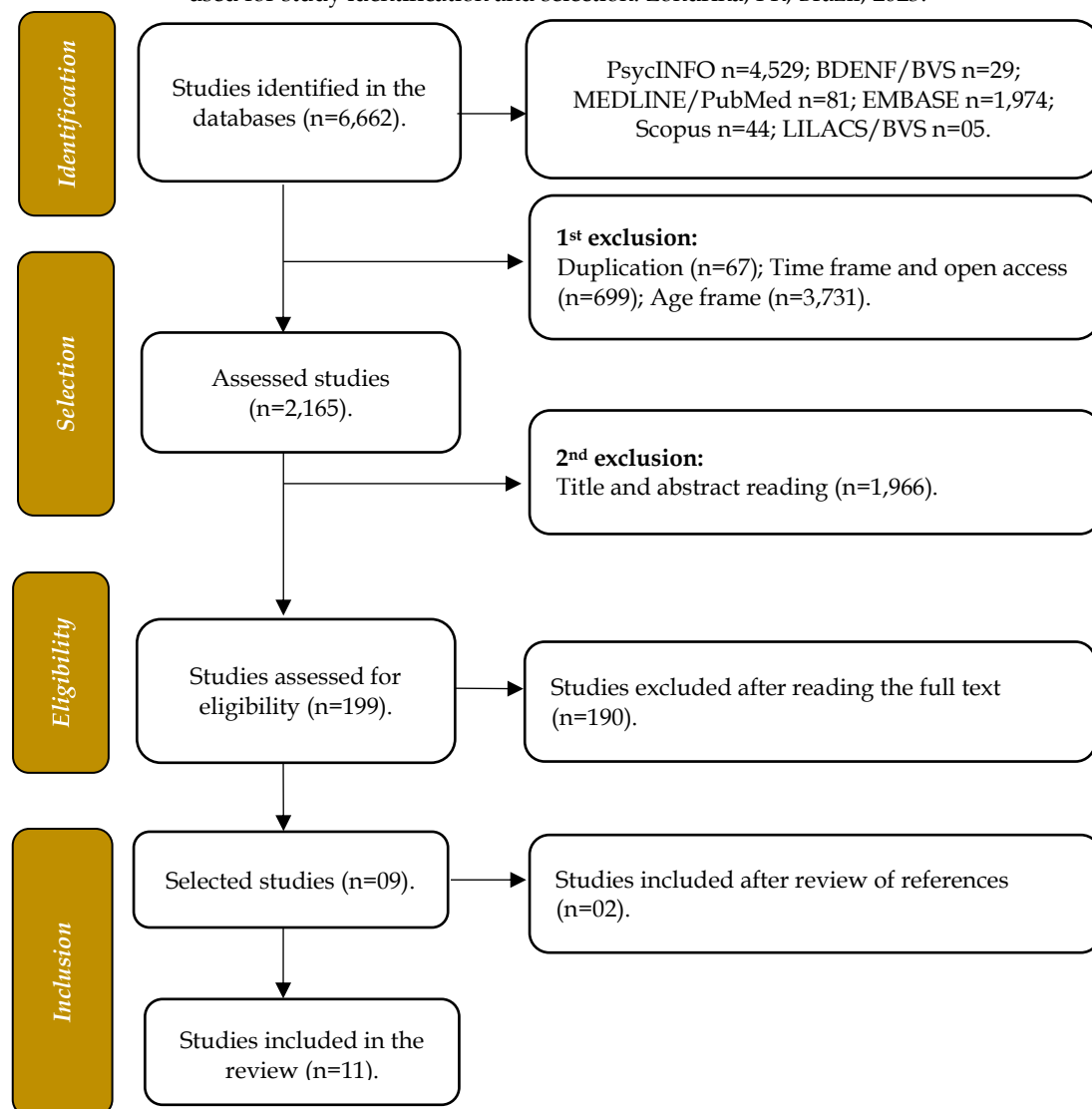
Concerning ethical and legal aspects, publications from peer-reviewed journals with open access and full-text availability online were used, and the authors were cited whenever the studies were mentioned.

RESULTS

A total of 6,662 studies were identified in the databases. Of these, 67 were excluded because they were duplicates, and 6,396 were excluded because they did not answer the guiding research question or did not meet the inclusion criteria. After full-text reading, an additional 190 studies were excluded. Nine studies were selected, and their reference lists were reviewed, resulting in the inclusion of two additional

articles. Thus, 11 articles comprised the final sample of this review, as demonstrated in the study identification, screening, and selection process presented in Figure 1.

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Systematic Reviews flowchart used for study identification and selection. Londrina, PR, Brazil, 2023.



Source: Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Systematic Reviews (2023).

The 11 articles included in the final sample of this study were published between 2013 and 2023, all in English, with nine quantitative studies and two qualitative studies. The predominant level of evidence among the selected studies was Level IV, with moderate quality of evidence (Chart 2).

Chart 2. Design of the selected studies. Londrina, PR, Brazil, 2023.

ID	Authors/year/place	Design/LoE/quality of evidence	Sample characteristics
(1)	Ha Manh <i>et al.</i> , 2023 ⁽²⁰⁾ Vietnam	Quantitative study/ IV/moderate	n: 172 mothers; children's age range: 0 to 5 years
(2)	Carlson <i>et al.</i> , 2022 ⁽²¹⁾ Australia	Quantitative study/IV/moderate	n: 99 parents*; children's age range: > 6 meses
(3)	Manna <i>et al.</i> , 2022 ⁽²²⁾ India	Observational and analytical study/IV/moderate	n: 404 parents*; children's age range: > 6 weeks.
(4)	Lee Mortensen, Harrod-Lui, 2022 ⁽²³⁾ Denmark	Quantitative study/IV/moderate	n: 5.627 parents*; children's age range: 0 to 2 years
(5)	Sun <i>et al.</i> , 2020 ⁽²⁴⁾ China	Quantitative study/IV/moderate	n: 148 parents*; children's age range: 0 to 14 years
(6)	Noureddin <i>et al.</i> , 2019 ⁽²⁵⁾	Quantitative study/IV/moderate	n: 100 mothers;

	Sudan		children's age range: 0 to 11 years
(7)	Hwang <i>et al.</i> , 2017 ⁽²⁶⁾ South Korea	Quantitative study/IV/moderate	n: 638 parents*; children's age range: > 6 to 59 months
(8)	How <i>et al.</i> , 2016 ⁽²⁷⁾ Malaysia	Quantitative study/VI/moderate	n: 200 parents*; children's age range: > 3 years
(09)	Peeler <i>et al.</i> , 2015 ⁽²⁸⁾ Australia	Qualitative study/VI/moderate	n: 12 participants (parents* and nurses); children's age range: 2 to 6 months
(10)	Archibald <i>et al.</i> , 2015 ⁽²⁹⁾ Canada	Qualitative study/VI/moderate	n: 21 parents*; children's age range: 1 to 10 years
(11)	Zhao <i>et al.</i> , 2013 China ⁽³⁰⁾	Quantitative study/IV/moderate	n: 2,960 parents*; children's age range: 0 to 14 years

Legend: *Includes fathers and mothers; LoE – level of evidence.

Source: prepared by the authors (2023).

The main sources of information used by parents of children with respiratory diseases were healthcare professionals (n=10). The topics addressed in the studies included influenza (n=2), vaccination (n=5), pneumococcal diseases (n=2), COVID-19 (n=1), acute respiratory diseases (n=1), respiratory syncytial virus (n=1), asthma (n=3), and bronchiolitis (n=1) (Chart 3).

Chart 3. Summary of results. Londrina, PR, Brazil, 2023.

ID	Source of information	Respiratory diseases	Parents' knowledge/information regarding respiratory conditions
(1)	Social media, healthcare professionals, and family	Acute respiratory illnesses	More than 80% of mothers know about acute respiratory illnesses, their common symptoms, and the factors that make children more susceptible to respiratory illnesses. In addition, 84.5% of mothers also had knowledge about the role of vaccination in disease prevention.
(2)	Healthcare professionals	Influenza and vaccination	54% of parents believe that influenza is extremely serious for children, and 79% support influenza vaccination.
(3)	Healthcare professionals	Pneumococcal diseases and pneumococcal conjugate vaccines	58.4% of parents had no knowledge about pneumococcal diseases or the vaccine.
(4)	Healthcare professionals and other parents of children	Respiratory syncytial virus and vaccination	Parents' knowledge about respiratory syncytial virus is limited. Parents reported that they did not have specific information about immunization, including the safety, effectiveness, and durability of vaccines.
(5)	Media and internet	COVID-19	All parents provided information about the disease and how it is transmitted to their children, warning and advising them to avoid places with a high probability of contagion.
(6)	Healthcare professionals	Asthma	Mothers had a low level of knowledge about asthma, and its severity is affected by a lack of knowledge about managing the disease. Many mothers do not seek specialists for treatment because they believe that asthma can be treated like a routine flu infection.
(7)	Media outlets, social media, physicians/nurses, and others	Influenza and vaccination	64.9% of parents believed that influenza could cause serious problems for their children, and 57.4% of parents thought that complicated flu would be very dangerous for their children.
(8)	Healthcare professionals and internet	Pneumococcal disease and pneumococcal conjugate vaccines	Compared to parents who vaccinated their children and those who did not, a smaller number of parents in the unvaccinated group had heard about pneumococcal disease (34.2% unvaccinated; 82.1% vaccinated) and about pneumococcal conjugate vaccines (36.8% unvaccinated; 69.1% vaccinated). Regarding pneumococcal disease, parents who chose not to vaccinate their children had less knowledge about the risk of the disease (61.5% unvaccinated; 81.2% vaccinated).

(09)	Healthcare professionals	Bronchiolitis	Mothers were unprepared to deal with bronchiolitis attacks, and this was exacerbated by a lack of information and understanding, leading to fear.
(10)	Healthcare professionals, media and internet	Asthma	It was found that parents lacked knowledge about the severity, acute treatment, and prevention versus guidance for an attack and about asthma itself.
(11)	Healthcare professionals and personal experiences (beliefs)	Asthma	63.98% of parents knew that asthma is a chronic inflammatory disease of the airways induced by allergens; 23.74% recognized that chronic cough can be a symptom of asthma; and 11.03% identified that colds, exposure to allergens, strong emotional changes, and cold stimulation are associated with asthma.

Source: prepared by the authors (2023).

DISCUSSION

This study provides evidence and discusses the importance of identifying parents' demands for information regarding the specific needs of their children when they understand that their children require care due to respiratory tract diseases.

The findings indicate that parents' search for information does not occur exclusively through specific or standardized sources capable of providing substantial information about certain respiratory diseases, although parents perceive themselves as sharing responsibility for care alongside the therapeutic process.^(22,25,28) The lack of tools or strategies for seeking knowledge and the absence of specific information about diseases generate feelings of fear^(25,28,31) and stress^(27,31,32) in situations in which children present signs and symptoms requiring intervention, even when parents understand that responsibility for care lies with healthcare professionals.^(25,28)

An assessment of parents' knowledge regarding different pneumococcal diseases conducted in India found that 30.7% were familiar with pneumonia, 6.2% with meningitis, and 3% with otitis media. Another important finding concerned parents' knowledge of the most susceptible age group, namely children younger than 5 years, as 12.9% had this knowledge, and 10.1% had correct information regarding the lethality of pneumococcal diseases.⁽²²⁾

Parents' lack of knowledge generates fear, stress, and insecurity, and the use of respiratory therapies commonly considered routine by healthcare teams, such as oxygen administration, may be distressing for families.^(25,27,28,32) Restrictions on physical contact and the inability to comfort a child in their arms during oxygen therapy are perceived by mothers as factors contributing to stress and emotional distancing from care, highlighting shortcomings in the humanized approach provided by nursing teams.^(25,28)

A scoping review conducted on healthcare services in Latin America highlighted the importance of communication between parents and healthcare professionals regarding diagnosis, treatment, and procedures, resulting in strengthened care delivery and making users feel more comfortable when accessing healthcare services.⁽³⁴⁾ Caregivers' educational level influences their understanding and, consequently, child-rearing practices. Parents without higher education demonstrate less knowledge about child development, which also affects care related to respiratory diseases.^(7,8,20)

In addition to information on the management of respiratory diseases, there is a need for information regarding medication use,^(8,9,35) with emphasis on health education about mechanisms of action, indications, and medication administration. One study found that parents have less knowledge about medications used in asthma treatment than about topics unrelated to medications.⁽³⁶⁾

When assessing methods for preventing respiratory diseases, a study conducted in South Korea showed that 49.4% of participants considered hand hygiene the most effective measure, whereas 37.3% identified influenza vaccination as effective. Approximately 62.7% of parents believed that the influenza virus is easily transmitted through interpersonal contact.⁽²⁶⁾ This scenario may reflect the level of knowledge, as higher educational attainment among both parents was associated with a better understanding of respiratory diseases, treatment, and management, favoring more effective practices.^(22,36)

Negative predictors of childhood immunization included concerns about vaccine safety, distrust regarding vaccine efficacy, and adverse events.^(22,24,31,32,36) Parents were more hesitant about influenza vaccination⁽²¹⁾ and COVID-19 vaccination^(24,33) than about other vaccines,⁽²¹⁾ although positive perceptions have also been reported.⁽²⁰⁾ Furthermore, changes in healthcare service dynamics resulting from the

coronavirus pandemic led to reduced vaccination rates in Brazil in 2020⁽³⁷⁾ and in other countries, such as the United States.⁽³⁸⁾

The factor that most motivated parents to vaccinate their children was promotion and dissemination by government agencies or the media.^(23,26) For the successful implementation of childhood immunization programs and for reducing morbidity and mortality, accurate information about vaccination is essential, and dissemination of such information through the media plays a relevant role. In addition, it is necessary to extend healthcare unit operating hours and offer more than one vaccination campaign day ("D-Day").^(23,30)

In countries where pneumococcal conjugate vaccines are not provided free of charge, parental adherence is lower because of the high cost, which negatively affects vaccination coverage.^(24,27) In Brazil, vaccination is available free of charge through the Unified Health System. However, additional information is needed to increase vaccination coverage.⁽³⁹⁾

Although influenza vaccination in children older than 6 months is the main strategy for disease prevention, challenges related to vaccine safety, efficacy, and duration of protection continue to raise concerns among parents, consequently contributing to lower adherence.^(23,32,39) Furthermore, families with more than one child and those in situations of greater social vulnerability may be at risk of not completing their children's immunization schedules, highlighting the need for targeted public policies.⁽⁴⁰⁾

It should be emphasized that the studies selected for this integrative review identified healthcare professionals, information and communication media, social media, and the internet as the main sources of information for parents, highlighting the importance of health education and the role of nurses in this context.

However, with widespread internet access, parents are increasingly using this resource to seek health information about their children. Consequently, websites and apps have become important support tools for parents, as they are readily available and easily accessible to this population.^(11,12)

The aspects discussed regarding the information sources sought by parents of children with respiratory diseases prompt extensive discussion about the need for guidelines, theoretical models, and protocols to guide nursing care and health education for this population group, given that most parents seek health information from the professionals who provide care to their children.

Additionally, issues related to prevention, such as vaccination, reveal weaknesses concerning information and parental decision-making regarding their children, reinforcing the need for greater exploration and expansion of access to information from reliable sources tailored to parents' concerns.

During the search process, difficulties were encountered in identifying evidence reflecting specific characteristics of children aged 0 to 23 months, since most of the studies analyzed generally included children from other age groups simultaneously. This limitation reduced the possibility of uncovering specific needs related to the parents of these children. Therefore, a gap was identified, indicating the need for future research involving this population.

This study promotes discussion regarding the need for greater systematization of health education strategies and methods on this topic. Such discussion contributes to the teaching, research, and care of children with respiratory problems and their families.

CONCLUSION

This investigation made it possible to identify that the main sources of information for parents regarding childhood respiratory diseases were healthcare professionals, followed by digital ecosystems (internet channels and social media) and beliefs based on previous experiences.

Parental dedication to caring for children experiencing respiratory complications may be influenced by knowledge about the disease and its management. Furthermore, parents express demands regarding specific needs that may affect their children. The absence of substantial parental knowledge may trigger fear, stress, insecurity, and even the deprivation of appropriate care for their children.

CONTRIBUTIONS

Contributed to the conception or design of the study/research: Araujo JP; Gallo AM; Zani AV. Contributed to data collection: Araujo JP; Gallo AM; Desconsi D. Contributed to the analysis and/or interpretation of data: Araujo JP; Gallo AM; Desconsi D; Mathioli C; Raminelli J A; Zani AV. Contributed to article writing or critical review: Araujo JP; Gallo AM; Desconsi D; Mathioli C; Raminelli J A; Marcon

SS; Zani AV. Final approval of the version to be published: Araujo JP; Gallo AM; Desconsi D; Mathioli C; Raminelli J A; Marcon SS; Zani AV.

REFERENCES

1. McHugh L, Regan A K., Sarna, M, Moore H C, Van Buynder P, Pereira G, *et al.* Inequity of antenatal influenza and pertussis vaccine coverage in Australia: the Links 2 Healthier Bubs record linkage cohort study, 2012-2017. *BMC pregnancy and childbirth*. 2023; 23(1): 314. DOI: <https://doi.org/10.1186/s12884-023-05574-w> .
2. Moyes, J, Tempia S, Walaza S, McMorrough LM, Treurnicht F, Wolter N, *et al.* The burden of RSV-associated illness in children aged BMC Med. 2023; 21: 139. DOI: <https://doi.org/10.1186/s12916-023-02853-3> .
3. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde e Ambiente. Departamento de Imunização e Doenças Imunopreveníveis. Coordenação-Geral de Vigilância das Doenças Imunopreveníveis. [Internet]. 2023 [cited jul 18 2023]. Available from: <https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/notas-tecnicas/2023/nota-tecnica-no-30-2023-cgvdi-dpni-svsa-ms>
4. Emukule GO, Osoro E, Nyawanda BO, Ngere I, Macharia D, Bigogo G, *et al.* Healthcare-seeking behavior for respiratory illnesses in Kenya: implications for burden of disease estimation. *BMC Public Health*. 2023; 23(1): 353. DOI: <https://doi.org/10.1186/s12889-023-15252-3> .
5. Allinson JP, Chaturvedi N, Wong A, Shah I, Donaldson GC, Wedzicha JA, *et al.* Early Childhood Lower Respiratory Tract Infection and Premature Adult Death from Respiratory Disease in Great Britain: A National Birth Cohort Study. *The Lancet*. 2023; 401 (10383): 1183-1193. DOI: [https://doi.org/10.1016/S0140-6736\(23\)00131-9](https://doi.org/10.1016/S0140-6736(23)00131-9) .
6. Gallo, E, Bressan S, Baraldo S, Bottigliengo D, Geremia S, Acar AS, *et al.* Increased risk of emergency department presentations for bronchiolitis in infants exposed to air pollution. *Risk analysis: an official publication of the Society for Risk Analysis*. 2023; 43(6): 1137-1144. DOI: <https://doi.org/10.1111/risa.14007> .
7. McCatharn JM, Herbert KK, Wei R, Rowe ML. Circles of Support: Exploring the ‘Where’ and ‘Why’ of Parents’ of Infants Information Seeking Behaviors. *Journal of Child and Family Studies*. 2021; 31 (11): 2915-2928. DOI: <https://doi.org/10.1007/s10826-021-02124-w> .
8. Khajuria R, Gupta RK, Bhadwal AS, Khajuria A. Parental Knowledge, Attitude and the Practices Regarding Management of Childhood Bronchial Asthma. *JK Science: Journal of Medical Education & Research* [Internet]. 2023, 10 de julho [citado em 1 de dezembro de 2024];25(3):163-7. Available from: <https://journal.jkscience.org/index.php/JK-Science/article/view/205>
9. Bert F, Previti C, Calabrese F, Scaioli G, Siliquini R. Antibiotics Self Medication among Children: A Systematic Review. *Antibiotics (Basel)*. 2022; 11(11):1583. DOI: <https://doi.org/10.3390/antibiotics11111583> .
10. Niu ZM, Willoughby J, Zhou R. Associations of health literacy, social media use, and self-efficacy with health information-seeking intentions among social media users in China: cross-sectional survey. *J Med Internet Res.*, 2021; 23(2): 1-10. DOI: <https://doi.org/10.2196/19134> .
11. Van den Heuvel MI, Bülow A, Heininga VE, de Moor EL, Janssen LHC, Vanden Abeele M, *et al.* Tracking infant development with a smartphone: a practical guide to the experience sampling method. *Front Psychol*. 2021; 12:703743. DOI: <http://dx.doi.org/10.3389/fpsyg.2021.703743> .

12. Araujo JP, Gallo AM, Parada CMGL, Marcon SS, Ferrari RAP, Pinto KRTF, *et al.* Mobile applications as a strategy to support parents in the care of newborns: a scoping review. *Rev Esc Enferm USP*. 2023;57:e20220470. DOI: <https://doi.org/10.1590/1980-220X-REEUSP-2022-0470en> .
13. Mendes KDS, Silveira RCCP, Galvão CM. Use of the bibliographic reference manager in the selection of primary studies in integrative reviews. *Texto contexto - enferm* [Internet]. 2019. [acesso 22 de julho de 2023];28:e20170204. DOI: <https://doi.org/10.1590/1980-265X-TCE-2017-0204> .
14. Peters MDJ, Godfrey C, McInerney P, Baldini Soares C, Khalil H, Parker D. Chapter 11: Scoping Reviews. In: Aromataris E, Munn Z (Editors). *Joanna Briggs Institute Reviewer's Manual*. The Joanna Briggs Institute 2017. Available from: <https://reviewersmanual.joannabriggs.org/>
15. Lockwood C, *et al.* Chapter 2: systematic reviews of qualitative evidence. In: Aromataris E, Munn Z (Editors). *JBİ manual for evidence synthesis*. Adelaide: JBI (Australia); 2020.
16. Bolano CRS, Reis DA. Banda larga, cultura e desenvolvimento. *Nova Economia*. 2015; 25(2): 387–402. DOI: <https://doi.org/10.1590/0103-6351/2090> .
17. Melnyk BM, Fineout-Overholt E. *Evidence -based Practice in Nursing & Healthcare: A Guide to Best Practice*. 4nd Edition. Philadelphia (US): Wolters Kluwer. 2019; 2-32. Available from: [https://books.google.com.br/books?hl=pt-BR&lr=&id=EPaBEAAQBAJ&oi=fnd&pg=PT26&dq=Melnky+BM,+Fineout-Overholt+E.+Evidence+based+Practice+in+Nursing+%26+Healthcare:+A+Guide+to+Best+Practice.+4nd+Edition.+Philadelphia\(US\):+Wolters+Kluwer.++2019%3B+2-32&ots=PG4eQhJnBL&sig=KW3FJYbtRl6Wk9QZPyLHL2pWfK&redir_esc=y#v=onepage&q&f=false](https://books.google.com.br/books?hl=pt-BR&lr=&id=EPaBEAAQBAJ&oi=fnd&pg=PT26&dq=Melnky+BM,+Fineout-Overholt+E.+Evidence+based+Practice+in+Nursing+%26+Healthcare:+A+Guide+to+Best+Practice.+4nd+Edition.+Philadelphia(US):+Wolters+Kluwer.++2019%3B+2-32&ots=PG4eQhJnBL&sig=KW3FJYbtRl6Wk9QZPyLHL2pWfK&redir_esc=y#v=onepage&q&f=false)
18. Ministério da Saúde (BR). Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Ciência e Tecnologia. Diretrizes metodológicas: Sistema GRADE – Manual de graduação da qualidade da evidência e força de recomendação para tomada de decisão em saúde [Internet]. 2014 [cited Jul 3, 2023]. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/diretrizes_metodologicas_sistema_grade.pdf
19. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al.* A declaração PRISMA 2020: diretriz atualizada para relatar revisões sistemáticas. *Epidemiol. Serv. Saúde*. 2022; 31(2): e2022107. DOI: <http://dx.doi.org/10.1590/s167949742022000200033>.
20. Ha Manh T, Le Thi Ai M, Nguyen Tuan A, Le Viet T. Knowledge, attitudes and practices of mothers during care of children with acute respiratory infections under 5 years old. *International Journal of Africa Nursing Sciences* 2023;19:100613. DOI: <https://doi.org/10.1016/j.ijans.2023.100613>.
21. Carlson SJ, Jocelyne M, Kerrie W, Leaske J, Macartneyc K. Knowledge, attitudes and practices regarding influenza vaccination among parents of infants hospitalised for acute respiratory infection in Australia. *Public Health Res Pract*. 2022; 32 (4): e32012202. DOI: <https://doi.org/10.17061/phrp32012202>.
22. Manna N, Das S, Rahaman S, Das D. Parental knowledge of pneumococcal diseases and pneumococcal conjugate vaccines: A cross-sectional study in Immunization Clinic, Medical College, and Hospital, Kolkata. *National Journal of Physiology, Pharmacy and Pharmacology*. 2022;12(7): 1089-94. DOI: <https://doi.org/10.5455/njppp.2022.12.062641202210062022> .
23. Lee Mortensen G, Harrod-Lui K. Parental knowledge about respiratory syncytial virus (RSV) and attitudes to infant immunization with monoclonal antibodies. *Expert Review of Vaccines* 2022;21:1523–31. DOI: <https://doi.org/10.1080/14760584.2022.2108799>.

24. Sun J, Xu Y, Qu Q, Luo W. Knowledge of and attitudes toward COVID-19 among parents of child dental patients during the outbreak. *Braz Oral Res* 2020;34:e066. DOI: <https://doi.org/10.1590/1807-3107bor-2020.vol34.0066>.
25. Nouredin AA, Shaaban KM, Mohamed SOO, Abdalla AA, Mahmoud AAA, Salman MST. The knowledge attitude and practice (KAP) of mothers of asthmatic children toward asthma in Khartoum asthma clinics. *Sci Rep* 2019;9:12120. DOI: <https://doi.org/10.1038/s41598-019-48622-2>.
26. Hwang JH, Lim CH, Kim DH, Eun BW, Jo SD, Song YH, *et al.* A survey of parental perception and pattern of action in response to influenza-like illness in their children: including healthcare use and vaccination in Korea. *Journal of Korean medical science*. 2017; 32(2): 204-211. DOI: <https://doi.org/10.3346/jkms.2017.32.2.204>.
27. How CH, Chun PPS, Shafi F, Jaques RW. Parental knowledge, attitudes and perception of pneumococcal disease and pneumococcal conjugate vaccines in Singapore: a questionnaire-based assessment. *BMC public health*. 2016; 16(1): 1-10. DOI: <https://doi.org/10.1186/s12889-016-3597-5>.
28. Peeler A, Fulbrook P, Kildea S. The experiences of parents and nurses of hospitalised infants requiring oxygen therapy for severe bronchiolitis: a phenomenological study. *Journal of Child Health Care*. 2015; 19(2): 216-228. DOI: <https://doi.org/10.1177/1367493513503>.
29. Archibald MM, Samina VC, Ali S, Hartling L, Scott SD. What is left unsaid: an interpretive description of the information needs of parents of children with asthma. *Research in Nursing & Health*. 2015; 38(1): 19-28. DOI: <https://doi.org/10.1002/nur.21635>.
30. Zhao J, Shen K, Xiang L, Zhang G, Xie M, Bai J, Chen Q. The knowledge, attitudes and practices of parents of children with asthma in 29 cities of China: a multi-center study. *BMC pediatrics*. 2013;13(1): 1-6. DOI: <http://www.biomedcentral.com/1471-2431/13/20>
31. Driessens C, Mills L, Patel R, Culliford D, Gbesemete D, Lee E, *et al.* Psychological distress experienced by parents caring for an immunosuppressed child during the COVID-19 pandemic. *Journal of Psychiatric Research* 2023;161:273–81. DOI: <https://doi.org/10.1016/j.jpsychires.2023.03.021>.
32. Kegler JJ, Neves ET, Silva AM, Oliveira DC, Zamberlan KC. Factors associated with parental stress in a Neonatal Intensive Care Unit. *Acta Paul Enferm* 2023; 36:eAPE02061. DOI: <https://doi.org/10.37689/acta-ape/2023AO02061>
33. Fróes GF, Mendes EN, Pedroza GA, Cunha ML. Stress experienced by mothers of preterm newborns in a neonatal intensive care unit. *Rev Gaucha Enferm*. 2019; 41(spe):e20190145. DOI: <https://doi.org/10.1590/1983-1447.2020.20190145>.
34. Panjwani S, Garney WR, Wilson K, Goodson P, Hamie S. Continuity of maternal and infant care through integrated health service delivery networks in Latin America: a scoping review. *Health Policy and Planning*. 2023; 38: 766–776. DOI: <https://doi.org/10.1093/heapol/czad030>.
35. Dantuluri KL, Bonnet KR, Schlundt DG, Schulte RJ, Griffith HG, Luu A, *et al.* Antibiotic perceptions, adherence, and disposal practices among parents of pediatric patients. *PLoS ONE* 2023;18:e0281660. DOI: <https://doi.org/10.1371/journal.pone.0281660>.
36. Franken MMA, Veenstra-van Schie MTM, Ahmad YI, Koopman, Versteegh FGA. The presentation of a short adapted questionnaire to measure asthma knowledge of parents. *BMC pediatrics*. 2018; 18:1-6. DOI: <https://doi.org/10.1186/s12887-018-0991-4>.

37. Silva, ÍS, Lira MLA, Souza AEB, Cavalcante EFO, Andrade FB. Modelo lógico-teórico como ferramenta de planejamento para melhoria da cobertura vacinal infantil no Rio Grande do Norte, Brasil. *Revista Ciência Plural*. 2023; 9 (3): 1–20. DOI: <https://doi.org/10.21680/2446-7286.2023v9n3ID29226>.
38. Bramer CA, Kimmins LM, Swanson R, Kuo J, Vranesich P, Jacques-Carroll LA, *et al.* Decline in Child Vaccination Coverage During the COVID-19 Pandemic – Michigan Care Improvement Registry, May 2016–May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:630–1. DOI: <https://doi.org/10.15585/mmwr.mm6920e1>.
39. Costa P, Menezes N, Andrade P, Hino PH, Taminato M. Adesão à vacinação contra influenza. *Revista de Enfermagem UFPE on line*, 2019; 13 (4): 1151–1156. DOI: <https://doi.org/10.5205/1981-8963-v13i4a238331p1151-1156-2019>
40. Araújo DABS, Correia LL, Lima PLGDSB, Vasconcelos SC, Farías-Antúnez S, Gomes YVC, *et al.* Coverage and determinants of childhood vaccination during the COVID-19 pandemic in Fortaleza, Northeastern Brazil: a longitudinal analysis. *Cad Saúde Pública* 2024;40:e00074723. DOI: <https://doi.org/10.1590/0102-311xen074723>.

Conflicts of interest: No
Submission: 2025/06/03
Revised: 2026/03/06
Accepted: 2026/03/06
Publication: 2026/16/07

Editor in Chief or Scientific: José Wicto Pereira Borges
Associate Editor: Ingrid Martins Leite Lúcio

Authors retain copyright and grant the Revista de Enfermagem da UFPI the right of first publication, with the work simultaneously licensed under the Creative Commons Attribution BY 4.0 License, which allows sharing the work with acknowledgment of authorship and initial publication in this journal.