Main Causes Of Vaccine Hesitation In Parents: Integrative Review

Principais Causas de Hesitação Vacinal Em Pais: Revisão Integrativa

Principales Causas de Vacunación En Padres: Revisión Integrativa

RESUMO

Objetivo: Analisar os principais fatores que contribuem para hesitação vacinal de pais e responsáveis. **Metodologia:** Revisão integrativa de literatura, abrangendo estudos publicados entre 2019 e 2024, nas bases de dados *PubMed, Cochrane Evidence Synthesis and Methods* e Portal Regional da Biblioteca Virtual em Saúde (BVS). **Resultados:** a hesitação varia conforme o tipo de vacina, sendo maior para a mais recente, COVID-19, e menor para vacinas tradicionais. Os principais aspectos identificados para hesitação vacinal de pais são as preocupações com a segurança e possíveis efeitos colaterais das vacinas, desconfiança em relação aos sistemas de saúde, e o impacto de informações incorretas, especialmente nas redes sociais. **Conclusão:** A identificação de causas e fatores relacionados à hesitação vacinal é primordial para elaboração de políticas públicas que promovam a conscientização e adaptem a comunicação conforme as especificidades culturais e regionais, melhorando a aceitação das vacinas entre os pais.

DESCRITORES: Hesitação vacinal, causalidade, pais.

ABSTRACT

Objective: To analyze the main factors that contribute to vaccine hesitancy among parents and guardians. **Methodology:** Integrative literature review, covering studies published between 2019 and 2024, with the aim of identifying the causes of vaccine hesitancy among parents, in the PubMed, Cochrane Evidence Synthesis and Methods and Regional Portal of the Virtual Health Library (BVS) databases, which includes the Latin American and Caribbean Literature in Health Sciences (LILACS). **Results:** Hesitancy varies according to the type of vaccine, being higher for the most recent, COVID-19, and lower for traditional vaccines. The main aspects identified for vaccine hesitancy among parents are concerns about the safety and possible side effects of vaccines, distrust of health systems, and the impact of incorrect information, especially on social media. **Conclusion:** Identifying the causes and factors related to vaccine hesitancy is essential for developing public policies that promote awareness and adapt communication according to cultural and regional specificities, improving vaccine acceptance among parents.

DESCRIPTORS: Vaccine hesitancy, causality, parents.

RESUMEN

Objetivo: Analizar los principales factores que contribuyen a la reticencia vacunal en padres y tutores. **Metodología:** Revisión integrativa de la literatura, que abarca estudios publicados entre 2019 y 2024, con el objetivo de identificar las causas de la reticencia vacunal en los padres, en las bases de datos PubMed, Síntesis y Métodos de Evidencia Cochrane y Portal Regional de la Biblioteca Virtual en Salud (BVS), que incluye Literatura Latinoamericana y del Caribe en Ciencias de la Salud (Lilas). **Resultados:** la vacilación varía según el tipo de vacuna, siendo mayor para la más reciente, la COVID-19, y menor para las vacunas tradicionales. Los principales aspectos identificados para las dudas de los padres sobre las vacunas son las preocupaciones sobre la seguridad y los posibles efectos secundarios de las vacunas, la desconfianza en los sistemas de salud y el impacto de la información incorrecta, especialmente en las redes sociales. **Conclusión:** Identificar causas y factores relacionados con la reticencia a vacunarse es esencial para desarrollar políticas públicas que promuevan la concientización y adapten la comunicación de acuerdo con las especificidades culturales y regionales, mejorando la aceptación de las vacunas entre los padres.

DESCRIPTORES: Renuencia a vacunarse, causalidad, padres.

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INTRODUCTION

The advent of vaccines represents one of the greatest scientific advances in humanity. Thanks to these interventions, Brazil received certification of elimination of poliomyelitis in 1994 [1] and eradicated smallpox in 1971. [2] However, despite this progress, in recent years there has been a worrying decline in vaccination uptake, with a consequent decrease in vaccination coverage.

According to the Butantan Institute, the MMR vaccine against measles, mumps and rubella recorded only 71.4% coverage in 2017, well below the established target of 90%, and in 2020, the Ministry of Health confirmed 7,718 cases of measles in Brazil. This increase was also associated with the impact of the COVID-19 pandemic. [3] Regarding the Americas, the World Health Organization (WHO) reported that, in 2022, polio vaccination coverage fell to 72%, the lowest percentage ever recorded. [4]

Several factors contribute to the drop in vaccination coverage, such as the COVID-19 pandemic; the spread of misinformation, especially on social media; and the influence of anti-vaccine movements have generated distrust and fear regarding the safety and efficacy of immunobiologicals. [5] This phenomenon, known as vaccine hesitancy, has been classified by the WHO as one of the ten main threats to global public health.

Vaccine hesitancy is defined as "a motivational state of conflict or opposition to vaccination, including intentions and predispositions". [6] This phenomenon has become a critical global public health issue, as it undermines mass immunization efforts, which are essential to eradicating preventable diseases.

Misinformation and lack of knowledge about the benefits of vaccines are also significant factors contributing to hesitancy, particularly among parents. Misinformation about vaccines exacerbates this problem. A notable example is Andrew Wakefield's 1998 paper suggesting a link between the MMR vaccine and autism. Although this claim has been widely debunked by successive studies, it has contributed to widespread distrust.

A study conducted by UNICEF indicates that many parents vaccinate their children only to meet requirements, such as presenting their school vaccination record, or to maintain benefits offered by the government, such as the Bolsa Família program. [7]

According to a meta-analysis study in 30 countries, the prevalence of vaccine hesitancy among parents of children aged 0 to 6 years was 21.1%, with heterogeneity among countries with different income levels. In the Americas, the percentage was 13.3%, and in the eastern Mediterranean region, the average prevalence was 27.9%. [8]

Studies indicate that, in high-income countries, differences in vaccine hesitancy among parents are often related to greater access to education, as well as the availability of more detailed information about vaccination. In addition, higher levels of education and diversity of perspectives can significantly influence the decision-making process regarding im-

munization, broadening the spectrum of reasons why parents choose to hesitate or not vaccinate their children. In short, each country or society has its own particularities that shape these choices. [9]

Undoubtedly, health professionals play a crucial role in vaccination adherence in all age groups.

> "A transmissão eficiente de informações sobre os benefícios, os riscos, as necessidades e a segurança das vacinas, pode gerar confiança e influenciar positivamente a decisão dos pais de vacinar seus filhos[10]."

Efficiently communicating information about the benefits, risks, needs and safety of vaccines can generate confidence and positively influence parents' decision to vaccinate their children. [10]

Therefore, since vaccine hesitancy puts the health of children who are not vaccinated at risk and compromises herd immunity, it is necessary to know the reasons why parents have hesitated to vaccinate their children, since understanding these factors can help health professionals approach them in order to ensure greater adherence to immunization campaigns. Therefore, the following question was used as a guide for the research: What are the causes of vaccine hesitancy among parents?

Therefore, this study aims to analyze the main factors that contribute to vaccine hesitancy among parents and guardians of children.

METHOD

This work uses the integrative literature review methodology and its objective is to synthesize primary studies on vaccine hesitancy in parents. This type of methodology allows the construction of a complete and comprehensive view of studies on the subject in question. In addition, it includes research with different methodological approaches (quantitative, qualitative, theoretical or mixed), which broadens the understanding of the topic. [8]

The integrative review involves the following steps: formulation of the research question; definition of inclusion and exclusion criteria; literature search; assessment of the quality of the studies; data extraction and analysis; synthesis of the results and presentation and discussion of the results. [11]

Thus, the specific research question was: what are the causes of vaccine hesitancy among parents? The searches for studies were carried out from 08/19/2024 to 10/15/2024, using the PubMed, Cochrane Evidence Synthesis and Methods and Regional Portal of the Virtual Health Library (VHL) databases, which includes the Latin American and Caribbean Literature in Health Sciences (LILACS), ensuring the inclusion of peer-reviewed articles.

The following search strategy was used: (("vaccination hesitancy" OR "hesitancy, vaccination" OR "vaccination hesitancies" OR "vaccination delay" OR "vaccination delays" OR "vaccine hesitancy" OR "hesitancy, vaccine" OR "vaccine hesitancies" OR "vaccine delay") AND (causality OR casualties OR "enabling factors" OR "multifactorial causality" OR "multifactorial casualties" OR "multiple causations" OR "predisposing factors" OR causation OR causations) AND (parents OR parent OR "parenthood status")). The Boolean operators AND and OR were used to optimize the search mechanisms. Equivalent search strategies were adopted in the other databases.

The inclusion criteria were primary studies published in the last five years that were available and addressed vaccine hesitancy in parents. There was no language restriction. The exclusion criteria adopted were review studies, letters, editorials, dissertations and theses, as well as commentaries, opinion pieces and essays.

The selection of articles was carried out manually in two stages. First, the titles and abstracts were analyzed to verify relevance and suitability for the inclusion criteria. Then, the full texts of the potentially selected articles were evaluated in detail. Three evaluators conducted the entire selection process, ensuring the accuracy of the results. In cases of disagreement between the evaluators, a fourth evaluator was consulted to make the final decision. Figure 1 shows the flowchart of the strategy used in the selection of articles.

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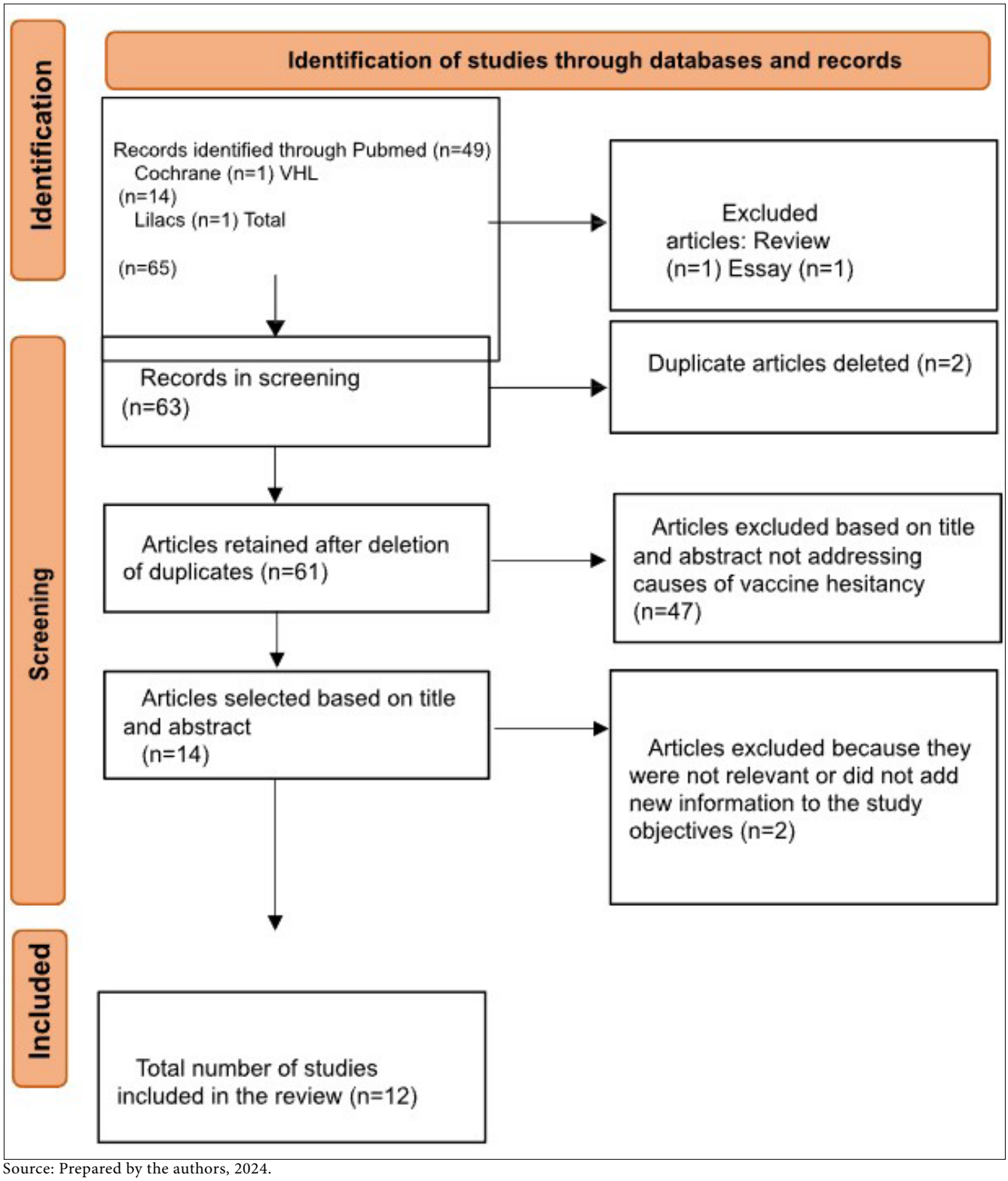
Figure 1: Sample selection flowchart of studies included in the integrative review, prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Itaúna, (MG), Brazil, 2024.



Source: Prepared by the authors, 2024.

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RESULTS

After applying the search engines, 65 articles were found in the electronic databases on the topic of parental vaccine hesitancy related to the main causes. After applying the exclusion filters, 10 articles met the eligibility criteria and were selected for review, namely: 10 from Pubmed (80%) and 2 from BVS (20%). The summary of the selected studies is described in Table 1. Most of the studies addressed specific types of vaccines, with emphasis on those related to COVID-19 and HPV. The United States stood out as the country that investigated the associated factors the most. Studies with a qualitative approach predominated, and the age group most frequently analyzed was children between 5 and 11 years old.

After the COVID-19 pandemic, there was a significant increase in interest and scientific publications on vaccine hesitancy. The increase in research can be explained by several factors, including the context of the pandemic with the introduction of new vaccines, increased misinformation, impact on public health policies and expansion of study parameters, which generated a greater production of data, recommendations and intervention strategies to deal with this public health problem.

Table 1 – Summary of articles included in the review

Title	Author/Year	Objective	Outcome
Weighing the risks and benefits: Parental perspectives on COVID-19 vaccines for 5- to 11-year-old children	Anushka Ataullahjan; et al Ano 2024	To understand the factors that influence parents' decisions regarding COVID-19 vaccination of children aged 5–11 years.	Parents who advocate freedom of choice prioritize the individual well-being of their children, even if it impacts the community. Hesitancy is higher for vaccines with more scientific debate.
Comparison of parent-reported motivators of non-vaccination for children 5-11 years old in Australia and Canada: Results of the iCARE study	Frédérique Deslauriers; et al Ano 2024	To assess and compare parental acceptance rates and reported motivators for vaccinating and not vaccinating children aged 5–11 years against COVID-19 in Canada and Australia during the first 9 months of vaccine availability.	Concerns varied by vaccine type, with lower concerns for DTaP and MMR. Concerns about the flu vaccine were related to personal experience and perceived risk. COVID-19 vaccines generated the greatest concerns due to infant immunity.
Identifying the intersection of parental HPV and COVID-19 vaccine hesitancy to inform health messaging interventions in community-based settings	Samantha Garcia; et al Ano 2024	To examine the relationship between parental hesitancy to vaccinate their children against HPV and intention to vaccinate their children against COVID-19, in order to inform interventions and health messages in communities with low vaccine uptake.	Parental vaccination decisions are influenced by several factors, such as misinformation about vaccine-preventable diseases.
Reticencia vacunal: análisis del discurso de madres y padres con rechazo total o parcial a las vacunas / Vaccine hesitancy: discourse analysis of parentswho have not fully or partially vaccinated their children	Cruz Piqueras; et al Ano 2019	To analyze and understand the narratives of vaccine reluctance, particularly those of individuals who have decided not to vaccinate their children.	Concerns about complacency were highest among pregnant women and mothers. Convenience was generally viewed positively.
Attitudes Toward Routine Vaccines and COVID-19 Vaccines Among Parents of Infants and Toddlers in an Urban Safety-Net Setting	Margaux Zimmerman; et al Ano 2024	To explore the attitudes of English- and Spanish-speaking parents of infants toward DTaP, MMR, influenza, and COVID-19 vaccines in a safety-net setting.	The highest hesitancy was toward the COVID-19 vaccine (55.9%) and the lowest hesitancy toward routine vaccines (12.2%).
Parental knowledge and attitudes to infant immunization in the context of RSV: All about confidence?	Simon Langer; et al Ano 2024	To assess parental knowledge and attitudes toward childhood vaccines in general and the new respiratory syncytial virus (RSV) vaccines. The aim was to understand how parents perceive these vaccines and their impact on child health.	Vaccine hesitancy is caused by insufficient knowledge, misinformation from unreliable sources, the impact of sensationalist media on possible adverse effects, and specific concerns, such as the HPV vaccine. The solution is to provide reliable information and educate parents. confiáveis e educar os pais.
Influenza vaccination hesitancy in large urban centers in South America. Qualitative analysis of confidence, complacency and convenience across risk groups	Miguel Ángel González-Block; et al Ano 2021	To analyze the determinants of hesitancy regarding influenza vaccination in South American countries, using the 3C model (confidence, complacency, and convenience) among urban risk groups in Brazil, Chile, Paraguay, Peru, and Uruguay.	Vaccine hesitancy is associated with factors such as lower educational level, greater religiosity, and younger population. Hesitant parents demonstrate lower trust in doctors and in new vaccines.

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Parental hesitancy about COVID-19, influenza, HPV, and other childhood vaccines	Tammy A Santibanez, Carla L Black, Tianyi Zhou, Anup Srivastav , James A Singleton Ano 2024	To assess parental knowledge and attitudes toward vaccination and the prevalence of hesitancy toward specific vaccines (COVID-19, influenza, HPV, and routine vaccines) among parents of children aged 6 months to 17 years.	A maior hesitação foi à vacina contra COVID-19 (55,9%) e a menor em relação a vacinas de rotina (12,2%).
A favorable impression of vaccination leads to a better vaccination rate for the human papillomavirus vaccine: A Japanese questionnaire survey investigation	Sinchul Jwa; et al Ano 2022	To investigate the factors contributing to the low acceptance rates of the HPV vaccine in Japan.	To investigate the factors contributing to the low acceptance rates of the HPV vaccine in Japan.
Mistrust of the medical profession and higher disgust sensitivity predict parental vaccine hesitancy	Rebekah Reuben; et al Ano 2020	Understand the demographic and attitudinal predictors of parental hesitancy to vaccinate their children.	A hesitação vacinal associada a fatores como menor nível educacional, maior religiosidade e população mais jovem. Pais hesitantes demonstram menor confiança nos médicos e nas novas vacinas.

Source: Prepared by the authors, 2024.

DISCUSSION

A 2024 cross-sectional study conducted by the University of Southern California found that vaccine hesitancy is particularly prevalent among racial/ethnic minorities and low-income families, and is associated with exposure to negative information about vaccines. The results suggest that vaccination campaigns that consider cultural diversity and provide reliable information can overcome barriers, promoting greater uptake among vulnerable groups. [12]

A comprehensive survey revealed significant variations in vaccine hesitancy by vaccine type. Approximately 55.9% of parents were hesitant about the COVID-19 vaccine; 30.9% were hesitant about the flu vaccine; 30.1% were hesitant about the HPV vaccine; and 12.2% of parents were hesitant about routine vaccines such as measles, polio, and tetanus. These data highlight the need for targeted communication approaches that address specific parental concerns to promote greater uptake. [13]

A qualitative focus group study conducted in Toronto with parents and caregivers of children aged 5 to 11 years has highlighted the complex dynamics of vaccine hesitancy. Participants selected from a quantitative survey conducted in 650 schools and two community health centres expressed concerns about disease spread, severity, potential side effects and social pressure. However, the balance of these factors varied, resulting in uncertainty about vaccination. COVID-19 vaccine hesitancy was particularly associated with safety concerns and fear of adverse effects, which contributed to lower vaccination rates among children in this age group compared to adolescents and adults. [14]

A similar study of 32 English- and Spanish-speaking parents of infants in a health care network found that while most supported routine vaccinations, concerns varied by vaccine type. Few parents expressed concerns about the DTaP and MMR vaccines, but the flu vaccine generated concerns due to the risk of flu-like symptoms. The greatest resistance was to the COVID-19 vaccine, based on the infants' perception of natural immunity. This study suggests that future interventions could strengthen acceptance by highlighting general benefits and addressing specific concerns about each vaccine type. [15]

iCare, in an internationally focused study, investigated public perceptions of public health policies and COVID-19 in Australia and Germany. The study found that vaccine hesitancy is largely influenced by low trust in government and health professionals, lack of accessible and clear information, fears of side effects, and distrust of coercive vaccination policies. Transparent and respectful communication strategies, as well as combating misinformation, were recommended to restore public trust. [16]

In Spain, a qualitative study of parents who chose not to vaccinate their children revealed an alternative belief system to the biomedical model, emphasizing the right to autonomy and responsibility for the individual well-being of children. These parents cited concerns about the simultaneous administration of multiple vaccines at early ages and doubts about changes in vaccination schedules. This discourse highlights the conflict between individual and collective interests, in which these

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parents prioritize individual well-being over community impacts. [17]

In addition to the COVID-19 vaccine, HPV vaccination has also faced resistance. In the United States, HPV vaccination still falls short of the 80% coverage target. Approximately one-third of parents refuse or delay this vaccine for adolescents, a higher hesitancy rate than for other routine vaccines, leading to frustration among health care providers who lack the time to address parental concerns. The phenomenon of "secondary acceptance"—when parents accept vaccination after initially refusing it—is poorly understood, but identifying factors that encourage this acceptance could improve counseling strategies. [18]

Studies show that hesitancy related to the HPV vaccine persists due to cultural and structural barriers. In Japanese culture, for example, research has found that positive impressions of vaccines are correlated with higher HPV vaccination rates, indicating that cultural approaches and clear information are effective in improving acceptance. [18]

Vaccine hesitancy remains a challenge for immunization programs, especially among uncertain parents who may be influenced by reliable information. Access to clear data on the benefits and risks of vaccines and preventable diseases is essential to reduce uncertainty and encourage pro-immunization decisions. Information campaigns need to be clear and transparent to increase parental confidence and strengthen vaccine uptake. [19]

Online misinformation and conspiracy theories have fueled vaccine hesitancy, affecting perceptions of vaccine safety. While immunization plays an essential role in protecting the population directly and indirectly (herd immunity), growing resistance highlights the value of educational campaigns that educate the public about common myths, such as the link between vaccines and autism, unfounded theories about mRNA vaccines, and vaccine components. [20]

In this way, distrust of medicine and health professionals affects parents' attitudes toward vaccination.

> "Parents who do not trust their children's doctors seek information online, where the abundance of content emphasizing the alleged dangers of vaccines increases hesitancy."

Traditional vaccination promotion strategies, such as corrective information, have been shown to be ineffective in reducing hesitancy, suggesting that combining scientific facts with engaging narratives may be more successful in promoting vaccination. [21]

CONCLUSION

This integrative review identified multiple factors that influence vaccine hesitancy among parents, revealing the complexity of decisions about childhood immunization. Among the main aspects identified were concerns about the safety and possible side effects of vaccines, distrust of health systems, and the impact of incorrect information, especially on social media. It was observed that hesitancy varied according to the type of vaccine, being more common for recent vaccines, such as the COVID-19 vaccine, and less frequent for routine vaccines.

The analysis highlighted the influence of anti-vaccine movements and misinformation on vaccine hesitancy, which reinforces the need for educational campaigns that clarify myths and provide evidence-based information. In addition, trust in health professionals is a determining factor for vaccine adherence, indicating that effective communication strategies can positively influence parents' decision to immunize their children.

Finally, the results suggest that public policies aimed at education and awareness, as well as cultural and regional approaches, are essential to address vaccine hesitancy. Therefore, the need for further studies on the topic is highlighted, as well as for establishing interventions that align accessible scientific information to combat misinformation, promoting safety and trust in vaccines for better adherence to childhood immunization.

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