Strategies of municipalities in Minas Gerais to increase COVID-19 vaccination coverage in children

Estratégias dos municípios mineiros para aumentar a cobertura vacinal de crianças contra a COVID-19

Estrategias de los municipios mineros para aumentar a cobertura vacunal para niños contra el COVID-19

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Abstract

Objective: To understand which strategies were adopted by municipalities to achieve COVID-19 vaccination coverage in children.

Methods: Qualitative intervention study conducted by the Vaccination Studies and Research Center of the UFMG School of Nursing, in collaboration with the State Department of Health of Minas Gerais. Participation of 212 municipalities in the study with a decreasing trend in vaccination coverage rates in children under two years of age. Eight workshops were held to prepare the action plan to combat low vaccination coverage rates. The workshops were audio recorded and transcribed, and the material was analyzed in three steps.

Results: The content analysis of the workshops highlighted three categories: "Intersectoral actions used by municipalities as a strategy to achieve COVID-19 vaccination coverage among children"; "Continuing education actions for healthcare staff" and "Reorganization of work processes in vaccination rooms". In the first category, coordinated actions with social services, education, spaces for political debate and other agents were described. In the second, continuing education actions both with the nursing team working in vaccination rooms and with professionals providing care to children and adolescents were mentioned. In the third category, the difficulties of working in vaccination rooms were highlighted, explaining the need to reorganize and optimize work in this location.

Conclusion: COVID-19 vaccination in children has been a major challenge for managers, epidemiological surveillance coordinators, nurses and nursing technicians in the vaccination room. Despite the efforts of health teams, it was not possible to achieve the vaccination coverage target, which shows the complexity of the vaccination scenario and the need to join forces from different sectors to increase the coverage in children's population.

Keywords
Child health; Vaccination coverage; Vaccination hesitancy; COVID-19 vaccines

Resumo

Objetivo: Compreender quais foram as estratégias adotadas pelos municípios para atingir a cobertura vacinal de crianças contra COVID-19.

Métodos: Estudo de abordagem qualitativa no âmbito de uma pesquisa-intervenção conduzida pelo Núcleo de Estudos e Pesquisa em Vacinação da Escola de Enfermagem da UFMG, em colaboração com a Secretaria de Estado de Saúde de Minas Gerais. Participaram do estudo 212 municípios com tendência decrescente nas taxas de cobertura vacinal em crianças menores de 2 anos. Foram realizadas 8 oficinas para a elaboração do plano de ação de combate às baixas taxas de cobertura vacinal. As oficinas foram registradas em áudio e transcritas, sendo esse material analisado em três etapas.

Resultados: A análise de conteúdo das oficinas evidenciou três categorias: "Ações intersetoriais utilizadas pelos municípios como estratégia para atingir a cobertura da vacinação de COVID-19 no público infantil"; "Ações de educação permanente para equipe de saúde" e "Reorganização de processos de trabalho nas salas de vacina". Na primeira, ações coordenadas com a assistência social, a educação, os espaços de debate político e outros agentes foram descritas. Na segunda categoria, foram citadas ações de educação permanente tanto com a equipe de enfermagem que atua na sala de vacina quanto com profissionais que realizam atendimento de crianças e adolescentes. Na última categoria, as dificuldades do trabalho nas salas de vacinação foram evidenciadas, explicitando a necessidade de reorganizar e otimizar o trabalho nesse local.

Conclusão: A vacinação contra COVID-19 em crianças tem sido um grande desafio para os gestores, coordenadores de vigilância epidemiológica, enfermeiros e técnicos de enfermagem na sala de vacina. Mesmo diante dos esforços das equipes de saúde, não foi possível alcançar a meta de cobertura vacinal, o que mostra a complexidade do cenário vacinal e a necessidade de unir forças de diversos setores para aumentar a cobertura vacinal infantil.

Descritores
Saúde da Criança; Cobertura Vacinal; Hesitação vacinal; Vacinas contra COVID-19

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Resumen

Objetivo: Comprender qué estrategias adoptaron los municipios para lograr la cobertura de vacunación infantil contra el COVID-19.

Métodos: Estudio cualitativo en el ámbito de una investigación de intervención realizada por el Centro de Estudios e Investigaciones en Vacunación de la Escuela de Enfermería de la UFMG, en colaboración con la Secretaría de Salud del Estado de Minas Gerais. En el estudio participaron 212 municipios con una tendencia decreciente en las tasas de cobertura de vacunación en niños menores de 2 años. Se realizaron 8 talleres para elaborar el plan de acción para combatir las bajas tasas de cobertura de vacunación. Los talleres fueron grabados en audio y transcritos, siendo este material analizado en tres etapas.

Resultados: El análisis de contenido de los talleres destacó tres categorías: "Acciones intersectoriales utilizadas por los municipios como estrategia para lograr la cobertura de vacunación COVID-19 entre los niños"; "Acciones de educación continua al personal de salud" y "Reorganización de procesos de trabajo en salas de vacunación". En el primero se describieron acciones coordinadas con asistencia social, educación, espacios de debate político y otros agentes. En la segunda categoría se mencionaron acciones de educación continua tanto con el equipo de enfermería que trabaja en la sala de vacunación como con los profesionales que brindan atención a niños y adolescentes. En la última categoría se destacaron las dificultades de trabajar en las salas de vacunación, lo que explica la necesidad de reorganizar y optimizar el trabajo en esta ubicación.

Conclusión: La vacunación contra COVID-19 en niños ha sido un gran desafío para directivos, coordinadores de vigilancia epidemiológica, enfermeros y técnicos de enfermería en la sala de vacunación. A pesar de los esfuerzos de los equipos de salud, no fue posible alcanzar la meta de cobertura de vacunación, lo que muestra la complejidad del escenario de vacunación y la necesidad de sumar esfuerzos de diferentes sectores para incrementar las coberturas de vacunación infantil.

Descriptores

Salud infantil; Cobertura de vacunación; Vacilación a la vacunación; Vacunas contra la COVID-19

Introduction

At the end of 2019, the world became aware of a new type of coronavirus detected in Wuhan, the People's Republic of China, and it became a public health emergency in early 2020.[1] Faced with such a global emergency, the vaccine against the COVID-19 virus was developed in record time. However, the development and subsequent distribution of immunobiological agents to countries was not the only variable involved in the search for population immunization; an efficient mass vaccination program was necessary to guarantee the access.[2,3]

The Brazilian National Immunization Program (Portuguese acronym: PNI) was formulated in 1973 and institutionalized in 1975 with the objective of guiding immunization actions throughout the national territory.[4] Given the pandemic context, in January 2021, the performance of this program culminated in the beginning of the national vaccination campaign against COVID-19, which currently offers the Astrazeneca, Janssen, Pfizer and Coronavac vaccines to combat the virus in the country. There was an anti-vaccine movement worldwide in this period, and Brazil was already experiencing a reduction in routine vaccine coverage, especially booster doses.[5]

Vaccinating children against COVID-19 represented progress against the pandemic, as individuals aged 6 months to 12 years are also victims of the disease and contribute to its transmission. Furthermore, the discontinuity of school life and the family anguish caused by the infection of children and adolescents represent losses beyond the spectrum of mortality and morbidity.[6] Even with the authorization of vaccination of children aged 5-11 years issued by ANVISA in 16/12/2021, and the approval for immunization of the population aged 6 months to 4 years issued just less than a year later, vaccination coverage for this age range is still unsatisfactory.[7]

Since the beginning of the campaign, more than 585.6 million doses of immunobiological agents have been distributed throughout the territory. Logistics and travel difficulties inherent to a continental and diverse homeland like Brazil have been faced in this process. In the distribution of vaccines under the primary scheme, no Federative Unit managed to reach the vaccination coverage target of 90% for any of these age groups. In the state of Minas Gerais, the first dose was applied in only 56.04% of this target audience.[8]

In the context of childhood vaccination, it is important to highlight the relevance of vaccination not only as an instrument for modifying epidemiological realities, but also as an agent for promoting the mental health of individuals in this age group.

In this sense, vaccination against COVID-19 was marked by profound political, social and organizational issues, a phenomenon that has been discussed in countless studies.[2,9] However, studies bringing together managers, nurses and representatives of surveillance and primary care to discuss the obstacles and, above all, share strategies for coping with this phenomenon and achieve better vaccination coverage have not been developed in Brazil yet. In this sense,

the following question was raised: what were the strategies adopted by municipalities in an attempt to achieve COVID vaccination coverage in children? The objective of this study is to understand the strategies adopted by municipalities to achieve COVID-19 vaccination coverage in children.

Methods

A qualitative intervention study included in the umbrella project entitled "Strategies for Increasing Vaccination Coverage in Children Under two years of age in the state of MG: an Action Research". The study was conducted by the Vaccination Studies and Research Center (Portuguese acronym: NUPESV) of the UFMG School of Nursing (Portuguese acronym: EEUFMG), in collaboration with the State Department of Health of Minas Gerais (Portuguese acronym: SES-MG).

The scenario were eight Regional Health Superintendencies (Portuguese acronym: SRS) in the state of Minas Gerais. Regional Health Superintendencies are organizations created with the purpose to coordinate the management of the state health system in different regions of the state, thereby ensuring access to quality health and the implementation of health policies through the monitoring and performance of activities related to this objective.

To select the municipalities for this qualitative stage, 212 municipalities with a decreasing trend in vaccination coverage rates in children under two years of age were considered. The decreasing trend was assessed in a previous stage that involved an ecological study. Health professionals from different areas and categories who worked directly or indirectly with vaccination/immunization in the 212 municipalities identified with a low vaccination coverage rate were invited to participate in the study.[10] Inclusion criteria comprised workers from the SRS municipalities involved with the vaccination, municipal managers, surveillance and primary health care coordinators, members of the national council of municipal health departments and individuals over 18 years of age. Workers, managers or members of surveillance and primary care coordination who were on vacation were excluded from the study. Representatives from 160 of these municipalities participated in the study.

The proposed intervention involved offering a workshop with focus groups (FG) designed and conducted by NUPESV members for the development of an action plan to combat low vaccination coverage rates. The invitation to municipalities and the programming of workshops were carried out by the respective SRS headquarter. Representatives of the 160 municipalities with low vaccination coverage rates went to the SRS headquarters/central on the scheduled day and time, when workshops were held. The data collection team was made up of members from SES-MG and the UFMG School of Nursing (EEUFMG) who traveled to the host city of each SRS.

From 7 March to 1 June, 2023, eight workshops were held in the eight SRS headquarters. Before the workshops, the municipalities received an "Instruction for Monitoring Indicators" via SRS containing a description of the strategic axes and indicators to be monitored for prior discussion during the workshops. The activities began with questions that triggered discussion.[10]

The final sample corpus resulted from FGs held during the workshops and included a total of 515 participants from 160 municipalities across the eight SRS. All workshops were audio recorded and transcribed by the previously trained team of transcriptionists. Transcripts were reviewed by a faculty member. As a large volume of data resulted from this process, all material was organized and managed using the MaxQda software, totaling 436 pages of pre-analyzed material.

The analysis of this material followed the guidance of Bardin's content analysis (2010) divided into three steps. Pre-analysis consists of the initial organization of the material, including skim reading and reviewing the objectives of the work. In the material exploration step, the objective is to categorize and code the material. Finally, the third step of data processing refers to inferences and interpretations combined with the objective of the work. The SRS were identified numerically from one to eight (SRS-1, SRS-2 and so on) to guarantee anonymity and for data categorization and analysis purposes.

This study was approved by the research ethics committee number 5709396 of the Universidade Federal de Minas Gerais under number CAAE: 58407122.4.0000.5149. All ethical precepts of the res-

olution n.466 of 2012 of the National Health Council (CNS) were followed.

Results

Most of the 515 participants were managers, health surveillance and primary care professionals. Approximately 89% were female, average age of 38 years, ranging between 21 and 64 years. Note that 98% had higher education and 44% had specialization in the area. Regarding employment, 65% had a permanent employment status, while 26% were under temporary contract and the remaining 9% held commissioned positions. Among all interviewees, 45% performed functions directly related to immunization, with an average of 11 years of work experience in this field. The content analysis of the workshops highlighted three categories: "*Intersectoral actions used by municipalities as a strategy to achieve COVID-19 vaccination coverage among children*"; "*Continuing education actions for healthcare staff*" and "*Reorganization of work processes in vaccination rooms*".

Category 1. Intersectoral actions used by municipalities as a strategy to achieve COVID-19 vaccination coverage among children

One of the strategies used by municipalities to improve COVID-19 vaccination coverage in children and adolescents was the adoption of intersectoral actions with social services and education, whose aim is to protect the right of children and adolescents to immunization.

> *"We also make great use of the partnership with CRAS [social assistance reference center], Happy Child is a program that serves many families, and we also organize days that are considered a specific day, we put on painting and bring painting so children can color, a little surprise, now we've set up that children's wing in a specific location, especially during COVID, so we form these partnerships with other bodies too, social, education, we have a good partnership with schools" (SRS-1).*
> *"Now a partnership with the Guardianship Council to notify parents who do not authorize the COVID-19 vaccination of children and adolescents, and we are having a very good return with these actions we've developed" (SRS-6)*

Some cities had space in political debate venues to bring up immunization-related issues, especially COVID-19 vaccination in children, which was considered a challenge by many workshop participants.

> *"We participated in a public hearing at the municipal council of [name of the municipality] and there we also asked to speak, so we used these resources and we were successful, of course with children, right, in relation to COVID we had a bit of difficulty in acceptability at the beginning, the awareness allowed us to reach a very interesting level" (SRS-1).*

Some participants reported active search actions and the association with social benefits which, even if misinterpreted by those responsible for the children, increased vaccination coverage.

> *"In March, we carried out a survey together with the Department of Education, in which teachers gave students a piece of paper to take home so parents could mark whether or not the child had already been vaccinated. It was for the purpose of the survey really, but then some 'positive' fake news emerged among parents that if they didn't vaccinate these children, they could lose rights and all, and that week and the following week, there was a huge increase in demand" (SRS-3).*

Category 2. Continuing education actions for healthcare staff

They reported actions carried out both for continuing education and more effective communication with nurses and nursing technicians in vaccination rooms, as well as with professionals who provide care to children and adolescents.

> *"So, I sat down with the pediatrician in our city. She does not recommend vaccines and I sat down with her, explained her the situation and said: your personal and political opinion is your personal and political opinion, here you are a professional and I want you to act like a professional, your personal cannot break into your professional" (SRS-4).*

Category 3. Reorganization of work processes

During the workshops, they highlighted the difficulties of concomitant routine vaccination and COVID-19 vaccination for various age groups, including children and adolescents. This required a new form of work organization in vaccination rooms in order to reduce the risk of immunization errors.

> *Even nowadays, people who are on the vaccine schedule, it's only COVID for adults and children. Then I didn't want to put the routine together so as not to complicate things. There is a nursing technician to take care of adults, children and routine, I was scared" (SRS-7).*

In some municipalities, they chose to lose doses from the vials to ensure the right and not miss the opportunity for COVID-19 vaccination.

> *"With COVID, we are now losing doses, because we know that person will not come back. We choose to do it and lose the dose in the vial" (SRS-4).*

The link with the nursing technician or nurse in the vaccination room also proved to be effective in convincing those responsible for COVID-19 vaccination in children.

> *"She [nursing technician] goes to homes, vaccinates in every home, flu vaccination for older adults, COVID vaccine, vaccinates adolescents, with this she gains the trust of mothers, some mothers already get there and say 'Wow, [name of the nursing technician], her hand is so light, she is so affectionate, she is so careful', this mother, she will definitely get there and let the [nursing technician] vaccinate her child. Creating this bond is very important" (SRS-1)*

Discussion

The COVID-19 pandemic and the real risks of disease and death required health professionals and managers to adopt strategies to ensure adequate vaccination coverage for the population, especially children. This study highlighted the need for intersectoral coordination, especially with social services and education, and the expansion of the discussion about vaccination to political scenarios. Furthermore, continuing education actions with training, dissemination of information and technical notes, and reorganization of the work process in the vaccination room were important strategies mentioned by participants to guarantee vaccination coverage among children.

Brazil was experiencing a period of falling vaccination coverage rates and with the advent of the pandemic and installation of a new and controversial reality, the dissemination of false information further compromised the vaccination scenario.[11] The discovery of the COVID-19 vaccine in record time and the politicization of the health issue required the expansion of the health debate to the political arena. COVID-19 vaccination proved to be a major challenge for immunization programs around the world, mainly due to the scarce and uneven distribution of vaccines.[2] In Brazil, issues related to the government's delay in acquiring vaccines, false information, a troubled relationship between federative entities, including the threat of acquisition of vaccines by states and not by the federation spread fear, insecurity and a troubled vaccination process in the country.[12,13]

Among the pediatric population, COVID-19 took on different forms. It started with a lower incidence of cases and deaths in children compared to other population groups, which generated uncertainty about the need for vaccination. In 2021, the incidence in children under five years of age was 2% and mortality was around 0.1% (WHO). However, the differences between the global South and North determined a higher number of deaths in countries in the global South. In the Brazilian case, one out of every five children who died from COVID-19 was Brazilian, and the number of deaths was higher in the northeast region.[14]

However, the historical process of the PNI and its capillarity through primary care meant that as vaccines were acquired, they were quickly applied to the target audience and gradually reduced deaths from the disease.[15] Primary care was essential to guarantee immunization. The study also highlights that intersectoral coordination with social services and education, having primary care as the coordinating center, was one of the important strategies to increase vaccination rates in children under two years of age.[16]

Studies indicate that vaccine hesitancy among those responsible for children under five is around 46.8%. Among the issues that lead to non-vaccination, more than half report concern about side effects (53.3%), followed by a lack of confidence in COVID-19 vaccines (48.7%) and some believe that children do not need the vaccine (38%). In this scenario, it is important to reestablish the trust of those responsible for COVID-19 vaccines and ensure children's rights.[17] In this sense, intersectoral actions with education and social services provide a greater chance of success, as demonstrated in the results of this study.

The complexity of issues related to vaccine hesitancy implies several strategies. In this study, in addition to strategies involving intersectoral actions, another mentioned action was related to health professionals, who are important allies to improve vaccination coverage. Thus, investment in continuing education and reorganization of the work process in the vaccination room was observed.

Regarding the reorganization of the work process, participants emphasized the organization of COVID-19 vaccination centers, in which vaccines from the basic calendar were not offered in the same space in order to reduce errors. Communication in the vaccination room was also expanded, and there was incentive to actively search for unvaccinated people and offer vaccination at home for those in need. Such strategies were important to ensure improved coverage and increase the population's trust in health services and professionals.

According to a study by Avaaz (2019),[18] the population has great trust in healthcare professionals and, therefore, it is important to rely on them to reinforce the need for vaccination, including prescribing and accompanying the user to the vaccination room. However, some studies indicate vaccine hesitancy related to vaccination among health professionals, mainly by young women.

Vaccination represented a guarantee of change in the epidemiological scenario and strategies were crucial for the return of daily activities. Confinement, social isolation and interruption of family support networks are the biggest aggravating factors related to mental health in pandemic times, and their repercussions are being widely studied across the planet.

Conclusion

COVID-19 vaccination proved to be effective in resuming social interaction, although in children it has been a major challenge for managers, epidemiological surveillance coordinators, nurses and nursing technicians in the vaccination room. Several strategies were necessary to alleviate vaccine hesitancy and increase specific coverage, from hiring human resources and training, reorganizing physical spaces in vaccination rooms, improving communication with the community and mainly, relying on intersectoral partnerships such as those with schools and social services. Despite the efforts of health teams, it was not possible to achieve the vaccination coverage target, showing the complexity of vaccine hesitancy among those responsible for children, especially when it comes to COVID-19 vaccination. There is a need for engagement from society, traditional and social media, but mainly a robust policy strengthened by all federative entities for the strengthening of PNI actions.

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Contributions

Lachtim ASF, Paiva AP, Freitas GL, Ferraz ML, Oliveira JS, Souza JFA, Baeta LLA and Matozinhos FP contributed to the study design, relevant critical review of the intellectual content, interpretation of data and approval of the final version to be published.

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