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VACCINATION SERVICES FROM THE PERSPECTIVE OF NURSING STAFF DURING THE COVID-19 PANDEMIC: A QUALITATIVE STUDY

SERVIÇO DE VACINAÇÃO NA PERSPECTIVA DE PROFISSIONAIS DE ENFERMAGEM DURANTE A PANDEMIA DA COVID-19: ESTUDO QUALITATIVO

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RESUMO

Objetivo: analisar a percepção de profissionais de enfermagem sobre o serviço de vacinação e o comportamento dos usuários durante a pandemia da covid-19. **Método:** estudo descritivo-exploratório, de abordagem qualitativa, realizado em Campo Grande (MS). Os dados foram coletados entre maio e dezembro de 2022 por meio de entrevistas individuais, semiestruturadas e audiogravadas, com 20 profissionais de enfermagem atuantes em sala de vacina ou na gestão de imunobiológicos. As entrevistas foram transcritas e submetidas à análise de conteúdo. **Resultados:** a análise resultou em duas categorias: "A crise da covid-19: impactos no serviço de vacinação" e "Vacinação como política pública e o fortalecimento do SUS". Evidenciaram-se mudanças significativas nos serviços de imunização durante a pandemia, com destaque para o papel estratégico da equipe multiprofissional, o protagonismo do Sistema Único de Saúde e alterações no comportamento dos usuários em relação à vacinação, como maior interesse por informações detalhadas sobre a vacina contra a covid-19 e aumento na procura por outros imunizantes do calendário vacinal. **Conclusão:** a pandemia influenciou a organização e a gestão dos serviços de vacinação e a adesão dos usuários às vacinas, ao mesmo tempo em que ressaltou a relevância do Sistema Único de Saúde e do Programa Nacional de Imunizações como políticas públicas essenciais no enfrentamento da crise sanitária.

Descritores: Comportamento de Saúde; Vacinação; Enfermeiros de Saúde Pública; Estratégia Saúde da Família; Pandemia de COVID-19.

ABSTRACT

Objective: to analyze how nursing staff perceived vaccination services and user behavior during the COVID-19 pandemic. **Method:** this descriptive–exploratory qualitative study was conducted in Campo Grande, Mato Grosso do Sul (Brazil). Data were collected between May and December 2022 through individual, semi-structured, audio-recorded interviews with 20 nursing staff working in vaccination rooms or in the management of vaccines. Interviews were transcribed and subjected to content analysis. **Results:** two categories emerged: "The COVID-19 crisis: impacts on vaccination services" and "Vaccination as public policy and the strengthening of SUS." The analysis revealed substantial changes in immunization services during the pandemic, emphasizing the strategic role of the multiprofessional team, the centrality of Brazil's Unified Health System, and shifts in user behavior. Notable changes included heightened interest in detailed information about COVID-19 vaccines and increased demand for other routine immunizations on the vaccination schedule. **Conclusion:** the pandemic influenced the organization and management of vaccination services and users' adherence to vaccines, while underscoring the importance of the Brazil's Unified Health System and the National Immunization Program as essential public policies in responding to the health crisis.

Descriptors: Health Behavior; Vaccination; Nursing Staff; Family Health Strategy; COVID-19 Pandemic.

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INTRODUCTION

Through the National Immunization Program (PNI), Brazil's Unified Health System (SUS) has become a global benchmark for vaccine coverage with universal and equitable access in the country[1]. Although the benefits of vaccination as a preventive strategy are well established, maintaining high coverage remains a persistent challenge for health authorities. Contributing factors include misinformation, fear of adverse events, access barriers, and the prioritization of individual choices over the collective interest, which strains public health policy[2-3].

A decline in global vaccine coverage has been documented since 2010, and Latin American countries are among the most affected, despite all having structured national immunization programs[4]. In Canada, a study of 6,519 parents of 2-year-old children found that 16.8% had refused at least one vaccine[5]. In Türkiye, a survey of 396 parents of adolescents aged 12-18 years reported that 41.7% refused COVID-19 vaccination for their children[6].

In Brazil, declining coverage began in 2012, intensified in 2016, and worsened with the COVID-19 crisis. Reductions were observed in overall coverage and in influenza vaccination among older adults[7]. A survey conducted in the 26 state capitals, the Federal District, and 12 additional cities, with a sample of 31,051 children born in 2017–2018, showed that no locality achieved satisfactory coverage; all were below 80%. In Campo Grande (Mato Grosso do Sul), full-schedule coverage was 54.2%[8].

In Brazil, nurses serve as the technical leads for vaccination rooms, overseeing human and material resources, guiding the nursing staff, and providing care to users[9-11].

Since the decision to vaccinate is influenced by sociocultural factors, by the care provided by nurses, and by perceptions of disease, two questions arise: what were the repercussions of the COVID-19 pandemic for vaccination services? How do nursing staff perceive adherence to vaccines in the PNI amid a pandemic that posed a collective threat to health?

Accordingly, this study aimed to analyze how nursing professionals perceived vaccination services and user behavior during the COVID-19 pandemic.

METHOD

This descriptive–exploratory qualitative study followed the Consolidated Criteria for Reporting Qualitative Research[12].

Participants were nursing staff from Primary Health Care (PHC) in one of the seven Health Districts of a Brazilian state capital, selected for convenience; at the time, the district comprised nine urban health units. We included mid-level and degree-level professionals directly involved in immunization services, working in care and/or management, with at least 2 months of experience to ensure familiarity with service dynamics. All had worked in immunization sectors during the pandemic. Professionals on medical leave, maternity leave, external training, or vacation during data collection were not included.

Initial contact was made in person with administrative managers of the urban units and technical supervisory sectors. The study objectives were presented, and a list of eligible professionals was requested. These professionals were then approached in person and invited directly by the researcher. Those who agreed had individual interviews scheduled at their preferred time to avoid disrupting routine service activities.

Semi-structured, audio-recorded interviews lasted about 30 minutes and were conducted by the lead researcher — a nurse and master's student in family health — who had no prior relationship with participants. Interviews took place in a private room at the workplace between May and December 2022.

Data collection used a brief characterization form (gender, age, position, training, employment status, time since graduation, and time in position) and a guiding question: "Tell me about vaccination services and users' attitudes during the pandemic."

A pilot test with one participant indicated no need for adjustments, so the interview was retained in the sample. To validate findings, at the end of each interview the lead researcher asked follow-up questions to clarify doubts and confirm whether interpretations made sense to the participant.

Collection continued until information saturation and achievement of the study objective[13]. Interviews were transcribed verbatim and submitted to thematic content analysis, following predefined steps: pre-analysis, material exploration, and treatment of results[14].

During pre-analysis, interviews were organized and skim-read, yielding 17 codes. In material exploration, codes were grouped by similarity into two meaning cores. After in-depth analysis aligned with the study objective, two thematic categories emerged, interpreted in light of public health policy (Figure 1).

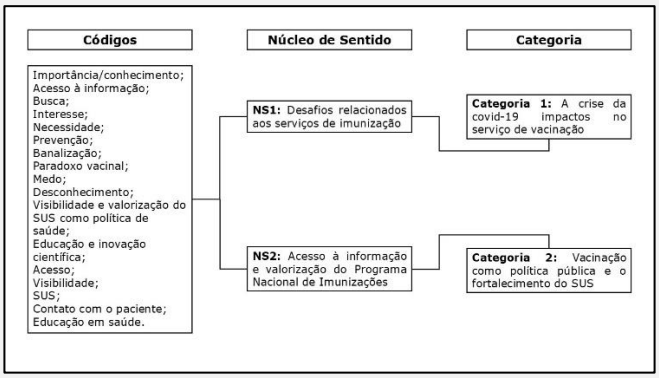

Figure 1 - Representation of the category formation process. Campo Grande, MS, Brazil, 2024

The study complied with national ethical guidelines for research involving human participants (Resolution No. 466, December 12, 2012) and was approved by the Human Research Ethics Committee of the Universidade Federal de Mato Grosso do Sul ((protocol No. 5,322,893). All participants provided written informed consent in duplicate.

To ensure confidentiality and anonymity, we used the following English abbreviations: "N" for nurse and "NT" for nursing technician, followed by "C" (care) or "M" (management) to indicate the area of practice, and a sequential number corresponding to the interview order. Example: N-C1 (care nurse 1).

RESULTS

A total of 20 nursing professionals participated: 13 nurses and seven nursing technicians. A total of 16 were

women, aged 25-53 years. Three nurses worked in management. Among the technicians, two held university degrees (in History and Law). Among the nurses, four specialized in family health, six in other areas, and three held a master's degree. Length of professional experience ranged from 18 months to 20 years.

The COVID-19 crisis: impacts on vaccination services

With the COVID-19 pandemic, the health system — especially immunization services — had to reorganize to vaccinate on a large scale. In this context, participants highlighted resources and strategies such as the COVID-19–specific registration system "Monitora," and the strengthening of internal communication, illustrated by the social worker's role in sharing information on vaccine availability:

> [...] *Monitora* [a system created to record COVID-19 vaccination] *was a very good resource. It would be great to have this system for all vaccines. Because regardless — if you travel, for example — you have a standardized record, since vaccination cards sometimes have different handwriting, get damaged, or are lost. A standardized record would be excellent* (N-C4).

> *We have a social worker who maintains internal communication with the team through a WhatsApp group and posts which vaccines are available or not. I think this strategy should be used permanently; it helps a lot* [team communication] (NT-C5).

According to interviewees, control measures and widespread fear of contagion affected demand for vaccination services:

> *I see that isolation interfered with service use. Many children come in with delayed vaccine cards, and I think mothers were afraid to bring them during the COVID period* (N-C2).

On the other hand, part of the population began seeking other vaccines, believing they could help prevent COVID-19, especially early in the pandemic:

> *We reached the influenza vaccination target in the COVID year, 2020, because people thought that getting the flu shot would somehow offer protection or lessen COVID symptoms* (N-C7).

> *More adults started coming to the health unit and, since they were getting the COVID vaccine, they took the opportunity to check their vaccination status. In that sense, I noticed — especially among younger and adult populations — they began visiting the unit more, and we were able to administer some overdue vaccines* (N-C4).

Professionals also reported increased questioning from the public, influenced by media coverage during the campaign:

> *They always got tetanus or hepatitis vaccines, for example, and never questioned anything — not even who the manufacturer was. But with COVID, they wanted to know the manufacturer* (NT-M1).

> *People used to simply receive the routine and campaign vaccines, and nowadays they question more and follow closely, because there were cases of vaccines that were not being given to certain people, and the media reported that widely* (N-C8).

For participants, the pandemic renewed recognition of vaccination as a preventive measure against vaccine-preventable diseases:

> *The COVID vaccination campaign led users to think more preventively — that they need to get vaccinated, that vaccination is a form of prevention, and that it's important to seek it before the most severe cases occur* (N-C5).

Although there was an initial surge in demand for PNI vaccines, the decline in COVID-19 mortality appears to have contributed to abandoning the schedule:

> *Demand was very high at first. Now that people are more immunized and are less afraid of getting COVID — similar to what happened with influenza — people aren't as concerned about getting vaccinated or taking care of themselves* (N-C3).

> *When the COVID vaccine arrived, there was that "BOOM." I think it was because it was a new disease and people were afraid. Today, there are leftover doses because people aren't coming* (NT-C3).

Vaccination as public policy and the strengthening of SUS

During the COVID-19 vaccination campaign, vaccination room hours were extended, and outreach and guidance on service locations were intensified:

> *For routine vaccines this was positive as well, because parents could bring their children at lunchtime or after work. Before the pandemic, vaccinating later in the day wasn't common practice, so this helped a lot* (NT-C6).

> […] *We work in the vaccination room until 6:45 p.m., so parents can come after work, or on Saturdays and Sundays at the referral center… it's just a matter of giving the right guidance* (N-C8).

Participants perceived greater PNI visibility in the media:

> *If we had the same frequent publicity used during the COVID campaign for the other vaccines, I think coverage would be much higher* (NT-M1).

> *I think it's a TV issue — whatever is in the media shows up. If there's a weekend campaign and TV says the vaccine is going to run out, the clinic gets packed; it goes from 120 to 300 people easily. If the media*

says the vaccine is running out, the line triples. That's how it is — it's all driven by media (NT-C3).

They also underscored the importance of reviving and strengthening active case finding, home visits, and community education by Family Health Strategy teams:

I believe on-site strategies in community centers and schools would help expand coverage (N-C2).

It really comes down to ongoing awareness — using school-based health programs and the social media we have: Instagram, Facebook, and even television, since we have a local channel (N-C10).

The role of the multiprofessional team stood out, along with a return to core principles of the PNI and the National Primary Care Policy (PNAB), with emphasis on community health workers (ACS) as a link between the population, the health unit, and the nursing team:

ACS home visits checking the mirror card, and during childcare visits the health professional verifying the card. If parents or guardians resist vaccination, the social worker — or even the child protection council — needs to be engaged (N-C1).

The ACS is crucial in this context, because sometimes you have a phone number and a name for a patient you don't know, but the agent who lives in that area does know them (...) (N-C5).

The fact that COVID-19 vaccination was offered exclusively through SUS was cited as a factor that broadened access across social strata to PNI services:

Many people didn't know SUS, didn't know the vaccination room, didn't know this service was offered by SUS, and they learned about it because of the COVID vaccine — people with higher socioeconomic status who didn't realize that vaccines through SUS are available to everyone. They thought they had to pay for vaccines, and I found it wonderful that the COVID vaccine wasn't sold anywhere — it was only given through SUS (NT-M1).

DISCUSSION

From the perspective of nursing staff, vaccination services underwent marked changes as the pandemic evolved. Social distancing and fear of contagion drove demand for information — both about vaccine characteristics and about how to access services.

After the rollout of COVID-19–specific vaccines, coverage of other routine vaccines declined. This shift may reflect the near-exclusive focus on COVID-19 vaccination and the resulting sense of safety, which led to neglect of other vaccines in the national schedule[15].

Participants recognized that the pandemic required immunization services to upgrade vaccine-monitoring systems. Dedicated management for COVID-19 vaccines accelerated large-scale vaccination — from delivery coordination, monitoring, and storage to the use of local technologies[16].

Even with funding for digitization and incentives for municipalities that updated the system monthly and met targets, many reported, in 2019, incompatibilities between the PNI information system and local systems. System complexity also led to irregular dose recording, undermining data quality[17].

An ecological study covering Brazil from 2013 to 2020 found that vaccine coverage for children up to 12 months fell short of Ministry of Health targets and was declining[15].

Data from six Latin American countries showed overall decreases in coverage even before the pandemic, with a sharp drop from March 2020 onward. Contributing factors included direct COVID-19 effects, regional, cultural, and socioeconomic specificities, access barriers, and resource constraints[18]. In Brazil, delays in the schedule and vaccine hesitancy are multifactorial — social, political, religious, economic, and geographic — compounded by gaps in health education and communication, limited access to reliable information, lack of confidence in vaccines, and misinformation about the pandemic and COVID-19 vaccination[19-21].

At the same time, the emergence of the pandemic in 2020 and related control measures introduced a new driver of low coverage. Studies from the United States, England, the United Kingdom, Pakistan, and several African countries reported sharp declines in health service use due to fear of exposure to SARS-CoV-2, with consequent drops in vaccination coverage, especially among children[22-26]. This phenomenon aligns with theories of a "pandemic of fear," which foster insecurity among caregivers and prompt concerns about exposing children to perceived risks when seeking vaccination during COVID-19[27].

Conversely, fear of contagion appears to have motivated some to seek other vaccines considered helpful for COVID-19 prevention, as suggested by increased demand for influenza vaccination. In the 2020 campaign, homogeneous population coverage across nearly 5,000 cities reached 82.8%, and priority groups achieved 120% of targets[28]. These data illustrate immunization's potential to reduce vaccine-preventable morbidity and mortality.

According to participants, public interest in vaccine information grew — mechanism of action, manufacturer, and adverse reactions. A study of attention to vaccines on Instagram and Facebook over 2 pandemic years showed greater public debate on science and health, involving politicians, celebrities, news outlets, and scientific institutions[29]. However, the most frequently accessed sources in Brazil rarely disclose editorial criteria, policies, or authorship, hindering assessment of information quality and accuracy.

Another reported strategy was extending clinic hours and publicizing vaccination sites, which improved access for families with constrained work schedules[30-32]. Accordingly, Ordinance No. 930 (May 15, 2019) established the "Saúde na Hora" program within the Family Health Strategy, extending operating hours for participating family health units[33].

Media coverage also influenced demand. During the yellow fever outbreak in Brazil (2007–2008), news reports portrayed the epidemic as uncontrolled without emphasizing its sylvatic nature, and highlighted the vaccine — leading to indiscriminate demand[34].

Campaigns and national vaccination days supported uptake, driven by the strengthening of the PNI and advances in research, development, and domestic vaccine produc-

tion[35]. Improving campaign communication — plain language, recognition of ethnic diversity, and the use of nationally recognized figures — contributed directly to controlling vaccine-preventable diseases[36].

In response to global challenges in vaccine hesitancy and its adverse effects on coverage, the World Health Organization launched the Immunization Agenda 2030, with core goals that include achieving 90% coverage for all essential childhood and adolescent vaccines[37].

In Brazil, the PNAB prioritizes active case finding to secure equitable, comprehensive access. This approach proactively identifies people not yet reached and offers preventive and curative services close to communities. Territorialization — careful analysis of each region's characteristics and needs — is essential to adapt actions to local demands, promoting more efficient, context-sensitive care[38]. These principles reinforce PHC as SUS's preferred point of entry, thereby supporting health promotion and reducing inequalities.

The multiprofessional PHC team also plays a central role, with emphasis on community health workers as the link between the population, the health unit, and the nursing team. Within this framework, nursing staff act as educators by providing accurate, evidence-based guidance, addressing doubts, dispelling myths, and fostering critical, reflective thinking about vaccines. This work strengthens trust in vaccination and community participation in immunization programs, with measurable impacts on disease prevention and population health[35]. To sustain it, teams need strong, ongoing professional education.

Finally, the exclusive distribution of COVID-19 vaccines through SUS promoted equitable access, increased the system's visibility across social strata, and helped counter negative perceptions. The pandemic highlighted the scale of SUS and the need for sustained, planned investment in public policy. Because of the complexity of the landscape, rebuilding a strong vaccination culture and raising coverage in Brazil will require intersectoral coordination, stronger policies, and strategic initiatives with both immediate and long-term actions[39].

Study limitations include convenience sampling, contingent on participant availability and consent amid high demand and restricted in-person access during COVID-19. Because data were collected in only one of the seven health districts, findings are not generalizable to the entire city. Moreover, given the PHC context during the pandemic, participants' perceptions of vaccines may reflect a specific moment influenced by the period's historical and political context.

CONCLUSION

The COVID-19 pandemic influenced how users engaged with health services. This context brought changes to sanitary control measures, generated fear around seeking care, and — at the same time — sparked greater interest in vaccine-related information and increased demand for other schedule vaccines before the specific COVID-19 vaccine was developed. However, coverage declined, both for other vaccines in the routine schedule and for COVID-19 booster doses.

Changes in PHC policy and financing may affect population adherence to vaccination. In this scenario, strengthening trust in the PNI among professionals and users is essential to restore vaccine coverage in Brazil.

Health services should intensify health-education strategies for the public and care teams, with a focus on the vaccination schedule. Ongoing training for PHC professionals is needed so they can address questions and resistance to vaccines clearly, empathetically, and with evidence-based guidance. In addition, adequate PHC funding must be a priority, ensuring the infrastructure, supplies, and workforce required for effective immunization promotion. Coordination among managers, workers, and the community is crucial to expand access, improve vaccine coverage, and confront the effects of misinformation and shifts in the political-health landscape.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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