Communication

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Pregnancy Card: Evaluation of Data on Vaccines for Women in Labor in a Public Tertiary Reference Maternity Unit in São Paulo, Brazil

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Abstract: There is a lack of information on vaccination for pregnant women in the Brazilian literature. Our aim was to evaluate the data on vaccines recorded on the pregnancy card and knowledge about the importance of vaccination for women admitted for labor in a reference public tertiary maternity unit in Presidente Prudente, São Paulo, Brazil. Vaccine data as prescribed by the National Immunization Program of Brazil (NIP) in prenatal cards for patients in labor from the 45 municipalities of the western region of São Paulo state were obtained. A questionnaire relating to knowledge about the types and importance of vaccination in pregnancy was applied. All vaccines indicated by the NIP were registered in only 12.0% of the prenatal cards, and 33.0% of cards registered any vaccines. In this group, 16.6% were aged between 14 and 21 years, and tetanus and COVID-19 were the most prevalent vaccines that they had heard of during prenatal care. Data on vaccines was poorly recorded in the cards, suggesting a lack of attention and unpreparedness of professionals working in primary care. Our study has countrywide and global relevance, and may be applied mainly in Latin American countries facing similar difficulties and limitations with low rates of vaccination during pregnancy.

Keywords: pregnant card; brazilian national program of immunization; vaccine data filling

1. Introduction

In Brazil, the National Immunization Program (NIP) was created in 1973 and is responsible for coordinating vaccination activity nationwide. Brazil received certification of eradication of rubella and congenital rubella syndrome in 2015, and of measles in 2016 from the World Health Organization [1]. There is no doubt about the effectiveness and necessity of vaccinating pregnant women with the main objective of protecting the women and neonate from infections. These vaccines have proven that they can confer immunity to the unborn child through transplacental passage or breast milk [2]. The vaccines that are part of the vaccination schedule for pregnant women by the Brazil Ministry of Health are Diphtheria/Tetanus/Acellular Pertussis (DTPa), Influenza, Hepatitis B, and COVID-19.

There is a lack of information on vaccination for pregnant women in the Brazilian literature, and it is difficult to obtain information on vaccination coverage in pregnancy from primary data. It is well known that vaccination coverage through secondary data is very low in this population [3,4]. One of the main problems that medical teams encounter in maternity hospitals of the Unified Health System (SUS) during hospitalization for childbirth is the incomplete and/or inconsistent registration of vaccination on prenatal cards. In our region, it is suspected that doctors and nurses in primary care are not instructed sufficiently about the importance of full vaccination in pregnancy and women are not completely informed about the importance of vaccines.

The western region of São Paulo state has a population of about 929.137 inhabitants in 2021 living in 45 municipalities. The Estadual Hospital of Presidente Prudente (EH) is a reference tertiary public maternity unit for pregnancy and labor, mainly for patients with comorbidities or infectious diseases, in the western region. It is suspected that the social distancing necessary to reduce the transmission of COVID-19 and people's fear of attending health care services in 2020 and 2021 resulted in a decrease in routine vaccinations and left even more pregnant women and children at risk of contracting preventable diseases [5].

Knowledge about full vaccination by primary care doctors and pregnant women may be a determinant for improving vaccination campaigns and health care actions contributing to the NPI objectives, to reach a pregnancy vaccination coverage of more than 80% countrywide. Our aim is to evaluate the data on vaccines in pregnancy cards and knowledge about the importance of vaccination of women admitted for labor in a reference public tertiary maternity unit in Presidente Prudente, São Paulo, Brazil.

2. Study Design

The pregnant woman's care card was created in Brazil in 1988. In 2022, the Brazilian Ministry of Health launched a new pregnant woman's card countrywide, aimed at health professionals and pregnant women who use SUS services. The document is an important instrument for monitoring pregnancy, delivery, and postpartum and includes a prenatal card to record clinical and dental consultations, and the results of examinations, laboratory data and vaccines, among other information. The mandatory vaccines in the pregnancy schedule of the NIP, DTPa, influenza, hepatitis B, and COVID-19, must be recorded in the pregnant prenatal card. Presentation of the prenatal card is mandatory at the time of admission, and it is registered in the parturient records. After admission, the parturient goes to pre-delivery, the obstetric center; and after delivery the patient is sent to the maternity ward for about 48 to 72 hours. In this period, the age and vaccination data were obtained from the prenatal cards. The patient was invited to answer a questionnaire related to knowledge about the types and importance of vaccination in pregnancy. Data from the cards and the questionnaire were collected by the obstetrician from EH who headed the project.

3. Results

From August 2022 to January 2023, 519 women were registered for labor in the admission section of EH; 166.6±23.42 monthly (95% confidence interval [CI], 142.1–191.2, varying from 141 to 200), and 59% (306/519) of prenatal cards were evaluated. The age was registered in 78.1% (239/306) of the patients; 27.23±043 years (95% CI, 26.37–28.09, varying from 14.00 to 50.00 years). Figure 1 shows that the vaccines indicated by the NIP were registered on the prenatal cards for only 12% (36/300) of the patients, and 3 vaccines were registered in 36% (108/300). However, any vaccine was registered in the prenatal card in 33% (99/306). Figure 2 shows the age distribution; however, age was not registered for 20.3% (61/300) of the patients. The most prevalent group was 22-30 years old (39.3% [118–300]); 16.6% (50/300) of patients were between 14 and 21 years. The highest number of patients were admitted and evaluated in August 2022 (Figure 3).
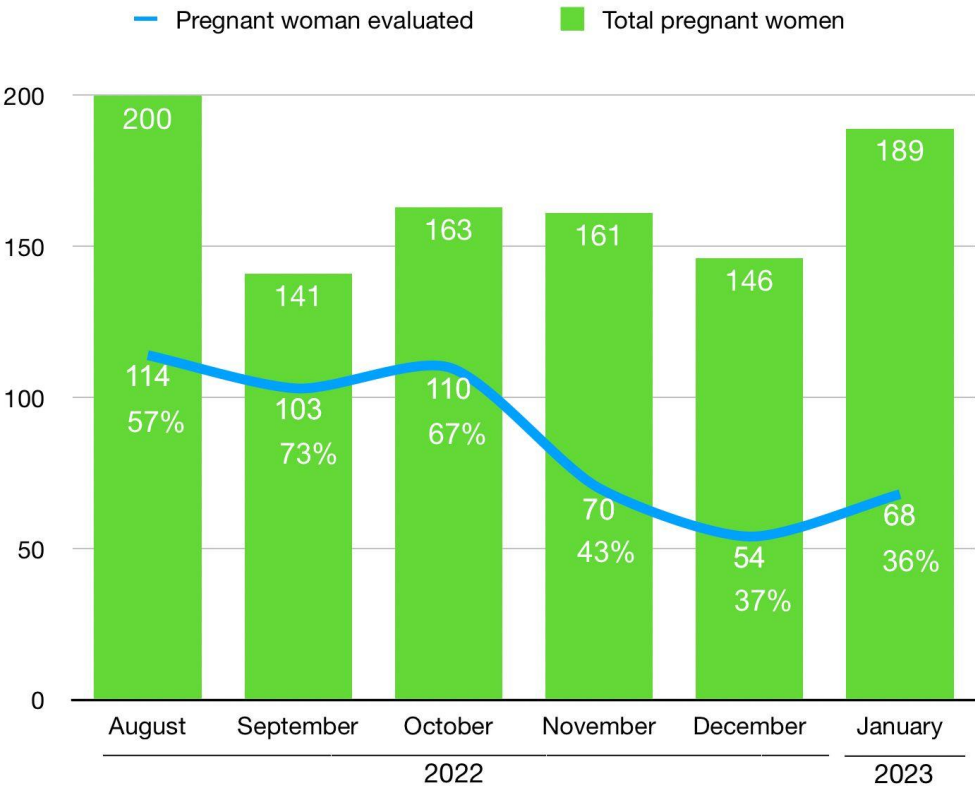
The questionnaire was applied to 300 patients. Figure 4 shows the answers to the following question: of the vaccines listed below, tick the ones that you had already heard of during prenatal care. Tetanus and COVID-19 were the most cited, and diphtheria was cited by only 75 of the patients.

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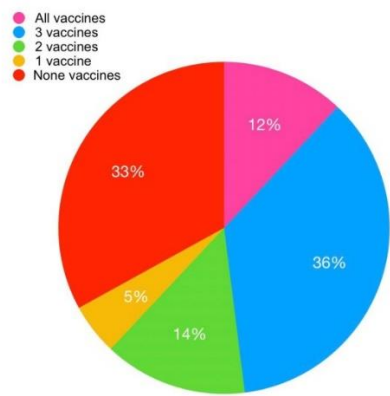
Figure 1. Distribution of vaccines registered in the pregnancy cards of women admitted for labor in the EH from August 2022 to January 2023.
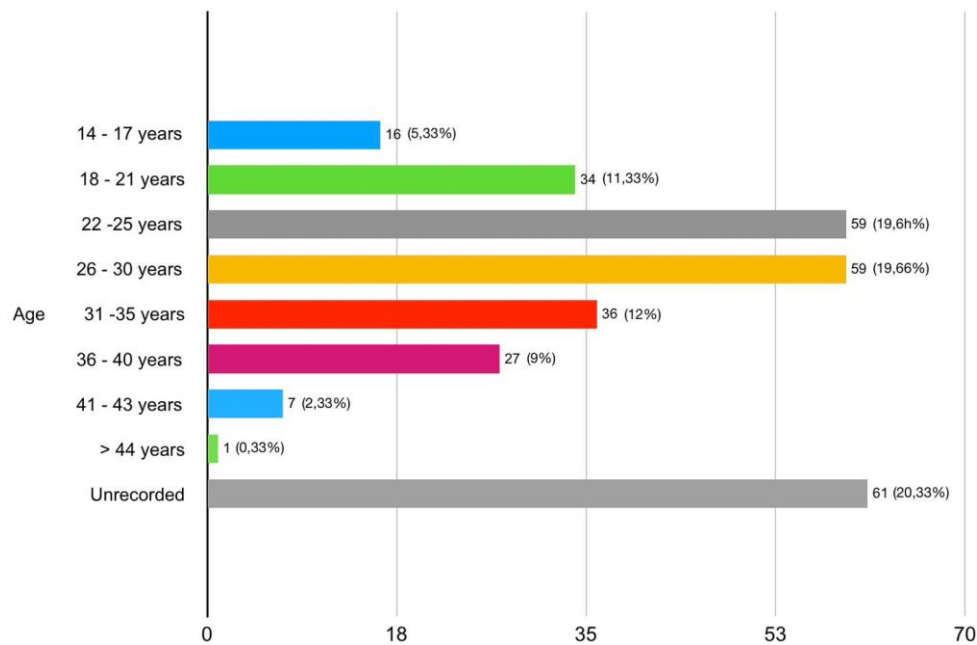
Figure 2. Age distribution registered in the pregnancy cards of women admitted for labor in the EH from August 2022 to January 2023.

Figure 3. Patients admitted and evaluated patients per month in the EH from August 2022 to January 2023.
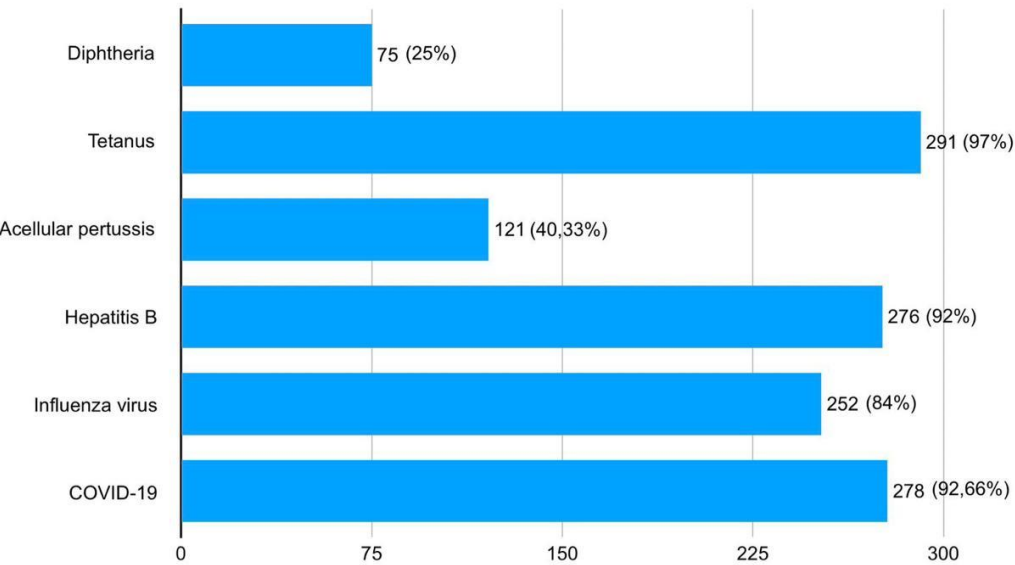
Figure 4. The answers to the question: of the vaccines listed below, tick the ones that you had already heard of during prenatal care.

4. Discussion

We found that all vaccines indicated by the NIP were registered in only 12% of the prenatal cards, and any vaccines were registered in 33.0%. In this group, 16.6% of patients were aged between

14 and 21 years, and tetanus and COVID-19 were the most prevalent vaccines that they had heard of during prenatal care.

These data highlight the gaps in registration of vaccines on the pregnancy card in primary care and may be extended to other aspects including maternal information, anamnesis, clinical examinations, and laboratory data [3,4]. In our daily clinical practice in EH, a progressive decrease in vaccine registration on prenatal cards has been observed in recent years, however, we had no idea of the severity of the problem. Evaluation of pregnant women's cards allows direct analysis of the quality of prenatal care in the public health services of our region. There are few studies in Brazil measuring primary vaccination coverage on pregnancy cards, so, it is difficult to compare our results with data obtained from other maternity sources. In a study that evaluated pregnant woman's health in a city in the countryside of Minas Geraes, one of the most populous states in Brazil, only 57.6% of pregnant women were vaccinated for tetanus [6]. In another study conducted in Vitória Greater Metropolitan region, the capital of Espirito Santo state, designed to analyze the quality of prenatal care in public health services, there is no reference to vaccination coverage in 1006 prenatal patient cards [7]. In a review conducted in Latin American countries, information on vaccinations in pregnant women was limited and varied from country to country, and influenza vaccination had regional coverage of approximately of 59% [8]. Brazilian coverage of pregnant women with DTPa in 2020 was 41.7%, lower than the minimum target of NIP (90% or 95%) [9].

For most patients (45%), data on age were not recorded on the prenatal cards; 22–30 years was the most prevalent. However, 40% of women were less than 21 years. In a countrywide study, first pregnancy at the age of 15–19 years obtained the highest percentages for all regions. Although there is a tendency for women to become pregnant later and later in Brazil, and a decrease in teenage pregnancy rates in recent years, Brazil is still above the world average and has registered high rates of early pregnancy in relation to other countries [10]. In EH, in the maternity ward, it is a routine observation that very young mothers walk through the halls rocking their babies as if they were in their homes rocking their dolls.

EH is the main public maternity facility in the western region of São Paulo state and its objective is to promote health care for pregnant women and their babies with excellence and develop people with social responsibility and respect for life. It provides health care in different specialties such as gynecology and obstetrics, pediatrics, infectious diseases, medical surgical clinics, and general and plastic surgery with multidisciplinary support. With a monthly average of 180 births, EH also receives pregnant and postpartum women from other regions of São Paulo state. In the period analyzed, 519 women were registered for labor in the admission section and the highest number of patients admitted and evaluated occurred in August. There are no data on the seasonality of labor in EH, and we are conducting a study on these data in the last 20 years.

Regarding the knowledge of vaccines that pregnant women had already heard about during prenatal care, tetanus and COVID-19 were the most prevalent, and diphtheria the least. In Brazil, there is a lack of studies on the knowledge of pregnant women about vaccines. In Latin America, a lack of awareness of infectious diseases and their vaccines was commonly cited as an obstacle to vaccination during pregnancy [11]. In another study in some Latin American countries, the main barriers were the lack of adequate information on maternal immunization; limited coordination between antenatal and immunization services; inadequate supply, resources, and infrastructure; high staff turnover; insufficient training for health care providers; and weak monitoring and reporting systems [8]. Similar to our results, a hospital-based, nationwide, cross-sectional study that evaluated different variables from pregnant women's cards found that the completeness was bad overall in Brazil and macro regions, except in the southern region [3].

One of our main limitations is that our data were collected from women in labor at a public hospital and an important proportion of pregnant women are from the private sector, where all the variables probably achieve much better rates than in the public service.

5. Conclusions

Notwithstanding the advances achieved in the availability of access to prenatal care in recent decades, we conclude that vaccines prescribed by the NIP are poorly recorded in the cards, suggesting lack of attention and unpreparedness of professionals working in primary care. Our study has countrywide and global relevance, mainly in Latin American countries that face similar difficulties and limitations to Brazil with low rates of vaccination during pregnancy.

Conflicts of Interest: The authors declare no conflict of interest.

References

1.   Sato APS, Boing AC, Almeida RLF, Xavier MO, Moreira RDS, Martinez EZ, Matijasevich A, Donalisio MR. Measles vaccination in Brazil: where have we been and where are we headed? Cien Saude Colet. 2023 Feb;28(2):351-362. doi: 10.1590/1413-81232023282.19172022.
2.   Beeler JA, Lambach P, Fulton TR, Narayanan D, Ortiz JR, Omer SB. A systematic review of ethical issues in vaccine studies involving pregnant women. Hum Vaccin Immunother. 2016 Aug 2;12(8):1952-1959. doi: 10.1080/21645515.2016.1186312.
3.   Mello LR, Marano D, Moreira MEL, Domingues RMSM, Costa ACCD, Dias MAB. Assessment of the completeness of filling the pregnant woman's card from the Ministry of Health: a national, cross-sectional study. Cien Saude Colet. 2022 Jun;27(6):2337-2348. doi: 10.1590/1413-81232022276.14292021.
4.   da Costa GD, Cotta RM, Reis JR, Siqueira-Batista R, Gomes AP, Franceschini Sdo C. Avaliação do cuidado à saúde da gestante no contexto do Programa Saúde da Família [Evaluation of the care to the pregnant woman's health in the context of the Family Health Program]. Cien Saude Colet. 2009 Oct;14 Suppl 1:1347-57. doi: 10.1590/s1413-81232009000800007.
5.   Silveira MM, Conrad NL, Leite FPL. Effect of COVID-19 on vaccination coverage in Brazil. J Med Microb 2021;70:001466
6.   Coutinho T, Monteiro MF, Sayd JD, Teixeira MT, Coutinho CM, Coutinho LM. Monitoramento do processo de assistência pré-natal entre as usuárias do Sistema Único de Saúde em município do Sudeste brasileiro [Monitoring the prenatal care process among users of the Unified Health Care System in a city of the Brazilian Southeast]. Rev Bras Ginecol Obstet. 2010 Nov;32(11):563-9. doi: 10.1590/s0100-72032010001100008.
7.   Neto ETS, Oliveira AE, Zandonade E, Gama SGN, Leal M. Prenatal patient cards and quality of prenatal care in public health services in Greater Metropolitan Vitória, Espírito Santo State, Brazil. Cad. Saúde Pública, 28(9):1650-1662
8.   Guzman-Holst A, DeAntonio R, Prado-Cohrs D, Juliao P. Barriers to vaccination in Latin America: A systematic literature review. Vaccine. 2020 Jan 16;38(3):470-481. doi: 10.1016/j.vaccine.2019.10.088.
9.   Wooping coughs: Vaccine coverage for pregnant TPA drops by 28% in 2020. FEBRASGO. Available at https://www.febrasgo.org.br/pt/noticias/item/1273-coqueluche-cobertura-vacinal-de-dtpa-gestante-cai-28-em-2020 (accessed on 10 February 2023).
10.   Fernandes FCGM, Santos EGO, Barbosa IR. Age of first pregnancy in Brazil: data from the national health survey. J Hum Growth Dev. 2019; 29(3):304-312. DOI: https://doi.org/10.7322/jhgd.v29.9523
11.   Ropero Alvarez AM, Vilajeliu A, Magariños M, Jauregui B, Guzmán L, Whittembury A, Cain E, Garcia O, Montesanos R, Ruiz Matus C; PAHO MNI working group. Enablers and barriers of maternal and neonatal immunization programs in Latin America. Vaccine. 2021 Jul 30;39 Suppl 2:B34-B43. doi: 10.1016/j.vaccine.2020.07.051.
12.   da Costa GD, Cotta RM, Reis JR, Siqueira-Batista R, Gomes AP, Franceschini Sdo C. Avaliação do cuidado à saúde da gestante no contexto do Programa Saúde da Família [Evaluation of the care to the pregnant woman's health in the context of the Family Health Program]. Cien Saude Colet. 2009 Oct;14 Suppl 1:1347-57. doi: 10.1590/s1413-81232009000800007.