







Covid-19 vaccination analysis in the population deprived of liberty: an ecological study

Análise da vacinação contra Covid-19 na população privada de liberdade: estudo ecológico

Análisis de la vacunación contra el Covid-19 en la población privada de libertad: estudio ecológico

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ABSTRACT

Objective: to analyze the Covid-19 vaccination scenario in the population deprived of liberty in a state in the Brazilian Northeast. **Method:** observational and ecological study, with data extracted from the Brazilian Penitentiary Information System and the bulletins published by the National Council of Justice, referring to October 2021 to June 2022, submitted to descriptive statistical analysis, using absolute and relative frequencies. **Results:** it was found that of the 4,345 people deprived of their liberty who had received the first dose of Covid-19 vaccination, only 573 had received the second dose and none had received the third dose. **Conclusion:** it was evident that, although vaccination is a benefit, it is still a major challenge to implement it for the population deprived of their liberty, since even though they are considered priority groups, access to this right has been hampered for these individuals.

Descriptors: COVID-19; Nursing; Prisons; Prisoners; Vaccines.

RESUMO

Objetivo: analisar o cenário de vacinação contra Covid-19 na população privada de liberdade em um estado do Nordeste brasileiro. **Método:** estudo do tipo observacional e ecológico, com os dados extraídos do Sistema de informações penitenciário brasileiro e dos boletins publicados pelo Conselho Nacional de Justiça, referentes a outubro de 2021 a junho de 2022, submetidos à análise estatística descritiva, por meio de frequências absolutas e relativas. **Resultados:** verificou-se que, entre 4.345 pessoas privadas de liberdade com a primeira dose de vacinação contra Covid-19, apenas 573 possuíam a segunda dose e nenhuma a terceira dose. **Conclusão:** evidenciou-se que, apesar da vacinação ser um benefício, ainda é um grande desafio para ser implementada para a população privada de liberdade, visto que, mesmo sendo considerados grupos prioritários, o acesso a esse direito foi prejudicado para esses indivíduos.

Descritores: COVID-19; Enfermagem; Prisões; Prisioneiros; Vacinas.

RESUMEN

Objetivo: analizar el escenario de vacunación contra el Covid-19 en la población privada de libertad en un estado del Nordeste brasileño. **Método:** estudio observacional y ecológico, con datos extraídos del Sistema de Información Penitenciaria de Brasil y boletines publicados por el Consejo Nacional de Justicia, correspondientes al periodo entre octubre de 2021 y junio de 2022, sometidos a análisis estadístico descriptivo, utilizando frecuencias absolutas y relativas. **Resultados:** se encontró que, de las 4.345 personas privadas de libertad con la primera dosis de la vacuna contra el Covid-19, solo 573 contaban con la segunda dosis y ninguna tenía la tercera dosis. **Conclusión:** se observó que, pese a que la vacunación es un beneficio, sigue siendo un gran desafío implementarla para la población privada de libertad, ya que, si bien se los consideran grupos prioritarios, el acceso a este derecho se vio afectado para estos individuos.

Descriptores: COVID-19; Enfermería; Prisiones; Prisioneros; Vacunas.

INTRODUCTION

The acute respiratory syndrome pandemic caused by the type-2 coronavirus (SARS-CoV-2), also known as Covid-19, has been affecting the Brazilian population since 2020. This scenario, as a health crisis, has further deepened social inequalities, an expression of the social, political, and economic crises. In this context, one of the measures to prevent transmission is vaccination, which has prioritized risk groups, at first represented by the older adult population and health professionals on the front line of combating and attending to cases of the disease, followed, as immunobiologicals become available, by the most vulnerable groups¹.

At the beginning of the pandemic, in 2020, state governments adopted several restrictive measures to mitigate the transmission of SARS-COV-2 in places of deprivation of liberty, such as restricting visits, outdoor activities, sunbathing, as well as suspending collective activities in schools, workshops, work and other assistance². However, many of the measures taken to contain the spread of the virus have ended up restricting access to rights³.

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These establishments are particularly challenging when it comes to preventing not only Covid-19, but also other infectious diseases. They are places that present various obstacles, such as crowds of people, because they don't always have the right architecture to allow for physical distancing and, especially, good ventilation². Another important aspect that aids the onset of these problems is the confinement time, as being exposed to this situation contributes to this process⁴.

Based on the data provided by the National Council of Justice (CNJ) Covid-19 Monitoring Bulletin, it became clear that it was not only the population deprived of liberty (PDL) that was exposed to the risks of the type-2 coronavirus within the prison system, as prison officers and other prison staff were the biggest victims of the pandemic within Brazilian prisons².

With the difficulties in effectively implementing the recommended prevention measures, it is possible to infer that the Covid-19 transmission can only be better controlled by vaccinating this population³.

In this context, this study sought to answer the following guiding question: what is the vaccination scenario against Covid-19 in the population deprived of liberty in a northeastern Brazilian state?

In order to answer this question, this study aimed to analyze the Covid-19 vaccination scenario in the population deprived of liberty in a Brazilian northeastern state.

METHOD

This is an observational and ecological study, whose information used in the data composition was collected from monthly data, made available between October 2021 and June 2022, in the Brazilian Prison Information System (*Sistema de Informações Penitenciário Brasileiro*, INFOPEN) and monthly bulletins published during this period by the National Council of Justice (CNJ), which allow data to be extracted and organized quickly according to the query to be tabulated. Infopen and the CNJ are public institutions that have publicly released data on the Brazilian prison system in electronic form (online).

The variables analyzed in relation to the prison context included: the number of people deprived of their liberty, divided by gender, age and category (provisional measure, provisional prison, and convicts). In addition, among the variables that demonstrate the prison system's health conditions, the following were evaluated: the number of health professionals working, and the number of professionals and people deprived of their liberty who had been vaccinated against Covid-19.

The data collected from the information systems and considered relevant was extracted and summarized in the form of tables and graphs, using EXCEL® software (Microsoft Office), which were constructed by the researcher in charge, containing the variables on health conditions and vaccination against Covid-19 in individuals deprived of their liberty and the absolute and relative values of each one.

The analysis was carried out using simple descriptive statistics, with the aim of schematizing the variability of the data between them. After measuring the data, it was presented descriptively in terms of absolute and relative frequencies.

The ethical aspects of the National Health Council's resolutions on the rules applicable to research were respected, considering that these are methodological procedures involving research with public databases, whose information is aggregated, without the possibility of individual identification. The data is directly obtained from information in the public domain, which does not entail risks for the population under study, but only brings benefits in terms of reviewing data and developing strategies to deal with the situation⁸.

RESULTS

The results presented are based on the information extracted from the bulletins. However, the lack of information completeness prevented the extraction of more data on the subject studied.

According to the State Secretariat for Resocialization and Social Inclusion⁹, the active prison population can be divided into convicts, provisional prisoners, those on security measures and those undergoing outpatient treatment.

Thus, by June 2022, the state's prisons had a total of 4,611 prisoners, of whom 4,463 were men and 156 women, with none in outpatient treatment, as shown in Figures 1 and 2.

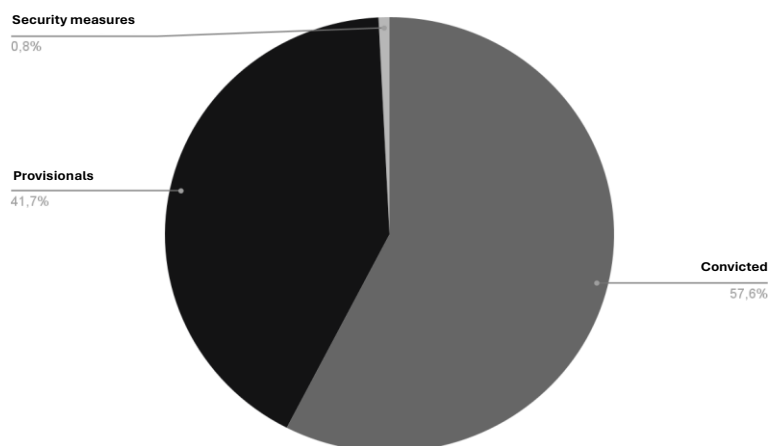


Figure 1: Number of men deprived of their liberty in a state in the Brazilian Northeast, separated by category (SERIS AL, 2022). Maceió, AL, Brazil, 2022.

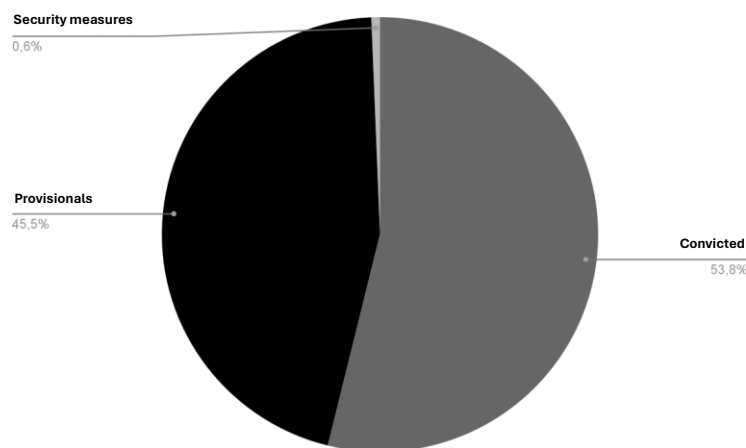


Figure 2: Number of women deprived of their liberty in a northeastern Brazilian state, separated by category (SERIS AL, 2022). Maceió, AL, Brazil, 2022.

When analyzing by age group, the largest number of prisoners was between 25 and 29 years old (1,304), and the smallest number corresponded to the group over 60 (72) in Alagoas⁹.

In relation to health professionals, by June 2022, the prisons in Alagoas had the number shown in Table 1.

Table 1: Number of health professionals in the Alagoas prison system. Maceió, AL, Brazil, 2022.

Health professionals in Alagoas' prison systems	n
Nurse	21
General practitioners	12
Nursing assistants and technicians	68
Psychologists	15
Psychiatrists	12
Occupational therapists	5
Dentists	10
Dental technicians	10
Other specialist physicians	4

Source: Penitentiary department information system¹⁰. Maceio, AL, Brazil, 2022.

From this context, according to data from the monthly CNJ Covid-19 Monitoring bulletin, data for the period from October 2021 to June 2022 shows that vaccination in Alagoas began in November 2021.

Table 2 shows the number of vaccine doses administered in the period studied.

Table 2: Number of people deprived of their liberty and prison staff in Alagoas vaccinated against Covid-19 in October 2021. Maceió, AL, Brazil, 2022.

PDL		Staff	
first dose (n)	second dose (n)	first dose (n)	second dose (n)
4.345	573	822	536

Source: National Council of Justice, 2022.

As a result, until the last month analyzed, Alagoas had 4,345 people deprived of their liberty with the first vaccination dose. However, only 573 of these have received the second dose and none have received the third dose. In relation to civil servants, 822 of them have received the first vaccine dose, while only 536 have received the second dose and none have received the third dose¹¹.

As a result, 94% of people deprived of their liberty were immunized with the first dose of the Covid-19 vaccine. However, only 18.9% had received the second dose of the immunobiologicals and none of those assessed had received the third dose up until the period studied. In addition, the number of vaccinated people shown above did not change until June 2022¹¹.

DISCUSSION

The National Plan for the Operationalization of Vaccination against Covid-19 listed priority groups to receive the immunobiological, since at first there was no ideal quantity of vaccines to immunize the entire population. Thus, workers in prisons and people deprived of their liberty were prioritized, as well as other vulnerable groups¹².

This decision was based on the vulnerability of this environment, in which individuals are susceptible to infectious diseases, mainly due to poor housing conditions and restricted circulation, as well as the impossibility of adopting effective preventive measures in these establishments. Therefore, it is a place with potential for outbreaks, which may contribute to an increase in the occurrence of cases outside these establishments¹².

Vaccinating people deprived of their liberty should follow the hierarchy of risks and priorities adopted for the general population, since there is no reason to distinguish between them. Thus, with a limited number of vaccines, it was necessary to seek a balance to take into account comorbidities, age and the environment in which these people are inserted, thus making the vaccine an instrument of health equity for this population group, which faces various obstacles in using health services. In addition, access to this and other forms of prevention is a fundamental right that is described in the constitution and should be brought to every citizen¹³.

When faced with overcrowding in prisons, careful surveillance is essential to quickly detect the entry of the virus into these environments and prevent immediate and large-scale transmission. For Brazilian prisons, cohort isolation is recommended, so that suspected cases are isolated from groups already imprisoned, as there is no structure to isolate them in individual cells. In other words, isolate PDL with the same characteristics (suspected/infected) in different groups and places¹⁴.

In general, the literature states that in the general community, each infected person contaminates two to three people, but in prisons the contamination risk is ten times greater, given that the contamination occurs as a result of transfers between prisons without checking for illnesses, visits in prison (family and intimate), the crowding of modules and the cross-distribution of staff^{14,15}.

In this sense, the prevention of Covid-19 transmission comes through measures such as vaccination, as the vaccine can be seen as an instrument for improving health care in general, especially in an environment of high transmissibility of infectious agents such as the prison system, since the effective mechanisms for preventing Covid-19 have been failing. In addition, the human and material resources that are used for this prevention have been affected by the illness of professionals who are directly linked to the care of PDL, thus leaving the attention uncovered for other diseases, especially chronic-infectious ones. Another aspect to be considered is the possibility of the

emergence of new intramural epidemic waves, considering the current degree of circulation of new variants of SARS-CoV-2, some of which are more transmissible¹³.

In this context, it can be said that the Covid-19 transmission in a prison puts the prison community and their families at risk, since the rapid spread of the disease has an amplifying effect on the people who are part of the prison context and on the general community, rapidly multiplying the number of infected people¹⁶. Thus, the prevention and control of Covid-19 in the prison environment is a major challenge, which requires an effective approach by managers and civil society, as well as effective measures to tackle this problem, which will need to be implemented quickly to control the situation in Brazilian prisons¹⁵.

Thus, when analyzing national prisons and their quantitative context, by June 2022, there were 654,704 prisoners in semi-open, open, closed, provisional, security measures and outpatient treatment. Of these, 626,005 were male and 28,699 were female. In the same period, Alagoas had 4,619 prisoners. Unlike Alagoas, in Brazil the largest number of prisoners were aged between 35 and 34 (151,891), but the smallest number were also aged over 60 (11,829)¹⁰.

When analyzed in a national context, 87.7% (574,117) of people deprived of their liberty received the first dose, 68.4% (447,995) received the second dose and 41% (268,773) received the third dose. In Alagoas, no PDL received the third vaccine dose, and few received the second dose, when compared to the number who received the first dose¹¹.

Thus, despite being listed as the first and second priority groups in the latest version of the Ministry of Health's NIP published, the population deprived of liberty and prison staff, with the exception of health workers, have been slow to have their right to priority vaccination fully guaranteed, thus compromising prevention against the virus³.

Therefore, regardless of whether they are newcomers or already incarcerated, it is of great importance that anyone who shows symptoms compatible with Covid-19, even mild ones, be tested as soon as possible and, if positive, be isolated or guaranteed individual assistance. In addition, the prioritization of vaccination against Covid-19 must be put into practice, since it is guaranteed by law, as it is an important measure to reduce the occurrence of illness¹⁴.

In this scenario, informing health and safety professionals, providing them with PPE, diagnostic tests, vaccinations and adapting their practices to the risk of Covid-19 illness are essential, in addition to removing those who belong to the risk group from work¹⁴.

In this way, it can be inferred that prisons are more susceptible to the rapid spread of the disease due to their population density and the impossibility of effectively applying standard distancing measures. This scenario highlights the importance of organizing the flow of people in and out of prisons, as well as the traffic of people in the internal environment. It is necessary to observe the biosafety standards of the Covid-19 protocols and put them into practice in environments with these characteristics¹⁷.

Study limitations

A study limitation was the unavailability of information on the reasons why subsequent doses were not administered to the population deprived of their liberty, making it impossible to analyze them in greater depth. In order to minimize this situation, this information was requested from the Resocialization Secretariat, but they informed us that they did not yet have the information to make it available.

CONCLUSION

It was observed that vaccination was a major challenge for people deprived of their liberty, since even though they are considered a priority group, access to this right was jeopardized.

Thus, during the period analyzed, many prisoners had not completed the vaccination schedule, with a small portion receiving subsequent immunobiological doses, which highlights the difficulties faced by this population in being included in the methods for preventing Sars-CoV-2 infection.

In order to elucidate more clearly the reasons for these challenges in vaccination, further studies will be needed that include research within prison systems.

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Authors' contributions

Conceptualization, A.C.S.R. and A.A.P.S.; Methodology, C.S.R. and A.A.P.S.; Software, A.C.S.R. and W.B.S.; Validation, T.S.L. and A.A.P.S.; Formal Analysis, A.A.P.S.; Investigation, A.C.S.R.; Data Curation, A.C.S.R.; Manuscript Writing, A.C.S.R., M.M.M. and N.V.S.T.; Writing – Review and Editing, A.A.P.S.; Visualization, T.S.L. and W.B.S.; Supervision, A.A.P.S.; Project Administration, A.A.P.S. All authors read and agreed with the published version of the manuscript.