https://doi.org/10.1590/1980-549720210053

SPECIAL ARTICLE / *ARTIGO ESPECIAL*

Prevalence of COVID-19 infection in the prison system in Espírito Santo/Brazil: persons deprived of liberty and justice workers

Prevalência de infecção por COVID-19 no sistema prisional no Espírito Santo/Brasil: pessoas privadas de liberdade e trabalhadores da justiça

Adriana Ilha da Silva[I], Ethel Leonor Noia Maciel[I], Camila Leal Cravo Duque[II], Cristiana Costa Gomes[III], Erika do Nascimento Bianchi[II], Orlei Amaral Cardoso[III], Pablo Lira[IV], Pablo Medeiros Jabor[IV], Raphael Lubiana Zanotti[III], Ricardo Tristão Sá[V], Silvânio José de Souza Magno Filho[II], Eliana Zandonade[I]

ABSTRACT: ***Objective***: To present a prevalence study held in prisons and estimate the percentage of persons deprived of liberty, health professionals, and prison officers infected with SARS-CoV-2 in Espírito Santo (ES). ***Methods:*** This is a prevalence study with a sample from 34 ES prisons, stratified between August 31 and September 4, 2020, following the Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection. The participants were interviewed and underwent rapid tests to detect immunoglobulin G and M in the groups mentioned. ***Results:*** Among 1,830 individuals (311 health professionals, 675 prison officers, and 844 persons deprived of liberty — PDL), the prevalence of COVID-19 infection was 11.89% for health professionals, 22.07% for prison officers, and 31.64% for PDL. Most interviewees were male, aged 21 to 40 years, had completed elementary school and higher education, were multiracial, and situated in the Metropolitan area of Vitória. ***Conclusion***: The prevalence was higher among persons deprived of liberty in the closed regime in all regions, as well as prison officers working in the semi-open regime, particularly in the North region. As for the comparison between regimes and regions, differences were identified between PDL groups with positive test results. Effectively combating COVID-19 within the prison system requires prison release actions, testing, and mass vaccination, as well as other health actions.

Keywords: COVID-19. Epidemiology. Cross-sectional studies. Penitentiaries.

[I]Epidemiology Laboratory, Universidade Federal do Espírito Santo – Vitória (ES), Brazil.
[II]State Secretariat of Justice of Espírito Santo – Vitória (ES), Brazil.
[III]State Secretariat of Health of Espírito Santo – Vitória (ES), Brazil.
[IV]Instituto Jones Santos Neves – Vitória (ES), Brazil.
[V]Department of Social Medicine, Universidade Federal do Espírito Santo – Vitória (ES), Brazil.
Corresponding author: Ethel Leonor Noia Maciel. Avenida Marechal Campos, 1.468, Maruípe, CEP: 29047-105, Vitória (ES), Brazil. E-mail: ethel.maciel@gmail.com.
Conflict of interests: nothing to declare – **Financial support:** Secretariat of Justice (SEJUS); National Prison Department (DEPEN), Universidade Federal do Espírito Santo (UFES), and State Secretariat of Health (SESA).

RESUMO: ***Objetivo:*** Apresentar um estudo de prevalência em presídios e estimar o percentual de pessoas privadas de liberdade, profissionais de saúde e agentes penitenciários infectados com o SARS-CoV-2 no Espírito Santo (ES). ***Métodos:*** Tratou-se de um estudo de prevalência com amostragem realizada em 34 unidades prisionais no ES, estratificadas entre os dias 31 de agosto e 4 de setembro de 2020, com base no *Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection*. Realizaram-se entrevistas e testes rápidos para detecção de imunoglobina G e M nos grupos citados. ***Resultados:*** Entre os 1.830 indivíduos (311 profissionais de saúde, 675 agentes penitenciários e 844 pessoas privadas de liberdade — PPL), as prevalências de infecção por COVID-19 foram 11,89% para os profissionais de saúde, 22,07% para os agentes penitenciários e 31,64% para as PPL. A maioria era do sexo masculino, com idade entre 21 a 40 anos, ensino fundamental e superior e cor parda, e os entrevistados concentravam-se na Região Metropolitana de Vitória. ***Conclusão:*** Observou-se que a prevalência foi maior entre as pessoas privadas de liberdade em todas as regiões no regime fechado e para os agentes penitenciários no regime semiaberto, com destaque para a Região Norte. Quanto à comparação entre os regimes e região, observaram-se distinções entre os grupos das PPL com testes positivos. Para que se alcance a eficácia no combate à COVID-19 no sistema prisional, são necessárias ações de desencarceramento, testes e vacinação em massa, como também outras ações de saúde.

Palavras-chave: COVID-19. Epidemiologia. Estudos transversais. Penitenciárias.

INTRODUCTION

At the end of 2019, humanity began to face one of the greatest challenges to its existence, the emergence of COVID-19 (SARS-CoV-2). Its dissemination led the World Health Organization (WHO) to declare a pandemic on March 11, 2020, providing countries with prevention and coping measures[1]. In Brazil, the first case of COVID-19 was confirmed on February 26, 2020. The unstable political context and the lack of integrated national coordination with states and municipalities did not favor the planning of strategies for preventing and tackling the advance of the virus, let alone the prioritization of strategies for vulnerable populations[2].

Regarding the most vulnerable groups, the WHO has made specific recommendations for preventing and controlling COVID-19 in the prison system. They consist of evaluating the possibility of parole for people who do not pose a danger to society and who belong to the risk group ("older adults; pregnant women; people with chronic/respiratory diseases or immunosuppressive conditions"). Moreover, "public policies to mitigate inequality must accompany judicial decisions to release these people, once many former convicts have no family and social support" [3]. Other instructions relate to screening procedures for all who enter the correctional facility— new persons deprived of liberty (PDL), workers, visitors, etc. —, as well as containment procedures, with quarantine to those who test positive for coronavirus[3].

Recommendation 62/2020 of the Brazilian National Council of Justice[4] (*Conselho Nacional de Justiça* — CNJ) followed the measures proposed by WHO and reinforced sanitary actions, such as restricting visits and instructing that cells and common areas be cleaned more often.

We emphasize that the State is responsible for the health needs of PDL, as determined by the Prison Law (*Lei de Execução Penal* — PEL)[5] and the National Policy for Integral Health Care for Persons Deprived of Liberty (*Política Nacional de Atenção Integral à Saúde da Pessoa Privada de Liberdade* — PNAISP)[6], the latter with actions at all levels of complexity, organized by prison health teams.

According to data from the Board of Directors overseeing the General Administration of Correction Facilities (*Diretoria de Administração Geral dos Estabelecimentos Penais* — DIRAGESP), on August 31, 2020, the Espírito Santo (ES) Prison System held 21,970 PDL in custody. Correction facilities are distributed in 17 penitentiaries, a custody house, a resocialization center, three female prisons, ten temporary detention centers, a screening center, a custody and psychiatric facility (*unidade de custódia e tratamento psiquiátrico* — UCTP), and a prison health unit (*unidade de saúde do sistema penal* — USSP). These 33 prison units, as well as the UCTP and USSP, are grouped as follows:

1. North region: Centro de Detenção Provisória de Colatina, Centro Prisional Feminino de Colatina, Penitenciária Semiaberta Masculina de Colatina, Penitenciária de Segurança Média de Colatina, Penitenciária Regional de Barra de São Francisco, Centro de Detenção Provisória de São Domingos do Norte, Centro de Detenção Provisória de São Mateus (CDPSM), Penitenciária Regional de São Mateus, Centro de Detenção e Ressocialização de Linhares, Penitenciária Regional de Linhares, and Centro de Detenção Provisória de Aracruz;
2. Metropolitan area: Unidade de Custódia e Tratamento Psiquiátrico, Centro Prisional Feminino de Cariacica, Penitenciária Semiaberta de Cariacica. The Complexo de Viana consists of the Unidade de Saúde do Sistema Penal, Centro de Triagem de Viana, Centro de Detenção Provisória de Viana II, Penitenciária de Segurança Média II, Penitenciária Agrícola do Espírito Santo, Penitenciária de Segurança Máxima I, Penitenciária de Segurança Máxima II, and Penitenciária de Segurança Média I. Vila Velha has the Casa de Custódia de Vila Velha and the Complexo de Xuri, with the following units: Centro de Detenção Provisória de Vila Velha, Penitenciária Estadual de Vila Velha I, Penitenciária Estadual de Vila Velha II, Penitenciária Estadual de Vila Velha III, Penitenciária Semiaberta de Vila Velha, Penitenciária Estadual de Vila Velha V. The region also has the Centro de Detenção Provisória de Guarapari and Centro de Detenção Provisória de Serra;
3. South region: Centro de Detenção Provisória de Cachoeiro de Itapemirim, Centro Prisional Feminino de Cachoeiro de Itapemirim, Penitenciária Regional de Cachoeiro de Itapemirim, and Centro de Detenção Provisória de Marataízes.

Institutionalized populations deserve differentiated care due to their susceptibility to infection dissemination, especially the prison population. Knowing the extent of the disease and its real impact on morbidity and mortality is essential to predict health service demands and devise an adequate plan.

The State Secretariat of Justice (*Secretaria de Estado da Justiça* — SEJUS) of Espírito Santo developed a protocol and contingency plan against COVID-19, validated by the Secretariat of

Health, to be followed in all prisons. In addition to hygiene and health care guidelines, other measures were adopted, such as temperature measurement, identification of PDL with flu symptoms, postponement and rescheduling of family visits, and external work activities.

In this scenario, seroprevalence surveys have become crucial to estimate cases of COVID-19 infection and its expansion in a given region under the management of health surveillance services in order to better know the profile of the disease, as well as favor decision-making to tackle the pandemic within walls. Moreover, during data monitoring, a greater number of cases were identified in the CDPSM, mirroring the scenario within walls. Thus, carrying out a survey to validate the performance of the measures adopted by SEJUS became important.

From this perspective, the present study proposes to present an analysis of the prevalence of COVID-19 in 34 penitentiaries to estimate the percentage of PDL, health professionals, and prison officers infected with SARS-CoV-2 in ES.

METHODS

STUDY TYPE

We conducted a prevalence study of the prison population of Espírito Santo (PDL, health professionals, and prison officers). This research design followed the Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection[7], as detailed below.

POPULATION AND SAMPLE

We carried out a population-based survey, sampled in all ES prisons, stratified by PDL (n=21,970), health professionals (n=441), and prison officers (n=3,101). The study was conducted between August 31 and September 4, 2020.

The sample size was calculated considering the populations described above, a 10% expected prevalence, a 2% sampling error, and a 5% significance level. Tests were performed in all penitentiaries of the state of Espírito Santo, totaling 34 facilities. Samples were calculated proportionally to the number of individuals in the three population strata from each prison. Table 1 shows the general population and the number of people assessed in each stratum.

FIELDWORK STEPS

Choice of survey participants

Based on a listing provided by SEJUS, a random draw was made of the names that would participate in the research. Considering the rotational characteristics of this

system, the logistics of transfers between prison units, the staff on vacation or on leave due to several reasons, as well as refusals during the performance of the epidemiological survey, we had to increase the sample reach with new draws, which corresponded to 20% of new participants in the research. We decided to conduct the survey in one week (five working days) so all workers would have the chance to participate, even those who work on shifts.

Of note, the study population comprised the prison population without distinction of gender or sentence regime, in addition to professionals who work directly in the prison health system, including prison officers.

Application use and data collection monitoring

We adopted the ArcGIS software, more specifically the collaborative tool Survey123 of the ArcGIS Enterprise Platform, which allows elaborating previously formatted collaborative forms. The Microsoft Office Pro Excel 2016 tool was also used to formulate questions.

The form was installed on mobile devices, with full offline use (the variables are described in item d below), so that it could be administered within prison units. At the end of each day, the devices were connected to the Internet, and the technical staff immediately received the data package collected that day.

In order to optimize the field activities, an interactive panel was developed to follow the research progress in each prison. The Operations Dashboard, available at ArcGIS Enterprise, was adopted to build the interactive panel and present the data collected from the questionnaires clearly and objectively. This tool uses maps, graphs, and other visual elements to display the data received from the questionnaire. Integrated with Survey123, the data are updated in real-time and can be used to perform actions (analyses) with pre-set filters.

Thus, throughout the research, we could monitor which units were close to reaching or had reached the targets for each of the profiles covered by the survey (inmates, prison officers, and health professionals).

Table 1. Sample size calculation for the three groups studied, considering the population size n, the expected prevalence, and the sampling error.

Population	n	Expected prevalence	Sampling error	Sample size
Persons deprived of liberty	21,970	10%	2.0	832
Health professionals	441	10%	2.0	293
Prison officers	3,101	10%	2.0	667
Total	25,512			1,801

COVID-19 test

Interviewers were trained to perform the test with a blood sample obtained by finger prick. We used the rapid immunochromatographic test for immunoglobulin M (IgM) and G (IgG) antibodies of the MedLevensohn brand, registered in the National Brazilian Health Regulatory Agency (*Agência Nacional de Vigilância Sanitária* — ANVISA) under No. 80,560,310,056. It has a 97.4% sensitivity and 99.3% specificity for IgG and an 86.8% sensitivity and 98.6% specificity for IgM.

The interview team received the full personal protective equipment (PPE) recommended by ANVISA for potential contact with people with COVID-19, in addition to cell phones and alcohol.

Questionnaire administration

In addition to the COVID-19 test, we collected the following participant information: gender, age, schooling, self-reported skin color, COVID-19 symptoms (cough, fever, tiredness, body pain, difficulty breathing, taste and smell changes) in the 15 days prior to the interview, and other unrelated symptoms. Also, specific data from each worker were investigated, such as: working hours, whether they worked in another facility, commute variables (prison officers and health professionals). Individuals from all three segments were asked about existing comorbidities. For health professionals and prison officers, work and commute information was gathered.

STATISTICAL DATA ANALYSIS

Data were collected using the application mentioned above. This information formed the database and was statistically analyzed by the Statistical Package for the Social Sciences (SPSS), version 20.0. We created frequency tables and estimated the prevalence and confidence intervals. The test results were associated with the study variables. The significance level adopted was 5%.

ETHICS

This study complied with Brazilian Resolutions 466/2012 and 510/2016 and was approved by the Ethics Committee of Health Sciences Center of the Universidade Federal do Espírito Santo, under opinion number 4,209,127. All selected individuals were informed about the study objectives, as well as its risks and advantages; materials and information were collected only after the participants signed the informed consent form. All individuals tested received the result from SEJUS and health professionals. Positive cases were reported

to the municipal health service for the necessary actions. Appropriate biological safety measures were taken to ensure the health of workers who collected data and materials.

During the epidemiological survey, control measures were taken for active cases of the disease. Inmates were referred to specific quarantine areas and received the necessary care by health teams. The workers went on leave and were instructed to seek the nearest health service.

RESULTS

We assessed 1,830 individuals — 311 health professionals, 675 prison officers, and 844 PDL. Among them, 37, 149, and 265 tested positive for COVID-19, respectively. According to Table 2, interviewees were mainly from penitentiaries in the Metropolitan area of Vitória (PDL 65.2%; health professionals 61.7%; officers 59.4%) and from the closed regime (PDL 88.6%; health professionals 90.7%; officers 89.5%); most PDL and prison officers were males (95 and 76.3%, respectively), while most health professionals were females (76.8%).

Among the PDL interviewed, the prevalent age group was 21 to 30 years (51.5%), the main level of education was elementary school (66.1%), and most individuals self-declared as multiracial (57.7%) and black (21%).

Health professionals were aged 31 to 40 years (41.3%), with complete higher education (43.6%), and self-declared as multiracial (44.8%) and white (41%). Similarly, prison officers were in the age group 31 to 40 years (54.8%), with complete higher education (45.6%), and self-declared as multiracial (49.9%) and white (33.2%).

Table 3 presents prevalence results, with their respective confidence intervals, as well as the estimated positive population in each category. The prevalence was 11.89% for health professionals, 22.07% for prison officers, and 31.64% for PDL.

Figure 1 shows the prevalence according to the region of Espírito Santo separated by groups. The North region had the highest prevalence rates for the three categories — 19.8% for health professionals, 25.9% for prison officers, and 43.7% for PDL.

Table 4 describes the prevalence per region and regime for the three categories studied. We identified a difference between the prevalence of the closed or semi-open prison regime in the North region and the Metropolitan area. In the North region, the prevalence rates that stood out were 0% in the semi-open and 20.5% in the closed regime for health professionals and of 24.2% in the closed and 54.5% in the semi-open regime for prison officers. In the Metropolitan area, 31.1% of PDL were in the closed and 16.1% in the semi-open regime, while 24.0% of prison officers worked in the closed and 6.7% in the semi-open regime.

Regarding the prevalence per region, regime, and category, the North region presented the highest rates in the closed system in all categories: PDL 44.1%, prison officers 24.2%, and health professionals 20.5%. Compared to the others, this region and the closed regime were similar in terms of the prevalence of positive SEJUS prison officers (24%)

Table 2. Profile of the interviewees stratified by persons deprived of liberty, health professionals, and prison officers.

Variable	Category	PDL n=844		Health n=311		Officers n=675	
		n	%	n	%	n	%
Prison location							
	Metropolitan area	550	65.2	192	61.7	401	59.4
	North	213	25.2	91	29.3	193	28.6
	South	81	9.6	28	9.0	81	12.0
Regime							
	Closed	748	88.6	282	90.7	604	89.5
	Semi-open	96	11.4	29	9.3	71	10.5
Gender							
	Female	42	5.0	239	76.8	160	23.7
	Male	802	95.0	72	23.2	511	76.3
Age group (years)							
	Up to 20	52	6.3	0	0.0	1	0.2
	21 to 30	422	51.5	115	37.1	46	6.8
	31 to 40	219	26.7	128	41.3	369	54.8
	41 to 50	88	10.7	51	16.5	208	31
	51 to 60	25	3.1	14	4.5	42	6.2
	61 and older	14	1.7	2	0.6	7	1.0
What is your education level?							
	Elementary school	544	66.1				
	High school	265	32.2				
	Higher education	14	1.7				
	Complete high school			55	17.7	181	26.9
	Incomplete higher education			19	6.1	92	13.6
	Complete higher education			135	43.6	307	45.6
	Master's degree			101	32.6	94	13.9
How do you identify as to skin color or ethnicity?							
	Asian	11	1.3	3	1.0	4	0.6
	White	168	19.9	127	41	224	33.2
	Indigenous	1	0.1	0	0.0	4	0.6
	Multiracial	487	57.7	139	44.8	337	49.9
	Black	177	21.0	41	13.2	106	15.7

PDL: persons deprived of liberty.

in the Metropolitan area and were very close to positive health professionals (17.9%) in the South region.

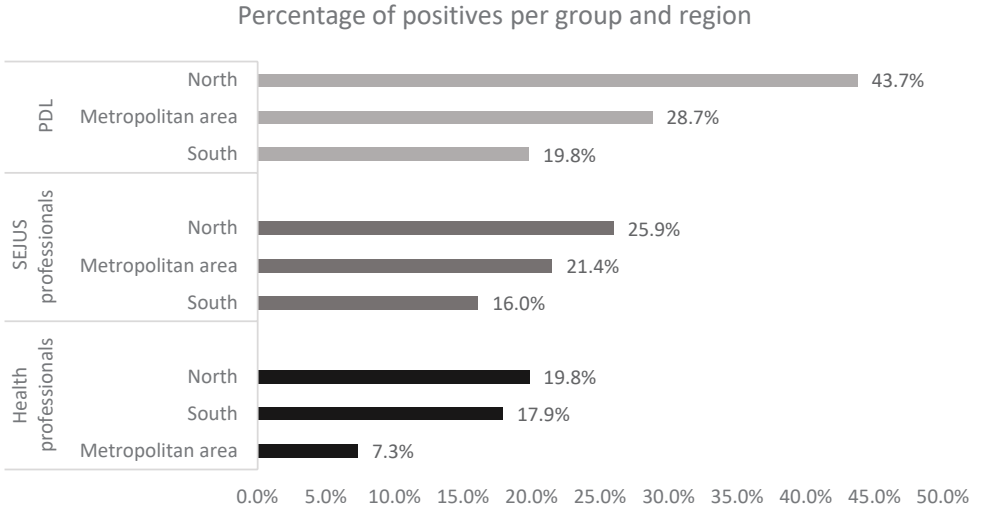
In the semi-open regime, the North region presented a 54.5% prevalence of COVID-19 infection, that is, approximately eight times more prison officers than the Metropolitan area and twice the number of positive PDL.

As for the analysis per group and regime, the prevalence of COVID-19 among PDL was higher in the closed regime, regardless of region, with variations ranging from 31.1 to 44.1%. Concerning prison officers, we found a regional distinction: in the North region, the highest prevalence was identified in the closed regime (24% versus 6.7% in the semi-open regime); contrary to the situation in the Metropolitan area (54.5% in the semi-open versus 24.2% in the closed regime) (Table 4).

Table 3. Prevalence results of COVID-19 infection for the three categories studied.

Groups	n	COVID-19 +			COVID-19 estimates	
		n	Prev (%)	95%CI	n*	95%CI
Health professionals	311	37	11.89	8.14–15.66	52	36–69
Prison officers	675	149	22.07	18.87–25.28	684	585–784
PDL†*	884	265	31.64	28.44–34.83	6,951	6,248–7,652

*A projection of positive patients was made for the groups studied. †Persons deprived of liberty; 95%CI: 95% confidence interval; prev: prevalence.



PDL: persons deprived of liberty. SEJUS: Secretariat of Justice.

Figure 1. Prevalence of COVID-19 infection according to Espírito Santo region and to groups.

DISCUSSION

This survey analyzing the COVID-19 prevalence in the Espírito Santo prison system demonstrated its importance for the discussion and decision-making by the public sector. The data examined allows evaluating and operationalizing actions for combating COVID-19 in prisons, particularly the greater prevalence among PDL in the closed regime in all regions and among prison officers working in the semi-open regime, with emphasis on the North region, even though the largest concentration of interviewees was in the Metropolitan area of Vitória.

The 31.64% prevalence shows that PDL, given the conditions of their incarceration and the epidemiological dynamics of the novel coronavirus, are more vulnerable to rapid transmission and, consequently, considered more serious than the general population, especially when compared to the ES population in the same period[8].

International studies presented similar results; for instance, in the research carried out by Hagan et al.[9], the prevalence of SARS-CoV-2 was, on average, 42.6% among the PDL of 16 prisons in the United States. Also, in the state of California alone[10], out of 96,440 PDL, 15,162 tested positive.

The literature consensus is that prisons are more vulnerable to the rapid spread of COVID-19 due to their population density and the inviability of standard distancing measures; therefore, health results related to SARS-CoV-2 are worse among PDL than in the general population[11,12].

This scenario highlights the need to measure and control the density of all social interaction, be it the contact with family members, lawyers, and health professionals or with prison officers. In other words, the organization of the flow and of the screening for the

Table 4. Total of individuals assessed and prevalence of COVID-19 infection according to region, regime, and category.

Region	Regime	Health		Officers		PDL	
		n	%	n	%	n	%
Metropolitan area							
	Closed	166	7.2	341	24.0	463	31.1
	Semi-open	26	7.7	60	6.7	87	16.1
North							
	Closed	88	20.5	182	24.2	204	44.1
	Semi-open	3	0.0	11	54.5	9	33.3
South*							
	Closed	28	17.9	81	16.0	81	19.8

*In this region, the unit only works with the closed regime. PDL: persons deprived of liberty.

entry and exit of people in prisons, as well as the transit within the internal environment, must observe biosafety standards of COVID-19 safety protocols.

In addition, studies on protective measures, such as prison release actions, testing, and mass vaccination, are necessary since prisons are still characterized as risky places that enhance dissemination, in addition to their overcrowding factors, lack of PPE, and poor hygiene conditions[12]. Thus, improving and reorganizing the infrastructure as to the sanitary conditions of the buildings are essential to maintain social distancing or isolation, considering the number of cells, treatment rooms, living areas, reception and screening areas, cafeterias, workshop and handicraft spaces, among others.

Failure to mitigate a wave within correctional facilities could lead to more hospitalization and deaths[3]. According to mathematical modeling studies, infections in the prison system occur earlier — on average, 63 days prior to the peak of infections in the general community[3]. Postponing the detention of 90% of people from COVID-19 risk groups could reduce prison mortality by 56.1%[3].

In short, incarceration impacts people's health, leaving them more vulnerable to infection, which, in addition to individual factors, can result in a worsening of the disease. Incarceration represents a continuous threat of infection and reinfection by the novel coronavirus in its severe form, mainly because asymptomatic individuals can disseminate the virus. Studies have shown that PDL have an increased prevalence of HIV, hepatitis B, hepatitis C, and syphilis. Besides, prisons have environments conducive to the spread of respiratory infections, such as influenza, tuberculosis, and, for the time being, also COVID-19.

In carrying out this study in the Espírito Santo prison system, we found that its strength lies not only in its applicability to other prison systems (national or international) but also in the hypothesis of a global trend, compared to other studies: when it comes to imprisonment or deprivation of people's liberty, the same problems and challenges are faced, which are enhanced by the COVID-19 pandemic. Nevertheless, our study had some limitations: the lack of daily control of the permanence or rotation of PDL and the work schedule of prison officers and health professionals, which demanded resamplings with new draws.

In conclusion, to effectively combat COVID-19 in the prison system, in addition to prison release actions, testing, and vaccination, we need intersectoral measures, with the joint work of legal, public health, psychosocial care, and prison system institutions advocating for the right to health and the mitigation of coronavirus in penitentiaries. These efforts should be concomitant with the development of actions in partnership with the organized civil society, family members, and lawyers, aiming to reduce cell overcrowding, improve ventilation systems, perform mass testing for COVID-19, track cases, and provide adequate access to health and psychosocial services.

REFERENCES

1. Brasil. Universidade Aberta do Sistema Único de Saúde. Organização Mundial de Saúde declara pandemia do novo Coronavírus [Internet]. 2020 [accessed on Sep. 29, 2021] Available at: https://www.unasus.gov.br/noticia/organizacao-mundial-de-saude-declara-pandemia-de-coronavirus

2. Crispim JA, Ramos ACV, Berra TZ, Santos MS, Santos FL, Alves LS, et al. Impacto e tendência da COVID-19 no sistema penitenciário do Brasil: um estudo ecológico. Ciênc Saúde Colet 2021; 26(1): 169-78. https://doi.org/10.1590/1413-81232020261.38442020
3. Carvalho SG, Santos ABS, Santos IM. A pandemia no cárcere: intervenções no superisolamento. Ciênc Saúde Coletiva 2020; 25(9): 3493-502. https://doi.org/10.1590/1413-81232020259.15682020
4. Poder Judiciário. Conselho Nacional de Justiça. Recomendação nº 62, de 17 de março de 2020. Recomenda aos Tribunais e magistrados a adoção de medidas preventivas à propagação da infecção pelo novo coronavírus – COVID-19 no âmbito dos sistemas de justiça penal e socioeducativo. Available at: https://atos.cnj.jus.br/files/original160026202003305e82179a4943a.pdf
5. Brasil. Presidência da República. Casa Civil. Subchefia para Assuntos Jurídicos. Lei nº 7.210, de 11 de julho de 1984. Institui a Lei de Execução penal. Diário Oficial da União 1984 – Seção 1 de 13 de julho de 1984. p. 10227. Available at: http://www.planalto.gov.br/ccivil_03/leis/l7210.htm
6. Brasil. Ministério da Saúde. Gabinete do Ministro. Portaria Interministerial nº 1, de 2 de janeiro de 2014. Institui a Política Nacional de Atenção Integral à Saúde das Pessoas Privadas de Liberdade no Sistema Prisional (PNAISP) no âmbito do Sistema Único de Saúde (SUS). Available at: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2014/pri0001_02_01_2014.html
7. World Health Organization. Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection. World Health Organization; 2020. Available at: https://apps.who.int/iris/handle/10665/332188
8. Silva AI, Maciel ELN, Duque CLC, Gomes CC, Bianchi EM, Cardoso OA, et al. Prevalência da infecção por COVID19 no sistema prisional no Espírito Santo/Brasil, 2020. https://doi.org/10.1590/1980-549720210053
9. Hagan LM, Williams SP, Spaulding AC, Toblin RL, Figlenski J, Ocampo J, et al. Mass testing for SARS-CoV-2 in 16 prisons and jails - six jurisdictions, United States, April-May 2020. MMWR Morb Mortal Wkly Rep 2020; 69(33): 1139-43. https://doi.org/10.15585/mmwr.mm6933a3
10. Kennedy BS, Richeson RP, Houde AJ. Risk factors for SARS-CoV-2 in a statewide correctional system. N Engl J Med 2020; 383(25): 2479-80. https://doi.org/10.1056/NEJMc2029354
11. Wallace M, Hagan L, Curran KG, Williams SP, Handanagic S, Bjork A, et al. COVID-19 in correctional and detention facilities - United States, February-April 2020. MMWR Morb Mortal Wkly Rep 2020; 69(19): 587-90. https://doi.org/10.15585/mmwr.mm6919e1
12. Pastoral Carcerária. Pastoral Carcerária divulga relatos e denúncias sobre o sistema carcerário em tempos de pandemia [Internet]. 2020 [cited on May 6, 2020]. Available at: https://carceraria.org.br/combate-e-prevencao-a-tortura/pastoral-carceraria-divulga-relatos-e-denuncias-sobre-o-sistema-carcerario-em-tempos-de-pandemia

Received on: 04/18/2021
Reviewed on: 08/06/2021
Accepted on: 08/18/2021
Preprint on: 09/01/2021
https://preprints.scielo.org/index.php/scielo/preprint/view/2887

Authors' contributions: Silva, A. I.: formal analysis, conceptualization, data curation, writing – original draft, writing – review & editing, methodology, validation. Maciel, E. L. N.: project administration, formal analysis, conceptualization, writing – review & editing, funding acquisition, methodology. Duque, C. L. C.: project administration, formal analysis, conceptualization, data curation, writing – review & editing, methodology, resources, supervision, validation. Gomes, C. C.: writing – review & editing, funding acquisition, resources. Bianchi, E. N.: project administration, formal analysis, conceptualization, data curation, writing – review & editing, methodology, resources, supervision, validation. Cardoso, O. A.: writing – review & editing, funding acquisition, resources. Lira, P.: writing – review & editing, funding acquisition, resources. Jabor, P. M.: formal analysis, conceptualization, data curation, writing – review & editing, methodology, software, supervision, validation. Zanotti, R. L.: writing – review & editing, funding acquisition, resources. Sá, R. T.: conceptualization, writing – review & editing, methodology. Magno Filho, S. J. S.: project administration, writing – review & editing, funding acquisition, resources. Zandonade, E.: formal analysis, conceptualization, data curation, writing – original draft, writing – review & editing, methodology, software, supervision, validation.

© 2021 Associação Brasileira de Saúde Coletiva
This is an open access article distributed under the terms of the Creative Commons license.