

## Recommended Non-Pharmacological Measures to Prevent and Control Covid-19 in the Prison System: A Scoping Review

Willie Otávio Bueno Bernardi<sup>1</sup>, Melisane Regina Lima Ferreira<sup>1</sup>, Nanci Michele Saita<sup>1</sup>, Keila Diane Lima de Sousa<sup>1</sup>, Rubia Laine de Paula Andrade<sup>1\*</sup>, Mellina Yamamura<sup>2</sup>, Aline Aparecida Monroe<sup>1</sup>

<sup>1</sup>Ribeirão Preto College of Nursing at São Paulo University (EERP/USP)

<sup>2</sup>Federal University of São Carlos (UFSCar)

### Review Article

**Date of Submission:** 03 October, 2022, Manuscript No. jnhs-22-78107; **Editor Assigned:** 05 October, 2022, Pre QC No. P-78107; **Reviewed:** 19 October, 2022, QC No. Q-78107; **Revised:** 24 October, 2022, Manuscript No. R-78107; **Published:** 31 October, 2022, DOI: 10.4172/JNHS.2022.8.10.48

#### \*For Correspondence

Rubia Laine de Paula Andrade, Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo (EERP/USP).

**Email:** rubia@eerp.usp.br

**Tel:** +55(16)3315-3407

#### Abstract

**Objective:** To identify non-pharmacological measures recommended by public managers to prevent and control Covid-19 in the prison system.

**Methods:** This is a Scoping Review which followed the recommendations of the Joanna Briggs Institute and the PRISMA Extension for Scoping Reviews and included: identification of the research question; bibliographic search; selection of publications; and data extraction.

**Results:** A total of 41 from 278 publications found in eight databases in February/2021 were included in this review. The recommendations were organized into: Entry (quarantine; screening); Detention (restriction of transfers; social distancing; isolation of cases); Release (early release; house arrest; alternative correctional measures); Employees (screening; health education; removal of suspects/confirmed); and Others (limitation of family/lawyer visits; strategies for maintaining family connections).

**Conclusions:** The main non-pharmacological measures to reduce the spread of Covid-19 were related to the different imprisonment periods (entry, permanence and release of prisoners) and the people who maintain contact with the prison system.

**Keywords:** Coronavirus Infections, COVID-19, Prisons, Disease Prevention, Communicable Disease Control

### INTRODUCTION

An estimated 10.7 million people are deprived of their liberty worldwide <sup>[1]</sup>. From this total, 530,922 new cases of Covid-19 were reported by November 26, 2021 among this population <sup>[2]</sup>. Considering the high transmissibility of the virus that causes the disease in institutionalized people and the complexity of the different scenarios, the implementation of non-pharmacological intervention measures to prevent and control Covid-19 is challenging, mainly due to the precariousness of the physical structure and the deficit of human resources of the prison units, which are usually sized according to the capacity and not by the occupancy rate <sup>[3]</sup>. Thus, exposure to unsanitary conditions and overcrowding in prisons, social and institutional marginalization, low education level, precarious healthcare conditions and overlapping of other comorbidities, such as the use of licit and illicit drugs, reinforces the vulnerability of persons deprived of their liberty to illness and complications from Covid-19 <sup>[3]</sup>.

Several weaknesses in health systems became evident with the emergence of the SARS-Cov-2 virus, which causes Covid-19, and consequently generated socioeconomic and health impacts, especially in vulnerable populations to illness and complications from Covid-19, such as those who are in prison. Thus, this situation imposed the task of reorganizing care to control the disease on health systems, instituting actions which ranged from health promotion and preventing virus transmission to case treatment. In view of the risk of the spread of Covid-19 within prison environments, understanding which SARS-Cov-2 coping strategies have been recommended in these contexts enables supporting an elaboration of public policies for decision-making and to establish a list of actions and practices to control the disease in prisons.

In view of the above, a preliminary study was carried out in the main review registry bases and in some bibliographic

# Research & Reviews: Journal of Nursing & Health Sciences

databases and no protocol or scoping review record on the topic was identified, which highlights the need for studies relating to this theme, aiming at including greater grounds for decision-making based on knowledge synthesis materials.

## OBJECTIVE

The objective of this study was to identify the non-pharmacological measures recommended by public managers to prevent and control Covid-19 in the prison system along with national and international scientific evidence.

## MATERIALS AND METHODS

This is a scoping review based on the methodology developed by the Joanna Briggs Institute Reviewer's Manual for Scoping Reviews<sup>[4]</sup> and recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - Extension for Scoping Reviews (PRISMA-ScR)<sup>[5]</sup>. It is noteworthy that this study was previously registered on the Open Science Framework Registries (OSFREGISTRIES) platform (doi: 10.17605/OSF.IO/Q8FTH) and its protocol is published in the Research, Society and Development journal<sup>[6]</sup>.

This study employed the following steps: identification of the research question; identification of relevant publications; registration and publication of the protocol; selection of publications; data extraction; data analysis; and evidence synthesis. First, descriptors for searching publications were identified which were derived from the guiding question: "What is the scientific evidence regarding the recommendations proposed by public managers to prevent and control Covid-19 in the population of persons deprived of liberty?", using the PCC strategy proposed by the Joanna Briggs Institute Reviewer<sup>[4]</sup>, in which: Population (P) corresponded to the public managers of health, justice and security; the Concept (C) to the propositions of recommendations which have been proposed to prevent and control Covid-19; and Context (C), to the prison system in the national and international scenarios.

It is noteworthy that included publications presented non-pharmacological recommendations to prevent and control Covid-19 among the prison population proposed by public health, justice and/or security managers or by national and international institutions/organizations/agencies. Studies whose recommendation was made by their authors were excluded, meaning they were not proposed by public health, justice and/or security managers or by national and international institutions/organizations/agencies.

In addition, we sought to include publications in English, Portuguese and Spanish, as well as the following study types: experimental and quasi-experimental, analytical observational, case series and case reports, qualitative studies, opinion articles, comments, debates, letter from the editor and editorials. Protocols, manuals, guides, technical notes and content from public domain sites were excluded. The descriptors mentioned in the PCC strategy, except for public health, justice and security managers, were identified controlled vocabulary/thesaurus - Descriptors in Health Sciences (DeCS), as well as the synonyms of each one and the corresponding descriptors in English and Spanish. Medical Subject Headings (MeSH) was also consulted for descriptors in English. Finally, previous searches were made in the databases in order to identify the free vocabulary also used in writing publications.

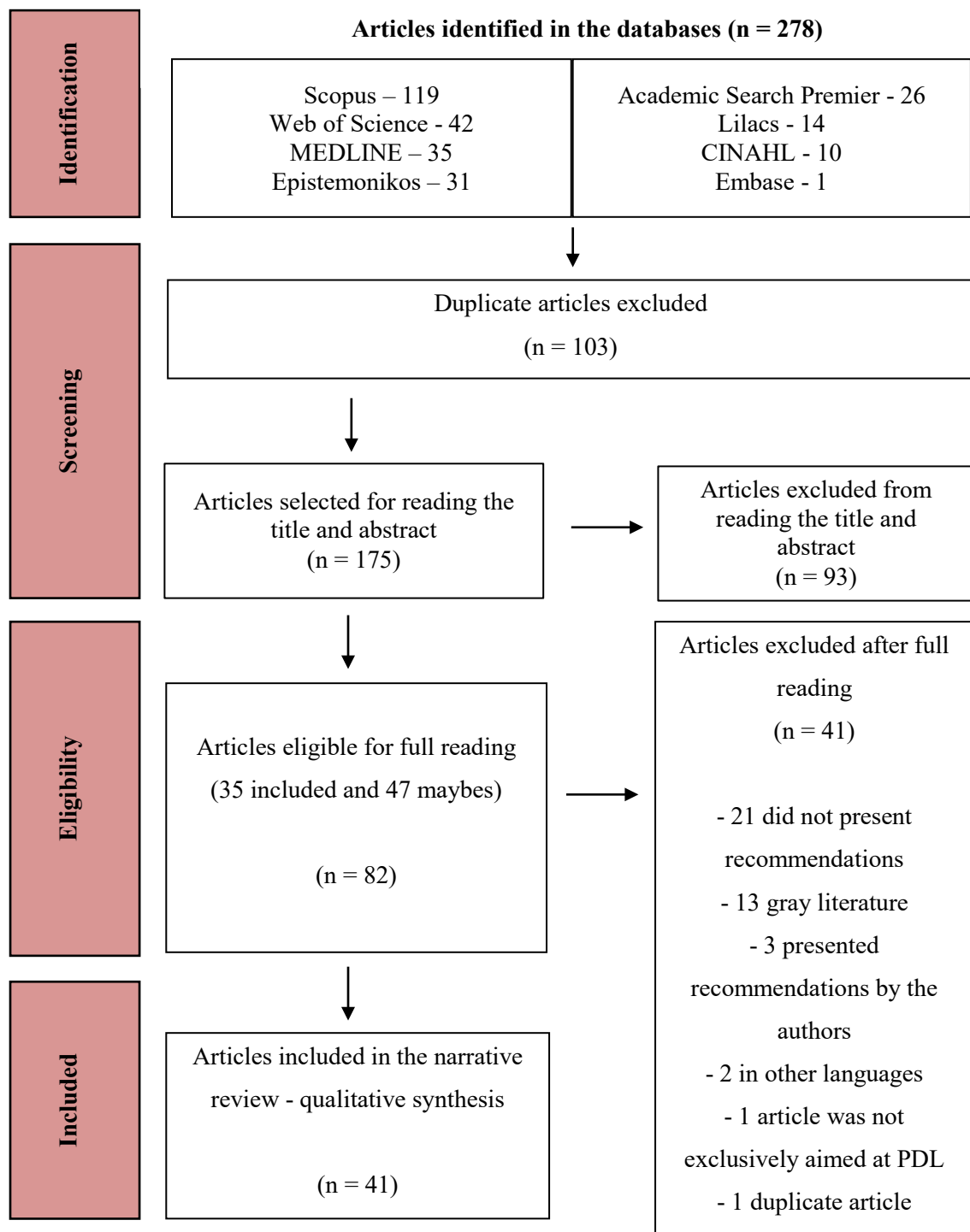
The databases used in the searches in February 2021 were: Scopus, Web of Science, Medical Literature Analysis and Retrieval System Online (MEDLINE), Epistemonikos, Virtual Health Library > Latin American and Caribbean Literature in Health Sciences (LILACS), Embase®, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Academic Search Premier. The vocabulary was used in Portuguese, English and Spanish in the searches made in LILACS, and the vocabulary was in English for the searches in the other databases.

The searches were performed by a researcher using the vocabulary found and the Boolean operators AND and OR. The search strategy presented in the published protocol<sup>[6]</sup> (including all identified vocabulary) was adapted for each database used and was limited to materials published after 2019 when Covid-19 occurred. After searching the databases, all identified citations were exported to the Rayyan QCRI online systematic review application from the Qatar Computing Research Institute<sup>[7]</sup> and after excluding duplicate publications, the selection process took place by two independent reviewers. A third reviewer was consulted in cases where there was disagreement. The publications eligible for prior reading of titles and abstracts underwent a second selection process through full reading of the materials.

The process of including studies in the review was presented in a flow diagram, as proposed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 Statement (PRISMA)<sup>[8]</sup>. Data from the included publications were extracted by one reviewer and checked by another reviewer using a data extraction form that included: article title, journal name, authors, language, year of publication, study location, study objective, study type, and main results. The synthesis of results was made narratively and presented graphically or in tables, as recommended by the Joanna Briggs Institute<sup>[4]</sup>. Finally, it should be noted that the products resulting from the data extraction were deposited in a secure repository at SciELO (doi: 10.48331/scielodata.AKUAXR).

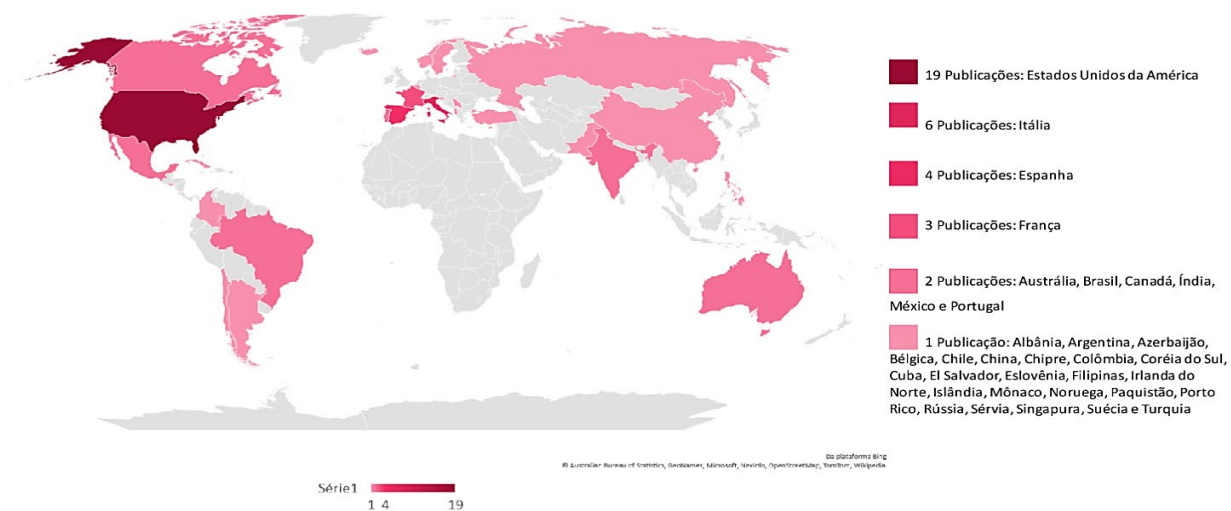
## RESULTS

The search in the databases enabled identifying 278 scientific productions, of which 103 publications were excluded because they were duplicates, and 93 after reading their titles and abstracts. Thus, 82 publications were considered eligible for full reading, of which 41 were included in the review (**Figure 1**).



**Figure 1** Flowchart identifying publications included in this scoping review on non-pharmacological measures recommended by public managers to prevent and control COVID-19 in the prison system, Ribeirão Preto, Brazil, 2021.

The recommendations proposed by public managers to prevent and control Covid-19 among the population deprived of liberty in the included publications came from 35 countries (some cited in more than one study and/or concomitantly with other countries). As a result, the United States of America deserves to be highlighted, as recommendations from the USA were presented in 19 publications (**Figure 2**).



**Figure 2** Distribution of the countries covered in the studies included in this scoping review on the non-pharmacological measures recommended by public managers to prevent and control COVID-19 in the prison system, Ribeirão Preto, Brazil, 2021.

Countries in Europe were covered 26 times in the publications, North America in 23, Asia in seven, South America in five, Central America in three and Oceania in two. Four transcontinental countries were also addressed.

Most of the 41 publications included were experience reports (18 - 43.9%) and commentaries (10 - 24.4%) (**Table 1**).

**Table 1** Description of articles included in this scoping review on non-pharmacological measures recommended to prevent and control COVID-19 in the prison system, Ribeirão Preto, SP, Brazil, 2021.

Authors/journal/year/country	Study design	Title	Study population (n)
Akiyama; Spaulding; Rich/N Engl J Med/2020/USA <sup>[3]</sup>	commentary	Flattening the curve for incarcerated populations - Covid-19 in jails and prisons	Not applicable
Davilantes et al./Morbidity and Mortality Weekly Report/2020/Puerto Rico <sup>[9]</sup>	commentary	Notes from the field: COVID-19 prevention practices in state prisons - Puerto Rico, 2020	Not applicable
Capacci et al./Clin Chem Lab Med/2021/Italy <sup>[10]</sup>	letter to the editor	Prevention and control of COVID-19 in the penitentiary of Florence	Not applicable
Clarke et al./Journal of Public Health/2020/Ireland <sup>[11]</sup>	experience report	Establishing prison-led contact tracing to prevent outbreaks of COVID-19 in prisons in Ireland	Not applicable
Rubin/JAMA - Journal of the American Medical Association/2020/USA <sup>[12]</sup>	commentary	The challenge of preventing COVID-19 spread in correctional facilities	Not applicable
Wallace et al/Morbidity and mortality weekly report/2020/USA <sup>[13]</sup>	experience report	Public health response to COVID-19 cases in correctional and detention facilities – Louisiana, March–April 2020	24 prison units
Collica-Cox; Molina/Victims & Offenders/2020/USA <sup>[14]</sup>	experience report	Controlling COVID while balancing service needs for the incarcerated - a national model for jails	Not applicable
Nelson; Kaminsky/Cancer Cytopathology/2020/USA <sup>[15]</sup>	commentary	A COVID-19 crisis in US jails and prisons	Not applicable
Vigilione et al./Victims & Offenders/2020/USA <sup>[16]</sup>	experience report	Adaptations to COVID-19 in community corrections agencies across the United States	213 administrators (the agencies were represented in 37 states nationwide)
Rapisarda; Byrne; Marmolejo/Victims & Offenders/2020/EUA, México, Cuba, Canada and El Salvador <sup>[17]</sup>	experience report	An examination of COVID-19 outbreaks in prisons and jails in North America, Central America, and the Caribbean	Not applicable
Rapisarda; Byrne/Victims & Offenders/2020/China, India, Pakistan, South Korea and the Philippines <sup>[18]</sup>	experience report	An examination of COVID-19 outbreaks in prisons and jails throughout Asia	Not applicable
di Giacomo et al./Am J Public Health/2020/Italy <sup>[19]</sup>	editorial	Italian prisons during the COVID-19 outbreak	Not applicable
Redondo et al./Victims & Offenders/2020/Spain and Portugal <sup>[20]</sup>	experience report	Corrections and crime in Spain and Portugal during the Covid-19 pandemic: impact, prevention and lessons for the future	Not applicable
Perez de Tudela/Victims & Offenders/2020/Spain <sup>[21]</sup>	experience report	Telematic control and semi-freedom as a response to the pandemic: the Spanish penitentiary system experience	Not applicable
Nowotny et al./Am J Public Health/2020/USA <sup>[22]</sup>	editorial	COVID-19 exposes need for progressive criminal justice reform	Not applicable

# Research & Reviews: Journal of Nursing & Health Sciences

Hawks; Woolhandler; McCormick/JAMA Internal Medicine/2020/USA <sup>[23]</sup>	commentary	COVID-19 in prisons and jails in the United States	Not applicable
Nomani; Nusrati; Mohtaj/International Journal of Pharmaceutical Research/2020/India <sup>[24]</sup>	experience report	Covid-19 pandemic and challenges of public health administration & criminal justice system	Not applicable
Inglesias-Osores/Revista Espanola de Sanidad Penitenciaria/2020/Spain <sup>[25]</sup>	letter to the editor	Transmission and prevention of SARS-CoV-2 (COVID-19) in prisons	Not applicable
Gagnon/Psychiatry Research/2020/USA <sup>[26]</sup>	letter to the editor	The solitary confinement of incarcerated American youth during COVID-19	Not applicable
Mukherjee; El-Bassel/The International Journal of Drug Policy/2020/USA <sup>[27]</sup>	commentary	The perfect storm: COVID-19, mass incarceration and the opioid epidemic	Not applicable
Ovchinnikov/Victims & Offenders/2020/Russia <sup>[28]</sup>	experience report	The Penitentiary System of Russia during the COVID-19 pandemic: a global challenge and initial results	Not applicable
Rao et al./Baylor University Medical Center Proceedings/2021/USA <sup>[29]</sup>	experience report	The evolution of health care in the Texas correctional system and the impact of COVID-19	Not applicable
Robinson; Heyman-Kantor; Angelotta/Am J Public Health/2020/USA <sup>[30]</sup>	editorial	Strategies mitigating the impact of the COVID-19 pandemic on incarcerated populations	Not applicable
Marmolejo et al./Victims & Offenders/2020/Argentina, Chile, Colombia and Mexico <sup>[31]</sup>	experience report	Responding to COVID-19 in Latin American prisons: the cases of Argentina, Chile, Colombia, and Mexico	Not applicable
Santos/Revista de Administração Pública/2020/Brazil <sup>[32]</sup>	Qualitative study	Dilemas morais da gestão pública brasileira no enfrentamento da pandemia do novo coronavírus	Not applicable
Pagano et al./Int. J. Environ. Res. Public Health/2020/Italy <sup>[33]</sup>	experience report	COVID-19 risk management and screening in the penitentiary facilities of the Salerno Province in Southern Italy	485 (prisoners) and 276 (police, administrative and medical personnel) blood tests for COVID-19
Piel/Journal of Forensic Sciences/2020/USA <sup>[34]</sup>	letter to the editor	Behavioral health implications of inmate release during COVID-19	Not applicable
Tavares; Garrido; Santoro/Revista Estudos Institucionais/2020/Brazil <sup>[35]</sup>	experience report	Política de saúde no cárcere fluminense: impactos da pandemia de Covid-19	Not applicable
Tan; Chua/Environmental Pollution/2020/Singapore <sup>[36]</sup>	letter to the editor	Preventing the spread of COVID-19 in custodial settings	Not applicable
Tavoschi; et al./Journal Frontiers in Public Health/2020/Italy <sup>[37]</sup>	commentary	Prevention and control of COVID-19 in Italian prisons: stringent measures and unintended consequences	Not applicable
Stewart et al./Journal of Bioethical Inquiry/2020/Australia <sup>[38]</sup>	experience report	COVID-19 and Australian prisons: human rights, risks, and responses	Not applicable
Shepherd; Spivak/Medical Journal of Australia/2020/Australia <sup>[39]</sup>	commentary	Reconsidering the immediate release of prisoners during COVID-19 community restrictions	Not applicable
Franco-Paredes et al./Lancet Infect Dis/2020/USA <sup>[40]</sup>	commentary	Decarceration and community re-entry in the COVID-19 era	Not applicable
Marco; Guerrero; Turrú/Medicina de Familia Semergen/2021/Spain <sup>[41]</sup>	Literature review	El control de la infección por SARS-CoV-2 en prisiones	Not applicable
Gallina; Giannico; Gallina/BJM Mil Health/2020/Italy <sup>[42]</sup>	letter to the editor	Release of mafia-crime prisoners during the COVID-19 epidemic: imbalance between detainee's health and public safety	Not applicable
Piñeros-Báez/Rev. Salud Pública/2020/Canada, Belgium, France and USA <sup>[43]</sup>	revisão de literatura	Respuestas de salud pública para manejo de la COVID-19 en centros reclusión: revisión de literatura	Not applicable
Picard et al./Infection Control & Hospital Epidemiology/2020/France <sup>[44]</sup>	letter to the editor	Prevention and management of coronavirus disease 2019 (COVID-19) in prison: feedback from an experience in a French remand center	Not applicable
Hagan et al./Morbidity and Mortality Weekly Report/2020/USA <sup>[45]</sup>	experience report	Mass testing for SARS-CoV-2 in 16 prisons and jails-six jurisdictions, United States, April-May 2020	16 prisons (16,392 people incarcerated or detained were tested)
Montoya-Barthelemy et al./Am J Prev Med./2020/USA <sup>[46]</sup>	experience report	COVID-19 and the correctional environment: the american prison as a focal point for public health	Not applicable
Crowley et al./BJGP Open/2020/Not cited <sup>[47]</sup>	commentary	Prison and opportunities for the management of COVID-19	Not applicable
Alexander; Allo; Klukoff/Journal of Humanistic Psychology/2020/USA <sup>[48]</sup>	experience report	Sick and shut in: incarceration during a public health crisis	Not applicable

The non-pharmacological measures recommended to prevent and control Covid-19 among the prison population were mostly developed and/or implemented by public justice and/or security managers, followed by national institutions/organizations/agencies (**Table 2**).

**Table 2** Synthesis of the proponents of non-pharmacological measures to prevent and control Covid-19 in the prison system, Ribeirão Preto, Brazil, 2021.

<b>Public Health Managers</b>	Puerto Rico Health Department <sup>[9-10]</sup> ; England Health Department <sup>[11]</sup> ; Director of the Center for the Health of Incarcerated Persons <sup>[12]</sup> ; Louisiana Health Department <sup>[10, 13]</sup> .
-------------------------------	---

<b>Gestores Públicos da Justiça e/ou da Segurança</b>	Westchester County Department of Corrections <sup>[14]</sup> ; Ohio state management <sup>[15]</sup> ; Administrators of community oversight agencies in the states <sup>[16]</sup> ; Federal and local governments, and prison system authorities of countries in North America, Central America, the Caribbean <sup>[17]</sup> and Asia <sup>[18]</sup> ; Parole service <sup>[11]</sup> ; Italian Minister of Justice <sup>[19]</sup> ; Prison administration in Spain <sup>[20,21]</sup> , Catalonia and Portugal <sup>[20]</sup> ; Managers of prisons and jails in the United States <sup>[22]</sup> ; Prosecutors of justice in the prison scope <sup>[23]</sup> ; Superior Courts and the Federal Supreme Court <sup>[24]</sup> ; National Penitentiary of Peru <sup>[25]</sup> ; Administrators of the Juvenile Justice Council <sup>[26]</sup> ; US state jurisdictions <sup>[27]</sup> ; Federal Penitentiary Service of Russia and regional authorities <sup>[28]</sup> ; Texas Department of Criminal Justice <sup>[29]</sup> ; Department of Corrections and the United States Supreme Court <sup>[30]</sup> ; Criminal Court of Appeals of Argentina <sup>[31]</sup> ; Superior Court of Justice of Mexico <sup>[31]</sup> ; Chilean Gendarmerie <sup>[31]</sup> ; Secretary of Security and Protection of Citizens <sup>[31]</sup> ; Brazilian National Council of Justice <sup>[32]</sup> ; Department of Territorial Activities and Protection for Adults and Minors in the Salerno Criminal Area <sup>[33]</sup> .
<b>Public managers and/or National institutions/ organizations/agencies</b>	Ministry of Justice, Public Health of England <sup>[11]</sup> ; US Federal Bureau of Prisons <sup>[3]</sup> ; Government of Lombardy <sup>[19]</sup> ; Governor of the State of Washington <sup>[34]</sup> ; Governor of the State of Rio de Janeiro and Institute for the Defense of the Right to Defense Marcio Thomaz Bastos <sup>[35]</sup> ; Ministry of Internal Administration <sup>[36]</sup> ; Italian Ministry of Justice <sup>[37]</sup> ; Australian state and territorial governments <sup>[40-41]</sup> ; United States Attorney General <sup>[12]</sup> ; United States federal government <sup>[30,40]</sup> ; Ministry of Health and Interior <sup>[41]</sup> ; Colombian Ministry of Justice <sup>[31]</sup> ; National Penitentiary and Prison Institute <sup>[31]</sup> ; Italian Government <sup>[42]</sup> ; Ministry of Health and Social Services and Ministry of Solidarity and Health of Quebec <sup>[43]</sup> ; French Ministry of Justice <sup>[44]</sup> .
<b>International institutions/Organizations/ Agencies</b>	Centers for Disease Control and Prevention (CDC) <sup>[9-10,12-13,27,41,43-47]</sup> ; Prison Policy Initiative <sup>[15,27,40]</sup> ; World Health Organization (WHO) <sup>[10,12,19,24,27,31,43-44,46-47]</sup> ; US Bureau of Prisons <sup>[12,48]</sup> ; Purple cross international committee <sup>[41]</sup> .

The pharmacological measures recommended by public managers to prevent and control Covid-19 among the population deprived of liberty were organized into five categories: Entrance of prisoners; Actions during detention; Release of prisoners; Actions aimed at employees; and Interventions aimed at others (**Table 3**).

**Table 3** Synthesis of non-pharmacological measures recommended by public managers to prevent and control COVID-19 among the population deprived of liberty, Ribeirão Preto, Brazil, 2021.

<b>Entrance Of Prisoners</b>	Initial screening <sup>[10,13,17,19,33,37,41,[43-44]</sup> ;
	Testing <sup>[9,10,18-19,35-36]</sup> ;
	Quarantine of admitted cases <sup>[9-10,13-14,17-20,36,38-39,44]</sup> ;
	Isolation of positive cases <sup>[9,19,33]</sup> ;
	Hygiene and individual protection measures <sup>[43-44]</sup> ;
	Centralization of admission in a prison unit <sup>[9]</sup> ;
	Amnesty for new detainees <sup>[3,17,22-23,25,27,40,46]</sup> and for new penalties <sup>[18]</sup> ;
<b>Reduced Movement Of Prisoners</b>	Postponement of sentence <sup>[18,22-23,25,27,40,46]</sup> or await trial while free <sup>[27-28,35]</sup>
	Remote access or suspension of hearings <sup>[14,17-18,24,28,31,35]</sup> ;
	Suspension or restriction of transfers <sup>[3,10,13-14,17-18,20,30-31,38,43]</sup> ;
	Suspension of external work <sup>[17,20,31,38]</sup> ;
	Restriction of temporary departures <sup>[20,30,35,41,43]</sup> ;
Authorization for voluntary stay in the cell <sup>[20]</sup>	
<b>Hygiene Measures</b>	Cleaning and disinfection of areas and surfaces of the prison environment <sup>[18,29,44]</sup> ;
	Vehicle sanitization <sup>[28]</sup> ;
	Increased ventilation <sup>[18,44]</sup> ;
	Proper food handling <sup>[18]</sup> ;
	Suspension of water rationing measures <sup>[35]</sup> ;
	Supply of cleaning or disinfection materials <sup>[20,31,37,43]</sup> ;
<b>Individual and Collective Protection Measures</b>	Following health protocols <sup>[10]</sup> .
	Use of personal protective equipment <sup>[13-14,17,26-27,41,43]</sup> ;
	Making masks <sup>[20]</sup> ;
	Distance measures between the prisoners themselves <sup>[9,11,17,19-20,27,29-30,39,41,44,46]</sup> ;
<b>Health Promotion Measures</b>	Hygiene measures, including encouraging the use of alcohol gel <sup>[44]</sup> ;
	Acquisition of infrared thermometers <sup>[12]</sup> .
	Offering mental health care <sup>[14, 17, 19, 29-30,46]</sup> .

# Research & Reviews: Journal of Nursing & Health Sciences

<b>Surveillance Measures</b>	Testing inmates <sup>[10,14-15,17-18,29,37,43-46]</sup> and contacts <sup>[45]</sup> ;
	Isolation of suspected cases <sup>[2,12,13,15,16,19,20,39,43,45,46]</sup> and contacts <sup>[11,13,18,37,41]</sup> ;
	House arrest of suspected cases <sup>[35]</sup> ;
	Providing protective equipment and personal hygiene supplies <sup>[12-14,17,20,35,37,43]</sup> ;
	Implementing protocols for diagnosis and prevention <sup>[9,17,41,43]</sup> ;
	Active search for cases <sup>[10,17-18,31]</sup> and contacts <sup>[11,18,41,43,47]</sup> ;
	Surveillance of risk groups <sup>[17-18,20,43]</sup> ;
	Notification of cases <sup>[18,41]</sup> ;
<b>Management Of Confirmed Cases</b>	Screening detainees <sup>[10, 27, 44, 47]</sup> ;
	Implementing treatment protocols <sup>[9,17,20,41,43]</sup> ;
	Isolation <sup>[3,9-10,17-19,29-31,37-38,41,43]</sup> ;
	Treatment of cases <sup>[10,37,43,46]</sup> or referral for medical treatment or hospitalization <sup>[3,9-10,12,17,19-20,31,37,41]</sup> ;
	Offering nutritious food to infected patients <sup>[18]</sup> ;
	House arrest <sup>[35]</sup> ;
	Adequacy of care units <sup>[13,20,31,43]</sup> ;
<b>Health Education</b>	Laboratory back-up <sup>[28]</sup> .
	Guidance on preventive actions <sup>[14,31,43-44]</sup> ;
	Providing educational materials for self-monitoring of signs and symptoms <sup>[11]</sup> ;
	Information about the disease <sup>[19-20]</sup> .
	Early release <sup>[3,11,13-18,20,22,24,27,32-36,38,41,43-44,46-47]</sup> ;
	Parole: remote supervision of cases <sup>[16]</sup> or suspension of supervision <sup>[22,37]</sup> ;
	increase in concession <sup>[17,18,35]</sup> ;
	House arrest <sup>[10,12,17,35,37,42]</sup> and increase in open regime concession <sup>[21]</sup> ;
	Replacement of penalty by alternative measures <sup>[10,20,30,35]</sup> ;
	Reduction of financial obligations <sup>[24]</sup> and bail amounts <sup>[13]</sup> ;
<b>Measures Aimed At Workers in the Prison System</b>	Screening <sup>[13,28,41,43]</sup> ;
	Quarantine before release <sup>[12, 27]</sup> .
	Screening professionals <sup>[12-13,17-18,28,37-39,43]</sup> ;
	Testing professionals <sup>[14,17-18,43,45]</sup> ;
	Guiding professionals with some degree of immunity to carry out custody and healthcare actions <sup>[3,17]</sup> ;
	Remote work of non-essential professionals <sup>[14,20,31,37]</sup> ;
	Removing professionals with suspected and confirmed Covid-19 cases <sup>[11-12,14,17,39,44]</sup> ;
	Providing protective equipment and personal hygiene supplies <sup>[13-14,17-18,35]</sup> ;
	Use of personal protective equipment <sup>[13,17-18,28,44]</sup> ;
	Training and education in health <sup>[11,14,17,20,41,43-44]</sup> ;
	Establishing consecutive work periods to expand rest periods <sup>[18,20,28,46]</sup> ;
	Psychological support <sup>[19]</sup> ;
	Restriction on the movement of employees <sup>[31]</sup> ;
	Suspending or reducing group activity <sup>[19-20]</sup> ;
	Maintaining minimum health teams in prison units <sup>[35]</sup> and use of military doctors <sup>[20]</sup> ;
Use of telemedicine <sup>[29-30]</sup> .	
<b>Measures Directed to the External Public</b>	
<b>Family Members</b>	Maintain family connections by telephone or video calls <sup>[3,10,14,19-20,27-28,31,38-39,41]</sup> ;
	Limiting visits <sup>[9,17-18,26-28,31,41,43]</sup> ;
	Suspending visits <sup>[3,10,12-13,17-20,25,30-31,35-38,43-44,48]</sup> ;
	Screening visitors <sup>[17,28,31,37]</sup> ;
	Use of personal protective equipment <sup>[28]</sup> .
<b>Lawyers</b>	Remote appointments <sup>[3,17,20,28]</sup> ;
	Limiting visits <sup>[3,20,28,35,48]</sup> ;
	Suspending visits <sup>[12]</sup> ;
	Screening lawyers <sup>[12]</sup> .
<b>Other Measures</b>	
<b>Education</b>	Remote access to educational activities <sup>[14,19-20]</sup> ;
	Suspending educational activities <sup>[18, 20, 31]</sup> .
<b>Inputs</b>	Limiting entry of goods and food <sup>[20, 31]</sup> .

## DISCUSSION

The Covid-19 pandemic emerged as a major challenge for prison system managers who were tasked with finding appropriate non-pharmacological measures for the prison context to prevent and control the disease. In view of this, it is important to note that most of the recommendations came from developed countries such as: the USA, which has the largest prison population and the largest number of Covid-19 cases in the world; European countries, such as Italy, which stood out for being the first western country to be the epicenter of the pandemic <sup>[49]</sup>; and Spain and France, which were the first to face difficulties in fighting the disease, as well as high mortality rates; this required strategic actions with quick responses and organized by political leaders against the health and humanitarian crisis in order to achieve better results in the fight against Covid-19 <sup>[50]</sup>.

Such actions were mainly based on the recommendations of public justice and/or security managers, as well as national institutions and/or agencies, and were mainly cited in experience reports and commentaries, which suggests the applicability of preventive and control actions against Covid-19 recommended worldwide, but which specifically considered the local singularities of each state and/or country specifically aimed at the target audience of the prison system. The entry period of individuals to the liberty deprivation condition in prison units was seen as a crucial moment, among many others, for establishing non-pharmacological measures to prevent and control Covid-19. Such concern is justified since the entry of an individual with infection could favor spreading SARS-Cov-2 in the prison system due to the confinement conditions, which are permeated by collective cells, overcrowded and have inadequate ventilation and hygiene levels.

Among the recommendations identified for the moment of entry into the prison system, those aimed at identifying inmates with suspected Covid-19 through screening and testing methods are noteworthy, as well as isolating such cases and preventing the increase in the prison population, with these measures being aimed at people who committed less dangerous crimes and who did not compromise public safety, such as people over 60 years of age, pregnant and/or breastfeeding women, people with some incapacity or disability, in addition to those with some health condition that could potentiate Covid-19 <sup>[18, 35]</sup>. Among the recommended measures during incarceration, there was concern about the movement of detainees when they needed to leave and return to the prison unit or go from one detention center to another; therefore, movement was often considered with a view to prevent viruses circulating in the external environments to the internal environments of the prison system. It is worth mentioning that alternative strategies to enable the progress of judicial proceedings and the promulgation of sentences were also adopted.

The following sanitary protocols <sup>[10]</sup> are highlighted regarding non-pharmacological measures focused on improving the structural conditions of the prison environment: suspending water rationing <sup>[35]</sup> and providing cleaning or disinfection materials <sup>[20,31,37,43]</sup>. Allied to environmental hygiene measures, there are recommendations for individual and collective protection measures, acquisition of infrared thermometers and distancing measures between prisoners, which involved individualizing cells <sup>[11, 30]</sup>, availability of alcohol gel for hand hygiene <sup>[44]</sup>, use of tents to redistribute prisoners <sup>[17]</sup> and preventing contact between members of different pavilions <sup>[20]</sup> or subgroups of inmates <sup>[9]</sup>. Such measures can have a direct impact on reducing the virus spread in these environments, since it is transmitted through the speech or coughing by infected people or through a surface contaminated by the virus which later comes into contact with the eyes, mouth or nose of a susceptible person.

Concern about the mental health of inmates was identified by offering mental healthcare <sup>[14, 18-19, 30, 46]</sup>, since this could be impaired due to the increase in deprivation and the feeling of confinement due to the restriction of inmates' contact with the environment outside the prison units and their families, in addition to the stressful conditions of the prison environment, causing deleterious feelings and potentiating mental disorders, such as anxiety and depression <sup>[26, 30]</sup>. Among the non-pharmacological recommendations, the surveillance actions mentioned in the results were often focused on some risk groups, such as people living with HIV, pregnant women and older adults <sup>[17]</sup>. Among the recommended actions, we highlight implementation of prevention and diagnosis protocols, active search and tracking for early detection in detainees and contacts, and proceeding with isolation or house arrest of suspected and confirmed cases of Covid-19.

Moreover, there was a recommendation to adapt prison units and teams to handle cases for managing confirmed Covid-19 cases, as well as the need to refer cases when their structure did not suit the service, especially those which were moderate or serious. The back-end of telemedicine was also identified to ensure healthcare for detainees. Such recommendations are valid since none of the instances of the healthcare system, and especially the prison health units, has all the necessary resources to meet the health demands of the population. In addition, health education was recommended for detainees and workers, which should take into account the knowledge level of the actors so that they qualify for adopting prevention measures and identifying the signs and symptoms of the disease <sup>[11,19-20]</sup>. This recommendation provides for transparent communication with reliable, accurate and up-to-date information about the disease and prevention and case management measures, as well as the use of educational materials <sup>[11]</sup>, in line with the recommendations of international organizations/agencies.

The recommendations aimed at extrication reinforce the need to reduce crowding in prison spaces and were only given to specific groups such as low-risk detainees or those who were about to finish serving their sentence, in addition to those who are part of groups at higher risk for death from Covid-19, including: older adults, people with comorbidities, pregnant women and immunocompromised patients. Thus, screening, testing <sup>[13, 28, 41, 43]</sup> and an inmate quarantine period prior to release from prison <sup>[12, 27]</sup> were recommended for the return of these people to the community.

Strategies were also recommended aimed at restricting the movement of employees, professionals and family members



in prison units, as well as screening and providing personal protective equipment for these populations at the time of entry into prison units. Family and judicial visits, group and educational activities were suspended in some places, which generated questions from professionals in the judicial area and protests from detainees [41], in addition to being able to cause or exacerbate the psychological and affective impact caused by the pandemic [26,30]. In turn, some strategies were used to minimize the impacts of these suspensions, such as remote visits, which were considered successful initiatives to maintain the support received by the inmates and ensure the contact of detainees with the contexts to which they may one day return [20].

In addition, alternatives were presented for the continuity of educational activities with the use of communication technologies [14, 19-20] and to maintain programs aimed at the rehabilitation and reintegration of the population deprived of liberty [14], such as remote actions to prevent drug abuse and risk of overdose [20]. Adopting and implementing non-pharmacological measures to prevent and control Covid-19 in prison environments faces challenges regarding the physical, logistical and security restrictions inherent to such settings [13]. Furthermore, social and political apathy, the limited articulation between prison health and public health, weaknesses in health services, lack of resources, power asymmetries, reduced coordination between criminal and prison policies, in addition to the very fragmentation of prison systems all overlap as difficulties faced by public managers in these scenarios [43].

The possible non-inclusion of relevant studies indexed in the databases is pointed out as a limitation of the present study, as well as non-inclusion of recommendations in the gray literature and the delimitation of publication languages. This study contributes elements so that health professionals and other social actors can turn their eyes to the strategies and recommendations adopted for Covid-19 in the prison system and make efforts to reduce the occurrence of the disease and its unfavourable outcomes in this population, considering the peculiarities of each context.

## CONCLUSION

In view of the results presented, it was possible to verify that the non-pharmacological measures to reduce the spread of Covid-19 in the prison system were articulated to the different moments which compose the imprisonment period of people deprived of liberty (entry, permanence and release), as well as to people who have contact with the prison system, such as family members of inmates, prison workers, lawyers and service providers.

## ACKNOWLEDGEMENT

This study was partly financed by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) [Financial Code 001] and by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) – Productivity in Research Sponsorship [grant number 317170-2021-0].

## REFERENCES

1. WPB (World Prison Brief). Institute for Crime & Justice Policy Research [Internet]. 2018
2. DEPEN (Departamento Penitenciário Nacional). Detecções/suspeitas do novo coronavírus nos sistemas penitenciários mundiais. [Internet]. 2021
3. Akiyama MJ, Spaulding AC, Rich JD. Flattening the curve for incarcerated populations-Covid-19 in jails and prisons. *N Engl J Med.* 2020; 382:2075-2077.
4. Peters MD, et al. Updated methodological guidance for the conduct of scoping reviews. *JB I evid synth.* 2020; 18:2119-2126.
5. Tricco AC, et al. PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Ann Intern Med.* 2018; 169:467-473.
6. Bernardi WO, et al. Recomendações propostas por gestores públicos para prevenção e controle da COVID-19 entre a população privada de liberdade: Protocolo de scoping review. *Res Soc Dev.* 2021; 10:e2510917815.
7. Ouzzani M, et al. Rayyan-a web and mobile app for systematic reviews. *Syst Rev.* 2016;5:1-10.
8. Page MJ, et al. PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *Bmj.* 2021; 372.
9. Davlantes E, et al. Notes from the field: COVID-19 prevention practices in state prisons-puerto rico, 2020. *Morb Mortal Wkly Rep.* 2020; 69:1144
10. Capacci M, et al. Prevention and control of COVID-19 in the penitentiary of Florence. *Clin Chem Lab Med.* 2021; 59:e239-41.
11. Clarke M, et al. Establishing prison-led contact tracing to prevent outbreaks of COVID-19 in prisons in Ireland. *J Public Health.* 2020; 42:519-524.
12. Rubin R. The challenge of preventing COVID-19 spread in correctional facilities. *Jama.* 2020; 323:1760-1761.
13. Wallace M. Public health response to COVID-19 cases in correctional and detention facilities-Louisiana, March-April 2020. *Morb Mortal Wkly Rep.* 2020; 69:594-598.
14. Collica-Cox K, Molina L. A case study of the Westchester County New York's jail response to COVID-19: Controlling COVID while balancing service needs for the incarcerated-A national model for jails. *Vict Offenders.* 2020; 15:1305-1316.

# Research & Reviews: Journal of Nursing & Health Sciences

15. Nelson B, Kaminsky DB. A COVID-19 crisis in US jails and prisons. *Cancer Cytopathol.* 2020; 128:513.
16. Viglione J, et al. Adaptations to COVID-19 in community corrections agencies across the United States. *Vict Offenders.* 2020; 15:1277-1297.
17. Rapisarda SS, Byrne J, Marmolejo L. An examination of COVID-19 outbreaks in prisons and jails in North America, Central America, and the Caribbean. *Vict Offenders.* 2020; 15:1234-1243.
18. Rapisarda SS, Byrne JM. An examination of COVID-19 outbreaks in prisons and jails throughout Asia. *Vict Offenders.* 2020; 15:948-958.
19. Di Giacomo E, et al. Italian prisons during the COVID-19 outbreak. *Am J Public Health.* 2020; 110:1646-1647.
20. Redondo S, et al. Corrections and crime in Spain and Portugal during the covid-19 pandemic: Impact, prevention and lessons for the future. *Vict Offenders.* 2020; 15:1156-1185.
21. Perez de Tudela EM. Telematic control and semi-freedom as a response to the pandemic: The Spanish penitentiary system experience. *Vict Offenders.* 2020; 15:1186-1202.
22. Nowotny K, et al. COVID-19 exposes need for progressive criminal justice reform. *Am J Public Health.* 2020; 110:967-968.
23. Hawks L, Woolhandler S, McCormick D. COVID-19 in prisons and jails in the United States. *JAMA Intern Med.* 2020;180:1041-1042.
24. Nomani MZM, Nusrati NA, Mohtaj M. Covid-19 pandemic and challenges of public health administration & criminal justice system. *Int J Pharm Res.* 2020;12:728-735.
25. Rapisarda SS, Byrne JM, Marmolejo L. An examination of COVID-19 outbreaks in South American prisons and jails. *Vict Offenders.* 2020; 15:1009-1018.
26. Gagnon JC. The solitary confinement of incarcerated American youth during COVID-19. *Psychiatry Res.* 2020; 291:113219.
27. Mukherjee TI, El-Bassel N. The perfect storm: COVID-19, mass incarceration and the opioid epidemic. *Int J Drug Policy.* 2020; 83:102819.
28. Ovchinnikov S. The penitentiary system of Russia during the COVID-19 Pandemic: A global challenge and Initial results. *Vict Offenders.* 2020; 15:1148-1155.
29. Rao S, et al. The evolution of health care in the Texas correctional system and the impact of COVID-19. *Bayl Univ Med Cent Proc.* 2021; 34:76-80.
30. Robinson LK, Heyman-Kantor R, Angelotta C. Strategies mitigating the impact of the COVID-19 pandemic on incarcerated populations. *Am J Public Health.* 2020; 110:1135.
31. Marmolejo L, et al. Responding to COVID-19 in Latin American prisons: The cases of Argentina, Chile, Colombia, and Mexico. *Vict Offenders.* 2020; 15:1062-1085.
32. Santos LS. Dilemas morais da gestão pública brasileira no enfrentamento da pandemia do novo coronavírus. *Revista de Administração Pública.* 2020;54:909-922.
33. Pagano AM, et al. COVID-19 Risk management and screening in the penitentiary facilities of the Salerno Province in Southern Italy. *Int J Environ Res Public Health.* 2020; 17:8033.
34. Piel J. Behavioral health implications of inmate release during COVID-19. *J Forensic Sci.* 2020.
35. Tavares NL, Garrido RG, Santoro AE. Política de saúde no cárcere fluminense: impactos da pandemia de Covid-19. *REI Revista Estudos Institucionais.* 2020; 6:277-300.
36. Tan LF, Chua JW. Preventing the spread of COVID-19 in custodial settings. *Environ Pollut.* 2020; 266:115337.
37. Tavošchi L, et al. Prevention and control of COVID-19 in Italian prisons: Stringent measures and unintended consequences. *Front Public Health.* 2020; 8:559135.
38. Stewart, et al. "COVID-19 and Australian prisons: Human rights, risks, and responses." *J Bioethical Inq.* 17 (2020): 663-667.
39. Shepherd S, Spivak BL. Reconsidering the immediate release of prisoners during COVID-19 community restrictions. *Med J Aust.* 2020;213:58-59.
40. Franco-Paredes C, et al. Decarceration and community re-entry in the COVID-19 era. *Lancet Infect Dis.* 2021; 21:e11-6.
41. Marco A, Guerrero RA, Turu E. El control de la infección por SARS-CoV-2 en prisiones. *Medicina de Familia. SEMERGEN.* 2021; 47:47-55.
42. Gallina P, Giannicco G, Gallina F. Release of Mafia-crime prisoners during the COVID-19 epidemic: imbalance between detainee's health and public safety. *BMJ Mil Health.* 2020; 166:444.
43. Piñeros-Baez VH. Public health responses for the management of COVID-19 in detention centers. Literature review. *Public Health J.* 2020; 22.
44. Picard J, et al. Prevention and management of coronavirus disease 2019 (COVID-19) in prison: Feedback from an experience in a French remand center. *Infect Control Hosp Epidemiol.* 2022; 43:127-128.
45. Hagan LM, et al. Mass testing for SARS-CoV-2 in 16 prisons and jails-six jurisdictions, United States, April-May 2020. *Morb Mortal Wkly Rep.* 2020; 69:1139.

## Research & Reviews: Journal of Nursing & Health Sciences

46. Montoya-Barthelemy AG, et al. COVID-19 and the correctional environment: The American prison as a focal point for public health. *Am J Prev Med.* 2020; 58:888-891.
47. Crowley D, et al. Prison and opportunities for the management of COVID-19. *BJGP open.* 2020;4.
48. Alexander AA, Allo H, Klukoff H. Sick and shut in: Incarceration during a public health crisis. *J Humanist Psychol.* 2020; 60:647-656.
49. Riboli E, Arthur JP, Mantovani MDF. No epidentro da epidemia: Um olhar sobre a COVID-19 na Itália. *Cogitare Enfermagem.* 2020; 25.
50. Lima NT, Buss PM, Paes-Sousa R. A pandemia de COVID-19: Uma crise sanitária e humanitária. *Cadernos de Saúde Pública.* 2020; 36:e00177020.