

COVID-19 in prisons: validity of a knowledge, attitude and practice survey

COVID-19 nas prisões: validação de um inquérito de conhecimento, atitude e prática
 COVID-19 en las cárceles: validación de un estudio de conocimiento, actitud y práctica

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Descritores

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Descriptores

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Abstract

Objective: To validate a knowledge, attitude and practice survey on preventive measures against COVID-19 for penitentiary system staff based on environmental theory.

Methods: This is a methodological study developed in four stages: conceptual structure establishment; instrument elaboration; content validity by judges; and appearance assessment by the target audience. The content of each item was validated for objectivity, clarity and relevance. Survey appearance was assessed regarding objective, organization, writing style and motivation. Content validity coefficient was used to assess agreement among judges and the target audience. Data were analyzed using gross distributions, percentages, position and dispersion measures. Cronbach's alpha index was used to analyze the consistency of judges' and target audience's assessments.

Results: Regarding content and appearance, the assessed requirements achieved agreement greater than 0.9. In consistency assessment, a Cronbach's alpha index > 0.9 and > 0.7 was obtained for content and appearance, respectively, indicating that judges and target audiences tended to make similar assessments.

Conclusion: The survey presented content and appearance validity for collecting data regarding knowledge, attitude and practice regarding COVID-19 prevention for penitentiary system staff, indicating that it could contribute to health education action planning and assessment.

Resumo

Objetivo: Validar um inquérito de conhecimento, atitude e prática sobre medidas preventivas da COVID-19 para os funcionários do sistema penitenciário, fundamentado na teoria ambientalista.

Métodos: Estudo metodológico desenvolvido em quatro etapas: estabelecimento da estrutura conceitual, elaboração do instrumento, validação do conteúdo por juízes e avaliação da aparência pelo público-alvo. O conteúdo de cada item foi validado quanto a objetividade, clareza e relevância. A aparência do inquérito foi avaliada quanto ao objetivo, a organização, ao estilo da escrita e a motivação. Utilizou-se o coeficiente de validação de conteúdo para avaliar a concordância entre os juízes e entre o público-alvo. Os dados foram analisados por meio de distribuições brutas, percentuais, medidas de posição e de dispersão. O índice alfa de Cronbach foi utilizado para analisar a consistência das avaliações dos juízes e do público-alvo.

Resultados: Quanto ao conteúdo e a aparência, os requisitos avaliados obtiveram concordância superior a 0,9. Na avaliação da consistência, obteve-se índice alfa de Cronbach $> 0,9$ e $> 0,7$, quanto ao conteúdo e à aparência, respectivamente, indicando que juízes e público-alvo tenderam a fazer avaliações similares.

Conclusão: O inquérito apresentou validade de conteúdo e aparência para a coleta de dados referentes a conhecimento, atitude e prática sobre prevenção da COVID-19, para os funcionários do sistema penitenciário, indicando que poderá contribuir para o planejamento e a avaliação de ações de educação em saúde.

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Conflicts of interest: nothing to declare.

Resumen

Objetivo: Validar un estudio de conocimiento, actitud y práctica sobre medidas preventivas de COVID-19 para los empleados del sistema penitenciario, fundamentado en la teoría ambientalista.

Métodos: Estudio metodológico llevado a cabo en cuatro etapas: establecimiento de la estructura conceptual, elaboración del instrumento, validación del contenido por jueces y evaluación de la apariencia por el público destinatario. Se validó el contenido de cada ítem respecto a la objetividad, claridad y relevancia. Se evaluó la apariencia del estudio respecto al objetivo, la organización, el estilo de escritura y la motivación. Se utilizó el coeficiente de validez de contenido para evaluar la concordancia entre los jueces y entre el público destinatario. Los datos se analizaron mediante distribuciones brutas, porcentajes, medidas de posición y de dispersión. Se utilizó el índice alfa de Cronbach para analizar la consistencia de las evaluaciones de los jueces y del público destinatario.

Resultados: Respecto al contenido y a la apariencia, los requisitos evaluados obtuvieron concordancia superior a 0,9. En la evaluación de la consistencia, se obtuvo un índice alfa de Cronbach $> 0,9$ respecto al contenido y $> 0,7$ respecto a la apariencia, lo que indica la tendencia de los jueces y del público destinatario a realizar evaluaciones similares.

Conclusión: El estudio presentó validez de contenido y apariencia para la recopilación de datos referentes a conocimiento, actitud y práctica sobre prevención de COVID-19 para empleados del sistema penitenciario, lo que indica que podrá contribuir a la planificación y evaluación de acciones de educación para la salud.

Introduction

Outbreaks of infectious diseases caused by respiratory viruses have been frequent. Among these outbreaks, COVID-19, Middle East respiratory syndrome (MERS), influenza A and H1N1 stand out. Thus, planning for pandemic disease management should be based on the probability that a new respiratory infection will be the cause of an upcoming infectious disease emergency.⁽¹⁾

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes COVID-19, is transmitted through respiratory droplets or aerosols or through contact between a contaminated hand and the eyes, nose or mouth. Therefore, the main recommended preventive measures are using a mask, maintaining social distancing, avoiding overcrowded places with inadequate ventilation, performing frequent hand hygiene with soap and water or 70% alcohol, avoiding touching the eyes, nose and mouth, performing hygiene, disinfecting surfaces, and being vaccinated.^(2,3)

Environmental conditions can prevent, suppress or contribute to illness and death. Among the risk environments for transmission of SARS-CoV-2 are prisons and penitentiaries. Brazilian prison facilities are characterized by overcrowding, poorly ventilated accommodation and poor personal and environmental hygiene conditions. From July to December 2021, there were 466,529 vacancies to accommodate 670,714 rehabilitation and reintegration trainees.⁽⁴⁾ These environmental characteristics increase the risk of transmitting infectious diseases, including COVID-19.⁽⁵⁾

According to the assumptions of Florence Nightingale's environmental theory, human beings are part of nature, whose health can be influenced, positively or negatively, by the environment. Nursing contributes to promoting health by adapting the physical environment and encouraging conditions favorable to psychological and social well-being, putting individuals in better conditions so they can prevent disease, resist it or recover from it.⁽⁶⁾

Considering that monitoring the environment and appropriate hygiene measures can prevent the transmission of COVID-19, this study proposes to develop, validate and assess a survey to identify knowledge, attitude and practice regarding COVID-19 prevention for penitentiary system staff based on the principles that guide environmental theory. This survey should provide an opportunity for an educational diagnosis of this group of people. Knowledge reveals what people understand about a given topic; attitude describes how they feel based on preconceived ideas; and practice describes how they behave.⁽⁷⁾

The knowledge, attitude and practice survey provides information about how the population group protects itself from the disease and what risk behaviors they have. This way, it contributes to identifying the risk of a disease outbreak and choosing appropriate interventions.⁽⁸⁾ Even with the end of the pandemic, the instrument will make it possible to investigate other infectious diseases with respiratory transmission in the prison context.

Penitentiary system staff were chosen as the target audience for the knowledge, attitude and prac-

tice survey, as they are a vehicle for the spread of the virus between the penitentiary system and the community.⁽⁹⁾ Furthermore, the conditions of vulnerability of the population deprived of liberty were considered, whose autonomy to practice the recommended preventive measures is subject to public authorities' determinations.⁽¹⁰⁾

The novelty of this study lies in environmental theory framework adaptation into an instrument to investigate knowledge, attitude and practice regarding COVID-19 prevention in the penitentiary system. Its relevance arises from the possibility of using the survey to investigate other infectious diseases with respiratory transmission and its applicability to direct health education actions, in addition to serving as an instrument for assessing interventions. It can also be used as a source of consultation to define preventive actions to be adopted in prison institutions.

From this perspective, this study aimed to validate a survey of knowledge, attitude and practice on preventive measures for COVID-19 for penitentiary system staff.

Methods

This is a methodological study, based on environmental theory and psychometrics framework, which includes three poles: theoretical, empirical and analytical. This study was carried out from November 2020 to November 2022, and approached the theoretical pole in four stages: conceptual structure establishment; instrument preparation; content validity by judges; and appearance assessment by the target audience.

To establish the conceptual structure, a thorough reading of the environmental theory content was carried out, and the main constructs were listed. Subsequently, a scoping review was carried out with the purpose of mapping the preventive measures for COVID-19, recommended for the penitentiary system. The scoping review followed the recommendations of international guide Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) and

the manual proposed by JBI. To prepare the knowledge, attitude and practice survey, survey items were listed, correlating the preventive measures, identified in the scoping review, to the constructs of environmental theory, such as physical, psychological and social environment.⁽⁶⁾

The items contained in the survey were made up of statements that make up the adequate construct representation and presented according to the criteria established for psychometric scales: I – objectivity (expresses desirable behaviors); II – clarity (understandable to the target population); and III – relevance (association between the item and the proposed theory).⁽¹¹⁾

For the content validity and appearance assessment stages, an invitation was sent by email to the participating judges and prison system staff, respectively. Everyone received a link for online access, through Google Forms, to the Informed Consent Form and a profile characterization form. Judges received the content validity instrument and a digitized document containing the conceptual structure. Staff received the appearance assessment instrument. The response period for both stages was 10 days, extendable for the same period.

Content validity was carried out by 22 judges, selected intentionally and by snowball, according to the adapted Fehring criteria, distributed into two categories: working in teaching and working in health care. Those who reached the minimum of five points were invited to participate in the survey. The search for judge selection was carried out by consulting the CV on the *Plataforma Lattes*, Brazilian National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*), as recommended by the selected professionals.

The content validity form items were judged individually according to the same criteria used in preparation: objectivity, clarity and relevance. For judgment, a Likert-type scale was used, with the following response options: “yes”, “no” and “partially”. Additionally, a space was created for comments and suggestions.

Based on judges' suggestions, modifications were made to the first version of the survey, giv-

ing rise to the second version of the instrument. To assess appearance, ten penitentiary system workers participated, selected by convenience and snowball, recommended by the Department of Human Resources of the Pernambuco State Resocialization Secretariat.

The appearance assessment form was designed so that, after reading the second version of the survey, staff could assess it based on the following criteria: objective (purpose one wants to achieve with the survey); organization (general organization, presentation, coherence and formatting of questions); writing style (linguistic characteristics and understanding); and motivation (ability to make an impact, motivation and interest). A Likert-type scale was used, with three response options and space for suggestions, similar to the content validity form.

Data analysis for content validity and appearance assessment followed the same procedure. Google Forms[®] produced a database with responses, in Microsoft Excel[®] spreadsheet format, which was imported into Stata software version 16.0. For sociodemographic characterization and professional experience variables, gross and percentage distributions were calculated.

To analyze agreement, content validity coefficient was adopted, with a value ≥ 0.8 being established to classify the adequate, overall and individual validity of items. The answers were analyzed considering numerical outcomes, with number 1 being assigned to “no” answers; number 2 for “partially” answers; and number 3 for “yes” answers. In content validity, position and dispersion measurements were calculated for each survey item, in each component; and for assessing appearance, the same calculations for the objective, organization, writing style and motivation components.

By analyzing content validity reliability and appearance assessment stages, Cronbach's alpha was calculated, with a 95% confidence interval. A coefficient ≥ 0.70 was considered acceptable to assess the consistency of the assessments made by judges and professionals from the penitentiary system.

The research was approved by the Research Ethics Committee of the *Universidade Federal de Pernambuco*, under Opinion 5.069.205 and

CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 52011421.1.0000.5208.

Results

In content validity, the majority of the 22 judges had a cisgender female identity (95.45%) and were aged between 30 and 39 years (50%). There was diversity in the area of professional training, nurses (59.09%), and physiotherapists (27.27%), physicians (4.55%), dentists (4.55%) and nurses and psychologists (4.55%) were identified. Regarding qualifications, 45.45% were specialists; 36.36% masters; and 18.18% physicians. Twenty judges (90.91%) had experience in assisting patients with COVID-19, 50% had experience in teaching and 68.18% were developing or have already developed research in the area of interest of this study. Regarding the objectivity, clarity and relevance aspects, the final content validity coefficient of each item was ≥ 0.80 . Assessment indicated that the items proposed knowledge construction, facilitated critical thinking and encouraged desirable behavior and attitudes in the target audience, having been written clearly and correctly associated with the physical, psychological or social environments of environmental theory (Table 1).

Responses obtained regarding content validity were subjected to consistency assessment, through the calculation of Cronbach's alpha. The objectivity aspect obtained an index of 0.97, clarity obtained 0.96, relevance, 0.98, and the set of items obtained 0.96, indicating that judges tended to make similar assessments, and the content validity process was consistent. Judges contributed 236 comments and/or suggestions, which were analyzed and accepted, when relevant and had the capacity to influence understanding or response (Chart 1). Suggestions for excluding items based exclusively on the structural difficulties of prison establishments were disregarded, as, among others, the survey aimed to encourage critical thinking and the adoption of appropriate practices. A suggestion to replace the term “detainee” with “rehabilitation and reintegration trainee” was accepted.

Table 1. Item content validity coefficient

Items	Content Validity Coefficient*		
	Objectivity	Clarity	Relevance
1 KNO. Resources for personal hygiene	0.969	0.984	0.969
2 KNO. Environmental cleaning	0.939	0.969	0.984
3 KNO. Symptom log	0.984	0.924	0.954
4 KNO. Regular testing	0.924	0.909	0.878
5 KNO. Test after exposure	0.969	0.954	0.969
6 KNO. Population cohorts	0.954	0.878	0.878
7 KNO. Quarantine	0.969	0.969	0.984
8 KNO. Isolation and monitoring	0.969	0.939	0.924
9 KNO. Active search	0.863	0.954	0.909
10 KNO. Use of mask	0.984	0.969	0.954
11 KNO. Exit restriction	0.969	0.893	0.954
12 KNO. Overcrowding	0.848	0.909	0.833
13 KNO. Communication with family	0.909	0.984	0.924
14 KNO. Inform measures	1.0	0.984	0.969
15 KNO. Educational material	0.954	0.954	0.818
16 KNO. Abstaining from measures	0.954	0.954	0.878
17 KNO. Mental health care	0.954	0.954	0.954
18 KNO. Rebellions	0.939	0.969	0.909
19 KNO. Suspension of visits	0.969	0.984	0.954
20 KNO. Admissions centralization	0.939	0.984	0.939
21 KNO. Suspension of transfers	0.954	0.954	0.954
22 KNO. Public transport	0.909	0.969	0.909
23 KNO. Access restriction	1.0	1.0	0.969
24 KNO. Isolation and confinement	0.878	0.954	0.863
25 KNO. Group activities	0.863	0.954	0.954
26 KNO. Use of common area	0.984	1.0	0.984
27 KNO. Staying in the courtyard	0.909	0.939	0.893
28 KNO. Risk group accommodation	0.939	0.969	0.924
29 KNO. Paid sick leave	1.0	1.0	1.0
30 KNO. Monitoring of measures	0.969	0.969	0.939
31 KNO. Action planning	0.984	0.939	0.984
32 KNO. Notifying unit	0.969	0.924	0.939
33 ATT. Resources for personal hygiene	0.984	0.984	0.939
34 ATT. Environmental cleaning	0.969	0.924	0.939
35 ATT. Symptom log	0.969	0.984	0.939
36 ATT. Regular testing	0.909	0.848	0.863
37 ATT. Test after exposure	0.954	0.924	0.984
38 ATT. Population cohorts	0.969	0.954	0.954
39 ATT. Quarantine	0.969	0.969	0.954
40 ATT. Isolation and monitoring	1.0	1.0	0.969
41 ATT. Active search	0.878	0.924	0.848
42 ATT. Use of mask	0.984	0.939	0.954
43 ATT. Exit restriction	0.954	0.893	0.939
44 ATT. Overcrowding	0.863	0.924	0.863
45 ATT. Communication with family	0.984	0.984	0.924
46 ATT. Inform measures	1.0	0.969	0.969
47 ATT. Educational material	0.939	0.954	0.848
48 ATT. Abstaining from measures	0.954	0.969	0.909
49 ATT. Mental health care	0.939	0.939	0.924
50 ATT. Rebellions	0.939	0.939	0.848
51 ATT. Suspension of visits	0.969	1.0	0.969
52 ATT. Admissions centralization	0.939	0.954	0.878
53 ATT. Suspension of transfers	0.878	0.969	0.924
54 ATT. Public transport	0.878	0.924	0.878
55 ATT. Access restriction	0.969	0.984	0.954
56 ATT. Isolation and confinement	0.863	0.924	0.863
57 ATT. Group activities	0.893	0.939	0.893
58 ATT. Use of common area	0.969	0.984	0.984

Continue...

Continuation.

Items	Content Validity Coefficient*		
	Objectivity	Clarity	Relevance
59 ATT. Staying in the courtyard	0.909	0.924	0.893
60 ATT. Risk group accommodation	0.954	0.954	0.893
61 ATT. Paid sick leave	0.984	1.0	0.969
62 ATT. Monitoring of measures	0.984	0.969	0.939
63 ATT. Action planning	1.0	0.984	0.954
64 ATT. Notifying unit	1.0	0.954	0.969
65 PRA. Resources for personal hygiene	1.0	0.984	0.924
66 PRA. Hand hygiene	1.0	0.939	0.969
67 PRA. Environmental cleaning	0.969	0.939	0.924
68 PRA. Symptom log	1.0	0.954	0.969
69 PRA. Regular testing	0.878	0.909	0.863
70 PRA. Test after exposure	0.984	0.924	0.939
71 PRA. Population cohorts	0.969	0.893	0.909
72 PRA. Quarantine	0.984	0.954	0.939
73 PRA. Isolation and monitoring	0.984	0.954	0.939
74 PRA. Active search	0.893	0.878	0.848
75 PRA. Use of mask	1.0	0.969	0.969
76 PRA. Use of mask by inmates	0.939	0.969	0.969
77 PRA. Exit restriction	0.984	0.939	0.954
78 PRA. Overcrowding	0.939	0.878	0.909
79 PRA. Communication with family	0.954	0.939	0.924
80 PRA. Inform measures	0.984	0.954	0.969
81 PRA. Educational material	0.939	0.909	0.848
82 PRA. Mental health care	0.954	0.878	0.954
83 PRA. Medical, psychological and social support	1.0	0.954	0.969
84 PRA. Suspension of visits	0.969	0.893	0.939
85 PRA. Admissions centralization	0.954	0.954	0.909
86 PRA. Suspension of transfers	0.954	0.969	0.924
87 PRA. Public transport	0.924	0.969	0.924
88 PRA. Access restriction	0.984	0.984	0.939
89 PRA. Isolation and confinement	0.893	0.969	0.909
90 PRA. Group activities	0.909	0.969	0.924
91 PRA. Use of common area	1.0	1.0	0.954
92 PRA. Staying in the courtyard	0.924	0.924	0.863
93 PRA. Risk group accommodation	0.939	0.954	0.893
94 PRA. Paid sick leave	1.0	1.0	0.969
95 PRA. Monitoring of measures	0.984	0.969	0.954
96 PRA. Action planning	0.984	0.939	0.954
97 PRA. Notifying unit	0.969	0.969	0.969

*Judges' polarization error discounted. KNO - knowledge; ATT - attitude; PRA - practice.

Comment analysis was carried out by grouping the corresponding items into the “knowledge”, “attitude” and “practice” dimensions. The content adjustments made for the “knowledge” dimension were reproduced in the others and, subsequently, the second version of the instrument was developed, containing 100 items, which was presented to staff for appearance assessment. When assessing appearance, the majority of the ten workers had a cisgender male identity (80%), mean age of 41.3 (±3.83) years, single marital status (60%), undergraduate education level (60%), average experience in the penitentiary system of 8.3 (±2.49) years,

Chart 1. Description of judges' suggestions; item after analyzing the considerations and acceptance or refusal by researchers

Item	Judges' comments/suggestions and Item after analyzing the considerations	Change
1	Include "paper towel" and "observe the safety conditions of the location". Item: Sinks must be installed, and a supply of water, soap, paper towels and alcohol gel must be maintained for frequent hand hygiene, observing the safety conditions of the location	Yes
2	Reduce the frequency of cleaning the environment to once a day Item: The environment must be cleaned and disinfected once a day, including cells, common areas, visiting spaces, toilets and showers	Yes
3	Include the requirement to wear a mask at the entrance to the establishment, remove temperature checks Item: During access to the prison establishment, use of a mask must be required and the health status of all individuals regarding the presence of symptoms must be recorded on forms, including: rehabilitation and reintegration trainees, staff, visitors and lawyers	Yes
4	Remove the expression "regardless of symptoms" and define the testing time interval according to the local epidemiological situation Item: 4. Retrained students and staff must be tested for COVID-19 at regular intervals, the period being defined according to the local epidemiological situation	Yes
5	Remove the test after quarantine and for those rehabilitation and reintegration trainees when they leave prison. Specify the type of test (RT-PCR or rapid test), indicate RT-PCR for symptomatic patients with a negative rapid test Item: The rapid test for COVID-19 must be carried out on rehabilitation and reintegration trainees upon admission. The RT-PCR test must be performed in symptomatic cases with a negative rapid test	Yes
6	"Improve writing clarity" Item: The prison population must be separated into small groups to rotate the use of common areas, reduce the number of people in contact with each other and reduce the number of prison officers with whom they will have contact	Yes
7	"Update the quarantine period and respect the guidelines of local health authorities; include in quarantine rehabilitation and reintegration trainees who leave the prison establishment for any reason" Item: They must undergo quarantine for 7 to 10 days, as per guidance from the local health authority: rehabilitation and reintegration trainees upon admission, those who leave the prison for some reason and people who have had close contact with rehabilitation and reintegration trainees and/or staff who tested positive for COVID-19	Yes
8	"Improve writing clarity" Item: Rehabilitation and reintegration trainees with suspected or confirmed COVID-19 must be removed from collective contact and placed in isolation, with nursing or medical assessment, in relation to the worsening or improvement of symptoms	Yes
9	"Many units do not have cameras in the pavilions" Item: Surveillance cameras should be used to locate people who have had close contact with rehabilitation and reintegration trainees and/or staff who have tested positive for COVID-19	No
10	"Include the indicated type of mask". It was added that recommendations from local health authorities should be followed Item: 10. Staff and trainees must wear respiratory protection masks, as recommended by the local health authority	Partially
11	"Summarize text" Item: To avoid exposure external to prison units, the outings of rehabilitation and reintegration trainees must be restricted to absolutely necessary cases	Yes
12	"There are cases that must deprive the individual of liberty, even before trial." The item was not changed, as it is understood that the statement "discourage pre-trial detention" does not inform that "there should not be pre-trial detention under any circumstances" Item: To reduce overcrowding in prisons, pre-trial detention must be discouraged; and individuals who do not pose a threat to public safety must be removed from prison	No
13	"Avoid letters as a means of communication, as there is a possibility of transmitting the disease through fomites" Item: During the pandemic, communication must be facilitated and free between rehabilitation and reintegration trainees and their family members and legal representatives, via telephone, email or video calls	Yes
14	"Improve the clarity of writing" Item: The prison administration must inform inmates of the measures taken for prevention and health care for COVID-19	Yes
15	"Avoid pamphlets as educational material as there is a possibility of transmitting the disease through fomites" Item: Posters with educational material covering basic knowledge about COVID-19 must be placed in strategic locations	Yes
16	"The act of not carrying out preventive measures or carrying them out inadequately may reveal structural impossibility". Given this comment, the idea of voluntariness was added Item: The act of voluntarily not carrying out preventive measures or carrying them out inappropriately represents a risk to the health of everyone, not just those who fail to do so.	Yes
17	Replace "outdoor exposure" with "daily exposure in the courtyard". Suggestion identified as not very relevant, as it would not influence understanding or response Item: Daily outdoor exposure; participation in recreational and wellness activities; maintenance of medical, psychological and cultural support services and the absence of stigmatizing and violent behaviors against people with COVID symptoms are essential for mental health	No
18	"Adapt the environment". Suggestion not accepted, as the item was validated in this aspect and was kept in the psychological environment Item: Rebellions can create situations that facilitate the spread of the virus	No
19	Include the idea of "temporality" in the suspension of visits Item: Visits in general must be suspended and those of legal representatives must be limited, and must take place on different days and times, with the period of application of the measure defined according to the local epidemiological situation	Yes
20	Unfeasibility due to the difficulties imposed by the current reality of prison establishments Item: Admissions must be centralized in a single custody center, considering the quarantine period	No
21	Remove the word "suspended" Item: Transfers of rehabilitation and reintegration trainees to other prison establishments must be restricted	Yes
22	Unfeasibility due to the difficulties imposed by the current reality of prison establishments Item: Public transport of rehabilitation and reintegration trainees should be avoided	No
23	No comments/suggestions received Item: The circulation of people within the prison must be limited by restricting access and distribution of staff in specific areas	No
24	Unfeasibility due to the difficulties imposed by the current reality of prison establishments Item: An isolation and quarantine space must be provided with characteristics different from solitary confinement spaces, using recreational, educational materials and other privileges	No
25	"Group activities can be carried out in cells, since these individuals already live together" Item: Group activities must be carried out between individuals who share the same cell	Yes
26	No comments/suggestions received Item: The times of use of common areas must be divided	No
27	Unfeasibility due to the difficulties imposed by the current reality of prison establishments Item: Time spent on the patio should be increased to allow safe social distancing to be practiced	No

Item	Judges' comments/suggestions and Item after analyzing the considerations	Change
28	Unfeasibility due to the difficulties imposed by the current reality of prison establishments Item: Accommodation for people in the risk group must be maintained in an independent prison unit, with cells that house a small number of prisoners	No
29	No comments/suggestions received Item: The right to paid sick leave must be guaranteed to infected staff	No
30	"Content described is the Ministry of Health's function" Not accepted, as the Public Ministry has a supervisory role defined by law, carrying out in-person inspections in prison units Item: The Public Ministry must monitor the implementation of preventive measures and the availability of statistical data on illness and death due to COVID-19 in prison units	No
31	"Summarize text" Item: The fight against the pandemic must be planned with the participation of public health departments, prison authorities, the Public Ministry and the Judiciary, with flexibility to adapt to the particularities of each institution	Yes
32	"Improve writing clarity"; "Include item about the vaccine" Item: The penitentiary system Primary Health Care units must be included as reporting units and offer free health services similar to those available to the community, with definition of the flow of care for patients with mild and severe symptoms Item inclusion: Knowledge dimension: "The vaccine can prevent COVID-19" Attitude dimension: "You consider it important to take the vaccine to prevent COVID-19" Practical dimension: "You take the COVID-19 vaccine as recommended by local health authorities"	Yes

RT-PCR - reverse transcriptase polymerase chain reaction.; T.N.: The instrument has been freely translated.

carried out their activities in nine different prison establishments and in different sectors, such as pavilions (20%), psychosocial department (10%) and others (70%). Regarding objective aspects, survey organization, writing style and motivation, the final content validity coefficient of each item was > 0.80 . Assessment showed that the survey reached the proposed goal, was organized, had comprehensible writing for the target audience and caused impact, motivation and interest (Table 2).

The appearance assessment process was subjected to consistency assessment, through the calculation of Cronbach's alpha. It was not possible to estimate Cronbach's alpha for writing style, due to the low variability of assessments. The objective aspect obtained an index of 0.76, organization obtained 0.83, motivation obtained 0.71, and the set of items obtained 0.79, indicating that staff tended to make similar assessments and that the appearance assessment process was consistent.

Discussion

The instrument developed and validated in this study covered preventive measures against COVID-19 to assess prison system staff knowledge, attitude and practice levels. The construction process considered the association between preventive measures, identified in the scoping review, and the definitions of the physical, psychological and social environment constructs, described in environmental theory.

Table 2. Appearance assessment content validity coefficient

Items	Content validity coefficient*
1. Objective	
1.1 Does it meet the proposed objectives?	1.0
1.2 Help with the assessment of preventive measures for COVID-19 in the penitentiary system?	0.966
1.3 Is it suitable for use with the target audience?	0.866
2. Organization	
2.1 Is the title attractive and indicative of content?	0.966
2.2 Is title size and content in topics adequate?	1.0
2.3 Does the content have a logical sequence?	0.966
2.4 Is there coherence between objectives and content?	0.933
2.5 Are the answer options coherent?	0.966
2.6 Do the sections look organized?	1.0
2.7 Are the colors attractive and easy to understand?	1.0
3. Writing style	
3.1 Is the writing clear and objective?	1.0
3.2 Is the text interesting?	1.0
3.3 Is the vocabulary accessible?	1.0
3.4 Is there an association between the topic of each section and the corresponding text?	1.0
3.5 Does the writing style correspond to the target audience's knowledge level?	0.966
3.6 Can the survey be answered without difficulties?	1.0
4. Motivation	
4.1 Is the survey appropriate for the target audience profile?	0.966
4.2 Does the content promote interaction with the target audience?	0.966
4.3 Does it invite/instigate changes in behavior and attitude during work?	0.866
4.4 Does it propose reflection on preventive measures for COVID-19 in the penitentiary system?	0.90
Item set (total)	0.966

*Judges' polarization error discounted.

Theories are structured and present a systematic view of phenomena to explain or predict events.⁽¹²⁾ The use of a theoretical framework to support the construction of a data collection instrument will provide it with scientific characteristics, which will direct professional practice to choose inter-

ventions with effective results, contributing to systemized assistance.⁽¹³⁾

Instrument/survey item elaboration must come from a conceptual structure well established by a psychological theory, prior research or systematic observation and analyzes of the relevant behavior domain.⁽¹⁴⁾ In this study, items that made up the instrument emerged from recommendations proposed in official documents from competent bodies as well as other relevant publications, mapped in a scoping review, which makes the conceptual structure consistent.

The survey was divided into knowledge, attitude and practice dimensions, in the physical, psychological and social environments, according to the pattern observed in other studies, which allows for the isolated investigation of each dimension.^(15,16) Furthermore, grouping items into preventive measures, referring to the physical, psychological and social environment, will facilitate consultation of measures to be adopted in prison institutions, considering that items were prepared through the adequate construct representation.⁽¹⁷⁾

Instruments, when developed with methodological rigor that provides high quality and whose accuracy is documented, are important for research and clinical practice. In this process, content validity is essential for the instrument to be considered safe, as it indicates to what extent the sample of items is appropriate to measure the construct.⁽¹⁸⁾

Content validity attested that the construct and its representation through items are coherent to assess prison system staff' knowledge, attitude and practice regarding preventive measures against COVID-19. However, despite the high agreement level, judges requested comments and suggestions that influenced the wording and final content of the survey.

The profile of the judges in this study indicated that, in addition to their qualifications, they had experience in assisting people infected with SARS-CoV-2, demonstrating their expertise in investigating the relevance of the items contained in the survey. Knowledge construction begins with the experience lived in moments of interaction with the new.⁽¹⁹⁾ Therefore, when there is no well-established

scientific knowledge, practical experience assumes a greater degree of importance.

Furthermore, there was a diversity of areas of professional training among judges, which provided a multidisciplinary assessment of the investigation. The multidisciplinary approach to patients with suspected or confirmed COVID-19 makes it possible to think about joint strategic actions, aiming to achieve better responses to their needs as a whole.⁽²⁰⁾

Appearance assessment met the proposed objectives. The profile of the target audience indicated a high education level, which was expected, considering that they are, for the most part, public servants. Participants had many years of experience in the penitentiary system, professional training and varied functions, and worked in different prison establishments, which provided survey appearance assessment from the perspective of staff with diverse experiences.

To analyze content reliability and appearance validity, consistency analysis was carried out using Cronbach's alpha index.⁽²¹⁾ In this study, Cronbach's alpha index refers to the consistency of participants' assessments and indicates that they tended to make similar assessments.⁽²²⁾ Reliability analysis achieved the proposed objectives, indicating that the survey has valid content and appearance and that the content validity and appearance assessment stages were consistent.

As a limitation of this study, it is noteworthy that the studies that made up the scoping review sample were classified as evidence level 5 or 4, as research with a higher scientific evidence level was still under development. However, survey content quality was not compromised, as the survey was validated by experts, obtaining a high content validity coefficient.

It is recommended that the survey be carried out with other professionals in the penitentiary system from different national and international locations to guarantee specific educational strategies for each reality. Another limitation of this study is that, despite the previous validity stages of the survey being relevant to health education actions, future studies are necessary to carry out construct validity to assess instrument internal consistency and stabil-

ity through factor analyzes and reliability measures to provide greater appreciation of the survey's measurement properties.

Conclusion

The survey to collect data regarding knowledge, attitude and practice regarding preventive measures for COVID-19 in the penitentiary system, drawn up based on a conceptual structure, proved to be valid in terms of content and assessed in terms of appearance, with a coefficient of content validity > 0.80. High agreement among judges and the target audience demonstrates that the instrument is suitable to be used for the purpose for which it is proposed. It can be used to identify the practices carried out, the risk of an outbreak, the choice of interventions and the planning and assessment of specific health education actions. However, given the current structure of Brazilian prison establishments, it is possible that the recommendations presented in the items require adjustments, which does not mean that they will not be implemented, but rather adapted.

Collaborations

Chaves TV, Guedes TG, Perrelli JGA, Albuquerque NLS, Mangueira SO and Linhares FMP contributed to study design, data analysis and interpretation, article writing, relevant critical review of intellectual content and approval of the final version to be published.

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