

## Working conditions and common mental disorders in prison officers in the inland region of the state of São Paulo, Brazil

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**Abstract** *The prison officer profession is characterized by working in risky situations, which can harm officers' mental health. This research aimed to analyze prison officers' working conditions associated with Common Mental Disorders (CMD). This cross-sectional study was conducted with prison officers in four penitentiary units in the inland region of the State of São Paulo, Brazil, from January to August 2019. The Self-Reporting Questionnaire (SRQ-20) tool was employed to quantify the presence of CMDs. Poisson regression verified the association between variables with robust variance and adjusted for confounding factors to estimate the prevalence ratio (PR) and 95% confidence interval (CI). The study population comprised 331 prison officers (ASP), with a 33.5% frequency of CMDs. CMDs were higher among prison officers with a worse perception of working conditions (PR: 1.13; 95%CI%: 1.03-1.24), who suffered insults (PR: 1.18; 95%CI: 1.08-1.29), psychological harassment (PR: 1.23; 95%CI: 1.11-1.36) and sexual harassment (PR: 1.20; 95%CI: 1.03-1.40) in the last 12 months. CMDs were associated with work-related variables, such as worse environmental conditions within the prison and psychological and sexual violence.*

**Key words** *Mental health, Prison, Work conditions, Occupational health*

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## Introduction

Common mental disorders (CMD) comprise a series of symptoms, such as insomnia, fatigue, somatic complaints, forgetfulness, irritability, difficulty concentrating, and feelings of worthlessness<sup>1</sup>. While CMDs can be classified as less severe problems than depression and anxiety<sup>1</sup>, they are prevalent disorders in the global population, contributing to the burden of mental illness<sup>2</sup> and generating functional disability, psychosocial impairments, and high social and economic costs<sup>3-5</sup>. These disorders may be more evident in populations or workers who concentrate on activities with a more significant impact on psychological distress, such as prison officers (ASP), the leading professional category that works in the Brazilian prison system<sup>6</sup>.

The ASPs mostly perform their work in contact with the prison population<sup>7</sup>. Additionally, these workers must play the conflicting role of promoting the reintegration and resocialization of convicted felons and, simultaneously, maintaining and preserving order and discipline in the penitentiary<sup>8,9</sup>. Thus, the professional environment of ASPs is an essential source of tension due to frequent threats and potential abuse<sup>7</sup>, which can directly affect the mental health of these workers.

A meta-analysis on the subject found a global prevalence of CMDs for adults of 17.6% in the last 12 months and 29.2% throughout life<sup>10</sup>. In the ASP population, the prevalence of CMDs reported in the national scientific literature ranges from 23.57% to 83.3%<sup>6,11-14</sup>. This variation may be due to exposure to occupational factors<sup>6,7</sup> and other individual variables and issues involving the health of these workers<sup>3-5</sup>. Thus, it is crucial to investigate the possible factors associated with CMDs in the ASP population through analyses adjusted for confounding factors, which allow a better understanding of the effect of working conditions on the health of these professionals. Thus, this study aimed to analyze the working conditions associated with common mental disorders, adjusted by health conditions, in penitentiary security agents.

## Methods

### Design, population, and study location

This is a cross-sectional study nested in the "AGEPEN Study: Working Conditions, Mental

Health and Sleep in Prison Officers in the State of São Paulo" project. Data were collected from January to August 2019 in the prison units of Assis, Florínea, Martinópolis, and Paraguaçu Paulista, part of the Coordination of the Western Region of the State of São Paulo<sup>15</sup>. These prisons were selected by convenience for the present study.

All male prison officers (ASP) who worked in the four selected prison units and had been in the profession for at least six months were eligible to participate in the project. In this study, all ASPs with incomplete records on the CMD outcome variable who refused to participate in the research, could not be located after three attempts, or were on leave during the collection period, regardless of the type of leave, were considered losses.

Regarding the data collection process, ASPs were invited to participate in the research at the onset of their work shift. After explaining the purpose of the research, the ASPs who agreed to participate received the Informed Consent Term and, later, the data collection tool. The tools were returned through unidentified envelopes, thus ensuring anonymity at the end of each work shift. The research was conducted in all working periods.

### Study variables

Information on CMDs was measured using the Self-Reporting Questionnaire (SRQ-20), developed by the World Health Organization in 1994 and translated and validated into Portuguese by Mari and Williams<sup>16</sup>. The tool includes 20 dichotomous questions, with "yes/no" answers, concerning the mental health condition in the last thirty days. Each "yes" answer scores one point, and each "no" answer scores zero points. The total sum of the scale can range from zero to 20 points. In this research, a cutoff point  $\geq 7$  is indicative of CMD<sup>17</sup>.

Aspects related to sociodemographic characteristics were also measured, including age group (27-39, 40-49, 50-59, 60 and over), ethnicity/skin color (white and nonwhite, including black, brown, yellow, and indigenous), marital status (single, separated/divorced, widowed, and married/common law-marriage), schooling (high school, higher education/postgraduate) and monthly household income (up to BRL 5,000, above BRL 5,000).

Regarding occupational variables, information was retrieved on work shifts (daily worker - eight daily hours, day or night shift - 12-hour shift); work sector (administrative, operation-

al-intermediate contact, operational-closest contact); profession seniority (up to 10 years, over 10 years); feeling like an ASP (yes, partially, no); thinking about changing professions (never, sometimes a year, sometimes a day/week/month); physical demand at work (low/moderate and high); mental demand at work (low/moderate and high); substance use to stay awake (yes/no); and perception of having been a victim of violence in the last 12 months (insults or embarrassing situations, threats, moral harassment, sexual harassment, and physical abuse) (yes/no). For the classification of the work sector, we considered ASPs' sectors within a prison unit, identifying per sector how close they are to people deprived of liberty. We also measured ASPs' level of satisfaction regarding temperature, noise, ventilation, hygiene, furniture, and facilities in the prison unit, for which the following answers were accepted: 1-good, 2-fair, and 3-poor. The score ranged from seven to 21 points, and the cutoff point adopted for greater dissatisfaction with the work environment was the percentile >75.

Regarding lifestyle and health variables, we adopted physical activity once or more times a week (yes/no); arthritis/arthrosis/rheumatism (yes/no); chronic pain (pain that has been bothering them for six months or more) (yes/no); Body Mass Index (BMI) (calculated based on self-reported weight and height data and categorized into three categories - normal, overweight, and obese); sleep quality (using the Pittsburgh Sleep Quality Index, considering worse sleep quality >5 points<sup>18</sup>); and health perception (very good/good, fair/poor/very poor).

### Processing and analysis

The collected data were double-entered and consolidated in Epi Info, version 3.5.2. The analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 20.0. The prevalence ratio (PR) estimation, 95% confidence interval, between CMDs and working conditions was performed using Poisson regression with robust variance. In addition to estimating the crude parameter, the PR was calculated using a model adjusted for variables of epidemiological importance or that showed a statistically significant association ( $p < 0.05$ ) with the dependent variable. The adjusted models were performed with the inclusion of the variables in a single block: age group, marital status, schooling, physical activity, BMI, sleep quality, self-perceived health, arthritis/arthrosis/rheumatism, and chronic pain.

### Ethical aspects

The Research Ethics Committee of the State University of Londrina (CAAE No. 87250718.7.3003.5563) and the Ethics Committee of the São Paulo State Penitentiary Administration (No. 024/2018) approved the project.

### Results

Two hundred thirty-five (37.6%) of the 566 eligible prison officers (ASP) in the four prisons studied were considered losses: leave ( $n=82$ ), refusal ( $n=95$ ), not located after three attempts ( $n=36$ ), and because they did not fill in the items of the SRQ-20 scale ( $n=22$ ), resulting in a final population of 331 (56.2%) ASPs. The prevalence of CMDs ( $SRQ-20 \geq 7$ ) was 33.5% ( $n=111$ ). The mean of the SRQ-20 was 5.1 (standard deviation: 4.7).

Regarding sociodemographic variables, the mean age was 45.1 years (standard deviation: 7.8), ranging from 27 to 73 years. We observed a significant association between the higher frequency of CMDs among ASPs who engaged in physical activity occasionally or did not practice physical activity ( $\geq 1$  time/week) with evidence of arthritis, arthrosis, rheumatism, chronic pain, and health perception (Table 1).

The ASPs who showed greater dissatisfaction with the working conditions inside the prison, having suffered insults and moral and sexual harassment, showed a higher prevalence of CMD signs (Table 2).

### Discussion

This study found a prevalence of 33.5% of common mental disorders (CMD) among prison officers (ASP), which was associated with the perception of worse conditions in the work environment, having suffered insults or embarrassing situations, and moral or sexual harassment in the last 12 months.

We observed that the frequency of CMDs in this study, as reported in other studies involving ASPs<sup>6,11,13,14,19</sup>, is higher than that observed in the general population<sup>4</sup> and teachers<sup>20</sup>. This observation seems to confirm the impact of the prison work environment on the mental health of ASPs<sup>8</sup>.

Despite the relevance of CMDs, there is a lack of international publications on the topic in ASPs. Among the available studies, we observe several

tools and approaches on the subject so that the frequency of CMDs in equivalent populations ranges from 15.2% to 59.6%<sup>21</sup>. The studies mainly focused on identifying post-traumatic stress disorder, depression<sup>19,21</sup>, and anxiety<sup>21</sup>. The method-

ological differences, cultural particularities, and the structuring of the prison system in different countries prevent us from adequately comparing the prevalence rates in those countries vis-à-vis those found in our study.

**Table 1.** Characteristics of prison security agents by sociodemographic, health condition, and common mental disorder (CMD) variables. State of São Paulo, 2019.

	Total	With a sign of CMD	PR (95%CI; p-value)
	n (%)	n (%)	
Age group (n=326)			
27-39 years	87 (26.7)	35 (40.2)	1.15 (0.91-1.45; 0.250)
40-49 years	134 (41.1)	39 (29.1)	1.06 (0.84-1.33; 0.641)
50-59 years	96 (29.4)	33 (34.4)	1.09 (0.87-1.39; 0.426)
60 years and over	9 (2.8)	2 (22.2)	1.00
Ethnicity/skin color (n=329)			
Nonwhite	80 (24.3)	21 (26.3)	0.93 (0.85-1.01; 0.093)
White	249 (75.7)	90 (36.1)	1.00
Marital status (n=329)			
Single, separated/divorced, widowed	54 (16.4)	12 (22.2)	0.89 (0.81-0.99; 0.036)
Married, living with a partner	275 (83.6)	99 (36.0)	1.00
Schooling level (n=328)			
High school	190 (58.0)	56 (29.5)	0.93 (0.86-1.00; 0.049)
Higher education, postgraduate	138 (42.0)	55 (39.9)	1.00
Monthly household income (n=328)			
Up to R\$ 5,000	181 (55.2)	62 (34.3)	1.01 (0.94-1.09; 0.760)
Above R\$ 5,000	147 (44.8)	48 (32.7)	1.00
Self-perceived health (n=316)			
Excellent/good	189 (59.8)	38 (35.8)	1.00
Fair/poor/very poor	127 (40.2)	68 (64.2)	1.28 (1.19-1.38; <0.001)
Physical activity ( $\geq$ once/week) (n=328)			
Yes	192 (58.5)	52 (27.1)	1.00
No	136 (41.5)	58 (42.6)	1.12 (1.04-1.21; 0.003)
Arthritis/Arthrosis/Rheumatism (n=325)			
Yes	48 (14.8)	24 (50.0)	1.15 (1.04-1.28; 0.007)
No	277 (85.2)	84 (30.3)	1.00
Chronic pain (n=318)			
Yes	155 (48.7)	70 (45.2)	1.19 (1.11-1.29; <0.001)
No	163 (51.3)	35 (21.5)	1.00
BMI (n=325)			
Obese	125 (38.5)	40 (32.0)	1.04 (0.93-1.17; 0.473)
Overweight	151 (46.5)	55 (36.4)	1.08 (0.96-1.21; 0.191)
Normal/Eutrophic	49 (15.1)	13 (26.5)	1.00
PSQI (n=245)			
Worse sleep quality	140 (57.1)	72 (51.4)	1.42 (1.32-1.52; <0.001)
Better sleep quality	105 (42.9)	7 (6.7)	1.00

PR: Prevalence ratio, IC95%: 95% confidence interval. BMI: Body Mass Index. PSQI: Pittsburgh Sleep Quality Index.

Source: Authors.

**Table 2.** Characteristics of prison security officers per occupational variables and common mental disorders. State of São Paulo, 2019.

	<b>Non-adjusted model PR (95%CI; p-value)</b>	<b>Adjusted model PR (95%CI; p-value)</b>
Work sector (n=311)		
Administrative	1.00	1.00
Operational - intermediate contact	1.06 (0.92-1.21; 0.438)	1.03 (0.89-1.18; 0.702)
Operational - closest contact	1.11 (0.98-1.26; 0.108)	1.04 (0.91-1.18; 0.611)
Work shift (n=328)		
8 daily hours	1.00	1.00
12 hours night shift	1.01 (0.91-1.13; 0.820)	0.98 (0.87-1.09; 0.704)
12 hours day shift	1.11 (1.01-1.23; 0.038)	1.05 (0.94-1.17; 0.379)
Work environment conditions <sup>a</sup> (n=319)		
Worse	1.20 (1.11-1.31; <0.001)	1.13 (1.03-1.24; 0.009)
Better	1.00	1.00
Profession seniority (n=325)		
Up to 10 years	1.00	1.00
Above 10 years	1.07 (0.98-1.18; 0.129)	1.08 (0.97-1.19; 0.146)
Feeling realized as ASP (n=328)		
Yes	1.00	1.00
Partially	1.18 (1.09-1.28; <0.001)	0.98 (0.89-1.07; 0.588)
No	1.31 (1.16-1.47; <0.001)	0.95 (0.87-1.14; 0.946)
Thought about changing professions in the last 12 months (n=313)		
Never	1.00	1.00
Sometimes during the year	0.93 (0.85-2.02; 0.113)	1.03 (0.92-1.15; 0.585)
Sometimes a day/week/month	1.22 (1.11-1.35; <0.001)	1.11 (0.98-1.25; 0.094)
Physical Requirements (n=309)		
Low and moderate	1.00	1.00
High	1.12 (1.01-1.24; 0.044)	1.08 (0.98-1.19; 0.114)
Mental requirements (n=327)		
Low and moderate	1.00	1.00
High	1.14 (1.05-1.24; 0.002)	1.08 (0.98-1.19; 0.137)
Substance use to stay awake or bear the load (n=321)		
Yes	1.13 (1.13-1.35; <0.001)	1.11 (0.97-1.27; 0.140)
No	1.00	1.00
Insults or embarrassing situations (n=320)		
Yes	1.27 (1.18-1.38; <0.001)	1.18 (1.08-1.29; 0.001)
No	1.00	1.00
Threat (n=319)		
Yes	1.18 (1.08-1.29; <0.001)	1.09 (0.98-1.21; 0.110)
No	1.00	1.00
Moral abuse (n=317)		
Yes	1.32 (1.19-1.46; <0.001)	1.23 (1.11-1.36; <0.001)
No	1.00	1.00
Sexual abuse (n=323)		
Yes	1.25 (0.99-1.59; 0.060)	1.20 (1.03-1.40; 0.021)
No	1.00	1.00
Physical abuse - weapon/bodily (n=322)		
Yes	1.07 (0.94-1.21; 0.342)	0.91 (0.79-1.05; 0.193)
No	1.00	1.00

Adjusted model: Age group + marital status + schooling + physical activity + Body Mass Index + sleep quality + self-perceived health + chronic pain + Arthritis/Arthrosis/Rheumatism. PR: Prevalence ratio. 95%CI: 95% confidence interval. aScore is achieved by evaluating satisfaction (1 - good; 2 - fair; 3 - bad) with temperature, lighting; noise; ventilation; hygiene; furniture, and facilities. The cutoff point adopted for greater dissatisfaction with the work environment was the 75% percentile (> 14 points).

Source: Authors.

When evaluating the prevalence of CMDs concerning the Brazilian reality, values similar to those found in studies carried out in Rio Grande do Norte (23.6%)<sup>14</sup> and Bahia (30.7%)<sup>11</sup> can be observed. However, studies with ASPs conducted in Sergipe and São Paulo showed a considerably higher prevalence of CMDs, between 68.0%<sup>6</sup> and 83.3%<sup>13</sup>, respectively. These differences are possibly due to the low number of participants<sup>6,13</sup> included in these studies and the peculiar place of work analyzed. For example, in one of them, ASPs were workers at a Hospital for Custody and Psychiatric Treatment<sup>13</sup>, an institution that shelters people deprived of their liberty who are considered incapable; that is, they have committed some type of crime but are unable to recognize or pay for their crimes due to their psychic conditions.

Physical inactivity was also associated with CMDs, which is corroborated by other studies with prison officers<sup>11,22,23</sup>. Physical activity reduces tensions, often arising from the work environment<sup>23</sup>, and provides significant benefits to the physical and mental health of the population, thus contributing to the promotion of health and quality of life<sup>24</sup>.

Concerning aspects inherent to the physical structure of prisons, working conditions were associated with CMDs. The Brazilian prison environment is generally characterized by buildings surrounded by walls and wires, guarded at all times by heavily armed men, and extensive and damp galleries and corridors<sup>8</sup>. These physical conditions, inherent to prison, can influence their physical health and psychological distress<sup>6</sup>. The unhealthy work environment can change the feeling of exertion, making the profession even more laborious<sup>25</sup> and increasing stress and the likelihood of developing mental disorders<sup>6</sup>.

We found that having suffered some type of violence in the last 12 months, such as insults or embarrassing situations, moral harassment, and sexual harassment, was significantly associated with CMDs in the adjusted analysis. A study in other population segments found multiple factors associated with CMDs, including exposure to violence. The risk of violence inside and outside the prison environment is typical of any activity related to prison security. Violence was also demonstrated in another study conducted with ASPs in Avaré-SP, in which 200 (66.4%) of the 301 prison workers reported having suffered at least one verbal or physical abuse event at work, and 108 (35.8%) reported having suffered at least one abuse event outside of work, however, related

to it<sup>12</sup>. The fear of violence can trigger insecurity and emotional fragility, leading to professional exhaustion, mental illness, and lack of work motivation<sup>26</sup>.

Violence in the work environment is a public health problem<sup>27</sup>, and its occurrence is more common in some professions, such as health or education professionals and prison officers, since the intrinsic peculiarities of these professional categories contribute to workers being more exposed to these events<sup>28</sup>. Therefore, physical, psychological, and sexual violence negatively affect the health conditions of ASPs and compromise their work process<sup>27</sup>.

The association between this type of mental violence is supported by a meta-analysis showing that exposure to bullying is associated with mental health problems, burnout, and lower job satisfaction<sup>29</sup>, with an impact on job satisfaction<sup>30,31</sup>, generating work stress<sup>30,31</sup>, organizational endangerment<sup>30</sup>, demotivation, dissatisfaction with the position, anxiety, and emotional exhaustion<sup>31</sup>. The association between sexual violence and CMDs is well reported for the female population<sup>32</sup> or in other professions<sup>33</sup>, with no reports on ASPs.

Possible limitations of this study are the use of self-reported information (which may contain memory bias); because it is a self-completed tool (which can generate doubts about the questions); the convenience sampling of the penitentiaries, not allowing the extrapolation of data to all ASPs in the western region or the entire state of São Paulo; the lack of more information about the losses, which hinders the assessment of a possible selective loss of individuals most affected by CMDs; and the small sample size, which, while representative for the population under analysis, may have compromised the accuracy of the association measures studied. However, using a validated tool to identify CMDs in the research population has strengths, in addition to working with a population that is difficult to access, given that the research was developed within prison units. Moreover, ensuring absolute confidentiality concerning ASP responses can minimize the risk of withholding information about their mental health and working conditions.

In summary, this study proved that working conditions, violence, insults, and demands inside prison are associated with CMD signs. Therefore, it would be relevant to conduct longitudinal studies on the subject, especially those assessing the development of CMDs throughout the exercise of the profession. The results can support actions aimed at improving physical spaces within the

prison, considering the inherent characteristics of penitentiaries, and actions aimed at reducing psychological violence, such as greater integration between ASPs and specialized psychological support geared to these professionals.

### **Conclusion**

The results showed the complex features of the topic, the many potential interrelationships between the associated variables, and the challeng-

es we face in this outlook. The study showed that approximately one in three ASPs had CMDs, a condition associated with the worse perception of working conditions, having suffered insults, and moral and sexual harassment in the last 12 months, regardless of confounding factors.

Despite the difficulties in improving several conditions of the work environment, the results point to the possibility of formulating policies to reduce the psychological violence suffered by prison officers, which would contribute to consistently curbing the prevalence of CMDs.

## Collaborations

DS Bravo: design, conception, methodology, data collection, data analysis, writing - initial version and editing, and final approval of the manuscript. SG Gonçalves: design, conception, methodology, data collection, data analysis, and final approval of the manuscript. E Girotto: writing - review and editing and final approval of the manuscript. AD González: writing - review and editing and final approval of the manuscript. FN Melanda: writing - review and editing and final approval of the manuscript. R Rodrigues: design, conception, methodology, data analysis, writing - review and editing, and final approval of the manuscript. AE Mesas: design, conception, methodology, data analysis, writing - review and editing, final approval of the manuscript, and supervision.

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