DOI: 10.1590/1413-812320182311.30372016

Common mental disorder among incarcerated women: a study on prevalence and associated factors

Transtorno mental comum entre mulheres encarceradas: estudo de prevalências e fatores associados

Celene Aparecida Ferrari Audi [1]
Silvia Maria Santiago [1]
Maria da Graça Garcia Andrade [1]
Priscila Maria Stolses Bergamo Francisco [1]

Abstract *Mental disorders are present in four of the ten main causes of incapacity across the world. This article aims to analyze the prevalence of Common Mental Disorders (CMD) in incarcerated women and associated factors. A cross-sectional study was conducted with a population of 1,013 women incarcerated in a female prison. The prevalence of CMD was assessed by the SRQ-20. The hierarchical logistic regression was the method of analysis used to search for independent associations between sociodemographic, lifestyle, morbidity and violence variables with CMD and strength of association. The prevalence of CMD was 66.7%. The following variables were independently and positively associated with CMD: lack of income, hypertension, tranquilizers, physical inactivity, smoking, scabies/pediculosis, psychological violence in the year before being arrested, and having witnessed psychological violence in the family in childhood/adolescence. Interdisciplinary activities among health, justice and education institutions can contribute to a qualified assessment of women before admission into the prison system. This can enable an approach that does not exacerbate or trigger the onset of CMD, contributing to the improvement in living conditions and for better health and recovery strategies.*
Key words *Women's health, Mental health, Common mental disorder, Violence, Prison*

Resumo *Transtornos mentais estão presentes em quatro das dez principais causas de incapacidade em todo o mundo. O objetivo deste artigo é analisar a prevalência e os fatores associados ao transtorno mental comum entre mulheres encarceradas. Método: estudo transversal realizado com uma população de 1.013 mulheres encarceradas em uma prisão feminina. A prevalência de TMC foi avaliada através do SQR-20. O modelo de regressão logística hierárquica foi o método de análise utilizado para verificar associações independentes entre as variáveis sociodemográfica, estilo de vida, morbidade e violência com TMC e sua força de associação. A prevalência de TMC foi de 66,7%. Foram de forma independente e positivamente associadas com TMC as variáveis: falta de renda, hipertensão, uso de tranquilizantes, sedentarismo, tabagismo, sarna/pediculose, violência psicológica no ano antes de ser presa e ter testemunhado violência psicológica na família quando criança/adolescente. Atividades interdisciplinares entre as instituições de saúde, justiça e educação podem contribuir para uma avaliação qualificada das mulheres antes da admissão no sistema prisional, assim como contribuir para a melhoria das condições de vida e de melhores estratégias de saúde e recuperação.*
Palavras-chave *Saúde da mulher, Saúde mental, Trantorno mental comum, Violência, Prisão*

[1] Departamento de Saúde Coletiva, Faculdade de Ciências Médicas, Universidade Estadual de Campinas. R. Tessália Vieira de Camargo 126, Cidade Universitária Zeferino Vaz. 13083-887 Campinas SP Brasil.
celenefaudi@yahoo.com.br

Introduction

Mental and behavioral disorders are a set of diseases defined by the International Classification of Diseases (ICD-10). Although the symptoms vary considerably, such behaviors are characterized, generally speaking, by a combination of abnormal ideas, emotions, behaviors and relationships with other people. The dichotomy between the biological and psychosocial dimensions has been an obstacle to the understanding of mental and behavioral disorders[1].

Ordinary mental disorders are characterized by non-psychotic psychiatric symptoms, as insomnia, fatigue, irritability, forgetfulness, difficult concentration, anxiety and somatic complaints[2]. In fact, these disturbances are similar to many physical diseases that result from a complex interaction of all these factors[1].

Mental disorders are present in four of the ten main causes of incapacity across the world, a situation that represents high costs in terms of human suffering, work disability and economic losses[1].

This condition can be aggravated among incarcerated individuals. Today, approximately nine million people worldwide are held in prisons. At least half of them have personality disorders and one million prisoners or more across the world suffer from severe mental disorders, like psychosis or depression. Furthermore, each year millions of prisoners try to end their lives while they are in prison[3-5].

A systematic review that evaluated 62 studies conducted in 12 countries, including 22,790 prisoners, has found that 3.7% of men had psychotic disorders, 10% had major depression, and 65% had personality disorder, including 47% who suffered from antisocial personality disorder. Among women, 4% had psychotic disorders, 12% had major depression, and 42% had personality disorder, including 21% who suffered from antisocial personality disorder[6].

In a study carried out by Meltzer and Petticrew[7], only one prisoner out of ten did not show evidences of having mental disorders, and not more than two out of ten had only one disorder.

The reasons for this high prevalence have been discussed by Reed[8] and include: higher risk of incarceration for people with mental disorder, insufficient assessment by courts, inefficient healthcare services, and non-identification of mental problems in the moment of imprisonment.

Among TMC associated factors stand out to be women, low education level, physical inactivity, alcoholic consumption, smoking, medication use, stressful events in life and social isolation[9,10].

Thus, prisons are clearly associated with mental health problems, either because many imprisoned individuals already had such disorders, or because people without mental disorders may develop emotional problems during the incarceration period due to the regime and conditions of the prison environment[5,10,11].

In view of the scarce scientific production on the theme in Brazil and of its epidemiologic relevance, it has become pertinent to investigate it, especially in the population of incarcerated women, besides that, to identify these factors can guide relevant interventions.

The aim of the present study was to assess the prevalence of Common Mental Disorder (CMD) among incarcerated women and to investigate its association with sociodemographic characteristics, self-reported morbidity and weight gain, variables related to lifestyle, use of tranquilizers and prior use of illicit drugs, as well as types of violence suffered before incarceration.

Methods

Study design

A cross-sectional study was conducted from August 2012 to July 2013 with total of inmates (n = 1,013) at a Female Prison (FP) located in the county of Campinas, São Paulo State. This study is part of a larger research that investigated health conditions of incarcerated women and workers at the institution.

Questionnaire, instrument, measurements and variables

The information was collected by means of a questionnaire that was divided into modules, administered by trained interviewers and answered face-to-face by the incarcerated women. The questionnaire addressed demographic characteristics (age, religion, marital status, race/skin color), socioeconomic characteristics (level of schooling, occupation in the FP and income), length of imprisonment, health-related behaviors, life and health conditions in the prison, and prior situation of violence, among others.

In the present study, the dependent variable was Common Mental Disorder (CMD), assessed by means of the Self-Reporting Questionnaire 20 (SRQ-20), an instrument developed by the

World Health Organization (WHO)[12] to detect common mental disorders in the general population. Validated by Mari and Willians[13] in the city of São Paulo, SRQ-20 is recommended by the WHO[1] to be used in developing countries and it has proved to be efficient to screen and detect common mental disorders.

An advantage of using SRQ-20 is that the instrument has been validated in Brazilians living in urban environments and has presented high sensitivity and specificity. The instrument is composed of 20 questions with dichotomous answers (yes/no) about depressive-anxious mood, somatic symptoms, decline in vital energy and depressive thoughts. Each answer "yes" is scored the value "1", and the final score is the sum of positive answers, ranging between 0 and 20[12].

The score used to assess CMD in this study was ≥ 8. A study that evaluated the performance of SRQ-20 as a psychiatric screening instrument has shown an ideal cut-off point of 7/8, with sensitivity of 86.33% and specificity of 89.31%. The SRQ-20's discriminating power for psychiatric diagnosis was 0.91. Cronbach's alpha coefficient was 0.86, the positive predictive value was 76.43% and the negative predictive value was 94.21%[13].

The following independent variables were considered:

- Sociodemographic: age group (≤ 39 years; ≥ 40 years), is currently studying (yes/no), has completed primary education (yes/no), marital status (married/stable union, other), children (yes/no), skin color (white, non-white), religion (Catholic, other), works (yes/no), receives income (yes/no), length of permanence in the Prison (≤ 1 year, >1 year), length of imprisonment (≤ 1 year, >1 year).
- Self-reported morbidity: It was asked women if they had arterial hypertension, diabetes mellitus, heart problem, gynecological problem, vaginal bleeding, urinary tract infection, fractures, tuberculosis, Hansen's disease, IST/AIDS, scabies/pediculosis. Considering overweight or obesity, they were calculated by the measure of height and weight (BMI = kg/m^2).
- Lifestyle: practice of physical activity ≥ 150 minutes weekly, smoking, use of tranquilizers, risky sexual behavior (to have sex without condom and have multiple partners), and prior use of illicit drugs (dichotomized as yes/no).
- Types of violence suffered before imprisonment: psychological, physical, sexual (dichotomized as yes/no). In the assessment of prior violence, the questions referred to childhood or adolescence (before the age of 15) and the indicators were 'has witnessed physical aggression in the family' (yes/no) and 'has suffered physical aggression in the family scope' (yes/no).

Statistical analyses

The collected information was keyboarded in the statistical package Epi Info 2000. Subsequently, the consistency of the database was analyzed, and whenever necessary, the questionnaires referring to the interviews were revisited. The software SPSS version 17.0 (SPSS Chicago, Illinois, USA) was employed for the statistical analyses. Initially, descriptive analyses were carried out, and the prevalence and bivariate association tests were calculated by means of the chi-square test, with a level of significance of 5%.

Analyses were performed using a hierarchical multiple logistic regression model developed in four stages.

In the first stage, we introduced the socioeconomic, biological, sociodemographic, and length of imprisonment variables that presented a level of significance lower than 20% ($p < 0.20$) in the test of association with the dependent variable. The variables with $p < 0.05$ remained in the model.

In the second stage, besides the variables that had remained in the previous stage, the self-reported morbidity variables were added, and those with $p < 0.05$ remained in the model.

In the third stage, the variables concerning health-related behaviors were included, and those with $p < 0.05$ remained in the model.

In the fourth and last stage, the variables related to situations of violence experienced by the inmates before the incarceration were included, and those with $p < 0.05$ remained in the model.

The strength of the association between the independent variables and the dependent variables was expressed in Odds Ratio values, with a 95% confidence interval. Model adjustment was verified by the Hosmer-Lemeshow Test.

The Project was submitted to the Research Ethics Committee of the Prisons Administration Department on October 27, 2011 and was approved on June 21, 2012. The consent document was read to all the interviewees. The document explained the aims of the study, the themes that would be approached and the procedures that would be followed. Voluntary participation was guaranteed, as well as the secrecy of participants' identity and the possibility of abandoning the study at any time, without any penalization or need of justification.

Results

The prevalence of common mental disorder (CMD) found in the women incarcerated at the institution considered in the present study was 66.7%.

The average age of the 1,013 researched women was 30.8 (sd = 9.3) years. According to Table 1, the majority of the women were aged 39 years or younger 82.0%, were single 65.0%), reported that their skin color was non-white 51.9%, had not completed primary education 63.0% with up to three years of study), was not studying in the Prison 95.8%, was not receiving any income 64.0%, and did not have any occupational activity in the Prison 88.5%. Among the interviewees, 3.0% were pregnant and 80.3% of them reported being mothers. Length of permanence in the Prison was lower than or equal to 1 year for 60.8% of the interviewees. In the simple analysis, the women who reported absence of income received for working in the FP presented higher prevalence of CMD.

In relation to the prevalence of common mental disorder (CMD) according to self-reported morbidity and weight gain, a higher preva-

Table 1. Sociodemographic characteristics, length of imprisonment and prevalence of common mental disorder (CMD) among female inmates of a prison in the interior of the State of São Paulo, 2011/2013.

Variables and categories	Inmates (n = 1,013)		CMD (≥ 8)		P-value*
	n	%	n	%	
Age group*					0.095
≤ 39 years	826	82.0	560	67.8	
≥ 40 years	181	18.0	111	61.3	
Studies in prison					0.588
No	969	95.8	647	66.8	
Yes	43	4.2	27	62.8	
Has completed primary education					0.841
No	622	63.0	413	66.4	
Yes	391	37.0	262	67.0	
Marital status					0.620
Married/stable union	355	35.0	233	65.6	
Other	658	65.0	442	67.2	
Children					0.964
No	200	19.7	133	66.5	
Yes	813	80.3	542	66.7	
Skin color*					0.205
White	487	48.1	315	64.7	
Non-white	526	51.9	360	68.4	
Catholic religion					0.637
No	613	60.5	405	66.1	
Yes	400	39.5	270	67.5	
Works in prison					0.786
No	897	88.5	599	66.8	
Yes	116	11.5	76	65.5	
Receives income					**0.020**
No	646	64.0	447	69.2	
Yes	363	36.0	225	62.0	
Length of permanence in prison					0.150
< 1 year	616	60.8	421	68.3	
≥ 1 year	397	39.2	254	64.0	
Length of imprisonment					0.673
< 1 year	838	82.7	556	63.3	
≥ 1 year	175	17.3	119	68.0	

* P-value from chi-square test.

lence was observed among hypertensive women ($p < 0.001$), women with scabies/pediculosis ($p = 0.002$), and women with overweight/obesity ($p = 0.039$) (Table 2).

Table 3 shows higher prevalence of CMD among women who do not practice physical activity on a daily basis ($p = 0.001$) and among smokers ($p = 0.006$). The prevalence observed in those who reported using tranquilizers was 81.9% ($p < 0.001$).

Table 4 presents the prevalence of CMD according to types of violence suffered in the year before incarceration. Except for physical aggression in childhood/adolescence, it is possible to see that all the variables were positively associated with presence of common mental disorder ($p < 0.05$).

Through the multiple logistic regression analysis of the factors associated with CMD presented on Table 5, it was possible to verify that the following variables showed an independent and positive association with CMD: absence of income, arterial hypertension, scabies/pediculosis, smoking, physical inactivity, use of tran-

Table 2. Prevalence of common mental disorder (CMD) according to self-reported morbidity and weight gain among female inmates of a prison in the interior of the State of São Paulo, 2011/2013.

Variables and categories	Inmates (n = 1,013)		CMD (≥ 8)		P-value*
	n	%	n	%	
Arterial hypertension*					< 0.001
No	785	78.3	498	63.4	
Yes	217	21.6	168	77.4	
Diabetes*					0.781
No	970	96.8	644	66.4	
Yes	32	3.2	22	68.8	
Heart problem					0.933
No	906	91.0	600	66.2	
Yes	90	9.0	60	66.7	
Gynecological problem					0.901
No	668	65.9	446	66.8	
Yes	343	34.1	229	66.4	
Vaginal bleeding					0.415
No	947	93.5	628	66.3	
Yes	66	6.5	47	71.2	
Urinary tract infection					0.322
No	695	68.8	456	65.6	
Yes	314	31.2	216	68.8	
Fractures					0.158
No	656	64.8	427	65.1	
Yes	357	35.2	248	69.5	
Tuberculosis					0.496
No	981	97.1	651	66.4	
Yes	29	2.9	21	72.4	
Hansen's disease					0.838
No	998	98.7	664	66.5	
Yes	13	1.3	9	69.2	
IST/AIDS					0.104
No	895	88.5	588	65.7	
Yes	116	11.5	85	73.3	
Scabies/Pediculosis					0.002
No	761	75.2	488	64.1	
Yes	251	24.8	187	74.5	
Overweight/obesity					0.039
No	404	39.9	254	62.9	
Yes	609	60.1	421	69.1	

* P-value from chi-square test.

Table 3. Prevalence of common mental disorder (CMD) according to lifestyle, use of tranquilizers and illicit drugs among female inmates of a prison in the interior of the State of São Paulo, 2011/2013.

Variables and categories	Inmates (n = 1,013)		CMD (≥ 8)		P-value*
	n	%	n	%	
Physical activity ≥ 30 min/day					0.001
No	712	70.3	497	69.8	
Yes	301	29.7	178	59.1	
Smoking					0.006
No	309	30.5	187	60. 6	
Yes	704	69.5	488	69.3	
Use of tranquilizers in prison*					< 0.001
No	816	80.6	514	63.0	
Yes	193	19.1	158	81.9	
Risky sexual behavior*					0.960
No	740	73.2	493	66.7	
Yes	271	26.8	181	66.8	
Use of illicit drugs before imprisonment					0.481
No	381	37.6	259	68.0	
Yes	632	62.4	416	65.8	

*P-value from chi-square test.

Table 4. Prevalence of common mental disorder (CMD) according to types of violence suffered before imprisonment among female inmates of a prison in the interior of the State of São Paulo, 2011/2013.

Variables and categories	Inmates (n = 1,103)		CMD (≥ 8)		P-value*
	n	%	n	%	
Psychological violence in the year before being imprisoned					< 0.001
No	605	59.7	366	60.5	
Yes	408	40.3	309	75.7	
Physical violence in the year before being imprisoned					< 0.001
No	695	68.6	434	62.4	
Yes	318	31.4	241	75.8	
Sexual violence in the year before being imprisoned					0.020
No	934	92.2	613	65.6	
Yes	79	7.8	62	78.5	
Before the age of 15 she witnessed physical aggression in the family					0.013
No	592	58.4	376	63.5	
Yes	421	41.6	299	71.0	
Before the age of 15 she suffered physical aggression in the family					0.870
No	740	73.1	492	66.5	
Yes	273	26.9	183	67.0	

* P-value from chi-square test.

quilizers, having witnessed violence in the family during childhood/adolescence, and having suffered psychological violence in the year before being incarcerated.

Discussion

The prevalence of symptoms related to common mental disorder (CMD) affects more than half of the incarcerated women investigated in the present study (66.7%).

Table 5. Multiple logistic regression analysis of the factors associated with common mental disorder (CMD) among female inmates of a prison in the interior of the State of São Paulo, 2011/2013.

Variables	First Stage			Second Stage			Third Stage			Fourth Stage		
	OR	95% CI	P-value	OR	95% CI	P-value	OR	95%CI	P-value	OR	95%CI	P-value
Receives income												
No	1.37	1.04-1.80	0.023									
Yes	1											
Arterial Hypertension												
No				1								
Yes				1.99	1.38-2.86	<0.001						
Scabies/ Pediculosis												
No				1								
Yes				1.65	1.19-2.89	0.003						
Smoking												
No							1					
Yes							1.58	1.18-2.11	0.002			
Physical Activity												
No							1					
Yes							1.56	1.19-2.13	0.002			
Use of Tranquilizer												
No							1					
Yes							2.41	1.61-3.61	<0.001			
Witnessed violence in the family in childhood/adolescence												
No										1		
Yes										1.40	1.05-1.86	0.021
Suffered psychological violence in the year before imprisonment												
No										1		
Yes										1.89	1.14-2.53	<0.001

Hosmer-Lemeshow Test= 0.88

A study carried out in 2006 in the State of São Paulo identified a significant prevalence of mental disorders in the incarcerated population: 61.7% of the inmates had at least one occurrence of mental disorder during their lifetime, and approximately 25% of the ones who were in the closed prison system met diagnostic criteria for at least one mental disorder in the year before the study. Approximately 11.2% of the male inmates and 25.5% of the women presented severe mental disorders[14,15].

The participants' profile in the present study was: young, single, non-white women with low social and/or economic status, incomplete primary education, low professional qualification, informal and low-income labor activity previously to the imprisonment. Specific studies with the incarcerated population have confirmed these findings and have showed that a large part of the sample of incarcerated women, in addition to these characteristics, had a life history marked by material, educational and affective insufficiency[12,16-18].

The factors that were associated with CMD were: prior psychological violence, witnessed violence in the family in childhood/adolescence use of tranquilizers, self-reported arterial hypertension and scabies/pediculosis, being a smoker, physical inactivity and absence of income.

The environment in prisons is usually precarious and unhealthy. Overcrowded cells, poor diets, lack of hygiene, sedentary lifestyle, drug use and conflicts of many types configure conditions that favor the proliferation of epidemics and other sickening situations. There is a considerable prevalence of cases of IST/AIDS, tuberculosis, pneumonia, dermatosis, hepatitis, traumas, infectious diarrhea, arterial hypertension, diabetes and mental disorders. Corroborating the literature, this study found that the living conditions before incarceration and the experience in the

prison contribute to the high prevalence of common mental disorder[5,18,19].

Studies have shown that more than half of all prisoners use licit and/or illicit drugs, have mental illness, or both the conditions apply. This increases their risk of sexually transmitted diseases and other infections, all of them highly prevalent in the incarcerated population. Furthermore, it is estimated that around 40% of all prisoners have at least one chronic disease, like diabetes or arterial hypertension, although it is a population that is predominantly composed of youths[6,8,10,20].

The prevalence of tobacco use is high in the FP and positively associated with CMD; however, no action has been carried out in order to control the incarcerated women's tobacco use, despite the existence of resources in the public networks of healthcare services[21,22].

A study conducted in the United States with people who received a psychiatric diagnosis found that their chance of smoking was 3.23 (95%CI 3.11-3.35) times higher when compared to those without this diagnosis. Improving the approach to psychiatric comorbidities - smoking among them - can be a task to be undertaken with the incarcerated population, considering that prisons can become adequate places for the implementation of actions of health promotion and disease prevention[3].

With regard to the practice of physical activity, only one third of the women practiced some modality on a daily basis. The evidences of the benefits of physical activities during at least thirty minutes in the major part of the weekdays are clear and consistent, as they contribute to mental health, not to mention their physical-functional and socialization benefits[23].

The bibliographic review has not found studies that assessed the relationship between physical activity and common mental disorder among incarcerated women. Nevertheless, population-based studies have found an inverse relationship between practice of physical activity and presence of CMD[24,25].

The prison where the study was conducted has a yard for the common use of the inmates. This yard can be used for daily, systematic and guided physical activities, in the perspective of acquisition of new behaviors that enhance physical and mental health.

Violence seems to be part of the incarcerated women's history and produces negative experiences throughout their lives. The women who reported having suffered psychological violence in the year before being imprisoned and having witnessed psychological violence in the family during adolescence had a chance almost twice as high of manifesting common mental disorder when compared to the other women. This corroborates the findings of a study in which personal history of psychological violence was also associated with CMD[25]. Therefore, incarcerated women may present a psychological condition that is even more vulnerable due to the history of violence and to the current condition of imprisonment[3,25].

Historically, prisons have been organized to shelter men, who represent the majority in the prison system. Until recently, incarcerated women were admitted to the same institutions constructed for men. These were transformed into female prisons, as is the case of the prison studied here. The fragile adaptation of the old structures has not met the needs of the population of incarcerated women, and this has been aggravating the conditions of permanence in prison and, due to this, the health of the women[26,27].

The incarcerated population's extremely precarious conditions of life and health make us reflect that, although the objective is ensuring their return to social life, the hazardous conditions of confinement become an obstacle to rehabilitation and prevent the imprisoned people's access to health in an effective way[27,28].

Among the study's limitations, we would like to mention that the data may be underestimated and the prevalence may be even higher. Many participants may not have reported stories of abuses or may have denied involvement with drugs and alcohol, fearing that the study might negatively affect their legal situation. Another limitation is the fact that it was a cross-sectional study, a condition that prevents the establishment of implicit causality relations among the variables. Moreover, we did not have access to the women's mental health conditions before their imprisonment.

Final remarks

The study has shown the difficult mental health situation of women incarcerated in the researched institution and corroborates other studies related to this population profile. The identification of the presence of mental problems when the individuals are admitted to prisons is a necessary task that may guide the adoption of measures to reduce suffering beyond the penalty of deprivation of freedom.

Ciência & Saúde Coletiva, 23(11):3587-3596, 2018

In this perspective, basic actions targeted at the treatment of common diseases, like arterial hypertension and dermatological complaints, the possibility of practicing physical activities on a regular basis, and the opportunity to work while serving the sentence need to be implemented. In addition, the treatment of mental disorders must be adequately conducted, including drug administration. These approaches need to be included in a health policy for the incarcerated population, in the context of a broader policy of reorganization of the prison system in Brazil.

Collaborations

CAF Audi participated in the study's conception and planning, coordinated and participated in the collection and analysis of the empirical data, wrote the paper and approved its final version. SM Santiago participated in the study's conception and planning, supervised data collection and analyses, reviewed the paper critically and approved its final version. MGG Andrade participated in the paper's conception, in the critical review and approved the final version of the paper. PMSB Francisco participated in the statistical analysis and interpretation of the data, and approved the final version of the paper.

References

1. World Health Organization (WHO). *The World Health Report-mental health: new understanding, new hope*. Geneva: WHO; 2002.
2. Goldberg D, Huxley P. *Common mental disorders: a biosocial model*. London: Tavistock; 1992.
3. Rich JD, Cortina CS, Uvin ZX, Dumont DM (2013) Women, Incarceration and Health. *Women's Health Issues* 2013; 23(6):333-334.
4. World Health Organization (WHO). *Obesity Preventing and Managing the Global Epidemic. Report of WHO Consultation on Obesity. Programme of Nutrition. Family and Reproductive Health*. Geneva: WHO; 1998.
5. World Health Organization (WHO). *European Office. Health in prisons – a WHO guide to the essentials in prison health*. Copenhagen: WHO; 2007.
6. Fazel S, Danesh J. Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. *Lancet* 2002; 359(9306):545-550.
7. Meltzer HGB, Petticrew M. *The Prevalence of Psychiatric Morbidity among Adults Aged 16-64, Living in Private Households, in Great Britain*. London: Office of Population Censuses and Surveys; 1994.
8. Reed J. Mental health care in prisons. *Br J Psychiatry* 2003; 182:287-288.
9. Chandra PS, Satyanarayana VA. Gender disadvantage and common mental disorders in women. *Int Rev Psychiatry* 2010; 22(5):513-524.
10. Fazel S, Hayes AJ, Bartellas K, Clerici M, Trestman R. Mental health of prisoners: prevalence, adverse outcomes, and interventions. *Lancet Psychiatry* 2016; 3(9):871-881.
11. Moraes PAC, Dalgalarrondo P. Incarcerated women in São Paulo: mental health and religiosity. *J Bras Psiquiatr* 2006; 55(1):50-56.
12. Beusenberg M, Orley JA. *Users Guide to the Self Reporting Questionnaire (SRQ)*. Geneva: World Health Organization; 1994.
13. Mari JJ, Willians P. A validity study of a psychiatric screening questionnaire (SRQ-20) in primary care in the city of São Paulo. *Br J Psychiatry* 1986; 148:23-26.
14. Gonçalves DM, Stein AT, Kapczinski F. Performance of the Self-Reporting Questionnaire as a psychiatric screening questionnaire: a comparativestudy with Structured Clinical Interview for DSM-IV-TR. *Cad Saude Publica* 2008; 24(2):380-390.
15. Damas BF, Oliveira WF. Mental health in prisons of Santa Catarina, Brazil. *Brazilian Journal Mental Health* 2013; 5(12):1-24.
16. Canazaro D, Argimon IIL. Characteristics, depressive symptoms, and associated factors in incarcerated women in the State of Rio Grande do Sul, Brazil. *Cad Saude Publica* 2010; 26(7):1323-1333.
17. Covington SS. Women and the Criminal Justice System. *Women's Health Issues* 2007; 17(4):180-182.
18. Staton M, Leukefeld C, Webster JW. Substance use, health problems and service utilization among incarcerated women. *Int J Offender Ther Comp Criminol* 2003; 47(2):224-239.
19. Alves J, Dutra A, Maia A. History of adversity, health and psychopathology among prisoners: comparison between men and women. *Cien Saude Colet* 2013; 18(3):701-709.
20. Instituto Nacional de Câncer José Alencar Gomes da Silva (INCA). *A situação do tabagismo no Brasil: dados dos inquéritos do Sistema Internacional de Vigilância, da Organização Mundial da Saúde, realizados no Brasil, entre 2002 e 2009*. Rio de Janeiro: INCA; 2011.
21. Iglesias R, Prabhat JHA, Pinto M, Silva VLC, Godinho J. Discussion paper - health, nutrition and population (HNP) Tobacco control in Brazil : executive summary. *Epidemiol. Serv. Saúde* 2008; 17(4):301-304.
22. Brazil. Ministry of Health (MH). *Agita Brazil: National Program for Promotion of Physical Activity*. Brasilia: MH; 2002. (Series C. Projects , Programs and Reports; n. 63).
23. Rocha SV, Araújo TM, Almeida MMG, Virtuoso JS. Practice of physical activity during leisure time and common mental disorders among residents of a municipality of Northeast Brazil. *Rev Brasileira de Epidemiologia* 2012; 15(4):871-883.
24. Pereira ARS, Morita M, Barros MBA. Common mental disorder. In: Barros MBA, César CLGC, Carandina L, Goldbaum M, editors. *The health dimensions: a population-based study in Campinas, SP.* São Paulo: Aderaldo & Rothschild; 2008. p. 143-152.
25. Johnson H. Concurrent Drug and Alcohol Dependency and Mental Health Problems among Incarcerated Women [online]. *Australian and New Zealand Journal of Criminology* 2006; 39(2):190-217. [acessado 2016 Maio 2]. Disponível em: http://search.informit.com.au/documentSummary;dn=811595735840921;res=IELHSS
26. Fernandes LH, Alvarenga CW, Santos LL, Pazin FA. The need to improve health care in prisons. *Rev Saude Publica* 2014; 48(2):275-283.
27. Bergh BJ, Gatherer A, Fraser A, Moller R. Imprisonment and women's health: concerns about gender sensitivity, human rights and public health. *Bull World Health Organ* 2011; 89(9):689-694.
28. Gois SM, Santos JHPO, Silveira MFA, Gaudêncio MMP. Beyond bars and punishments: a systematic review of prison health. *Cien Saude Colet* 2012; 17(5):1235-1246.

Artigo apresentado em 17/08/2016
Aprovado em 22/03/2017
Versão final apresentada em 24/03/2017