

Psychological symptomatology in a prison population: an exploratory study of age, psychopathological history and time in prison

Molina-Coloma V¹, Lara-Machado R², Pérez-Pedraza B¹, López-Rodríguez D¹

¹Universidad Autónoma de Coahuila. Saltillo. México.

²Pontificia Universidad Católica del Ecuador. Ambato. Ecuador.

ABSTRACT

Objectives: Identify psychological symptoms relating to age, psychopathological history and time in prison in women and men incarcerated in a prison.

Material and method: Cross-sectional study. The sample was made up of 100 inmates, 50 men and 50 women and the symptom Checklist-90-Revised (SCL-90-R) was used to assess psychopathological symptoms.

Results: This study shows that inmates with a psychopathological history prior to entry to prison, younger inmates (18-29 years) and inmates who have been a short time in prison present more psychopathological symptoms.

Discussion: The results found suggest the implementation of a protocol for psychological care of prisoners in general, but highlights a particular interest in the care of cases with people with a psychopathological history prior to entering prison, in those who are younger and those who have been in prison for a short time.

Keywords: age factors; psychopathology; length of stay; South America.

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INTRODUCTION

The prison population has increased in many countries¹, as has the prevalence of mental health problems in prisons^{2,3}. One important feature of this phenomenon is that such problems are more prevalent in prison settings than amongst the general public^{4,5}. These results have enabled factors linking psychopathology and delinquency to be identified⁶.

There is a belief that the increased presence of mentally ill inmates in prisons has been caused by the closure of psychiatric institutions (criminalisation of mental disorders). A large number of people with mental disorders have ended up in prison because they do not go to health centres where they can receive the help they need. Such patients are often socially marginalised and excluded⁶⁻⁸.

This situation may partly explain the fact that some people present some kind of mental disorder before entering prison^{7,8}. It could also be said that health of persons with pre-existing mental disorders tends to deteriorate with the passage of time and may lead to more serious problems if the person is not treated⁷.

In addition, the environment within a prison can increase psychopathological symptoms and distress⁹⁻¹¹. The prison setting is a demanding one in terms of the adaptations that new inmates have to make, and adaptive failures are common, even amongst emotionally balanced people with adequate psychological resources^{7,12}.

In this regard, the length of stay in prison, especially when a person has been imprisoned for a short period and when he or she enters for the first time,

can play a part in the appearance of more mental health problems¹⁰⁻¹³. Long periods of confinement, little activity or mental stimulation, social isolation, removal from support networks and the presence of adverse and critical situations¹⁴ can all have a negative impact on health^{12,15}.

Likewise, inmates' perceptions of the prison setting, in terms of the social, organisational, emotional and physical features of a prison, also play a part in inmates' behaviour^{11,16}. In the case of Ecuador, for example, prisons are characterised by factors such as extortion, overcrowding and violence, which do not contribute towards a positive environment^{17,18}.

The results obtained from previous research conclude that both individual characteristics (particularly a record of mental disorder) and environmental factors have an influence on inmates' psychological distress^{10,11,19}. Mental health issues and violence in prisons are caused by a range of conditions and factors that create and maintain such problems^{20,21}.

This study is important on the one hand because inmates with mental disorders suffer from a loss of quality of life that can impact their day-to-day lives in prison. Such pathologies can also act as a limitation on any process of social re-adaptation. On the other hand, studies such as these are necessary in Latin American contexts such as Ecuador because of the need to highlight the problems existing in prisons, especially in issues of mental health, given that very few Latin American countries have legislation that specifically applies to mental health in prisons^{22,23}.

The hypothesis behind this study is the following: inmates who have spent little time in prison, who are younger and have a record of mental illness, present more psychopathological symptoms.

MATERIAL AND METHOD

Participants

The convenience sample technique was used for this study. The sample consisted of a total of 100 participants, 50 men and 50 women, who were incarcerated in the Adults Prison of Ambato (Ecuador). Inmates who complied with the previously established inclusion criteria were selected from the ones who had voluntarily offered to participate after being informed of the process: The criteria were: a) they were able to read and write; and b) they were not in custody.

Evaluation instruments

The instruments used for evaluation were:

- Questionnaire of socio-demographic, health and prison variables. Carried out on an ad hoc basis by the first author of the study. It allowed data about the socio-demographic factors and details about offences committed to be gathered. The information provided was contrasted with the prison records.
- The Symptom Checklist 90-Revised. For this study, the Spanish version of González de Rivera et al was used²⁴. The questionnaire consists of 90 self-administered items, which evaluates symptoms of psychological distress. The dimensions that make up the questionnaire are: somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism. It also presents three general indices that reflect the global severity level of the individual's symptoms: the global severity index (GSI), the positive symptoms total (PST) and positive symptoms distress index (PSDI). Each item presents five response options on a Likert scale, ranging from 0 (nothing) to 4 (very much). This tool presents a high internal consistency, with values between 0.81 and 0.90, and the test-retest reliability coefficients are between 0.78 and 0.90. The reliability coefficient of this tool for the prison population in Ecuador was 0.95⁴.

Procedure

This study took place at the Adults Prison of Ambato, which has modules for men and women, and houses persons convicted of violent and non-violent crimes, who are assigned to three different areas depending on how dangerous they are.

The first author of this study obtained the necessary permits to enter the prison. The inmates then received a letter informing them about the study, and the men and women who decided to participate signed an informed consent form. The evaluation was carried out individually in a session of about one hour supervised by the first author of this study.

Data analysis

The data was analysed with the Statistical Package for Social Science (SPSS) software, version 24.0. For the categorical variables, Parametric tests were used; chi-square for comparing groups and Cramer's V to calculate size differences. For the quantitative variables, Student's t parametric tests were also used to

compare groups and Cohen's *d* test was used to calculate the size of the effect of the differences. The age groups and length of stay in prison were compared by means of a variance analysis (ANOVA) and the effect size was calculated with the G Power 3.1²⁵ program.

RESULTS

Socio-demographic and crime characteristics

100 inmates participated in this study. The mean age of the men was 33.96 years (standard deviation [SD] = 11.09), and of the women, 33.84 years (SD = 8.63). The socio-demographic characteristics showed significant differences between men and women in nationality ($\chi^2 = 7.53$; $p = 0.006$; Cramer's *V* [*V*] = 0.274), type of offence ($\chi^2 = 24.94$; $p = 0.000$; *V* = 0.499), behaviour inside prison ($\chi^2 = 9.46$; $p = 0.002$; *V* = 0.308) and having a member of the family in prison ($\chi^2 = 7.89$; $p = 0.005$; *V* = 0.281).

Both the men and women are of Ecuadorian nationality. However, there is a small group of Colombian women. Most of the crimes committed by the men are theft, sexual offences and murder/manslaughter, while the women are more likely to have committed offences such as possession of drugs, theft and unlawful assembly. Women present more reports of misconduct in prison than men, and also have more family members in prison (Table 1).

Psychopathological symptoms amongst inmates with and without a history of mental illness prior to imprisonment

Table 2, which compares the group of inmates that has a record of mental disorders with the group that does not prior to imprisonment, shows significant in most of the dimensions, with the exceptions of hostility, phobic anxiety and the PSDI. The dimensions that present the largest effect size (moderate) are: anxiety (Cohen's *d* [*d*] = 0.50), PST (*d* = 0.50) and phobic anxiety (*d* = 0.49), followed by GSI (*d* = 0.43) and somatization (*d* = 0.42). This result shows that the persons with a history of mental illness before entering prison present a greater intensity and range of psychological symptoms. They are also more anxious and tend to somatise their conflicts.

Age and psychopathological symptoms

Table 3 shows that the group of inmates that form part of the 18-29 year age group present higher scores in the averages than the other age groups, and significant differences were found in some of the symptoms,

mainly in Obsessive-Compulsive (*d* = 0.38), phobic anxiety (*d* = 0.7) and PST (*d* = 0.36), with mean effect sizes. The greater general symptomatology that younger inmates present, the more obsessive and anxious they are, unlike the older inmates.

When comparing groups with the Bonferroni post hoc test, significant differences were seen in Obsessive-Compulsive between the age groups of 18-29 and 30-40 years ($p = 0.002$) and between the groups of 18-29 and 41-60 years ($p = 0.002$). In other words, the younger inmates are more obsessive-compulsive, unlike the older inmates. The results for interpersonal sensitivity showed that there are differences between the age groups of 18-29 and 30-40 years ($p = 0.041$). The youngest inmates are more likely to feel hurt than the mean age group in prison. The significant differences between age groups in anxiety can be seen in the age groups of 18-29 and 30-40 years ($p = 0.016$) and between the groups of 18-29 and 41-60 years ($p = 0.001$). Young people are most anxious than the older inmates.

There are differences in phobic anxiety between the age groups of 18-20 and 30-40 years ($p = 0.002$) and between the groups of 18-29 and 41-60 years ($p = 0.009$). In other words, young inmates have higher levels of phobic anxiety. The results for paranoid ideation showed significant differences between the age groups of 18-29 and 30-40 years ($p = 0.016$) and between the groups of 18-29 and 41-60 years ($p = 0.026$). This shows that young inmates present more paranoid ideation than the members of the other two age groups. There are difference in psychoticism between the age groups of 18-20 and 30-40 years ($p = 0.021$). Young inmates present more symptoms of psychoticism than the other age groups.

The general indices showed that significant differences in the GSI can be seen between the age groups of 18-29 and 30-40 years ($p = 0.017$) and between the groups of 18-29 and 41-60 years ($p = 0.012$). The results for the positive symptoms total showed significant differences between the groups of 18-29 and 30-40 years ($p = 0.024$) and between the groups of 18-29 and 41-60 years ($p = 0.002$). The population of young inmates presented greater severity and range in the evaluated symptoms.

Time in prison and psychopathological symptoms

Table 4 shows that inmates who have been incarcerated for 1 to 11 months present higher averages. However, the differences are not significant, with effect sizes between median and large, in depression (effect size *f* [*f*] = 0.36), phobic anxiety (*f* = 0.35), paranoid ideation (*f* = 0.29),

Table 1. Socio-demographic data and details of offence.

Prison population							
Socio-demographic data and details of offence	Men N = 50		Women N = 50		χ^2	<i>p</i>	V
	N	%	N	%			
Marital status					1.99	0.574	0.141
Single	16	32.00	18	36.00			
Married/with partner	23	46.00	26	52.00			
Divorced/separated	8	16.00	5	10.00			
Widow(er)	3	6.00	1	2.00			
Nationality					7.53	0.006	0.274
Ecuadorian	50	100.00	43	86.00			
Colombian	0	0.00	7	14.00			
Level of education					1.00	0.317	0.100
Basic general education	23	46.00	28	56.00			
General secondary education	27	54.00	22	44.00			
Type of offence					24.94	0.000	0.499
Crimes against life	7	14.00	3	6.00			
Sexual offences	10	20.00	1	2.00			
Theft	25	50.00	18	36.00			
Illegal possession of drugs	3	6.00	21	42.00			
Illegal association	3	6.00	6	12.00			
Others	2	4.00	1	2.00			
Disciplinary record					9.46	0.002	0.308
Yes	12	24.00	27	54.00			
No	38	76.00	23	46.00			
Family member in prison					7.89	0.005	0.281
Yes	20	40.00	34	68.00			
No	30	60.00	16	32.00			

Note. V: Cramer's V.

GSI ($f = 0.31$) and PST ($f = 0.29$). Inmates who have spent less time in prison present greater severity and range of the evaluated symptoms, and also present greater levels of depression, phobic anxiety and paranoid ideation.

When the groups were compared with the Bonferroni post hoc test, significant differences were observed in depression between the groups of 1 to 11 months and 60 or more months ($p = 0.002$). Significant differences were also observed between the groups of 1 to 11 months and 60 or more months ($p = 0.003$). The symptoms of depression and phobic anxiety are present in inmates who have spent little time in prison (1 to 11 months) unlike those who have been in prison for longer (60 or more months).

The general severity index showed significant differences between the groups of 1 to 11 months and 60 or more months ($p = 0.014$). Significant differences were also found in the positive symptoms total between the groups of 1 to 11 months and 60 or more months ($p = 0.026$). This implies that the range and severity of symptoms is more notable amongst inmates who have spent less time in prison.

DISCUSSION

There are a large number of persons with mental issues in prison, and they are not always detected or diagnosed. The levels of severity are associated with

factors such as sex, history of mental disorder, age and time in prison. The conclusion drawn from the study is that the inmates with a history of mental illness prior to conviction, young inmates (18-29 years) and

those who have spent less time in prison present more psychopathological symptoms.

The results observed in this study show that the inmates with a record of mental illness prior to incar-

Table 2. SCL-90-R on inmates with and without record of mental illness prior to entering prison.

SCL-90-R	With record of mental illness N = 19		Without record of mental illness N = 80		t	p	d
	M	SD	M	SD			
Somatization	1.99	0.97	1.12	0.91	3.67	0.000	0.42
Obsessive-Compulsive	1.88	0.96	1.25	0.74	3.20	0.002	0.34
Interpersonal sensitivity	1.52	0.98	1.05	0.77	2.25	0.027	0.26
Depression	1.99	0.79	1.44	0.84	2.61	0.011	0.32
Anxiety	1.95	0.88	0.96	0.85	4.56	0.000	0.50
Hostility	1.51	1.30	1.07	1.29	1.34	0.182	0.17
Phobic Anxiety	1.17	0.92	0.74	0.84	1.93	0.057	0.49
Paranoid ideation	1.97	1.11	1.21	0.90	3.17	0.002	0.35
Psychoticism	1.52	0.92	0.86	0.69	2.52	0.001	0.38
Global severity index	1.78	0.76	1.10	0.65	3.98	0.000	0.43
Positive symptoms total	59.89	14.46	41.57	17.40	4.25	0.000	0.50
Positive symptoms distress index	2.60	0.69	2.30	0.67	1.78	0.078	0.22

Note. d: Cohen's d; SD: standard deviation; M: mean; SCL-90-R: The Symptom Checklist 90-Revised; t: t-Test.

Table 3. Ages ranges and psychopathological symptoms of inmates (SCL-90-R).

	Age ranges								
SCL-90-R	18 to 29 years N = 37		30 to 40 years N = 44		41 to 60 years N = 19		F	<i>p</i>	f
	M	SD	M	SD	M	SD			
Somatization	1.39	0.96	1.23	0.99	1.22	1.04	0.310	0.734	0.08
Obsessive-Compulsive	1.77	0.90	1.18	0.71	1.02	0.55	8.50	0.000	0.38
Interpersonal sensitivity	1.42	0.98	0.97	0.66	1.02	0.73	3.47	0.035	0.26
Depression	1.77	0.96	1.46	0.77	1.31	0.77	2.26	0.110	0.21
Anxiety	1.57	1.10	1.01	0.79	0.64	0.47	8.01	0.001	0.37
Hostility	1.37	1.35	1.17	1.33	0.67	1.03	1.89	0.157	0.19
Phobic Anxiety	1.24	1.04	0.60	0.68	0.54	0.55	7.65	0.001	0.37
Paranoid ideation	1.76	1.11	1.16	0.82	1.04	0.85	5.34	0.006	0.31
Psychoticism	1.28	0.96	0.82	0.66	0.77	0.38	4.69	0.011	0.30
Global severity index	1.53	0.87	1.10	0.58	0.96	0.49	5.81	0.004	0.33
Positive symptoms total	20.63	3.39	16.14	2.43	11.42	2.62	7.18	0.001	0.36
Positive symptoms distress index	0.74	0.12	0.68	0.10	0.59	0.14	0.129	0.879	0.05

Note. SD: standard deviation; F: F-Test for Anova; f: effect size f; M: mean; SCL-90-R: The Symptom Checklist 90-Revised.

Table 4. Time in prison and psychopathological symptoms (SCL-90-R).

Time in prison											
SCL-90-R	1 to 11 months N = 49		12 to 35 months N = 21		36 to 59 months N = 12		60 months and over N = 18		F	<i>p</i>	f
	M	DT	M	DT	M	DT	M	DT			
Somatization	1.31	1.02	1.40	1.04	1.56	0.79	0.90	0.88	1.34	0.265	0.20
Obsessive-Compulsive	1.49	0.87	1.42	0.88	1.38	0.69	0.98	0.58	1.73	0.166	0.23
Interpersonal sensitivity	1.30	0.86	1.10	0.90	1.12	0.81	0.77	0.56	1.89	0.136	0.24
Depression	1.76	0.79	1.51	1.00	1.67	0.86	0.93	0.54	4.71	0.004	0.36
Anxiety	1.37	0.99	1.20	1.05	0.93	0.53	0.72	0.69	2.25	0.088	0.25
Hostility	1.10	1.18	1.24	1.41	1.28	1.38	1.10	1.51	0.102	0.959	0.06
Phobic Anxiety	1.08	0.96	0.79	0.82	0.73	0.71	0.25	0.35	4.54	0.005	0.35
Paranoid ideation	1.64	1.04	1.21	1.01	1.04	0.63	0.98	0.83	2.91	0.039	0.29
Psychoticism	1.12	0.81	1.00	0.93	0.72	0.59	0.77	0.46	1.48	0.225	0.21
Global severity index	1.39	0.75	1.25	0.85	1.21	0.49	0.79	0.38	3.29	0.024	0.31
Positive symptoms total	48.34	19.76	47.10	18.67	44.58	8.21	34.00	15.12	2.98	0.035	0.29
Positive symptoms distress index	2.46	0.65	2.21	0.69	2.42	0.71	2.18	0.71	1.13	0.341	0.18

Note. SD: standard deviation; F: F-Test for Anova; f: effect size; f; M: mean; SCL-90-R: The Symptom Checklist 90-Revised.

ceration, which formed a lower percentage (N = 19), obtained higher scores in presence of symptoms than those who did not have a history of mental disorders. However, it should be mentioned that they also presented higher scores, as can be seen in Table 2.

Living conditions during incarceration can lead to mental health problems. But it should also be pointed out that certain subgroups in prison, such as inmates who present a background of mental illness, are more vulnerable. Or rather, that persons who enter prison with some kind of mental disorder can present more serious symptoms as a result of incarceration¹¹.

Most younger inmates (18-29 years) presented higher averages in comparison with the other two groups. The differences between the groups of 30-40 and 41-60 years are minimal. This implies that the youngest age group is more likely to present mental health issues.

It should be noted that there were no significant differences in symptoms of depression, although the averages were high in all the age ranges. Depression is generally present amongst many inmates, regardless of their age, as is the case with hostility.

It has been argued that the length of stay in prison can bring about a deterioration in inmates' mental health²⁶. Studies^{11,27} show that mental health issues

in the first months of incarceration are greater and diminish with the passage of time, but despite the reduction, inmates continue to present poor mental health²⁷. One of the explanations given for this situation is that it is more likely to be associated with a process of stress reduction than with any improvement in symptoms or particular disorder²⁷.

This study shows that inmates who spend less time in prison present higher levels of depression, phobic anxiety, paranoid ideation, greater intensity of psychological distress (GSI) along with the extent and diversity of symptoms that are presented (PST). On the other hand, it was found that the longer other groups have been in prison, the greater the reduction in symptoms. Based on the findings made by other authors on this point, it may be possible that such symptoms amongst inmates who have only recently been incarcerated may be linked to a process of adaptation to their new surroundings^{13,27}.

It should be noted that the presence of mental health problems in prisons is an issue that requires more attention in Ecuador. In this regard, the work done with the prison population represents a major challenge²⁸. Although in recent years the Ecuadorian government has made efforts to meet inmates' needs, they still face a lot of limitations⁴.

On the one hand, many prisons in Ecuador operate under difficult conditions, with overcrowding and violence within prisons that threatens the lives of many inmates. Prisons in Ecuador do not meet international standards regarding adequate structures and effective working order^{22,29,30}.

On the other hand, there continues to be little in the way of work on mental health. There is no data on diagnoses or treatment. Neither is there information on whether psychological procedures are based on some kind of protocol³¹. Prisons in Ecuador urgently need pre-designed and empirically validated programmes to deal with the needs and treatments of offenders.

It should be pointed out that timely and adequate care of inmates can ensure a reduction in the risk of recidivism³². On the other hand, a high quality mental health care service in Ecuadorian prisons that operates in collaboration with community mental health services, would go much further in ensuring an improvement of health indices in the community, given that inmates who have served their sentence and been released would have the opportunity to continue with their treatment^{4,33}.

To conclude, this study has some limitations. The number of inmates who participated in the study was small and the ones who did were able to read and write. The results cannot be generalised given that the group of inmates was small and specific. Furthermore, the psychological assessment was carried out when the participants were incarcerated.

Interesting future research could include a longitudinal study that evaluates the same inmates from the first day of prison and monitors them over the course of several months and/or years during their stay. Despite the limitations mentioned above, this study enabled relevant data to be obtained for use in dealing appropriately with the psychopathological problems of inmates in Ecuadorian prisons.

CORRESPONDENCE

Verónica Molina-Coloma
E-mail: v_molina@uadec.edu.mx

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