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Burden of separation and suicide risk of prisoners with minor children

Sinja Krüger [a,b], Stefan Priebe [c], Rosemarie Fritsch [b], Adrian P. Mundt [d,e,*]

[a] Klinik für Psychiatrie und Psychotherapie, Charité Campus Mitte Universitätsmedizin Berlin, Germany
[b] Departamento de Psiquiatría y Salud Mental, Hospital Clínico, Facultad de Medicina, Universidad de Chile, Santiago, Chile
[c] Unit for Social and Community Psychiatry, WHO Collaborating Centre for Mental Health Services Development, Queen Mary University of London, UK
[d] Facultad de Medicina, Universidad Diego Portales, Chile
[e] Facultad de Medicina, Universidad San Sebastián, Chile

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ABSTRACT

The present study aimed to explore the burden of separation from children and its relationship with suicide risk in prisoners with minor children at the moment of admission into the penal justice system. Suicide risk was assessed using the Mini International Neuropsychiatric Interview in newly admitted female (n = 198) and male (n = 229) prisoners in Santiago de Chile. The burden of separation from minor children was rated on a numeric rating scale. Both genders showed high burden of separation from children at imprisonment. Mothers had significantly lower suicide risk than women without children. The relative risk was 0.31 (95% CI [0.16–0.6], $p < 0.001$) to show 'high suicide risk'. There was no difference of suicide risk between imprisoned fathers and male prisoners without children. Within the group of fathers, the suicide risk associated with the burden of separation. Our study indicates that strengthening the parent role and facilitating parent–child contacts during imprisonment could be an important element of suicide prevention interventions.

1. Introduction

Prison population rates have been increasing in many parts of the world (Walmsley, 2016), and this increase is shown to be related with psychiatric bed removals in South America. In Chile, the last two decades has seen a decrease in the number of psychiatric beds by nearly 70%, while the prison population has doubled (Mundt et al., 2015). Prisons were even referred to as the new mental asylums (Sisti, Segal, & Emanuel, 2015). In prison populations, the suicide rate is about three times higher than in the general population and the second leading cause of death (Duthe, Hazard, Kensey, & Shon, 2013; Fazel, Grann, Kling, & Hawton, 2011). High prevalence of mental disorders in prisoners have been reported worldwide (Fazel & Seewald, 2012) and in Chile (Mundt et al., 2013; Mundt, Kastner, Larrain, Fritsch, & Priebe, 2016). Suicide in prison populations is therefore considered to be an important public health problem.

Environmental, socio-demographic, and psychological factors have been related with suicide risk in prisoners (Fazel, Cartwright, Norman-Nott, & Hawton, 2008; Marzano, Hawton, Rivlin, & Fazel, 2011). Environmental factors include overcrowding (McDonald & Thomson, 1993), high turnover, (van Ginneken, Sutherland, & Molleman, 2007) and isolation (Winkler, 1992). Socio-demographic factors include young age and being single (Daniel, 2006). History of psychiatric hospitalisation, history of suicide intents (Brown, Beck, Steer, & Grisham, 2000), and family history of suicidal behaviour (Lekka, Argyriou, & Beratis, 2006) have been reported as risk factors. Lifetime and current psychiatric disorders (Fazel et al., 2011), alcohol, and illicit drug use (Kovasznay, Miraglia, Beer, & Way, 2004) have also been associated with increased suicide risk in prisoners. The suicide risk has been found to be most pronounced in the first week of imprisonment (Fazel et al., 2008; Winkler, 1992).

In the general population, having a child is associated with lower suicide risk in females (Qin, Agerbo, & Mortensen, 2003). The protective effect of being a parent on suicide risk also appears to apply to men (Qin et al., 2003). In Western countries, the protective effect has been observed in fathers with children of up to two years old and in mothers with children of up to six years old (Qin et al., 2003). For mothers, being married with more children has also been associated with lower suicide risk (Hoyer & Lund, 1993).

In the US, a majority of the prisoners have children aged 18 years old or under (Stanley & Byrne, 2000) and a third of imprisoned parents have several children (Maruschak, Glaze, & Mumola, 2010). The majority of imprisoned mothers care for their children prior to imprisonment, whereas only a minority of fathers live with their children prior to imprisonment in the US (Glaze & Maruschak, 2008; Mumola, 2000). During paternal imprisonment most children live with their biological mother (Schlafer & Poehlmann, 2010). Latin American societies are often described as cultures with a collectivistic orientation and identity

* Corresponding author at: Facultad de Medicina, Universidad Diego Portales, Ejercito 233, Santiago, Chile.
E-mail address: adrian.mundt@mail.udp.cl (A.P. Mundt).

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(Triandis, 1989, 2001). Assisting and supporting family members may therefore be of higher importance in Latin America than it is in Western countries (Fuligni, 2011). There are no data to report regarding the numbers of prisoners with minor children in South America, as this information is not routinely collected.

Only few studies have examined mental health problems in imprisoned parents. Separation from children has been described as one of the most 'disturbing and painful' factors for imprisoned mothers (Luke, 2002). Separation from children has been identified as a risk factor for psychological distress (Fogel & Martin, 1992; Poehlmann et al., 2013), anxiety, shame, anger, and guilt (Arditti & Few, 2008; Arendell, 2000; Young, 2000). Similar patterns of depression symptoms have been found in imprisoned mothers compared to women without children (Fogel & Martin, 1992). However, mothers have also been reported to have higher rates of anxiety symptoms (Fogel & Martin, 1992) as well as a higher prevalence of post-traumatic stress disorders and substance-use disorders (Greene, Haney, & Hurtado, 2000). Low levels of contact between mothers and their children during imprisonment further relate to higher levels of depression and somatization (Loper, Carlson, Levitt & Scheffel, 2009; Tuerk & Loper, 2006).

Several studies have evaluated differences in the prevalence of mental disorders between imprisoned mothers and fathers. At least one study found higher rates of drug and alcohol use disorders in mothers as compared to fathers (Kjellstrand, Cearley, Eddy, Foney, & Martinez, 2012). Imprisoned mothers were one and a half times more likely to suffer from mental disorders and four times more likely to have been affected by traumatic life events in the past compared to imprisoned fathers (Glaze & Maruschak, 2008).

Research on the relationship between suicide risk and parental imprisonment remains inconclusive. Studying risk factors for suicide attempts, Encrenaz et al. (2014) found a significantly higher number of suicide attempts in male prisoners who had at least one child. The probability of a suicide attempt during imprisonment was three times higher for imprisoned fathers compared to non-fathers. Qualitative research on parental imprisonment and suicide risk has shown that imprisoned mothers with psychological symptoms are unlikely to express suicidal thoughts (Poehlmann, 2005). It has therefore been proposed that the role of being a mother could be a resource protecting against 'insanity' and 'death', which gives 'meaning' to the mothers' lives during imprisonment (Shamai & Kochal, 2008). It has further been suggested that imprisonment could strengthen maternal identity in female prisoners (Shamai & Kochal, 2008), whereas fathers may rather abandon paternal identity during imprisonment (Dyer, 2005). In contrast, other qualitative research during imprisonment suggests that the mother's role ceases to protect against suicide and that this is accompanied by the perceived partial loss of the parenting role (Moloney, van den Bergh, & Moller, 2009).

The present study aimed to assess the relationship between the burden of separation from minor children in prisoners and the suicide risk of parents compared to non-parents.

2. Methods

2.1. Participants

The study was cross-sectional and observational. Consecutively committed male and female prisoners participated in the study. The sample was recruited from three remand prison facilities in the metropolitan region of Santiago de Chile. Daily admission lists of consecutively committed prisoners in one male prison (Centro de Detención Preventiva Santiago Uno) and two female prison facilities (Centro Penitenciario Feminino San Joaquín and San Miguel) were used to recruit a total sample of 198 female and 229 male participants. Interviews were conducted within the first few days of imprisonment (median 5 days; mean 7.7 days after imprisonment). Only Spanish speaking participants were included in the sample (Mundt, Kastner, Larrain, Fritsch, & Priebe, 2016).

2.2. Recruitment

Three out of 473 prisoners did not follow the call to the interview area and could not be screened for eligibility. Seven out of 470 prisoners were excluded due to mental or psychological incapacities to participate, such as agitation, learning disability or cognitive impairment. Thirty out of 463 prisoners rejected participation; 433 agreed to participate in the study. Six participants prematurely ended the interview and were excluded from further analysis. The data of 427 participants were retained for the final analyses. The rejection rate was 7.0%.

2.3. Instruments

2.3.1. Socio-demographic characteristics

Data on socio-demographic characteristics were collected, including age, marital and employment status, background of migration, educational and income level. *Marital status* was categorised as single, married, co-residing, separated, divorced, and widowed. *Educational level* was categorised according to the International Standard Classification of Education (ISCED) in which level 5 and level 6 (university and doctorate degrees) were collapsed into one level. Employment status was dichotomised as working for income and not working for income. Monthly income was assessed on the personal level and calculated as per capita income for each member of the household. The type of criminal offense was recorded and categorised as property, violence, drugs, and others.

2.3.2. Burden of separation from children

Data on the number of minor children (<age 18) were collected. In Chile, 18 is the age at which citizens are recognised by law as adults. We included the total number of minor children irrespectively of whether they were living with the participant prior to imprisonment or not. A numerical rating scale (NRS) with 11-points ranging from 0 to 10 was employed in order to quantify the burden of separation from children. Participants were asked to rate their burden or 'pain' of separation from children between 0 and 10 points with 0 indicating *no burden at all* and 10 indicating the maximum and *worst possible burden*.

2.3.3. Suicide risk

Suicide risk was assessed with the Mini International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998). It assesses suicide risk with six yes/no questions, of which five relate to the past month and one to the lifetime.

1. In the past month, did you think that you would be better off dead or wish you were dead?
2. In the past month, did you want to harm yourself?
3. In the past month, did you think about suicide?
4. In the past month, did you have a suicide plan?
5. In the past month, did you attempt suicide?
6. In your lifetime, did you ever make a suicide attempt?

The suicide risk is graded as none, low, moderate or high. If all questions are answered with 'no', suicide risk is absent. If question 1 or 2 or 6 is answered with yes, suicide risk is low. If question 3 or questions 2 and 6 are answered with yes, suicide risk is moderate. If questions 4 or 5 or questions 3 and 6 are answered with yes, suicide risk is high.

2.3.4. Psychological symptoms

The Symptom-Checklist-90-Revised (SCL 90-R) [Spanish version] was used to assess psychological symptoms. The SCL 90-R was developed by Derogatis in 1977 (Derogatis, 1977). The 90 items represent nine dimensions: somatisation, obsession–compulsion, interpersonal

sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Each item is scored on a 5-point scale with 0 indicating *no symptoms at all*, 1 indicating *a little bit*, 2 indicating *moderately*, 3 indicating *quite a lot,* and 4 indicating *extremely often*. The scale refers to the symptoms over the last seven days. The Global Severity Index (GSI) is the average score of the 90 items on the list. It indicates overall psychological distress. The scale has been validated for prisoners in Chile (Ignatyev, Fritsch, Priebe, & Mundt, 2016).

2.3.5. Mental disorders

The MINI was conducted to assess mental disorders (Sheehan et al., 1998). It is a short structured interview for classifying psychiatric disorders according to the fourth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM–IV) or the International Classification of Diseases ICD (10th version). Sixteen Axis I disorders, suicide risk and one Axis II personality disorder are assessed by the MINI. It distinguishes between current and lifetime mental disorders. The assessment takes between 15 and 30 min. The MINI has acceptable Kappa coefficients for the test–retest reliability and interrater reliability, and good validity (Sheehan et al., 1998).

Mental disorders were grouped and dummy coded into the following five categories: current affective disorders (including major depression, recurrent major depression, bipolar disorder, dysthymia); current anxiety disorders (including panic disorder, agoraphobia, social phobia, post-traumatic stress disorder, obsessive–compulsive disorder, and generalised anxiety disorders); current psychotic disorders (including affective and non-affective psychotic disorders); substance-use disorders (including alcohol and drug abuse/dependence); and personality disorders (including antisocial personality disorder and borderline personality disorder). The module for establishing diagnoses of borderline personality disorders was taken from the Structured Clinical Interview for DSM–IV [Spanish version] (First, Gibbon, Spitzer, Williams, & Benjamin, 1990), which has good Kappa coefficients for test–retest reliability and interrater reliability (Fydrich, Renneberg, Schmitz, & Wittchen, 1997).

2.4. Procedure

One psychiatrist, four clinical psychologists and a nurse conducted the interviews. Two senior consultant psychiatrists trained the field team in using the MINI including ratings of video material. The first 10 interviews were doubled to discuss and resolve interrater discrepancies. The interviews lasted 45–60 min. Interviews were conducted in a separate room to ensure confidentiality. Data were stored and processed using pseudonyms to protect confidentiality. Data collection took place between February 2013 and September 2013. All participants provided written informed consent. The study was approved by the Ethics Committee of the University of Chile (Acta de Aprobación 01 from 25.01.2012) and by the Ministry of Justice of the Republic of Chile (reference: Subsecretaria de Justicia 15.03.2012).

2.5. Data analysis

Prevalence rates for groups of mental disorders were calculated as per cent values with 95% confidence intervals for the proportions. A Spearman's Rank correlation coefficient was run to test for an association between suicide risk and burden of separation within the group of mothers and fathers. The Mann–Whitney-U-Test was used as a non-parametric test to compare the burden of separation between mothers and fathers. Chi-square tests were conducted to assess differences between parents and non-parents in mental disorders and each category of suicide risk (none, low, moderate, high and any suicide risk). For further analysis, suicide risk was coded as 0 = none, 1 = low, 2 = moderate and 3 = high. We tested for differences in suicide risk and psychological symptoms (SCL-90-R) between parents and non-parents using t-tests. The relative risk was calculated for female parents to present with high suicide risk. Analysis of covariance (ANCOVA) was conducted to determine the effect of being a mother on suicide risk. Being a mother was treated as the independent variable and suicide risk as the dependent variable. Age was treated as possible confounding variable. Values of $p < 0.05$ were considered statistically significant.

3. Results

3.1. Socio-demographic characteristics

Socio-demographic characteristics are reported separately for male and female participants. On average, people lived with three to four people per household and had low educational levels. Many male participants committed violent crimes. Most female participants committed crimes against property or drug-related crimes. Nearly half of both female and male prisoners had previously been imprisoned (Table 1).

3.2. The burden of separation from children

Most prisoners had one or more minor children (Table 2). The vast majority of male and female parents rated the burden of separation from children at 10 points, the maximum of the scale. The median of the numeric rating scale for burden of separation from children was 10 for both genders. One-hundred-and-fifty-eight out of 170 mothers of children (92.9%) reported the maximum burden of separation from their children. One-hundred-and-six out of 139 fathers (76.3%) stated the maximum burden of separation from their children. Mean value of the NRS for burden of separation from children was 8.9 (SD 2.4) for fathers and 9.7 (SD 1.1) for mothers of minor children. The NRS had low variance due to the high item popularity of the maximum score ($p = 0.9$). The Mann–Whitney-U test showed that mothers had higher burden of separation from children than fathers ($z = -3.85$, $p < 0.01$).

Table 1
Sociodemographic characteristics of recently admitted remand prisoners in the metropolitan area of Santiago.

	Total sample N = 427 (100%)	Male N = 229 (100%)	Female N = 198 (100%)
Mean age	31.6 (±11.5)	30.0 (±11.7)	33.5 (±11.0)
Chilean	406 (95.1%)	223 (97.4%)	183 (92.4%)
Non-Chilean migrant populations	21 (4.9%)	6 (2.6%)	15 (7.6%)
Marital status			
Single	253 (59.3%)	134 (58.5%)	116 (60.1%)
Married	85 (19.9%)	37 (16.2%)	48 (24.2%)
Co-residing with partner	141 (33.0%)	71 (31.0%)	70 (35.4%)
Separated	40 (9.4%)	11 (4.8%)	29 (14.6%)
Divorced	5 (1.2%)	2 (0.9%)	3 (1.5%)
Widowed	11 (2.6%)	1 (0.4%)	10 (5.1%)
Mean personal income in CLP	307,894 (± 499,244)	372,282 (± 566,422)	230,908 (± 392,415)
Mean per capita household income in CLP	204,072 (± 227,713)	224,568 (± 167,159)	179,316 (± 282,718)
Mean number of people per household	3.89 (±2.51)	3.84 (±2.64)	3.93 (±2.37)
Educational level			
ISCED 0	114 (26.7%)	51 (22.3%)	63 (31.8%)
ISCED 1	90 (21.1%)	35 (15.3%)	55 (27.8%)
ISCED 2	120 (28.1%)	75 (32.8%)	45 (22.7%)
ISCED 3	78 (18.3%)	49 (21.4%)	29 (14.6%)
ISCED 4	13 (3.0%)	9 (3.9%)	4 (2.0%)
ISCED 5 or 6	12 (2.8%)	10 (4.4%)	2 (1.0%)
Working for income	331 (77.5%)	195 (85.2%)	136 (68.7%)
Offense category			
Property	116 (27.2%)	61 (26.6%)	55 (27.8%)
Violence	117 (27.4%)	86 (37.6%)	31 (15.7%)
Drugs	147 (34.4%)	28 (12.2%)	119 (60.1%)
Others	83 (19.4%)	66 (28.8%)	17 (8.6%)
Previous imprisonment(s)	191 (44.7%)	95 (41.5%)	96 (48.5%)

Table 2
Number of children among recently admitted prisoners in the metropolitan area of Santiago de Chile, separated for male and female prisoners.

	Total sample N = 427 (100%)	Male N = 229 (100%)	Female N = 198 (100%)
Parent of minor children	309 (72.4%)	139 (60.7%)	170 (85.9%)
1 child	113 (26.5%)	69 (30.1%)	44 (22.2%)
2 children	77 (18%)	29 (12.7%)	48 (24.2%)
3 children	50 (11.7%)	18 (7.9%)	32 (16.2%)
4 children	39 (9.1%)	15 (6.6%)	24 (12.1%)
5 children	16 (3.7%)	6 (2.6%)	10 (5.1%)
6 children	10 (2.3%)	2 (0.9%)	8 (4%)
7 children	3 (0.7%)	–	3 (1.5%)
8 children	1 (0.2%)	–	1 (0.5%)

3.3. Suicide risk

Table 3 shows the suicide risk of prisoners with children and without children.

Suicide risk was significantly less frequent in mothers of children (M 0.7, SD 1.0) as compared to women without children (M 1.4 SD 1.4), t (32,156) = 2.54, p = 0.02. Especially the category 'high suicide risk' was significantly less frequent in mothers than in women without children ($\chi^2 = 11.6$ [1], $p = 0.001$). Mothers had a relative risk of 0.31 (95% CI [0.16–0.6], $p < 0.001$) to show 'high suicide risk' when compared to women without children. The suicide risk of fathers with children did not differ from the suicide risk of other male prisoners.

Mothers had also significantly less any suicide risk than fathers (M 1.2, SD 1.3), t (259,017) = 3.77, p < 0.001. 'High suicide risk', was less present in mothers compared to women without children but also compared to fathers ($\chi^2 = 17.5$ [1], $p < 0.001$). The relationship of being a mother and lower suicide risk persisted after controlling for age F(1) = 5.39, p = 0.02.

There was a significant correlation between the burden of separation and the suicide risk in fathers ($r = 0.2$, $p = 0.02$), whereas the burden of separation and suicide risk did not correlate in mothers ($r = 0.03$, $p = 0.74$).

3.4. Mental disorders

The prevalence of groups of DSM–IV diagnostic categories are reported separately for prisoners with children and prisoners without children for each gender (Table 4). All groups showed high prevalence rates of mental disorders. The prevalence rates did not significantly differ for parents of children and participants without children.

Severity of psychopathological symptoms on the GSI and on the 9 subscales of the SCL-90-R for parents of children and people without children are reported in Table 5. Mean symptom scores did not significantly differ between parents and non-parents (Table 5).

4. Discussion

Most people admitted to the penal justice system in Chile are parents of minor children (72.4%), of which almost all mothers and most fathers showed high burden of separation from children at the point of admission. Mothers showed significantly lower rates of suicide risk than female non-parents, even though the prevalence of most disorders and psychological symptoms did not significantly differ between imprisoned parents and non-parents.

Our study indicated that more prisoners were parents of minor children in Chile as compared to Western high-income countries (Dünkel, Kestermann, & Zolondek, 2005; Glaze & Maruschak, 2008), which reflects the characteristics of the South American region and other economies in transition. The average number of children in the general population in Chile is 1.8 per woman (OECD, 2016). In our study, female prisoners had on average 2.3 minor children. Since female prisoners have more children than the female general population, it seems to be even more important to address the effects of separation from children in prisoners.

The parent–child separation at imprisonment disrupts family systems (Poehlmann et al., 2013). In Latin American cultures, family relationships, especially between parents and children, are stronger than in Western cultures. Therefore, the separation from children may be perceived as especially painful. In the absence of effective institutional or social care for children left behind by imprisoned parents, there may be a greater sense of responsibility to stay attached with children for the time of separation and resume responsibilities after the release from prison. In Chile, the pre- and postnatal care of imprisoned mothers and their breastfeeding children has to be provided by the prison facility. In the study population, none of the mothers was admitted to prison together with a breastfeeding child.

A previous study reports poor mental health in fathers with history of imprisonment compared to non-fathers with history of imprisonment (Curtis, 2011). We did not find a significant difference in the prevalence of mental disorders between male parents and non-parents. In imprisoned female parents, we found a lower prevalence of current affective disorders. Previous research from the US found similar patterns of severity of depression symptoms in mothers and women without children. Around 65% of imprisoned mothers and women without children met criteria of depression symptoms with clinical relevance in previous research (Fogel & Martin, 1992). In contrast to our findings, mothers in Western cultures were reported to have higher rates of anxiety, post-traumatic stress and substance-use disorders as compared to prisoners without children (Fogel & Martin, 1992; Greene et al., 2000).

Table 3
Suicide risk of prisoners with minor children and without minor children at admission to the penal justice system.

Suicide risk	Male prisoners					Female prisoners				
	With children		Without children		With vs. without children	With children		Without children		With vs. without children
	N = 139		N = 90			N = 170		N = 28		
	n	%	n	%	Chi-square (df = 1)	n	%	n	%	Chi-square (df = 1)
None	63	45.3	42	46.7	0.04	102	59.1	12	42.9	2.89
Low	25	18.0	19	21.1	0.34	35	20.7	3	10.7	1.51
Moderate	9	6.5	7	7.8	01.4	14	8.5	3	10.7	0.19
High	42	30.2	22	24.4	0.9	19	11.6	10	35.7	11.58**
	n	%	n	%	t-value	n	%	n	%	t-value
Any suicide risk (low, moderate or high)	76	54.7	48	53.3	−0.67	68	40.0	16	57.1	2.54*

* $p < .05$.
** $p < .01$.

Table 4
Prevalence of mental disorders among prisoners with children and without children in the metropolitan area of Santiago de Chile.

	Male prisoners N = 229 (100%)					Female prisoners N = 198 (100%)				
	With children N = 139 (60.7%)		Without children N = 90 (39.3%)			With children N = 170 (85.9%)		Without children N = 28 (14.1%)		
	n	%	n	%	Chi-square (df = 1)	n	%	n	%	Chi-square (df = 1)
Any current affective disorder	88	63.3	52	57.8	0.70	85	50.0	19	67.9	3.07
Any current anxiety disorder	76	55.7	45	50.0	0.48	64	37.6	9	32.1	0.31
Substance use disorders	103	74.1	70	77.8	0.4	54	31.8	10	35.7	0.17
Any current psychotic disorder	33	23.7	18	20.0	0.44	16	9.4	1	3.6	1.05
Personality disorder	98	70.5	65	72.2	0.08	33	19.4	13	46.4	0.21

Our study indicates that mothers of minor children have lower suicide risk than women without children at imprisonment. Psychological symptom levels did not explain this difference. Shamai and Kochal (2008) hypothesized that illicit drug use in imprisoned mothers was not related to abandonment of the identity as mother or to higher suicide risk, but rather a strategy to cope with the burden of separation from children. Our study did not show any significant difference in mental disorders between mothers and women without children. The lower suicide risk for mothers could be explained by a sense of responsibility for the children. According to the literature, most of the mothers are the primary carers of their children prior to imprisonment (Mumola, 2000). On average, women receive much shorter sentences than men. Therefore, their separation from children due to imprisonment is of shorter duration than it is for men. Women may therefore tend to maintain a sense of responsibility for their children during imprisonment and reassume responsibilities after release. This sense of responsibility could help to dismiss suicidal ideation.

In contrast to previous research (Moloney et al., 2009), our data indicate that the protective effect of having children against suicide persists for mothers in prison. It has been reported that imprisoned mothers with frequent contact with their children had lower symptoms of depression and that bonding and feelings of 'closeness' can be maintained during imprisonment (Houck & Loper, 2002; Poehlmann, 2005). Mothers were also reported to maintain more frequent contact with their children during imprisonment than fathers (Chambers, 2009). Since mothers have less suicide risk in spite of a similar burden of mental disorders and psychological symptoms as compared to women without children, there may be a protective factor in the identity as mothers against suicide that is maintained during imprisonment. Our results support the assumption that motherhood in prisoners could protect against 'death' (Shamai & Kochal, 2008), even though it does not support the notion that motherhood in prisoners protects against 'insanity' (Shamai & Kochal, 2008).

Encrenaz et al. (2014) showed an increased risk of suicide attempts during imprisonment for male prisoners with at least one child. This study also recruited inmates of a remand prison with uncertainty about the duration of their imprisonment. Attachment styles of fathers with a history of violent offenses were described as 'dismissive' (Frodi, Dernevik, Sepa, Philipson, & Bragesjo, 2001). A study from the US reported that in many inmates the father–child bond had already been fragile or disrupted prior to imprisonment (Dyer, 2005). Imprisonment can further destabilise family bonds in fathers and lead to the abandonment of their identity as fathers (Dyer, 2005). Nevertheless, the majority of fathers feel close or very close to their children during imprisonment and rate themselves as 'good fathers' (Day, Acock, Bahr, & Arditti, 2005). In contrast to the study by Encrenaz et al. (2014), we did not find that fathers had higher suicide risk than non-fathers. This might be explained by cultural differences between Latin American societies and Western societies. In Latin America, being a father is described as the 'highest form of male responsibility', irrespective of the absence or presence of the father (Vigoya, 2001). Being a parent is part of the male identity. The identity of fathers in Latin American societies may be more resistant to the separation imposed by imprisonment, compared with Western societies where the identity of fathers is assumed to be abandoned during imprisonment (Dyer, 2005).

The burden of separation was high for both genders as expected for the collectivistic Chilean society where family ties are the most important social support systems. Mothers had even higher scores than fathers. Scores may be biased by social desirability. The variance of the scale was not satisfying for the women. However, there was a positive relationship between the burden of separation from children and suicide risk in male prisoners, even though the overall suicide risk in fathers was not different from non-fathers. There may be two competing effects in fathers: increased suicide risk with increase of the burden of separation, and protection from suicide risk due to maintaining the role identity as fathers of children.

5. Strengths and limitations

This is the first study quantifying the association of having minor children and suicide risk, mental disorders, and psychological symptoms at imprisonment. So far, most of the research exploring suicide

Table 5
Mean scores of the SCL-90 subscales in recently admitted prisoners with and without children in the metropolitan area of Santiago de Chile.

	Male prisoners					Female prisoners				
SCL-90	With children		Without children			With children		Without children		
Psychological symptoms	M	SD	M	SD	*t*-Value	M	SD	M	SD	*t*-Value
Somatization	1.4	1.0	1.3	0.9	0.62	1.6	1.0	1.6	1.1	0.30
Obsessive–compulsive	1.7	0.9	1.7	0.9	0.21	1.4	1.0	1.5	1.1	0.26
Interpersonal sensitivity	1.3	0.9	1.2	0.8	1.12	1.2	0.9	1.3	1.0	0.91
Depression	1.9	1.0	1.8	1.0	0.67	1.9	1.0	1.9	1.2	0.04
Anxiety	1.6	1.1	1.5	1.0	0.83	1.7	1.1	1.8	1.2	0.34
Hostility	0.9	0.9	0.9	0.9	0.56	0.5	0.6	0.7	0.9	1.55
Phobic anxiety	0.8	0.9	0.8	0.9	0.44	0.9	0.8	1.0	1.1	0.59
Paranoid ideation	1.4	1.1	1.3	1.0	0.68	1.4	1.0	1.5	1.1	0.62
Psychoticism	1.3	0.9	1.2	0.9	0.59	1.0	0.8	1.1	0.9	0.79
Global severity index	1.5	0.8	1.4	0.8	0.64	1.4	0.8	1.5	1.0	0.50

risk in imprisoned parents has used qualitative methods in small samples. Our study used standardised and validated instruments applied by trained researchers. A simple non-validated numeric rating scale was used to establish the presence of burden of separation from children. The scale indicated the presence of high burden of separation in most parents at imprisonment. The study did not assess characteristics of the parent–child relationships prior to imprisonment such as the frequency of contact, responsibility for the care and quality of the relationship, being single parent, or having a child in custody as qualitative research would have done. We did not assess, whether the participants were in a same-sex relationship. However, adoption in homosexual relationships was not allowed in Chile at the time of data collection.

6. Conclusion

Our study suggests that motherhood continues being a protective factor against suicide risk after imprisonment in collectivist societies. Results from our study show that imprisoned mothers are less suicidal than imprisoned females without children even when displaying psychological symptoms and mental disorders. Fathers do not show any overall difference in suicide risk as compared to non-fathers. However, within the group of fathers the suicide risk increases with the burden of separation from children. Suicide prevention interventions should include working on preserving and strengthening the parent role during imprisonment, for instance by facilitating regular parent–child contact.

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