

Comparison of suicidal symptom networks in prison populations according to recidivism

Andrés Pemau¹, Anna Pedrola-Pons*², Alejandro de la Torre-Luque^{2,3}, Gemma Escuder-Romeva^{4,5}, Ellen Vorstenbosch^{3,6}, Enric Vicens Pons⁵

¹ Faculty of Psychology and Health Sciences, UDIMA.

² Department of Legal Medicine, Psychiatry and Pathology, UCM.

³ CIBERSAM, Carlos III Health Institute.

⁴ MERITT, Sant Joan de Déu Research Institute, Sant Joan de Déu Foundation

⁵ Parc Sanitari Sant Joan de Déu, Sant Boi del Llobregat

⁶ Research, Teaching and Innovation Unit, Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat.

*a.pedrola.pons@gmail.com





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INTRODUCTION

Suicide risk in prison settings

The prevalence of suicide and self harm is higher in incarcerated people than in people living in community (Fazel et al., 2018).

Suicide is the most common cause of death in prison (Mundt et al., 2024).

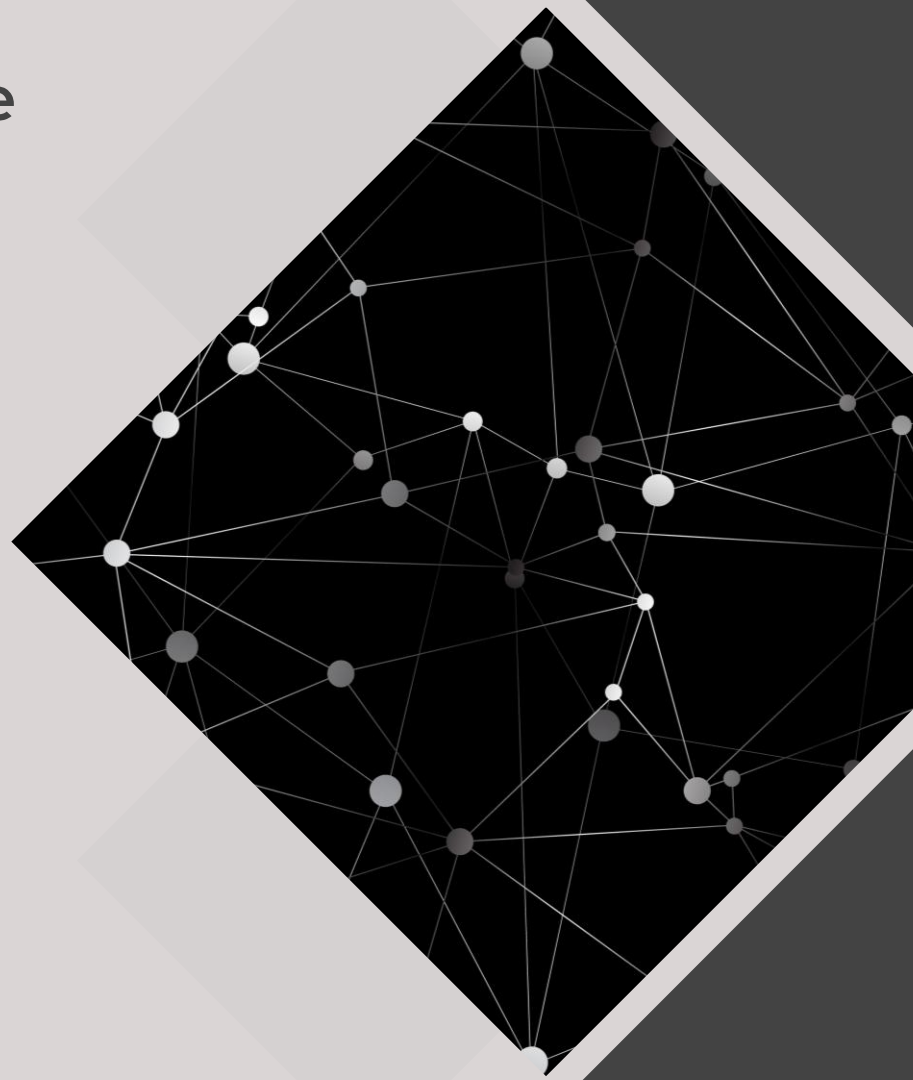
Spain is one of the countries with highest prison suicides rate (Aebi et al., 2023).

Evidence based differences in suicide related risk factors among first-time prisoners and re-offending individuals (Favril et al., 2022).



Network perspective in suicide research

- It has been proposed as an alternative to the traditional diagnostic view
- Pathology is conceptualized as a network of interacting symptoms (Borsboom, 2008)
- It has been suggested as a technique with strong potential in suicide research (de Beurs, 2017)
 - It may help validate **complex models**
 - It can be used to **compare groups** beyond differences in symptom intensity



Objectives

- Study the networks of suicide risk factors among incarcerated individuals in Spain
- Compare the networks between individuals after their first prison admission and repeat offenders





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METHODS

Methods

Participants

Data from the PRECA study (2007–2008) was analysed.

The sample included 707 male offenders. 324 first-time offenders (mean age 35,30) and 383 recidivists (mean age 38,17).

Procedure

Sociodemographic (age, nationality education level, marital and working status) and criminological variables (recidivism) were assessed.

Suicide risk was assessed using the Spanish version of Plutchik scale (Plutchik et al., 1989; Rubio et al., 1998).

Data analysis

- First, general descriptive analyses were conducted
- Comparisons were made between participants, grouping them according to recidivism status
 - χ^2
 - Student's *t* test

Data analysis

- Symptomatic networks were estimated (*Issing model*).
 - Entire sample
 - First Time Offenders (FTO)
 - Recidivists
- Each node represents an item from Plutchik Suicide Scale
- For each network, stability and centrality indices (*strength, closeness, and betweenness*) were calculated.
- To compare differences between the networks of FTO and recidivists, the Network Comparison Test (NCT) was used



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RESULTS

Group comparisons

Demographic variables

The recidivist sample was older, had a higher proportion of individuals born in Spain, lower educational attainment, and a higher rate of prior unemployment ($p < .01$).

In terms of criminological variables, recidivists showed a higher proportion of violent offenses ($p < .01$).

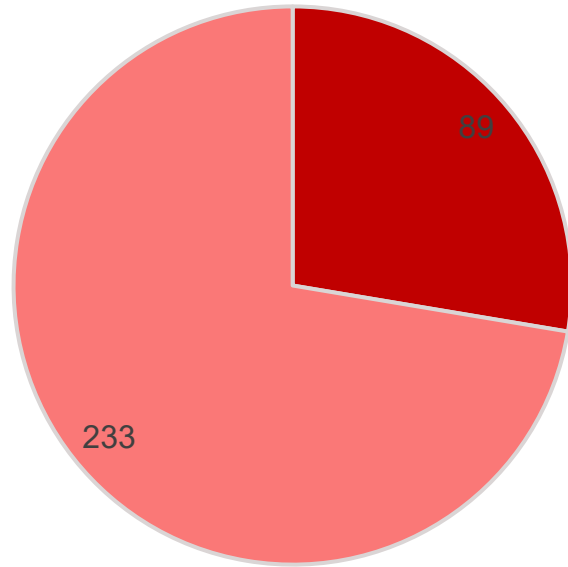
Plutchik Suicide Scale

Recidivists had a higher mean total score on the scale ($p < .01$; Hedges' $g = .445$).



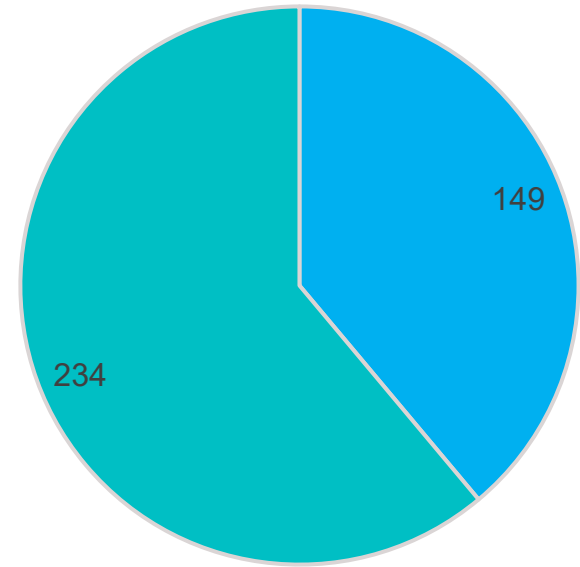
Suicidal ideation**

FTO



■ Yes ■ No

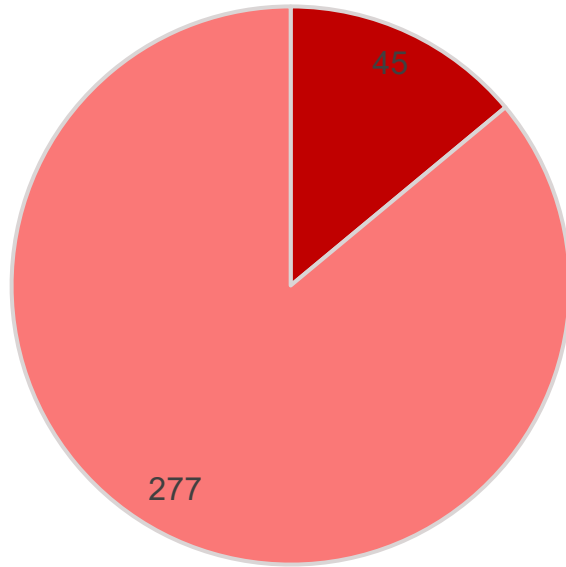
Recidivist



■ Yes ■ No

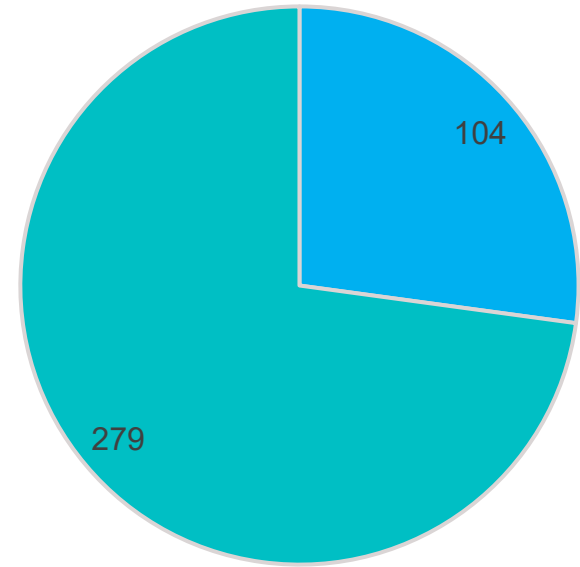
Suicide attempt**

FTO

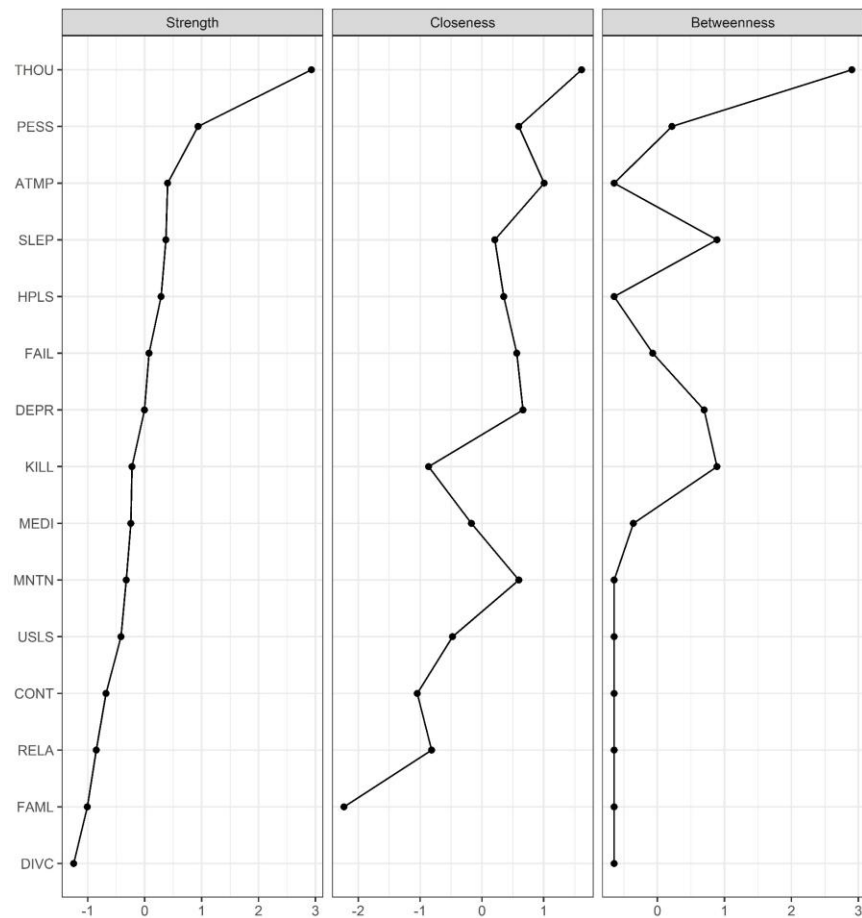
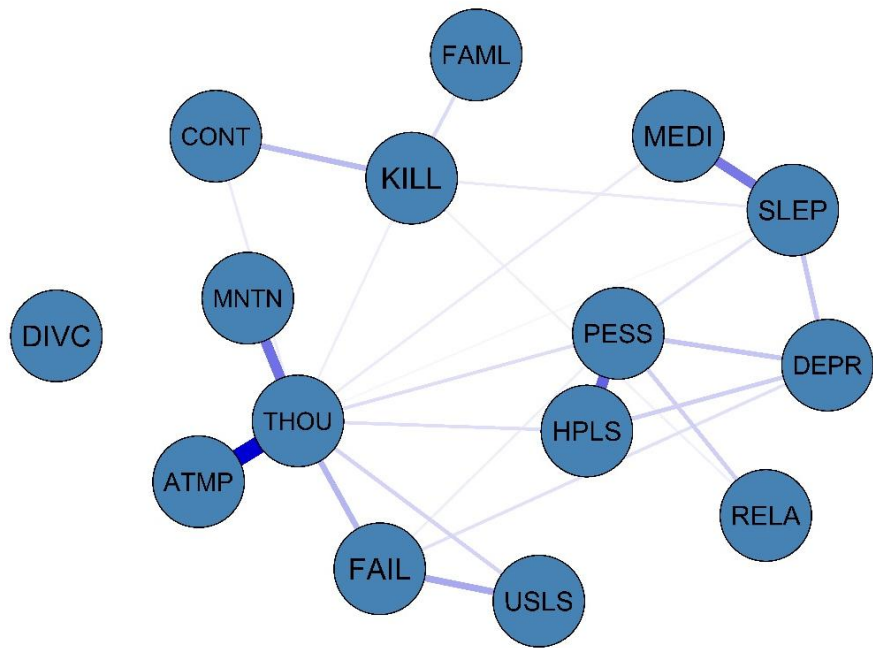


■ Yes ■ No

Recidivist



■ Yes ■ No





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Discussion

Limitations

Some centrality indices may not be fully stable given the sample size.

Gender composition of the sample may affect generalizability, given known sex differences in suicidal behavior in prison.

Self-report measures for suicide risk may be subject to response bias.

The selection of variables included in the network is necessarily limited and may omit relevant nodes (e.g., substance use, psychiatric comorbidity).



**Recidivists showed a higher risk of
suicide compared to first-time
offenders**

However, their networks were equivalent in
structure and strength



This work highlights the potential of applying network analysis to study suicide risk in prison contexts.

It can help identify **relevant therapeutic targets** (e.g. *suicidal ideation, sleep problems*).



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