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UNRAVELLING THE RISK FACTORS OF SUICIDAL
BEHAVIORS IN MALE INMATES

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Resumo

Os reclusos dispõem de um risco particularmente acrescido de agir consoante pensamentos suicidas, quando comparando com a população geral. Contudo, são raros os estudos que distinguem os reclusos que pensam, daqueles que tentam o suicídio. Tendo em mente esta distinção *ideação para a ação*, este estudo pretende identificar os fatores de risco da ideação suicida e da sua transição para as tentativas de suicídio. A amostra incluiu 411 reclusos condenados ($M = 37.94$; $SD = 10.91$) de 15 estabelecimentos prisionais portugueses. Aproximadamente 29.1% dos reclusos reportou um histórico de ideação suicida, dos quais 19.22% cometeram uma tentativa de suicídio. A Impulsividade/Irresponsabilidade apresentou-se como fator de risco central para a ideação suicida ($OR = 1.44$; 95% CI : 1.01-1.04), enquanto as competências interpessoais de autogestão e motivação emergiram como o único fator protetor para as tentativas de suicídio ($OR = 0.59$; 95% CI : 0.41-0.87). O histórico de prática de comportamentos autolesivos apresentou-se como o único fator de risco tanto para a ideação suicida, como para as tentativas de suicídio. Este estudo contribui para o conhecimento dos comportamentos suicidas em homens em situação de reclusão, permitindo retirar implicações práticas para intervenções em estabelecimentos prisionais. São também discutidas as potenciais limitações deste estudo e sugestões de investigação futuras.

Palavras-chave: Reclusos; Ideação para a Ação; Ideação suicida; Tentativas de suicídio; Comportamentos Suicidas

Abstract

Prison inmates face a considerably higher risk of acting on suicidal thoughts compared to the general population. However, studies differentiating inmates who think about suicide from those who attempt suicide are scarce. Given this ideation-to-action distinction, the current study aimed to identify risk factors for suicidal ideation, suicide attempts, and the transition from one outcome to another. The participants were 411 convicted inmates ($M = 37.94$; $SD = 10.91$) from 15 Portuguese prisons. Among the total sample, 29.1% reported a lifetime history of suicidal ideation, with 19.22% having attempted suicide. Impulsivity/Irresponsibility was a central risk factor for suicidal ideation ($OR = 1.44$; $95\% CI: 1.01-1.04$), while interpersonal competencies of self-management and motivation were protective factors against suicide attempts ($OR = 0.59$; $95\% CI: 0.41-0.87$). Previous self-harm behaviors were the only risk factor for both suicidal ideation and suicide attempts. Our findings provide important insights about the knowledge of suicidal behaviors of male individuals in prison, suggesting practical implications for interventions in prisons. Potential limitations and future directions are also discussed.

Keywords: Inmates; Ideation-to-action; Suicidal ideation; Suicide attempts; Suicidal behaviors

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Introduction

Suicidal behaviors are major concerns in public health due to their vastly damaging impact and high prevalence. In fact, suicide is one of the leading causes of death worldwide, accounting for almost 800,000 annual deaths. In Portugal, at least three individuals commit suicide per day, and the vast majority are men (Portuguese Psychological Association, 2022). The damaging impact and concerning rates have prompted researchers to understand suicidal behaviors and identify strategies to predict, treat, and prevent suicide. One of the central strategies is the identification of risk factors (Franklin et al., 2017). Within this scope, the main reviews have demonstrated that suicidal behaviors are the result of a dynamic, complex, and understudied combination of distinct factors. A review by O'Connor and Nock (2014) classified the risk factors into categories, namely personality and individual differences, cognitive and social factors, and negative life events. The main risk factors found within these categories were impulsivity, social isolation, pain tolerance, and a history of trauma.

The main risk factors of suicidal behaviors can also be classified into wider categories. For example, a meta-analysis conducted by Franklin and colleagues (2017) suggested as main categories externalizing and internalizing psychopathology, as well as previous involvement in self-harm behaviors. In the externalizing psychopathology category, suicidal ideation and suicide attempts were associated with aggressive and antisocial behaviors, substance abuse, and incarceration history. In the internalizing psychopathology category, the risk of suicidality was increased by poor emotion regulation, anxiety disorders, and hopelessness.

Another central strategy in the prevention and treatment of suicidal behaviors is the identification of protective factors. Research has found a protective role of dimensions like optimism, resilience, future thinking, and goal adjustment (O'Connor & Nock, 2014). For instance, social and emotional competencies can be considered crucial targets for suicide prevention since they promote better life outcomes (Liu & Wang, 2024). According to the Committee for Children (2019), social and emotional competencies can play a significant role in the mitigation of some risk factors of suicidal behaviors. The main protective effects have been found for social and emotional competencies of self-management, relationship skills, responsible decision making, and social/self-awareness (Committee for Children, 2019; Liu & Wang, 2024; Posamentier et al., 2023). For example, both self-management and relationship skills can mitigate the risk impact of hopelessness, anxiety, and substance use. In addition, the impact of both hopelessness and anxiety can be overcome with the development of self-

awareness (Committee for Children, 2019; Posamentier et al., 2023).

Although extant research has been conducted on the protective role of social and emotional skills, evidence about factors that protect against suicidal behaviors remains limited (O'Connor & Nock, 2014). It is particularly crucial to further examine the risk and protective factors of suicidal ideation and suicide attempts since both theoretical and empirical evidence suggests that suicidal ideation and attempts are robust predictors of suicide (Favril et al., 2017; 2022). However, most individuals who consider suicide do not engage in suicidal behaviors. Therefore, suicidal ideation and its transition to attempts may have distinctive risk factors. Based on this distinction between ideation and attempt, a new theoretical framework has emerged, called *ideation-to-action* (Favril et al., 2020a; Favril & O'Connor, 2021; Klonsky et al., 2016).

Within this framework, the most comprehensive theory is the Integrated Motivational-Volitional Model of Suicidal Behavior (IMV) (O'Connor, 2011). According to the IMV model, the risk of suicidal behaviors begins with specific features within the biosocial context of individuals, including vulnerabilities, privations, and negative life events. The combination of these features can stimulate feelings of defeat and humiliation. If individuals have simultaneous difficulties in overcoming social problems and maladaptive coping styles, these prevailing feelings can give way to perceptions of entrapment. Consequently, the perception of entrapment can increase the risk of suicidal ideation, especially when individuals have poor social support and feel like a burden to others or alienated from their contexts. The last two dimensions are known as perceived burdensomeness and thwarted belongingness, respectively. After the development of suicidal ideation, the risk of suicide attempts is increased by factors like impulsivity and previous suicidal behaviors (O'Connor, 2011).

Advancing our knowledge about the risk and protective factors of the suicidal process is crucial. However, it is even more urgent for the most vulnerable groups of society. Inmates have particularly higher risks to consider, attempt, and die by suicide (Brooker et al., 2023; Vorstenbosch et al., 2023; Zhong et al., 2021). Both suicide and suicide attempts are disproportionately prevalent in inmates. According to the World Health Organization (2007), suicide is the leading cause of death in prisons, and when compared to the general population, inmates have a proportion of suicide three to eight times higher (Fazel et al., 2017). Regarding suicide attempts, the rates for inmates range from 19% to 22%, while in the general population, the prevalence is 3% (Favril, 2021). The alarming rates of suicidal behaviors in the prison population underscore the need for targeted research and early prevention efforts in prisons (Favril, 2021; Jobes & Joiner, 2019).

The few studies conducted in prisons have suggested that suicidal behaviors in inmates have common risk factors with the general population. In both populations, the main risk factors found are, for example, poor emotion regulation, mental health problems (Sarchiapone et al., 2009), and lack of social support (Abderhalden, 2022; Bani et al., 2019). Moreover, in both populations, suicidal behaviors are more prevalent in males (Castelpietra et al., 2018; Stoliker et al., 2021). Some of these common risk factors seem to be intensified by the prison context, possibly explaining the higher vulnerability of inmates (Favril et al., 2020a).

The prison context is characterized by restrictive conditions. One of the main restrictions is related to social support, since the prison context can encourage isolation by limiting family and social relationships (Moreira & Gonçalves, 2010). In this regard, according to Favril and colleagues (2022) meta-analysis, poor social support is particularly common among inmates who have engaged in suicide attempts. Isolation in prison can be particularly damaging for inmates who have children, since the restrictions on being able to parent can increase the risk of mental health problems characterized by experiences of grief and hopelessness (Charles et al., 2019). In this line, Encrenaz and colleagues (2014) found inmates with children were three times more likely to attempt suicide. The highly damaging impact of prison isolation can be intensified by recidivism, given that repeated sentences to prison can increase the risk of losing an intimate partner and community resources (Tadesse et al., 2021). Indeed, previous research with inmates has demonstrated that both suicidal ideation (Slade & Edelman, 2014) and suicide attempts (Rivlin et al., 2013) are associated with recidivism.

Apart from its isolation, the prison context can also restrict involvement in meaningful activities like educational or vocational programs and sports (Vuk & Doležal, 2020). The prison lifestyle is often sedentary and idle, with monotonous routines (Farley et al., 2016) and limitations on physical activity (Nowotny et al., 2016). In fact, previous studies conducted in prisons found an association between lack of work activity and both suicidal ideation (Favril et al., 2017) and suicide attempts (Favril et al., 2022; Rivlin et al., 2013). In a similar vein, Stoliker and colleagues (2018) found that inmates who engaged in physical exercise were less likely to attempt suicide. These restrictions typically inherent to prisons can lead to hopelessness and anxiety (World Health Organization, 2007). For most inmates, these feelings of hopelessness and anxiety can stimulate cognitive distortions, where they perceive suicidal behaviors as coping strategies for adaptation, regulation, relief, and temporary avoidance (Luke et al., 2021; Pickering et al., 2023; Scott et al., 2023).

Understanding the heightened risk of suicidality in prison populations must include not only an examination of prison restrictions, but also of the unique features of inmates. Prison populations are already vulnerable before imprisonment (Favril, 2021), possibly because several specific risk factors of suicidality in the general population are also prevalent among inmates and are disproportionately represented within this group. Two factors disproportionately represented in the prison population are high levels of impulsivity and a history of exposure to painful experiences, which means many of these individuals have gotten accustomed to physical pain, contributing to a reduced fear of death (Van Orden et al., 2010). The reduced fear of death is a dimension known as acquired capability for suicide and is considered one of the central mechanisms to explain the transition from suicidal ideation to suicide attempts (Klonsky et al., 2016; O'Connor, 2011; Van Orden et al., 2010). Indeed, inmates have a particularly higher risk of exposure to painful experiences (e.g., violence), given their higher probability for socioeconomic deprivation (Favril et al., 2017), addiction disorders (Marzano et al., 2016), and having been exposed to severe adversity during childhood (Wanamaker et al., 2022). Similarly, inmates who perpetrate interpersonal violence may have other features that facilitate suicidal behaviors, like higher levels of anger, hostility, and feeling like a burden to others and alienated from their contexts (Ma et al., 2018).

Taken together, the aforementioned findings suggest that suicidal behaviors in prisons are the result of a dynamic interaction between specific risk factors disproportionately prevalent in inmates (e.g., impulsivity) and factors exclusive to their context (e.g., prison restrictions) (Favril, 2021). Advancing our knowledge in this field of research must be an international priority since several studies have shown that inmates have a higher probability of acting according to their suicidal intentions compared to the general population (Favril et al., 2020b; 2020c; Favril & O'Connor, 2021).

Favril and colleagues (2020a) conducted one of the studies that addressed risk factors of the suicidal process within a prison population. Conducted with a sample of 1,203 inmates in Belgium, their findings suggested that a psychiatric diagnosis and self-harm were the main risk factors of suicidal ideation. In addition, inmates who failed to resist their suicidal intentions were those with more involvement in within-prison drug use and self-harm. Furthermore, another study by the same research team suggested that inmates who act upon their suicidal thoughts are more likely to have a self-reported diagnosis of mental disorder, self-harm, and substance abuse (Favril & O'Connor, 2021). In contrast, Stoliker and Abderhalden (2023) found that suicidal ideation in inmates was linked with drug use and self-harm, along with poor social support. In addition, the progression of suicidal ideation to

attempts was associated with the perpetration of interpersonal violence while intoxicated.

The need for further research within the prison population must also be a national priority, given the alarming prevalence of suicide in Portuguese prisons (11.2% between 2019 and 2020) (Aebi & Tiago, 2021). To our knowledge, Pragosa (2012) conducted the only Portuguese study to address risk factors associated with the transition from suicidal ideation to attempts within a prison context. Conducted with a sample of 157 inmates, the researcher found that inmates who attempted suicide were more likely to be single, have a psychiatric diagnosis, and report a history of drug abuse and recidivism. The risk of suicide attempts was also associated with emotional instability, suicidal ideation, and impulsivity. In the interviews conducted by the researcher, the reasons given by inmates for attempting suicide were mainly related to negative affective states, separation from children, and poor social support.

Despite their empirical contributions, some of these international studies did not examine important risk factors like separation from children and impulsivity. Most importantly, none of these international and national studies explored the potential protective role of social and emotional competencies. Despite recognition that social and emotional competencies can mitigate the impact of risk factors of suicidal behaviors in the general population, the comparable research is limited regarding prison populations. The majority of the remaining studies with inmates examined the risk of suicide, where both suicidal ideation and attempts were explored without distinction (Winicov, 2019). In addition, they also neglected the factors associated with the prison context (Favril et al., 2020a). Given these literature shortcomings, the present study aimed to contribute to further understanding the suicidal behaviors and suicidal process in inmates. We thus intended to expand and explore, not only understudied risk factors, but also protective factors. We hoped the findings from this study would provide useful insights for the early identification of inmates at risk of both developing suicidal ideation and acting according to suicidal thoughts. Advancing knowledge in this field is particularly important since the findings may help save lives and promote safer prison environments (Abderhalden, 2022; Klonsky et al., 2021).

Method

Participants

The current study included 411 male inmates selected from 15 Portuguese prisons in central and north Portugal. The inmates were convicted of offenses perpetrated after the age of 16 years. The mean age of participants was 37.94 ($SD = 10.91$, range: 19–83) years. On average, participants had 8.69 ($SD = 3.02$) years of education. Most of the sample were from the ethnic majority group (78.6%, $n = 316$) and were Portuguese nationals (87.6%, $n = 360$). Regarding marital status, most participants were single (63.7%, $n = 261$), while 13.7% ($n = 56$) were in a relationship similar to a marital status; 13.4% were divorced/separated ($n = 55$), and 9% were married ($n = 37$).

The lifetime prevalence of suicidal ideation among this sample was 29.1% ($n = 119$). The mean age of this subsample was 39.3 ($SD = 10.55$, range: 20–67) years. On average, these participants had 8.31 ($SD = 3.22$) years of education. Most of the subsample were from the ethnic majority group (75%, $n = 87$) and were Portuguese nationals (88.9%, $n = 104$). Further sociodemographic characteristics are shown in Table 1.

Table 1. Sociodemographic Characteristics of the Total Sample and the Subsample of Inmates With Suicidal Ideation

Variables		Male inmates (<i>N</i> = 411)		Male inmates with suicidal ideation (<i>n</i> = 119)	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age		37.94	10.91	39.24	10.55
Education		8.69	3.01	8.31	3.22
		<i>N</i>	%	<i>n</i>	%
Minority Group	No	316	78.6%	87	75%
	Yes	86	21.4%	29	25%
Nationality	Portuguese	360	87.6%	104	88.9%
	Spanish	2	0.5%		
	Brazilian	11	2.7%	3	2.6%
	Angolan	7	1.7%	3	2.6%
	Another	22	5.4%	6	5.1%
	Double	2	0.5%	1	0.9%
	Marital status	Single	261	63.7%	74
	Relationship similar to marital status	56	13.7%	17	14.3%
	Married	37	9%	6	5%
	Divorced/Separated	55	13.4%	22	18.5%
	Widow	1	0.2%		
Children	No	143	34.8%	41	34.5%
	Yes	268	65.2%	78	65.5%
Sports	No	125	30.6%	39	33.3%
	Yes	283	69.4%	78	66.7%
Recidivism	No	195	49.4%	56	50%
Mental disorder	Yes	200	50.6%	56	50%
	No	386	94.8%	107	89.9%
	Yes	21	5.2%	12	10.1%
Type of crime	Non-violent	171	46.1%	42	38.5%
	Violent	152	41%	47	43.1%
	Homicide	18	4.9%	8	7.3%
	Sexual crimes	30	8.1%	12	11%

Abbreviations: *M*, Mean; *SD*, Standard Deviation; *n*, total of participants; %, percentage of participants

Measures

Sociodemographic Questionnaire

We gathered sociodemographic data about age, nationality, ethnicity (majority or minority), educational achievement, marital and parental (having children vs. not having children) status, and the regular practice of sports. The survey also included criminological information like prior convictions and length of sentence.

Social and Emotional Competencies Questionnaire (SEC-Q; Zych et al., 2018; Portuguese Version by Lobo et al., 2019)

The multidimensional SEC-Q self-report measure assesses 16 items grouped into four dimensions: (a) Self-Awareness (e.g., “I know how to label my emotions”), which represents the ability to label emotions and recognize individual strengths; (b) Self-Management and Motivation (e.g., “I can motivate myself”), which involves the management of own emotions to pursue goals; (c) Social Awareness and Pro-Social Behavior (e.g., “I pay attention to the needs of others”), which includes social competencies like perspective taking and the ability to relate to others; and (d) Decision Making (e.g., “I don’t make decisions carelessly”), which is the ability to analyze situations while respecting others (Lobo, 2020; Zych et al., 2018).

Participants rate their level of agreement with each item within the last 12 months, using a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*). Higher scores in each dimension represent better skills within that specific dimension (Zych et al., 2018). The original (Zych et al., 2018) and Portuguese (Lobo, 2020) versions of the SEC-Q showed good psychometric proprieties. In the current study, this instrument showed appropriate internal consistency ($\alpha = .75-.80$).

Predictive Antisocial Spectrum Questionnaire (Moisés et al., 2019; Neves, 2023)

This self-report instrument assesses antisocial traits in forensic populations with 10 items divided into two dimensions: (a) Impulsivity/Irresponsibility (e.g., “If I need to take risks, I take them, even if it affects my safety”), which reflects both disregard for consequences and acting without thinking and (b) Interpersonal Relationships (e.g., “I have already gotten into trouble for risking my own safety or others”), which represents the individual’s ability to relate to others (Neves, 2023).

Participants rate the degree to which each item describes them on a 4-point Likert scale (1 = *Strongly disagree* to 4 = *Strongly agree*) from the beginning of their adolescence (before 15 years old). The Predictive Antisocial Spectrum questionnaire was developed in Portugal, and the 10-item version has shown good psychometric proprieties (Neves, 2023). In the current study, this instrument also demonstrated appropriate internal consistency ($\alpha = .69-.77$).

Health Risk Behavior Checklist (Pinto & Maia, 2013)

This checklist is a self-report measure that assesses 15 health risk behaviors (e.g., early smoking initiation) with 20 items. Some of the items are scored with a 5-point Likert scale (1 = *Very often* to 5 = *Never*), while others are scored as dichotomous responses (*Yes* or *No*). A risky behavior is considered present with an affirmative response on the yes/no items or a response of *sometimes*, *often*, or *very often* on the Likert scale items. For the risk factors early smoking, alcohol and drug initiation, and early sexual intercourse the presence is considered if the participants had these experiences at an age younger than 16 years. The instrument provides a global index of health risk behaviors by summing the number of risk factors identified. The global score ranges from 0 to 20 (Pinto & Maia, 2013).

In the current study, each health risk behavior was assessed individually as independent risk factors (e.g., drug misuse, previous involvement in self-harm behaviors, and perpetration of interpersonal violence). Consistent with recent studies in prison populations (e.g., Stoliker & Abderhalden, 2023), the participants were also asked about their lifetime history of suicidal ideation (“Have you ever seriously thought about taking your own life?”) and suicide attempts (“If so, have you ever attempted suicide?”). This checklist was added to the official base of psychological assessment instruments of the American Psychological Association (APA; Pinto & Maia, 2013).

Procedure and Data Analysis

This study was part of the research project *Assessment for effective interventions: Reducing the risk of criminal recidivism and social marginalization*. The aim of this project was to analyze the risk and protective factors of both pro/antisocial behavior and social integration in adults, both in communities and prison populations. Ethical approval for the study protocol was granted by the Ispa Ethics Committee (I/029/01/2020).

To conduct the data collection, authorization was requested from prison directors and from the Direção-Geral de Reinserção Social e Serviços Prisionais (DGRSP). The data collection process was coordinated with each prison director via email and/or telephone. The exclusion criteria included all conditions that could have an influence on the potential participants ability to consent to the study and understand the questionnaires (e.g., illiteracy, not understating Portuguese, and having an intellectual disability or severe psychopathology). Participants on remand were also excluded. The sample were recruited from Portuguese prisons of central (Sintra, Lisboa, Linhó, Carregueira, Montijo, Caxias, and Torres Novas) and north (Paços de Ferreira, Guarda, Braga, Porto, Coimbra, Aveiro, Leiria, and Santa Cruz do Bispo) Portugal. The prisons were selected according to their geographical proximity and number of participants that met the criteria. The participants were randomly selected with a premade list of the prisons.

The paper-and-pencil Portuguese questionnaires were administered to a group of six to 10 inmates at a time. The administration was supervised by two to four research team members in spaces inside the prisons (e.g., library, school, visiting rooms). Prior to the administration of the questionnaires, team members who supervised the data collection explained to participants the aims of the project, the confidential and voluntary nature of participation, as well as the participants right to withdraw at any time. There were no financial incentives for participation. The participants who agreed to engage in the study gave written informed consent which was then separated from the questionnaires to guarantee confidentiality. On average, the participants completed the protocols in approximately 25 minutes. If the researcher was unable to contact a participant (e.g., hospitalization), the participant was replaced by another inmate drawn from the premade random list.

Data analysis was performed with IBM SPSS (Version 29). First, we assessed the correlations between suicidal ideation, suicide attempts, and the transition and the dichotomous (e.g., drug misuse) and continuous (e.g., social and emotional dimensions) variables. Due to the binary nature of the outcomes, the analysis was conducted with binary logistic regression to obtain the significance and odd ratios (ORs) of the associations when adjusted to the remaining predictors. Only risk and protective factors with significant associations with the outcome were entered into the multivariate models. The analysis controlled for sociodemographic variables (age, education, and minority group) to adjust for their contributions. All the assumptions to conduct binary logistic regression were assessed and satisfied, with the exception of the Self-Awareness subscale. For this reason, this dimension was excluded from the study.

Results

Prevalence Estimates

The prevalences of suicidal ideation and suicide attempts were 29.1% ($n = 119$) and 19.4% ($n = 79$), respectively. Nearly 35% of the participants (34.8%; $n = 40$) who reported suicidal ideation without endorsing suicide attempts (see Table 2). All participants who reported engaging in suicide attempts simultaneously reported suicidal ideation. Further prevalences and descriptive statistics are listed in Table 2.

Table 2. Descriptive Statistics for Suicidal Ideation and Suicide Attempts Groups

Type of factors	Suicidal Ideation (<i>n</i> = 409)						Suicide Attempts (<i>n</i> = 408)			
	Yes (29.1%, <i>n</i> = 119)		No (70.9%, <i>n</i> = 290)		Only SI (34.8%, <i>n</i> = 40)		Yes (19.4%, <i>n</i> = 79)		No (80.6%, <i>n</i> = 329)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Protective factors										
Self-management and motivation	3.32	0.82	3.53	0.60	3.45	0.79	3.24	0.83	3.52	0.63
Social awareness and pro-social behaviors	3.13	0.62	3.25	0.59	3.01	0.71	3.19	0.56	3.22	0.61
Decision making	2.98	0.90	3.04	0.80	3.04	0.86	2.95	0.92	3.05	0.81
Risk factors										
ASSpectrum – Impulsivity/Irresponsibility	1.13	0.78	0.90	0.76	1.06	0.77	1.16	0.79	0.92	0.77
ASSpectrum – Interpersonal Relationships	1.52	0.86	1.54	0.85	1.49	0.90	1.54	0.85	1.53	0.86
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Having children	78	65.5%	188	64.8%	26	65%	52	65.8%	213	64.7%
Non-participation in sports	39	33.3%	85	29.4%	14	35.9%	25	32.1%	99	30.3%
Recidivism	56	50%	144	51.2%	21	52.5%	35	48.6%	164	51.3%
Perpetration of violent behaviors	76	63.9%	190	65.5%	28	70%	48	60.8%	217	66%
Drug misuse	78	65.5%	208	71.7%	27	67.5%	51	64.6%	234	71.1%
Self-harm behaviors	48	40.3%	28	9.7%	8	20%	40	50.6%	36	10.9%

Abbreviations: *n*, total of participants; *SI*, suicidal ideation; *M*, mean; *SD*, standard deviation; %, percentage

Bivariate Analyses

Impulsivity/Irresponsibility and previous involvement in self-harm behaviors were risk factors increasing the odds of both suicidal ideation and suicide attempts. Self-management and motivation was the only protective factor decreasing the odds of both suicidal ideation ($OR = 0.72$; $p = 0.03$) and suicide attempts ($OR = 0.62$; $p < .001$). Among the subsample of inmates with suicidal ideation, previous involvement in self-harm behaviors ($OR = 4.10$; $p = 0.002$) was the only risk factor that increased the odds of suicide attempts (see Table 3).

Table 3. Bivariate Analyses Between Risk and Protective Factors and Suicide Indicators

Type of factors	Suicide Indicators											
	Suicidal Ideation (N = 411)				Suicide Attempts (N = 411)				Transition (n = 119)			
	OR	SE	95% C.I	p	OR	SE	95% C.I	p	OR	SE	95% C.I	p
Sociodemographic factors												
Age	1.01	0.01	0.99-1.03	0.16	1.01	0.01	0.98-1.03	0.61	0.98	0.02	0.95-1.02	0.29
Education	0.95	0.04	0.88-1.02	0.14	0.95	0.04	0.87-1.04	0.24	1.00	0.06	0.89-1.13	0.96
Minority Group	1.22	0.27	0.73-2.06	0.45	1.38	0.29	0.67-2.45	0.28	1.17	0.46	0.47-2.88	0.63
Protective factors												
Self-management and motivation	0.72	0.15	0.54-0.97	0.03	0.62	0.16	0.45-0.86	<.001	0.71	0.27	0.42-1.20	0.20
Social awareness and pro-social behaviors	0.74	0.18	0.53-1.04	0.09	0.95	0.20	0.64-1.41	0.79	1.60	0.32	0.86-1.97	0.14
Decision making	0.93	0.17	0.72-1.20	0.56	0.89	0.15	0.67-1.19	0.43	0.89	0.22	0.58-1.38	0.61
Risk factors												
Having children	1.00	0.23	0.64-1.57	0.99	1.03	0.26	0.62-1.73	0.90	1.04	0.41	0.47-2.31	0.93
ASSpectrum – Impulsivity/Irresponsibility	1.45	0.14	1.09-1.92	<.001	1.49	0.16	1.09-2.04	<.001	1.20	0.26	0.72-1.98	0.49
ASSpectrum – Interpersonal Relationships	1.00	0.13	0.78-1.30	0.96	1.01	0.15	0.75-1.36	0.94	1.06	0.23	0.67-1.67	0.80
Non-participation in sports	0.87	0.24	0.55-1.39	0.57	0.92	0.27	0.54-1.57	0.76	1.19	0.41	0.53-2.67	0.68
Recidivism	1.02	0.23	0.65-1.58	0.95	0.91	0.26	0.54-1.51	0.70	0.86	0.40	0.40-1.86	0.69
Perpetration of violent behaviors	1.03	0.23	0.66-1.62	0.90	0.81	0.26	0.49-1.34	0.41	0.66	0.42	0.29-1.50	0.32
Drug misuse	0.76	0.23	0.48-1.20	0.23	0.75	0.26	0.45-1.26	0.28	0.88	0.41	0.39-1.96	0.75
Self-harm behaviors	5.50	0.27	3.24-9.32	<.001	8.43	0.29	4.81-14.77	<.001	4.10	0.46	1.68-10.01	0.002

Binary Logistic Regressions

The model obtained for suicidal ideation was statistically significant, ($X^2(8) = 59.31$, $p < .001$). The model explained 21% (Nagelkerke R^2) of the variance in suicidal ideation and correctly classified 77% of the cases. In the multivariate model, Impulsivity/Irresponsibility ($OR = 1.44$; $95\% CI: 1.01-1.04$) and previous involvement in self-harm behaviors ($OR = 5.59$; $95\% CI: 3.14-9.96$) increased the odds of suicidal ideation after adjusting for sociodemographic variables (see Table 4).

The model explained 27% (Nagelkerke R^2) of the variance in suicide attempts and correctly classified 85% of the cases, ($X^2(8) = 67.65$, $p < .001$). Previous involvement in self-harm behaviors predicted suicide attempts ($OR = 8.57$; $95\% CI: 4.58-16.03$) and Self-Management and Motivation ($OR = 0.59$; $95\% CI: 0.41-0.87$) was negatively related with suicide attempts (see Table 4).

The logistic regression model obtained for the transition was also statistically significant, ($X^2(4) = 9.18$, $p = 0.05$). The model explained 11% (Nagelkerke R^2) of the variance in the transition and correctly classified 67.6% of the cases. Among the subsample of inmates with suicidal ideation, only previous involvement in self-harm behaviors predicted suicide attempts ($OR = 3.71$; $95\% CI: 1.47-9.35$) (see Table 4).

Table 4. Binary Logistic Regressions for Suicide Indicators

Type of factors	Suicide Indicators														
	Suicidal Ideation (<i>n</i> = 380)					Suicide Attempts (<i>n</i> = 380)					Transition to suicide attempts (<i>n</i> = 116)				
	<i>B</i>	<i>OR</i>	<i>SE</i>	95% <i>C.I</i>	<i>p</i>	<i>B</i>	<i>OR</i>	<i>SE</i>	95% <i>C.I</i>	<i>p</i>	<i>B</i>	<i>OR</i>	<i>SE</i>	95% <i>C.I</i>	<i>p</i>
Sociodemographic factors															
Age	0.03	1.03	0.01	1.01-1.06	<.001	0.03	1.03	0.02	0.99-1.06	0.06	0.002	1.00	0.02	0.96-1.04	0.91
Education	-0.04	0.96	0.04	0.89-1.05	0.40	-0.02	0.98	0.05	0.89-1.09	0.76	0.04	1.04	0.07	0.91-1.19	0.54
Minority group	0.16	1.18	0.30	0.65-2.14	0.59	0.23	1.26	0.05	0.63-2.51	0.51	0.21	1.23	0.50	0.46-3.31	0.68
Protective factors															
Self-management and motivation	-0.33	0.72	0.18	0.51-1.01	0.06	-0.52	0.59	0.20	0.41-0.87	<.001					
Risk factors															
Self-harm behaviors	1.72	5.59	0.29	3.14-9.96	<.001	2.15	8.57	0.32	4.58-16.03	<.001	1.31	3.71	0.47	1.47-9.35	0.005
ASSpectrum – Impulsivity/ Irresponsibility	0.36	1.44	0.18	1.01-2.04	0.04	0.23	1.26	0.21	0.83-1.92	0.27					
Models															
X^2 (<i>df</i>), <i>p</i>	59.31 (8), <i>p</i> <.001					67.65 (8), <i>p</i> <.001					9.18 (4), <i>p</i> =0.05				
Nagelkerke R^2	0.21					0.27					0.11				
%	77.1					85					67.6				

Abbreviations: *B*, beta; *OR*, adjusted odd ratio; *SE*, standard error; 95% *C.I*, confidence interval; *p*., significance; X^2 , chi square; *df*, degrees of freedom; R^2 , Nagelkerke chi square; %, percentage of correct classification

Discussion

In Portugal, this is one of the few studies to examine the risk factors of suicidal ideation and its transition to suicide attempts in inmates, adding to the literature with three main findings. First, previous involvement in self-harm behaviors predicted suicidal ideation and the transition to suicide attempts. Our findings are consistent with previous studies that found associations between self-harm behaviors, suicidal ideation (Favril et al., 2020a; Stoliker & Abderhalden, 2023), and suicide attempts (Favril & O'Connor, 2021). In addition, Impulsivity/Irresponsibility was the only risk factor for suicidal ideation, which is inconsistent with previous studies (Pragosa, 2012). Finally, self-management and motivation was the only protective factor against suicide attempts. Indeed, previous studies had identified some dimensions related with competencies of self-management and motivation (e.g., goal adjustment, problem solving) as key protective factors against suicide attempts (for a review, see O'Connor & Nock, 2014).

Some of the central risk factors which facilitate the transition to suicide attempts are those related to painful experiences due to a lower pain sensitivity and the fear of death over time (Klonsky et al., 2016; O'Connor, 2011; Van Orden et al., 2010). Lower pain sensitivity and the fear of death can be stimulated by self-harm (Willoughby et al., 2015), explaining, therefore, the role of self-harm in the transition from suicide ideation to suicide attempts. Another risk factor of the transition to suicide attempts is impulsivity (O'Connor, 2011). However, in our study, impulsivity predicted suicidal ideation instead of the transition to suicide attempts. Our findings may suggest that the inmates with suicidal ideation might be at an increased risk of attempting suicide. Indeed, suicidal ideation can be developed across a spectrum of intensity that starts with the general intent to die and ends with a plan with details and the intention to achieve it (Harmer et al., 2024). Hence, it is possible that the inmates with suicidal ideation are already at the end of this spectrum, which is concerning, particularly because previous studies have shown (e.g., Favril et al., 2020b; 2020c; Favril & O'Connor, 2021) that inmates have twice the probability of acting according to suicidal thoughts compared to the general population.

Despite identifying risk factors of suicidal behaviors, this study also examined social and emotional competencies as protective factors against suicidal behaviors. Our findings suggest that social and emotional competencies of self-management and motivation are protective factors for suicide attempts. Self-management and motivation involve the

regulation of own emotions to pursue goals (Lobo, 2020; Zych et al., 2018). Therefore, our findings support previous research that demonstrated poor emotion regulation as a main risk factor of suicidal behaviors (Franklin et al., 2017; Sarchiapone et al., 2009), as well as goal adjustment as a protective factor against suicide attempts (O'Connor & Nock, 2014).

Surprisingly, in the current study, separation from children and the perpetration of interpersonal violence among male inmates did not appear to predict suicidal ideation and suicide attempts. Regarding having children, in previous research, this factor was associated with suicide attempts (Encrenaz et al., 2014). However, previous studies also found that inmates with children tend to have more education along with convictions not related with violent crimes (Reef & Dirkzwager, 2020). Furthermore, many inmates with children tend to be resilient and persistent in maintaining their parental role (Charles et al., 2019). Regarding the perpetration of interpersonal violence, the inconsistency in our results can potentially be explained by methodological differences with previous studies. For instance, in Stoliker and Abderhalden (2023), the perpetration of interpersonal violence was considered while inmates were intoxicated. In addition, inmates who perpetrate interpersonal violence may have other characteristics that facilitate suicidal behaviors, for example, feeling like a burden to others and alienated from their contexts (Ma et al., 2018).

Our findings have greater relevance in the light of the strengths of this study. To our knowledge, this was the first study in Portugal to simultaneously consider both risk and protective factors against suicidal behaviors and suicidal processes among incarcerated males. Regarding protective factors, we examined factors scarcely addressed in prison populations (e.g., social and emotional competencies), considering the importance of these competencies to survival in prison (e.g., separation from children). Despite the important contributions, our findings must be interpreted considering relevant limitations. First, given the cross-sectional nature of our research, we were unable to examine causal relationships (Wang & Cheng, 2020) and provide an accurate examination of the suicidal process across time. Second, given the single item measure, we were unable to perform an analysis of the severity and frequency spectrum of suicidal behaviors. Another problem related to the measures is their retrospective self-report and single item nature, which can introduce biases, such as those related to social desirability (Mortel et al., 2008). Finally, despite the analysis of factors related to the prison context, the measures of suicidal behaviors unable an accurate understanding of the impact of the prison context on suicidality.

The aforementioned limitations suggest lines of future research. Future assessments might focus on suicidal behaviors within the prison context. Therefore, we recommend

studies on recidivism and the impact of the loss of an intimate partner after imprisonment. Also, future studies should adopt research designs with higher methodological quality (e.g., long-term longitudinal studies), allowing for a better identification and understanding of the risk and protective factors of the suicidal process across time. In addition, in prison populations, suicidal ideation seems to be more prevalent in older inmates (Stoliker et al., 2020). For instance, examining the impact of age on suicidal behaviors could be an important research focus. Another important avenue for future studies might include different samples. Some studies found that female inmates are more likely to both engage in suicide attempts (Stoliker et al., 2021) and complete suicide (Mundt et al., 2024) than males. Furthermore, including inmates in remand could also be pertinent, given their higher risk of suicide (Vanhaesebrouck et al., 2022; Zhong et al., 2021).

Despite study limitations, our findings contribute to the literature and provide important practical implications. Our findings support the well-established finding that inmates are a population at high risk of suicide (World Health Organization, 2007). Overall, our findings underscore the need for early prevention and intervention with this vulnerable population (Favril, 2021; Jobes & Joiner, 2019). For the prevention and intervention of suicidal behaviors, it is crucial to implement psychosocial programs responsive to the unique needs of inmates. In line with our findings, the programs should target warning indicators of suicidal behaviors, like reduced levels of self-control and a history of prior or current involvement in self-harm behaviors. In addition, the programs should also address the development or improvement of the protective factors found, including social and emotional competencies.

In this study, the obvious warning indicator factor was suicidal ideation. All inmates with suicide attempts reported prior suicidal thoughts. Therefore, the prevention of suicidal behaviors in prisons should also target the early stages of the suicidal process to identify inmates at risk of the development of suicidal ideation (Abderhalden, 2022; Klonsky et al., 2021). Subsequently, the inmates with suicidal ideation must be monitored and provided with appropriate access to healthcare services (World Health Organization, 2007). Following these recommendations could help prevent progression through the suicidal process, before it reaches its worst and irreversible end—suicide.

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APPENDIX

Appendix A – Literature review

Empirical literature review

i. International studies.

The main studies conducted in the line of research of suicidal behaviors in forensic populations enable the identification of the risk factors commonly associated with suicidal ideation (see Appendix A), suicide attempts (see Appendix B) and suicide (see general section). The main findings of these studies demonstrate similarities between these particular individuals, and the general population. In both populations suicidal behaviors seem to be stimulated by interpersonal, clinical, criminological, personality and affective risk factors. However, given the specific characteristics and contexts of the justice-involved population, suicidal behaviors seem to be influenced by risk factors that are unique to them, namely factors related to prison context (e.g., separation of children). Regarding the interpersonal risk factors, previous research has found associations between suicidal behaviors and the absence of intimate relationships, as well as the perception of poor social support.

In the clinical risk factors, the main associations found for suicidal behaviors are substance use/abuse, mental disorders and self-harm. Furthermore, previous studies have also found associations with some facets of the antisocial personality disorder (ASPD). The development of suicidal behaviors is also associated with personality risk factors, namely higher levels of impulsivity and aggressiveness. In addition, engaging in interpersonal violence may also increase the risk of these outcomes. Regarding the affective risk factors, findings from previous research have found an increased risk in the presence of weak social and emotional skills (e.g., low levels of resilience and emotional lability). Finally, in the criminological factors, the main associations were found for recidivism.

Previous research has demonstrated a key role of these vulnerabilities as prominent risk factors in the development of suicidal ideation in inmates, as well as their transition to suicide attempts. Regarding suicidal ideation, findings from previous studies have found an association with recidivism. A study of Slade and Edelman (2014) found that repeated exposure to the harmful prison environment can be a risk factor for the development of suicidal ideation. This suicidal behavior has also been associated with interpersonal and clinical factors. A study of Favril and colleagues (2017) has found that suicidal ideation is related to the lack of meaningful activities (e.g., working activity), as well as the perception of poor social support and psychiatric diagnosis.

Findings from previous studies have also found associations between these vulnerabilities and suicide attempts. The risk of engaging in suicide attempts can potentially be encouraged by the perception of poor social support, high levels of aggression, psychiatric morbidity, and the absence of meaningful activities in prison. For example, a systematic review with meta-analysis of Favril and colleagues (2022), found significant associations between these factors and suicide attempts in inmates. Consistent with the role of aggression, is a study of Ricarte and colleagues (2022), which found associations between suicide attempts and engaging in interpersonal violence, even when other dimensions were controlled. These findings are also aligned with other studies (Rivlin et al., 2013), who found higher levels of aggressive behaviors among inmates who engaged in suicide attempts, when compared with those who didn't engage in this behavior.

Some of the mentioned vulnerabilities are studied exclusively based in their potential association with suicide attempts, namely ASPD and separation from children. For example, a study conducted by Verona and colleagues (2001) found a higher prevalence of suicide attempts in inmates diagnosed with this disorder, as well as the factor 2 of PCL-R (chronic antisocial deviance). This finding may have underlain an intention to obtain secondary gains (Moreira & Goncalves, 2010). In addition, , a study of Encrenaz and colleagues (2014) has found that, when compared to the inmates who are not parents, those who have children are three times more likely to engage in suicide attempts. Other contributions of this study are the identification of anxiety and depression symptoms, as potential risk factors for suicide attempts.

In this field of research, in addition to these studies aimed to examine each suicidal behavior, independently, there are also other studies aimed to compare both suicidal behaviors in their risk factors. The findings of these studies highlight the existence of both differences and similarities between suicidal ideation and suicide attempts (Shepherd et al., 2018). Regarding underlying similarities, a study of Sarchiapone and colleagues (2009) found the engagement in both suicidal behaviors is increased in the presence of lower levels of resilience, emotional lability, depression, as well as the involvement in interpersonal violence and substance abuse. Consistent with these findings is a more recently study of Stoliker and colleagues (2021), which has shown that both suicidal behaviors are related with mental disorders and emotional dysregulation. The inmates who committed suicide attempts were more likely to be divorced, when compared to those who only had suicidal ideation.

As regards to differences, a study conducted by Tadesse and colleagues (2021), found that suicidal ideation seems to be mainly associated with being single and the perception of

poor social support. In the other hand, the risk for suicide attempts is associated with recidivism.

Contrary to these findings, is a more recent study of Khezri and colleagues (2023), who found that the risk of suicidal ideation in inmates is increased by recidivism. In the other hand, suicide attempts were more prevalent in the inmates who were divorced and who used drugs. Another interesting finding of this study is the association found between both suicidal behaviors and the perpetration of violent offenses.

In this field of research, one of the theoretical assumptions is that both suicidal ideation and attempts are stages of the suicidal process, since both factors are robust predictors of suicide (e.g., Favril et al., 2017). However, previous research has found that not all individuals who think about committing suicide attempts translate this intention into their behavior (Favril et al., 2020a; Favril & O'Connor, 2021). In light with these assumptions, as well as the evidence that both suicidal behaviors may have different underlying mechanisms, a new line of investigation emerges. In this new line, known as ideation-to-action, the main studies aim to discriminate between the individuals that have exclusively suicidal ideation and those who translate it into their behaviors.

In forensic populations, a study of Favril and colleagues (2020a) suggested that those who only have suicidal ideation are mostly affected by the lack of meaningful activities in prison (e.g., work) and the perception of poor social support. Other study of Stoliker and Abderhalden (2023) found that the main risk factors among those who only had suicidal ideation were drug use and history of self-harm. Regarding the transition to suicide attempts, it's possible to highlight the studies of Favril and colleagues (2020c), as well as Favril and O'Connor (2021). Both studies have converging findings, since they found that the risk of acting according to suicidal thoughts was higher in the presence of drug use, as well as a history of self-harm. Interpersonal violence is also a key factor in the transition to suicide attempts (e.g., Favril & O'Connor, 2021; Favril et al., 2020c; Stoliker & Abderhalden, 2023).

Another study that stands out in this empirical framework was conducted by Stoliker and colleagues (2021). The findings from this study demonstrated that inmates with both suicidal ideation and suicide attempts had greater emotional and mood lability and were single. Another interesting result from this study is related to the association between the transition across suicidal behaviors and impulsivity. Indeed, the empirical literature has found that the main mechanisms underlying the transition to suicide attempts are the high levels of behavioral disinhibition (Favril et al., 2020a; Klonsky et al., 2018; Mars et al., 2019).

The transition across the stages of the suicidal process is also associated with self-

reported diagnosis of a mental disorder. Favril and colleagues (2020b), found that specific mental disorders seem to increase the risk for the transition to suicide attempts, namely drug and alcohol dependence, as well as Post-Traumatic Stress Disorder (PTSD). Similarly, the findings of this study highlighted the role of mental disorders, demonstrating that participants with a diagnosis were three times more likely to report suicidal ideation and attempts.

ii. National studies.

In Portugal, the empirical literature aimed to examine suicidality in forensic populations is scarce. Within the suicidal ideation framework, it's possible to highlight three studies. Santos (2013) study demonstrated that the main predictors of suicidal ideation in inmates were being young, previous substance use and recurring thoughts about suicide. The remaining studies focused on the examination of the risk factors of suicidal ideation of inmates on remand and in the first contact with the prison context. A study of Moreira (2009) found that before the execution of the sentence, inmates had higher involvement in self-harm behaviors, as well as substance use (heroin and cocaine). The higher involvement in self-harm behaviors were also maintained during the execution of the sentence. The main risk factors found for suicidal ideation were isolation and psychopathology symptoms (e.g., depressive).

A study conducted by Moreira and Gonçalves (2010) demonstrated that the first contact with the prison context is a moment of particularly higher distress. These symptoms tend to decrease over time, due to the mobilization of adaptive coping styles, as well as higher levels of resilience. However, the inmates with suicidal ideation maintained the symptoms six months after imprisonment, revealing an inability to adapt to the prison context. In addition, a study from Freitas (2021) has demonstrated that the risk for suicidal behaviors in inmates is increased with a history of maltreatment within the family context.

Other studies in Portugal explored the risk factors associated with self-harm, a key predictor of suicidal behavior. A study conducted by Ferraz and colleagues (2017), demonstrated that self-harm is more prevalent among inmates with a prior involvement in family maltreatment, substance use and self-harm. These inmates had also higher levels of psychopathology symptoms, as well as neurotic and psychotic traits.

In Portugal, to our knowledge, Pragosa (2012) conducted the only study examining the risk factors associated with the transition from suicidal ideation to attempts in inmates. In the interviews conducted by the researcher, inmates explained the main factors associated with their transition to suicide attempts. The main factors identified by inmates were negative

feelings, for example hopelessness, longer sentences, negative relationships with other inmates or prison staff, as well being separated from their children and family and having poor social support. In summary, the main findings demonstrated that suicide attempts were more prevalent in inmates with a mean age ranging between 30-40 years old, who are mainly affected by the prison context and the lack of family support.

Theoretical literature review

i. Ideation-to-action models.

According to the Portuguese Psychological Association (2022), there are three types of suicidal behaviors – suicide, suicidal ideation, and suicide attempts. Suicide is an occurrence in which an individual intentionally intends to end their life and dies because of their actions (Portuguese Psychological Association, 2017). Suicidal ideation is characterized by thoughts related to ending one's life. These thoughts are conceptualized as anticipations of suicidal acts. However, they can also refer to desires or the formulation of a plan to commit suicide, without necessarily conducting it (Portuguese Psychological Association, 2022). Finally, suicide attempts can be defined as any action, with an implicit or explicit intention to die, regardless of the probability of the chosen method causing death (Portuguese Psychological Association, 2017).

Suicidal behaviors have a damaging impact. The survivors of suicide attempts must cope with psychological and physical consequences, that can simultaneously impact their family and community contexts (Portuguese Psychological Association, 2022). Therefore, the efforts to understand their development are highly important to the prevention of these consequences. In the theoretical literature the main models aimed to explain the suicidal process are those rooted in the ideation-to-action framework. In this regard it is possible to highlight the following models: (a) Interpersonal Theory of Suicide (Van Orden et al., 2010); (b) Three-Step Theory (Klonsky & May, 2015); and (c) The Integrated Motivational-Volitional Model of Suicidal Behavior (IMV) (O'Connor, 2011).

The Interpersonal Theory of Suicide (Van Orden et al., 2010), proposes that the development of suicidal ideation is caused by the simultaneous presence of two crucial interpersonal factors –perceived burdensomeness and thwarted belongingness. Perceived burdensomeness is related to an experience where the individuals perceive themselves as a burden for those around them. This perception leads to feelings of hatred, as well has the belief that dying has more value, compared to living. Thwarted belongingness involves the individual's experience of alienation from its contexts, fostering feelings of loneliness and

poor reciprocal care.

The Interpersonal Theory of Suicide suggests that one of the main mechanisms for engaging in suicide attempts, among those with suicidal ideation, is the acquired capability for suicide. This is a construct that involves the replacement of a desire for self-preservation with self-mutilation, developed through exposure to painful events. For instance, these types of experiences can lead to increased physical pain tolerance, and consequently, a lowered fear of death. In this regard, the factors related to these painful experiences will act as potential risk factors for the transition in the suicidal process (e.g., perpetration of violent offenses, involvement in interpersonal violence, substance use/abuse, self-harm and mental disorders) (Favril et al., 2020b; May & Victor, 2018; Van Orden et al., 2010).

The Three-Step Theory (Klonsky & May, 2015), hypothesis that suicidal ideation is the result of the combination between psychological pain and feelings of hopelessness. In this relationship social connections can be protective factors. Therefore, the theory suggests that the influence of the remaining risk factors is associated with the negative impact that they will have on psychological pain and feelings of hopelessness. In the transition of suicidal ideation to suicide attempts, the main factors suggested by the theory are related to genetic (e.g., pain sensitivity), acquired (e.g., acquired capability of suicide) and practical (e.g., access to lethal means). One of the main assumptions postulated by this theory is that individuals with higher likelihood to exhibit maladaptive responses to painful emotions, will be more likely to experience difficulties in emotional regulation and consequently, they will have a greater propensity for suicidal behaviors.

As previously mentioned, emotional lability is found to be a pertinent risk factor for suicidality. Indeed, emotional deficits can have a negative impact in psychosocial management skills, and consequently, in social interactions. This negative impact can facilitate the development of psychological pain, in which suicidal ideation is induced as a relief mechanism (Paradiso et al., 2016). Hence, these deficits can act as coping strategies, especially when the individual has acquired capability of suicide (Turton et al., 2021). In summary, the development of suicidal behaviors may represent a maladaptive strategy to regulate negative emotions. Therefore, the involvement in suicidal behaviors is negatively reinforced, since it allows a relief of these negative emotions (Asarnow et al., 2021; Winicov, 2019).

The Integrated Motivational-Volitional Model of Suicidal Behavior (IMV) (O'Connor, 2011) is a comprehensive theory that integrates some of the assumptions of the remaining models, in order to explain the development and transition through suicidal behaviors.

According to this model suicidal behaviors are developed through three phases: (a) pre-motivational; (b) motivational; and (c) volitional. The transition through these stages is stimulated by different factors. The pre-motivational phase is characterized by the presence of precipitating factors – triggers –, diatheses, characteristics of the environment and life events, for example, deprivations and adverse experiences in childhood. These factors can be defined as variables that attenuate or strengthen the relationship with threats to self-appraisal. They integrate the biosocial context of suicide.

Due to the impact of the aforementioned factors, the motivational phase is marked by the development of feelings of defeat and humiliation that can trigger the perception of being trapped and social rejection, through factors related to threats to the self, like obstacles in resolving social problems or maladaptive coping styles. For instance, these threats can stimulate suicidal ideation, through motivational factors like perceived burdensomeness, thwarted belongingness, resilience, and social support. These factors increased the likelihood that entrapment will lead to the development of suicidal ideation (O'Connor, 2011).

In the volitional phase, the existence of the aforementioned mechanisms can lead to suicidal behaviors, through volitional factors like acquired capability of suicide, impulsivity, and history of suicidal behaviors. These factors increase the probability that suicide attempts will emerge from suicidal ideation. According to this model, individuals with a history of self-harm, will have more motivational and volitional factors (O'Connor et al., 2016; O'Connor & Kirtley, 2018).

These models are consistent in the primarily role of acquired capability of suicide, in the progression to suicide attempts. This construct can be developed through the exposure to painful or provocative experiences. Some of the risk factors found in previous research can also facilitate the exposure to these types of experiences, and consequently, stimulate the development of acquired capability of suicide (Smith et al., 2016). The perpetration of violent offenses can potentially increase the risk for the involvement in violent and painful experiences, due to the higher levels of the associated behavioral disinhibition (Favril et al., 2020a; Favril & O'Connor, 2021). The relationship between violent offenses and the acquired capability of suicidal can also be explained through the longer sentences applied to these individuals. For instance, these types of sentences can lead to higher isolation, as well as the development of perceived burdensomeness (Ma et al., 2018), hopelessness (Zhang et al., 2010) and burnout (Oyeleke et al., 2018).

The role of mental disorders as risk factors for suicidal behaviors can be explained by the increased risk for the development of perceived burdensomeness and thwarted belongingness,

as well as the exposure to provocative or painful events. However, it is proposed that different mental disorders will have a distinct impact in the suicidal process. Therefore, mental disorders characterized by internalizing symptoms, like depression, will have a more significant role in the development of suicidal ideation, while those related with poor control of impulses (e.g., substance-related disorders) will have a more prominent influence in the transition to suicide attempts (Van Orden et al., 2010).

Other explanation is the pre-existence of acquired capability of suicide, prior to the perpetration of violent offenses. The individuals who commit violent offenses are more likely to have adverse childhood experiences (e.g., child abuse), being diagnosed with ASPD (Fazel & Danesh, 2002) and having emotion regulation deficits (Turecki et al., 2019). In a similar vein, the inmates who perpetrate interpersonal violence, may struggle with other characteristics that facilitate suicidal behaviors, namely higher levels of impulsivity, anger, hostility, perceived burdensomeness and thwarted belongingness (Ma et al., 2018). Similarly, justice-involved individuals are more likely to be exposed to adverse childhood experiences, like physical and sexual abuse, neglect, and violence (Wanamaker et al., 2022). Inmates exposed to this physical and sexual abuse are more prone to engage in violent and aggressive behaviors as adults (Felson & Lane, 2009). This history of violence may be linked with higher levels of impulsivity, thwarted belongingness (Ma et al., 2018) and greater acquired capability of suicide (Smith et al., 2016).

Substance use/abuse is another risk factor that can be associated with the exposure to painful events (e.g., interpersonal violence), due to higher levels of disinhibition and problems in decision-making (Favril et al., 2020c; Mars et al., 2019). Therefore, this risk factor can also lead to the development of acquired capability of suicide. In addition, substance use can increase the risk for suicidal behaviors through the potential negative impacts on social integration, as well as emotional regulation (Norström et al., 2016).

ii. The pains of imprisonment – Deprivation Model, Importation Model and Combined Model.

The assumptions proposed by the aforementioned models, acquire greater relevance when applied to forensic populations, and particularly, to the prison context. In the theoretical literature of suicidality, there are some theories aimed to explain suicidal behaviors in these populations, considering their unique characteristics, namely: (a) Deprivation Model; (b) Importation Model; and (c) Combined Model. To obtain an accurate explanation of suicidal behaviors among these unique population, these models will be explained, in articulation with

previous theories.

As previously mentioned, suicidal behaviors in inmates have specific features. Therefore, the theoretical frameworks in this field, must consider the potential impact of the prison context (Fazel et al., 2011; Moreira & Gonçalves, 2010). One of the main goals of prisons is to ensure the safety, health, and well-being of inmates (World Health Organization, 2014). Suicides completed in these contexts are particularly worrying for the justice system, since they challenge the effectiveness of the current health guidelines, in the respect for human rights (Liebling, 2017; Stürup-Toft et al., 2018). Indeed, there is consistent evidence highlighting the negative outcomes of the prison context, in the mental health of inmates, facilitating behavioral and psychological consequences (Eyoun et al., 2023; Ferraz et al., 2017; Gonçalves et al., 2016). The relationship between the prison context and the negative outcomes for inmates, is explored by the Deprivation Model. This theory suggests that the main problems of the adaptation to prison (e.g., violence, suicide), are consequences of the multiple conditions and deprivations, possibly inherent to this context (Dye, 2010).

The theories previously explained, propose that the main risk factors for suicidal behaviors are the isolation, loneliness, and social rejection, in which social support, and connections can be protective mechanisms. According to the Deprivation Model, the prison context can increase isolation by limiting connections, through the separation of family and social support networks (Moreira & Gonçalves, 2010). For instance, the separation or the very absence of intimate relationships can trigger the development of thwarted belongingness (Ricarte et al., 2022), rejection (Cramer et al., 2017), and abandonment (Eyoun et al., 2023), as well as the loss of affective references, essential for maintaining identity. In the face of these negative outcomes, involvement in suicidal behaviors may represent an attempt to stimulate affective attitudes in significant others (Bani et al., 2019). The alienation from family and social support networks can also increase the risk for perceived burdensomeness, since the inmates are unable to provide emotional support to their contexts (Ma et al., 2018; Mandracchia et al., 2018).

Previous research has found associations between being single and suicidal behaviors. Inmates involved in an intimate relationship have higher levels of perceived social support (Pettus-Davis, 2014). However, imprisonment can strongly damage this association, given the higher possibility for the loss of these relationships (Apel, 2016; Hardy, 2018). The loss of this source of social support can be explained by underlying factors, like social stigmatization (Condry & Minson, 2021) and specific features of imprisonment, like obstacles in establishing intimate contacts (Moran, 2013).

The isolation imposed by imprisonment can be particularly harmful for inmates who have children. The separation from children can lead to mental health problems, like increased isolation and hopelessness (Charles et al., 2019), which are consistently supported risk factors for suicidality. In addition, inmates who are parents may suffer with higher levels of stress (Milavetz et al., 2021). Their vulnerability to the development of these mental states can be explained with the difficulties of parenting imposed by the prison context. For instance, they may struggle in the absence of an alternative caregiver, institutional support, as well as privacy and comfort in the communication with their children (Arditti, 2016). The higher risk of these inmates can also be explained by personal factors related to their parental role. In this regard, imprisonment can stimulate the development of distortions (Hardy, 2018), where they may suffer with feelings of guilt due to their absence in their children's routine (Fowler et al., 2017). In addition to feelings of guilt, they may also feel fearful regarding the impact of their criminal conduct in their parental relationship (Arditti & Few, 2008).

Lack of meaningful activities is another risk factor highly associated with prison deprivations, like monotonous routines (Farley et al., 2016) and limitations in physical activity (Nowotny et al., 2016). For instance, these features can lead to an idle lifestyle in prisons. This is particularly concerning, since the involvement in meaningful activities can be a useful tool for the adaptation to the prison environment, since it allows improvements in the psychological and physical well-being of inmates (Favril et al., 2017; 2022), that will have a positive effect in the prevention of suicidal behaviors (Stoliker, 2018).

The prison context is often characterized by another deprivations, such as: (a) victimization (Caravaca-Sánchez et al., 2021; Encrenaz et al., 2014; Favril, 2021; Lambie & Randell, 2013); (b) oppressive environment and constant surveillance (Haney et al., 2016); (c) significant loss of freedom, autonomy, privacy and control (binti Abd Aziz et al., 2022; Favril, 2021; Moreira & Gonçalves, 2010; World Health Organization, 2007) and (d) separation of their professional and/or religious activities (Moreira & Gonçalves, 2010).

For instance, these deprivations can be particularly harmful for inmates, stimulating negative mental states, like the fear of the unknown, a negative perception of the justice system, alienation, hopelessness and shame. In most cases, these highly degrading, frustrating, and stressful conditions tend to be too demanding for their coping skills (World Health Organization, 2007). Hence, the adaptation to the prison context requires the development of new social, cognitive, and emotional skills. If they are unable to adapt, the repeated exposure to these circumstances, aligned with the suppression of the feelings previously mentioned (Laws, 2019), can structure cognitive distortions, where inmates

perceive suicidal behaviors as methods of adaptation, regulation, relief and temporary avoidance to the prison environment (Luke et al., 2020; Pickering et al., 2023; Scott et al., 2023). Essentially, the involvement in these types of behaviors is a method of expressing needs (Winicov, 2019).

As previously stated, recidivism is a risk factor found for both suicidal ideation and attempts. Inmates who return to the prison, experience greater stress, compromising their psychological well-being (Turney et al. 2013) and increasing their risk for suicide (Mihai et al., 2015). Recidivism can also be particularly damaging for inmates, due to an increased risk for isolation. In this regard, repeated contacts with the prison context can increase the probability for the loss of an intimate partner and/or significant community resources (Tadesse et al., 2021). Furthermore, prison features can structure patterns of mood, thought and behavior, which can be intensified if the individual returns to prison (Slade & Edelman, 2014). In addition, recidivism can be particularly harmful for inmates who have children, given the higher risk for the development of depressive symptoms and substance use (McKay & Tadros, 2023).

The negative health outcomes of the prison context highlight the necessary improvements in addressing the criminogenic and rehabilitation needs of inmates (Lambie & Randell, 2013). Despite the negative impact of the prison context in suicidal behaviors, not all inmates engage in suicidal behaviors in this context. Therefore, an explanation of their suicidal behaviors based exclusively in the prison context, is limited. Hence, an accurately understanding must also consider the unique features of inmates. In light with this evidence is the Importation Model (Irwin & Cressey, 1962). The theory proposes that the problems of the adaptation to prison are direct consequences of the intrinsic characteristics of inmates developed prior to their contact with the prison context. In this regard, their specific traits predispose them to suicidal behaviors, even before their imprisonment (Dye, 2010; Favril, 2021). These characteristics are consistent with the personality, clinical, interpersonal, and affective vulnerabilities mentioned previously.

Regarding the personality vulnerabilities, inmates may have higher levels of impulsivity and aggressiveness before their contact with the prison context, since both vulnerabilities are characteristic traits of ASPD – a diagnosis typically predominant in the male prison population (DSM-5; American Psychiatric Association, 2013). Therefore, this personality disorder may be a relevant factor in understanding the vulnerable predisposition to suicidal behaviors of this population. Impulsivity is a risk factor for suicidal behaviors, as well as a suggested volitional factor by IMV model (O'Connor, 2011). Therefore, its presence

increases the risk for suicide attempts, among those with suicidal ideation (Favril & O'Connor, 2021). In addition, impulsivity is a construct that is proposed to be contrary to self-control (Anestis et al., 2014). Indeed, self-control is known for its moderating role in the relationship between perceived levels of stress and suicidal ideation. In this regard, in the presence of high stress levels, those with better self-control skills will suffer less from suicidal ideation (Martin et al., 2023).

In summary, the Deprivation Model suggests that difficulties in the adaptation to the prison context are related to the prison deprivations, whereas the Importation Model justifies these struggles with specific features on inmates, developed before imprisonment. Despite the important contributions of both models, the prison context and the features of inmates can't be independently used to explain suicidal behaviors. Therefore, the current consensus in the literature is that an accurately understanding of suicidal behaviors in inmates must integrate the theoretical assumptions of both models. With this consensus a new theoretical framework emerges, known as Combined Model (Favril, 2021). This new framework proposes a combination of both intrinsic and deprivation factors in understating the adaptation to imprisonment. This combination is also a key mechanism proposed by ideation-to-action theories to explain the transition to suicide attempts (Abderhalden, 2022; Klonsky et al., 2018; Stolikier & Abderhalden, 2023). Therefore, the adaptation to prison deprivations will depend on the coping strategies, vulnerabilities and predispositions that inmates have prior to their contact with the prison context. Hence, inmates with greater vulnerabilities will have accentuated difficulties in the adaptation process. Simultaneously, these deprivations may, in turn, accentuate their vulnerabilities, increasing the risk for suicidal behaviors (Dye, 2010; Favril, 2021).

Based in the empirical and theoretical reviews conducted, it's possible to uncover important conclusions. The assumptions of the general theories of suicidal behaviors can be applied to better understand these phenomena in specific and vulnerable populations, like inmates. However, to accomplish a better prevention and responsive intervention, both theoretical and empirical literature must include the distinctive features of inmates, namely their intrinsic characteristics and their unique contexts. Although extant research has been conducted, the risk factors of suicidal behaviors in inmates must continue to be an international priority (Favril, 2021; Favril et al., 2020b; 2020c; Favril & O'Connor, 2021), given its potential to save lifes at risk in the most vulnerable populations and critical contexts.

GENERAL SECTION

Main risk factors found for suicidal behaviors in justice-involved individuals

Risk factors associated with suicidal ideation in justice-involved individuals

Table 1. *Factors associated with Suicidal Ideation in Justice-Involved Individuals*

Suicidal ideation	
Type of risk factors	Studies
Related to prison context	
Recidivism	Rivlin et al., 2013; Slade & Edelman, 2014
Perpetration of violent offenses	Larney et al., 2012
Solitary confinement	Malarkey et al., 2022
Lack of meaningful activities	Favril et al., 2017
Inability to participate in meaningful activities	Barry et al., 2017
Disruptive behaviors	Abderhalden, 2022
Exposure to the suicidal behavior of other inmates	Crewe et al., 2017
Fear for personal safety	Favril et al., 2017; Malarkey et al., 2022
Harmful prison context	Stoliker et al., 2023
Tobacco use in prison	Eyoum et al., 2023
Use of violence in detection moment	Meade et al., 2017
Absence of social visits	Eyoum et al., 2023
Sentence of 15 years or more	Crewe et al., 2017
Sentence <12 months	Favril et al., 2017
Related to individuals past	
Adverse experiences in childhood	Eyoum et al., 2023; Schaefer et al., 2016; Zhang et al., 2010

Exposure to family suicidal behaviors	Abderhalden, 2022; Stoliker & Abderhalden, 2023
Death of a family member	Shepherd et al., 2018
Family history of mental disorders	Tadesse et al., 2021
Interpersonal	
Poor social support	Abderhalden, 2022; Favril et al., 2017; Jenkins et al., 2005; Schaefer et al., 2016; Tadesse et al., 2021; Stoliker & Abderhalden, 2023; Way et al., 2013; Zhang et al., 2010
Personality	
Low levels of extraversion	Sarchiapone et al., 2009
Aggressiveness	Sarchiapone et al., 2009
Hostility	Sarchiapone et al., 2009
Cognitive	
Permissive cognitions of suicide	Slade & Edelman, 2014
External locus of control	Favril et al., 2017; Slade & Edelman, 2014
Low levels of resilience	Carli et al. 2010; Sarchiapone et al., 2009
Affective	
Feelings associated with the perception of defeat and being trapped	Slade & Edelman, 2014
Feelings of fear and hopelessness	Abderhalden, 2022
Emotional lability	Sarchiapone et al., 2009
Emotional dysregulation	Turton et al., 2021
Physical health	
Traumatic brain injuries	Larney et al., 2012
Clinical	
General mental disorders	Butler et al., 2018; Favril et al., 2017; Moreira & Gonçalves, 2010; Stoliker et al., 2023; Tadesse et al., 2021
Personality disorders	Jenkins et al., 2005

Depression	Carli et al. 2010; Eyoum et al., 2023; Larney et al., 2012; Pennington et al., 2015; Zhang et al., 2010
Psychoticism	Sarchiapone et al., 2009
Neuroticism	Carli et al. 2010; Jenkins et al., 2005; Sarchiapone et al., 2009
Secondary psychopathy	Pennington et al., 2015
Hospitalizations due to mental disorders	Larney et al., 2012
Substance use	Abderhalden, 2022; Butler et al., 2018; Stoliker et al., 2023; Stoliker & Abderhalden, 2023
Previous self-harm behaviors	Abderhalden, 2022; Butler et al., 2018; Larney et al., 2012; Slade & Edelman, 2014; Stoliker & Abderhalden, 2023
Previous suicide attempts	Favril et al., 2017; Schaefer et al., 2016; Way et al., 2013

Demographic

Caucasian ethnicity	Jenkins et al., 2005; Malarkey et al., 2022; Schaefer et al., 2016; Stoliker & Galli, 2021
Male gender	Stoliker et al., 2021
Female gender	Tadesse et al., 2021
Low levels of educational	Jenkins et al., 2005; Stoliker & Abderhalden, 2021
Mean age of 40 years old	Stoliker et al., 2020

Risk factors associated with suicide attempts in justice-involved individuals

Table 2. *Factors associated with Suicide Attempts in Justice-Involved Individuals*

Suicide attempts	
Type of risk factors	Studies
Related to prison context	
Maximum security prisons	Favril et al., 2022; Hawton et al., 2014
Solitary	Favril et al., 2022
Perpetration of violent offenses	Favril & O'Connor, 2021; Khezri et al., 2023; Stoliker, 2018
Perpetration of offenses against property	Caravaca Sánchez et al., 2018
Recidivism	Favril et al., 2020b; Favril & O'Connor, 2021; Ricarte et al., 2022; Rivlin et al., 2013; Caravaca Sánchez et al., 2018; Tadesse et al., 2021
Victimization	Cain & Ellison, 2022; Favril et al., 2020b; Favril et al., 2022; Rivlin et al., 2013; Stoliker, 2018
Lack of meaningful activities in prison	Favril et al., 2022; Stoliker, 2018
Disciplinary measures	Caravaca Sánchez et al., 2018
Fear for personal safety	Favril et al., 2022; Joon Jang, 2020
Prison context (compared to parole)	Bryson et al., 2021
Separation from children	Encrenaz et al., 2014
Sentence of 15 years or more	Crewe et al., 2017
Life sentence	Favril et al., 2022; Hawton et al., 2014; Caravaca Sánchez et al., 2021
Related to individuals past	
Physical and sexual victimization	Encrenaz et al., 2014; Favril et al., 2022
Exposure to family and social suicidal behaviors	Favril et al., 2020a; Favril et al., 2022
Exposure to addictive behaviors in the family context	Khezri et al., 2023

Family history of imprisonment	Caravaca Sánchez et al., 2018
Family history of mental disorders	Tadesse et al., 2021
Adverse childhood experiences (e.g., emotional, sexual, and physical abuse and emotional and physical neglect)	Angelakis et al., 2020; Marzano et al., 2016; Rivlin et al., 2013; Caravaca Sánchez et al., 2018; 2019
Bullying	Marzano et al., 2016
Interpersonal	
Poor social support	Bani et al., 2019; Favril et al., 2022; Jenkins et al., 2005; Rivlin et al., 2013
Social isolation	Marzano et al., 2016
Being single	Bani et al., 2019; Jenkins et al., 2005; Khezri et al., 2023; Ricarte et al., 2022; Caravaca Sánchez et al., 2018
Personality	
Low levels of extraversion	Sarchiapone et al., 2009
High levels of neuroticism	Sarchiapone et al., 2009
Low levels of assertiveness and cooperation	Favril et al., 2022
Novelty seeking	Favril et al., 2022
Aggressiveness	Favril et al., 2022; Ricarte et al., 2022; Rivlin et al., 2013; Sarchiapone et al., 2009
Hostility	Favril et al., 2022; Rivlin et al., 2013; Sarchiapone et al., 2009
Impulsiveness	Bani et al., 2019; Favril et al., 2022; Marzano et al., 2016; Ricarte et al., 2022; Rivlin et al., 2013
Cognitive	
Low levels of self-control	Byng et al., 2015
Low levels of self-esteem	Favril et al., 2022; Rivlin et al., 2013
Low levels of resilience	Sarchiapone et al., 2009
Affective	
Feelings of hopelessness	Rivlin et al., 2013
Feelings of anger	Stoliker, 2018
Emotional lability	Favril et al., 2022; Sarchiapone et al., 2009

Perceived burdensomeness	Cain & Ellison, 2022
Feelings of empty	Khezri et al., 2023
Physical health	
Traumatic brain injuries	Larney et al., 2012
Clinical	
General mental disorders	Cain & Ellison, 2022; Favril & O'Connor, 2021; Stoliker, 2018
Previous self-harm behaviors	Castelpietra et al., 2018; Favril & O'Connor, 2021; Favril et al., 2022
Previous suicide attempts	Castelpietra et al., 2018
Suicidal ideation	Favril et al., 2022; Shepherd et al., 2018
Bipolar disorder	Stoliker et al., 2021
Schizophrenic psychosis	Stoliker et al., 2021
Psychotic disorder	Favril et al., 2022; Jenkins et al., 2005; Sarchiapone et al., 2009; Stoliker et al., 2021
Personality disorders	Jenkins et al., 2005; Stoliker et al., 2021
Anxiety disorders	Encrenaz et al., 2014; Favril et al., 2022
Post-Traumatic Stress Disorder	Shepherd et al., 2018
Depression	Encrenaz et al., 2014; Favril et al., 2022
Substance use	Cain & Ellison, 2022; Favril & O'Connor, 2021; Favril et al., 2022; Khezri et al., 2023; Marzano et al., 2016; Caravaca Sánchez et al., 2018
Psychotropic medication	Favril et al., 2022
High levels of stress	Cain & Ellison, 2022; Favril et al., 2022
Demographic	
Caucasian ethnicity	Hawton et al., 2014; Jenkins et al., 2005; Stoliker, 2018; Stoliker & Galli, 2021
Female gender	Favril et al., 2020a; Favril & O'Connor, 2021; Khezri et al., 2023; Stoliker et al., 2021; Tadesse et al., 2021
Male gender	Castelpietra et al., 2018; Gates et al., 2017
Low levels of educational	Jenkins et al., 2005; Caravaca Sánchez et al., 2021

Mean age of 50 years	Caravaca Sánchez et al., 2021
>30 years	Khezri et al., 2023
Mean age of 30 years	Castelpietra et al., 2018

Economic

Professional occupation prior to imprisonment	Caravaca Sánchez et al., 2018
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Risk factors associated with suicide in justice-involved individuals

Table 3. *Factors associated with Suicide in Justice-Involved Individuals*

Suicide	
Type of risk factors	Studies
Factors related to the prison context	
Maximum security prisons	Bukten & Stavseth, 2021; Dye, 2010
Overcrowding	Dye, 2010; Rabe, 2012
Perpetration of violent offenses– sexual offenses, homicides	Duthé et al., 2013; Ma et al., 2018; Rabe, 2012; Raddi et al., 2022; Zhong et al. 2021
Perpetration of offenses against property	Caravaca Sánchez et al., 2018
Absence of cell sharing	Ma et al., 2018; Zhong et al. 2021
Recidivism	Liebling, 2017
Fear for personal safety	Liebling, 2017
Solitary confinement	Duthé et al., 2013; Vanhaesebrouck et al., 2022;
Negative relationships with prison staff	Liebling, 2017
Absence of staff training	World Health Organization, 2007
Harmful prison context (e.g., disorganization, humiliation, and violence)	Liebling, 2017
Frustration regarding legal processes (e.g., reversals in parole decision-making; transfers; cell reallocations; changes in legal status)	Favril et al., 2018; Gupta & Girdhar, 2012
Rare family visits	Duthé et al., 2013; Zhong et al. 2021
Separation from children	He et al., 2001
Remand	Ma et al., 2018; Vanhaesebrouck et al., 2022; Voulgaris et al., 2018; Zhong et al. 2021
Life sentence	Zhong et al. 2021
First hours of imprisonment	Raddi et al., 2022
First week	Vanhaesebrouck et al., 2022
Sentence of 4-5 years	World Health Organization, 2007
Long or undetermined sentences	Cramer et al., 2017; Liebling, 2017

Related to individuals past	
Victimization and exposure to violence	Smith et al., 2014
Psychiatric family history	Saavedra & López, 2015
Interpersonal	
Social isolation	Hayes, 2017; World Health Organization, 2007
Being single	Ma et al., 2018; Saavedra & López, 2015
Poor social and family support	World Health Organization, 2007
Interpersonal conflicts	Gupta & Girdhar, 2012
Cognitive	
Maladaptive coping strategies	Cramer et al., 2017
Absence of future ambitions	World Health Organization, 2007
Affective	
Emotional problems	World Health Organization, 2007
Feelings of hopelessness	World Health Organization, 2007
Personality	
Antisocial traits	Verona et al., 2001
Impulsiveness	Fazel & Baillargeon, 2011
Aggressiveness	Fazel & Baillargeon, 2011
Physical health	
Traumatic brain injuries	Larney et al., 2012
Clinical	
Mental health problems	Fazel et al., 2016
Additive disorders	Saavedra & López, 2015
Affective disorders	Saavedra & López, 2015
Personality disorders	Saavedra & López, 2015
Antisocial personality disorder	Verona et al., 2001
Anxiety disorders	Saavedra & López, 2015; Vanhaesebrouck et al., 2022

Substance use or abrupt interruption of use	World Health Organization, 2014
Depression	Vanhaesebrouck et al., 2022
Previous self-harm behaviors	Castelpietra et al., 2018; Fazel et al., 2017; Hayes, 2017
Suicidal ideation	Zhong et al. 2021
Previous suicide attempts	Castelpietra et al., 2018; Hawton et al., 2014; Zhong et al. 2021
<hr/>	
Demographic	
<18 years	Dye, 2010
>30 years	Duthé et al., 2013
20-25 years	World Health Organization, 2007
Male gender	Castelpietra et al., 2018; Fazel et al., 2017; Ma et al., 2018; Vanhaesebrouck et al., 2022
<hr/>	

Measures

Sociodemographic questionnaire

QUESTIONÁRIO SOCIODEMOGRÁFICO

- Dados dos EP's? (a preencher pela investigadora – Sim/Não): _____ Se sim, qual? _____
1. Sexo: Masculino Feminino
2. Idade: _____
3. Escolaridade: _____ (número máximo de anos de escola concluídos com sucesso)
4. Profissão _____ (se está neste momento num estabelecimento prisional, indique a profissão que tinha na altura que foi condenado)
5. Nacionalidade: _____
6. Considera-se parte de um grupo étnico minoritário?
Não Sim
7. Estado Civil:
Solteiro União de Facto Casado Divorciado/Separado Viúvo
8. Se não é financeiramente independente indique a escolaridade e profissão de quem o suporte financeiramente (se é mais que uma pessoa, indique a profissão e escolaridade de quem ganha mais ao fim do mês).
- 8.1. Escolaridade _____
- 8.2. Profissão _____
9. Tem filhos? Não Sim
10. Quantos? _____
11. Prática regularmente desporto? Não Sim
12. Tem algum problema grave de saúde mental? Não Sim
13. Na sua infância e adolescência viveu sempre com os seus pais? Não Sim
14. Já alguma vez viveu num centro educativo? Não Sim
15. Já alguma vez foi condenado (por exemplo, pena suspensa, pena de prisão, trabalho comunitário, etc.)? Não Sim
16. Se respondeu sim, indique quantas vezes (se está preso, contando com esta vez) _____
17. Já alguma vez esteve preso/a ou detido? Não Sim
18. Se sim, qual o crime/s? _____
-
19. Qual o tempo de pena? _____
20. Quantos dos seus amigos já estiveram presos (Se nenhum, escreva apenas "0") _____
21. Se está neste momento num estabelecimento prisional, indique se já frequentou um programa de intervenção dentro do estabelecimento: Não Sim
22. Se sim, que tipo(s) de intervenção? _____

Social and Emotional Competencies Questionnaire

SEC-Q

(I. Zych, R. Ortega-Ruiz, R. Muñoz-Morales e V. Llorent, 2018;

Versão Portuguesa: R. Lobo, T. S. Almeida, & M. Basto-Pereira, 2019)

Por favor responde a este questionário tendo em conta os últimos 12 meses. Para que os nossos resultados sejam corretos, por favor responde com sinceridade. Todas as tuas respostas serão totalmente confidenciais. Muito obrigado pela tua colaboração. Leia as seguintes afirmações e responde indicando o grau de concordância com cada uma delas utilizando a seguinte escala.

1	2	3	4	5
Discordo Completamente	Discordo Bastante	Não discordo nem concordo	Concordo Bastante	Concordo Completamente
				1 2 3 4 5
1. Sei como classificar as minhas emoções.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2. Tenho plena consciência dos meus pensamentos que, por sua vez, influenciam as minhas emoções.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3. Consigo diferenciar uma emoção da outra.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
4. Sei de que forma as minhas emoções têm influência sobre o que faço.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
5. Consigo-me auto motivar.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
6. Os meus objetivos são claros.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
7. Apesar das dificuldades continuo a perseguir os meus objetivos.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
8. Estou ciente do que as pessoas esperam dos outros.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
9. Estou atento às necessidades dos outros.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
10. Habitualmente posso e sei como posso ajudar os outros que carecem de ajuda.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
11. Tenho um bom relacionamento com os meus colegas de estudo ou de trabalho.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
12. Normalmente ouço de forma ativa.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
13. Ofereço ajuda a quem necessita da minha ajuda.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
14. Tomo decisões analisando cuidadosamente as possíveis consequências.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
15. Por norma, considero as vantagens e desvantagens de cada uma das opções, antes de tomar uma decisão.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
16. Não tomo decisões de forma descuidada.				<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Predictive Antisocial Spectrum Questionnaire

Predictive Antisocial Spectrum Questionnaire

(PASQ) (C. Moisés, A. Castro, & M. Basto-Pereira, 2019)

INSTRUÇÕES: Indique com uma (X) até que ponto concorda que as seguintes afirmações caracterizam a sua maneira de pensar ou agir habitualmente, pelo menos desde o início da adolescência (antes dos 15 anos).

Itens	Discordo totalmente	Discordo parcialmente	Concordo parcialmente	Concordo totalmente
1. Se tiver de correr riscos corro, mesmo que afete a minha segurança.				
2. Quando perco a cabeça "levo tudo à frente".				
3. Mesmo que saiba que estou a fazer algo errado, às vezes avanço sem pensar.				
4. Mesmo que eu seja o culpado, pouco me interessa o que acontece aos outros.				
5. Já me meti em problemas por andar envolvido em lutas.				
6. Não sentir remorsos afeta a minha relação com os outros.				
7. Já arranjei problemas por ter colocado em risco a minha segurança ou a de outros.				
8. As minhas mentiras já me fizeram perder amigos.				
9. Já me meti em problemas por não cumprir as minhas obrigações (horários, dívidas, etc.).				
10. As minhas relações pessoais já foram afetadas por não cumprir os meus compromissos.				

Health Risk Behaviors Checklist

LISTA DE COMPORTAMENTOS DE SAÚDE

(R. Pinto & Á.Maia, 2013)

Este questionário é sobre comportamentos de saúde. A informação será usada para melhorar a educação para a saúde de jovens como tu. Por favor, responde às perguntas com base no que tu realmente fazes. As tuas respostas são confidenciais. Por isso, NÃO ESCREVAS O TEU NOME. A tua participação é voluntária. Certifica-te que todas as questões foram respondidas. No entanto, se não te sentires confortável a responder a alguma das questões, deixa-a em branco. Muito obrigado pela tua participação.

Assinala com Oa opção mais adequada

1. Já alguma vez experimentaste fumar cigarros, mesmo que tenha sido uma ou duas passas?

a) Sim; b) Não

2. Se sim, que idade tinhas quando isso aconteceu? Idade: _____

3. Fumas atualmente? a) Sim; b) Não

4. Costumas fazer exercício físico?

a) Muitas vezes b) Frequentemente c) Algumas vezes d) Raramente e) Nunca

5. Costumas beber álcool, como por exemplo cerveja, vinho, ou licor?

a) Muitas vezes b) Frequentemente c) Algumas vezes d) Raramente e) Nunca

6. Se sim, que idade tinhas quando bebeste álcool pela primeira vez? Idade: _____

7. Costumas lavar os dentes?

a) Muitas vezes b) Frequentemente c) Algumas vezes d) Raramente e) Nunca

8. Na última semana, em algum momento estiveste muito tempo sem comer (por exemplo, não tomar o pequeno almoço ou almoço para perder peso)?

a) Sim; b) Não

9. Costumas tomar o pequeno almoço?

a) Muitas vezes b) Frequentemente c) Algumas vezes d) Raramente e) Nunca

10. Costumas comer chocolates, doces, bolos, ou pastilha elástica?

a) Muitas vezes b) Frequentemente c) Algumas vezes d) Raramente e) Nunca

11. Já alguma vez experimentaste drogas, como marijuana, cocaína, heroína, metanfetaminas ou ecstasy?

a) Sim; b) Não;

12. Se sim, que idade tinhas? **Idade:** _____

13. Consomes atualmente?

a) Sim; b) Não;

14. Já alguma vez te magoaste de propósito, por exemplo fazer arranhões ou cortes no teu corpo com um objeto afiado, queimar a tua pele com a ponta de um cigarro ou um fósforo aceso?

a) Sim; b) Não

15. Já alguma vez pensaste seriamente em suicidar-te?

a) Sim; b) Não

16. Se sim, já alguma vez tentaste o suicídio?

a) Sim; b) Não

17. Já alguma vez estiveste envolvido em comportamentos violentos, por exemplo em lutas?

a) Sim; b) Não

18. Durante os últimos 30 dias, andaste com algum tipo de arma, por exemplo, uma arma de fogo ou faca?

a) Sim; b) Não

19. Que idade tinhas quando tiveste a tua primeira relação sexual?

a) Idade _____ ; b) Nunca tive relações sexuais

20. Se tiveste relações sexuais, na última vez, tu ou o teu parceiro usaram preservativo?

a) Sim; b) Não

Informed consent

CONSENTIMENTO INFORMADO

O projeto de investigação científica "*Avaliar para intervir eficazmente: Reduzindo o risco de reincidência criminal e marginalização social*", é conduzido por uma equipa de 3 investigadores, englobando só em 2019/2020, 6 dissertações de mestrado.

Pretende-se estudar os fatores de risco e de proteção para o comportamento pró/antissocial, bem como para a integração social em adultos, tanto da comunidade como da população prisional.

A sua participação não lhe trará risco ou despesa e pode a qualquer momento recusar a continuidade da participação. A aplicação do questionário é realizada a várias pessoas e o consentimento informado será separado das suas respostas, tornando impossível associar as suas respostas à sua identificação, **garantindo-lhe por isso, o máximo de confidencialidade**. Os resultados deste projeto poderão ajudar a moldar políticas públicas mais eficazes. **A sua participação é voluntária e os dados fornecidos são absolutamente confidenciais e usados para fins científicos. Nesse sentido, por favor seja sincero.**

Caso aceite participar, pedimos de seguida o seu consentimento informado. Os investigadores disponibilizam-se para esclarecer quaisquer dúvidas, informações adicionais poderão ser obtidas através do e-mail: projetoispaprosocial@gmail.com. Muito Obrigado!

Eu, _____(nome completo), li e compreendi este documento e aceito participar no projeto científico: "*Avaliar para intervir eficazmente: Reduzindo o risco de reincidência criminal e marginalização social*", dando o meu consentimento informado e tendo a garantia que todos os meus dados permanecerão confidenciais.

O/A participante

(Assinatura)