Article

An Exploratory Study in the Portuguese Population on Writing a Suicide Note: Correlates in the Suicide Spectrum and Qualitative Analysis

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Abstract

Suicide notes are an important warning sign for suicidal behaviors. The aim of this exploratory research is (a) to contribute to understanding the place of suicide notes in the spectrum of suicidal behaviors in Portugal, and (b) to analyze the content remembered by individuals regarding a suicide note. Two complementary studies were carried out. In the first, a quantitative investigation, the statistical relationship of writing a suicide note: To the occurrence of lifetime suicide attempts, to lifetime self-harming behaviors, and to suicidal ideation in the two weeks prior to the assessment was evaluated. In the second study, a qualitative investigation, the content recalled by individuals regarding a suicide note was analyzed. In the quantitative study, 841 adults aged between 18 and 65 years, and 1,012 young adults participated. In the qualitative study, 18 young adults participated. Findings of the quantitative study reveal that writing a suicide note significantly related to the lifetime presence of a suicide attempt and to self-harming behaviors and to suicidal ideation in the two weeks prior to the assessment. Findings of the qualitative study suggest that individuals who have written suicide notes exhibit a significant self-oriented focus, yet they also demonstrate a strong sense of concern for the survivors.

Keywords: consensus qualitative analysis; content analysis; suicidal behaviors; writing a suicide note

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Suicide is a major public health problem and is the cause of more than 700,000 deaths per year worldwide (World Health Organization [WHO], 2023). Suicide notes serve as crucial clues for comprehending the underlying motivations that drive individuals to suicide or to attempt suicide. It has been known for some decades that writing a suicide note is associated with high suicidal intent (Beck et al., 1974; Black, 1993) and is a predictor of death by suicide (Leenaars, 1992). Currently, writing a suicide note continues to be considered an important warning sign for suicidal behaviors by institutions such as the World Health Organization (Organização Mundial de Saúde, 2006; WHO, 2017) and the American Association of Suicidology (2018). The Portuguese Society of Suicidology (Sociedade Portuguesa de Suicidologia, 2023) highlights that writing a suicide note is a significant warning sign to be considered during a suicidal crisis. The research on this topic includes the examination of the relationships between suicide notes and other suicidal behaviors, such as suicidal ideation and suicide attempts, as well as the analysis of the content of such notes. Indeed, conducting a content analysis of suicide notes can be instrumental in comprehending the factors that led an

individual to suicide or to attempt suicide. The preserved "material" in the form of these records can provide valuable insights into what may have played a decisive role in the occurrence of the suicidal act (Pereira & Fensterseifer, 2019).

The literature highlights that in suicide notes it is common to find different themes, namely related to economic bankruptcy, terminal diseases, disabling chronic diseases, unemployment, loneliness, reduced quality of life, loss of a loved one, thwarted belongingness, thoughts of accusation or the revelation of secrets kept during life (Loret et al., 1999). Moreover, it is common to see references to feelings of guilt or punishment (Pestian et al., 2012) and, in many cases, expressions of love for survivors (Foster, 2003). Arbeit and Blatt (1973) also indicate that anger is often expressed, either directed towards the individual or towards the outside. It was also observed that suicide notes may include references to traumatic experiences, expressions of ambivalence, feelings of love, hate, helplessness, loss and need for self-punishment (Pestian et al., 2012). In the Northern Ireland Suicide Study (Foster et al., 1997), one of the largest psychological autopsy studies carried out in the British Isles, the six most common themes were: Apology/shame, love for survivors, inability to endure life, instructions on post-mortem issues, hopelessness/nothing to live for, and advice for survivors. In the study conducted by Loret et al. (1999) that investigated the notes found in 183 cases of suicide occurring in three districts of the province of Alicante, in Spain, the content analysis retained the categories: Farewell, instructions, apology and accusation. Mejías-Martín et al. (2023) conducted a study based on 286 forensic observations in Spain, which included suicide notes. That study revealed the impact of adverse health and family-related events, emotional states of grief and sadness, and failures within

the healthcare system in recognizing and responding to signs of vulnerability.

In fact, the material found in suicide notes can be quite complex and informative. Stella et al. (2022), used procedures related to network science and analyzed genuine suicide notes written by 143 by individuals who successfully committed suicide. This pool of information was developed by Schoene and Dethlefs (2016). Stella et al. (2022) concluded that the notes describe highly structured and contrasting narratives of emotions, more complex than expected by null models and for populations without clinical issues. Based on network science, psycholinguistics, and the semantic framework theory, Teixeira et al. (2021) attempted to develop a representational network of suicidal ideation expressed in the same pool of suicide notes analyzed by Stella et al. (2022). Findings suggested that the connections between terms with positive and negative valence give rise to a significantly greater degree of balance than in a null model (a model constructed under the assumption that the network under study has no particular patterns or special structure, where the affective structure is random), and in a linguistic baseline model capturing mental wanderings in the absence of suicidal ideation. Suicide notes are affectively compartmentalized in such a way that positive concepts tend to cluster together and dominate the entire network structure. Notably, this cluster is different regarding perceptions of the self, which is dominated by negative and sad conceptual associations. A key positive concept is that of "love", which integrates information relating self to others. The concept of love was prominent in suicide notes and was associated with the expression of emotions that combine joy and confidence with anticipation and sadness.

Despite its clinical significance, to the best of our knowledge, no prior research published in a peer-reviewed journal has examined this topic in Portugal. Thus, the current exploratory research aims to enhance understanding of the role of suicide notes within the spectrum of suicidal behaviors within the Portuguese society. The research examines the statistical contribution of writing a suicide in predicting different types of suicidal behaviors: Suicidal ideation, suicide attempts, and self-harming behaviors. Additionally, the research delves into the content recalled by individuals concerning suicide notes they had previously written, providing important insights into this aspect of their experience. Two complementary studies are reported. In the first, a quantitative investigation, the statistical relationships between writing a suicide note at some point during one's life and the occurrence of lifetime suicide attempts and lifetime self-harming behaviors is evaluated in two convenience samples (a community sample and a young adult college student's sample). This study also analyzed the statistical relationship between writing a suicide note and suicidal ideation in the two weeks prior to the assessment, controlling for the effect of depressive symptoms and significant sociodemographic variables. In the second study, a qualitative investigation, the content recalled by individuals regarding a suicide note is analyzed. This study assesses the dimensions or aspects that individuals recall from a suicide note that they have written in their past in a convenience sample of young adult college students.

Method: Quantitative Study

Participants

Two samples participated in this study. The first consisted of 841 adults from the community, aged between 18 and 65 years ($M = 44.02$; $SD = 12.87$), predominantly female (73.2%), with an average number of years of schooling of 15.80 years ($SD = 2.4$) and an unemployment percentage of 11.5%. Of the total participants, 43.5% of participants were single, divorced or widowed and 56.3% were married or in a common law marriage. Seventy-seven (9.2%) participants reported having had a diagnosis of a mental disorder. The second sample consisted of 1,012 undergraduate students at the University of Évora, of which 710 responded in person and 302 responded online. They were aged between 17 and 29 years ($M = 19.56$; $SD = 1.94$), with only 3.7% being over 25 years old. This sample was predominantly female (61.8%), consisting of 93.1% non-working students and 79.2% living away from home. In terms of year of university study, 53.9%, 14.3%, and 29% reported being in their first, second, or third year of studies, respectively. Sixty participants (5.9%) reported having had a diagnosis of a mental disorder.

Measures

Assessment of Writing a Suicide Note – Writing a suicide note was assessed using the question "Have you ever written a suicide (farewell) note/message?" (see Campos et al., 2021). Participants had three response options "0–*No*; 1–*Yes, I started at least one, but I didn't finish writing it*; 2–*Yes, I finished writing at least one*". When the response was 1 or 2, participants were asked two more questions: "Indicate how many times it occurred"; "Indicate when was the last time it occurred". For the purposes of statistical analysis (regression analyses), responses scored with 1 or 2 were combined to create a binary variable (writing *versus* not writing a suicide note).

Assessment of the Lifetime Presence of a Suicide Attempt – The presence of a lifetime suicide attempt was assessed using Item 1 of the Suicidal Behaviors Questionnaire-Revised (SBQ-R; Campos & Holden, 2019; Osman et al., 2001). The item is: "Have you ever thought about or attempted to kill yourself?" In this question, individuals have 6 response options "1– *Never*; 2– *It was just had a brief passing thought*; 3a– *I have had a plan at least once to kill myself, but I did not try to do it*; 3b– *I have had a plan at least once to kill myself, and I really wanted to die*; 4a– *I have attempted to kill myself, but I didn't want to die*; 4b– *I have attempted to kill myself, and I really hoped to die*".

Assessment of the Lifetime Presence of Self-Harming Behaviors – The presence of self-harming behaviors was assessed through the question: "At any time during your life, have you deliberately (in other words, of your own will) taken an overdose of medication (in pills or other form) or hurt yourself in any other way (such as cutting yourself, burning yourself or intoxicating yourself with drugs and/or alcohol) in order to deliberately harm yourself?". Options were: 0– *No*; 1– *Yes, once*; 2– *Yes, more than once*. This question has been used in previous studies to assess self-harming behaviors (e.g., Arvanas et al., 2022; Campos et al., 2022; Guerreiro, 2014; Guerreiro et al., 2017) and is an operationalization of the definition of self harming behaviors considered in the CASE study (Madge et al., 2008).

Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977). The CES-D is a self-report measure consisting of 20 items, which assesses the frequency of depressive symptoms in the week prior to the assessment. Items are responded using a four-point Likert scale, ranging from 0 (*Never or very rarely – less than 1 day*) to 3 (*Very often or always – 5 to 7 days*). Of the 20 items, four are written in the sense of euthymia and are reverse scored. The total score is obtained by summing the scores of the 20 items. In the

present study, Cronbach's alpha value was. 93, both for the student sample and for the community sample.

Suicide Ideation Scale (SIS) (Rudd, 1989). The SIS is an inventory consisting of 10 items, which assesses the frequency of suicidal ideation over the week prior to the assessment. Items are answered using a five-point Likert scale, ranging from 1 (*Never*) to 5 (*Always*). Unlike the original version, the Portuguese version developed by Campos et al. (2019), asks about the two weeks prior to the assessment. The total score is obtained by summing scores of the 10 items. In the present study, Cronbach's alpha value was. 93, both for the student sample and for the community sample.

Data Collection Procedures

The inclusion criteria for participants in the first sample were: Aged 18 to 65 years old; Portuguese as their native language; at least the 6th grade of schooling. Data were collected online through the LimeSurvey platform as part of a larger research project on suicidal behaviors. A link to access the platform was shared on social media or was sent via institutional email for college students. After participants' access to the platform, an informed consent form was presented on the first page, describing the conditions of participation. If individuals agreed to collaborate, they clicked on "next", then a sociodemographic form was presented and, subsequently on each page and in a continuous manner, questionnaires within a broader research project on suicidal behaviors were administered. The second sample was collected in person or in an online format. A subsample of 302 participants was collected online through the same LimeSurvey platform similar to the first sample, and a subsample of 710 participants was collected in person. In person participants were asked to first provide informed consent by signing a form. This data collection took place in classrooms, and participants were then asked to complete a sociodemographic form, followed by the questionnaires. Inclusion criteria for this study were: participants had to be between the ages of 18 and 25 years, having Portuguese as the native language, and be enrolled as bachelor's degree students at the University of Évora. Ethics approval of the studies was obtained from the Ethics Commission of the University of Évora.

Quantitative Data Analysis

We first estimated the prevalence of writing a suicide note in each of the samples. In order to statistically predict each of the suicidal behaviors: Suicide attempts, self-harming behaviors, and suicidal ideation, we tested regression models for each of the two samples. We entered writing a suicide note as an independent variable, along with significant socio-demographic variables, and each of the suicidal behaviors as a dependent variable. Possible socio-demographic variables were: Sex, age, education level, marital status, being currently unemployed, chronic disease, and the diagnosis of a mental disorder, in the case of the community sample, and were: Sex, age, education level, living away from home, working-student status, chronic disease and the diagnosis of a mental disorder, in the case of college sample. Logistic regression models were employed to statistically predict the binary variables of suicide attempts and self-harming behaviors, while multiple linear regression models were used to statistically predict suicidal ideation. We employed a bootstrapping methodology with 1,000 iterations to construct 95% bias-corrected confidence intervals, ensuring a more robust test of the significance of estimated parameters (e.g., Yung & Bentler, 1996).

Method: Qualitative Study

Participants

The sample consisted of 18 participants, young adults, college students aged between 18 and 23 years ($M = 20.00$; $SD = 1.82$), predominantly female (66.7%). It consisted of 83.3% non-working students and 94.4% living away from home. In terms of years of university study, 27.8%, 44.4%, and 27.8% reported being in their first, second, or third year of studies, respectively. Nine participants (50%) reported having a diagnosis of a mental disorder.

Measure

To assess the content of suicide notes, participants were asked to answer the same question presented in the quantitative study, but this time when the participant's response was 1 or 2, he/she was asked to respond to one additional question: "Describe with the greatest possible detail and reliability what you wrote in the suicide note".

Data Collection Procedures

An initial sample of 302 participants responded on an online platform. The inclusion criteria were described in the quantitative study. An access link was made available for a protocol inserted in the LimeSurvey platform. When participants accessed the platform, an informed consent form was displayed on the first page. If they agreed with the participation conditions, they continued by clicking on "next", then a sociodemographic form was presented and then, a set of questionnaires, including the questions related to the writing of a suicide note, within the scope of a broader research project on suicidal behaviors. Of the 302 participants, 23 reported having started and 17 having finished writing a suicide note. Of this total of 40, 21 participants included the text they remembered having written on the suicide note. Three participants were excluded, one because he wrote that he did not remember what he had written in the note, another because the answer did not fit the request (he just wrote "greetings") and, another, because he wrote that he did not agree with the question, justifying that it was "too personal".

Qualitative Data Analysis

Data were analyzed according to the consensus qualitative research method (Hill & Knox, 2021). This is an inductive approach to the content of participants' responses, in which evaluators define domains and categories after consensus. Three evaluators participated. The process started with the first two authors of the present paper (evaluators) evoking their expectations about the results of the study. The intention was to reduce the risk of interpretive bias and expand awareness of future possible disagreements between raters during the review process (Cardoso et al., 2012). Of the 18 descriptions transcribed onto Word sheets, two were initially codified together by the two evaluators, in order to fine-tune coding criteria. Two other descriptions were randomly selected and reserved for coding at the end of the process, allowing for the assessment of the saturation level of the domains and categories that were previously identified. This step was undertaken to assess the level of saturation within the previously identified domains and categories. That said, coding was carried out independently by each evaluator. The descriptions were then decomposed into meaning units. Following the initial coding step, the two evaluators held a meeting to reach a consensus. Then, each evaluator individually

assigned categories to each unit of meaning, with any uncertain categories being underlined to aid in subsequent evaluation. As the analysis progressed, the evaluators proceeded to define information domains based on the established categories. Initially, this was done individually, and then the evaluators engaged in discussions to reach a consensus. In a later stage of the analysis, a third evaluator (the third author of this paper) joined the process as an auditor. The auditor's role involved reviewing all the work conducted by the two initial evaluators and providing suggestions for improvement. To evaluate the saturation level of the previously defined domains and categories, the two descriptions that were initially set aside were subsequently analyzed. This final step of the process resulted in the inclusion of a few additional meaning units.

Results: Quantitative Study

Suicide Notes and Suicide Attempts

In the first sample, 38 participants (4.5%) had written a suicide note in their lifetime and 35 (4.2%) had previously attempted suicide. Twenty-four participants had started to write a suicide note but did not finish it and 14 had finished the note. Of those who indicated how many notes they had started or ended, the majority ($n = 28$) stated that they wrote only one note and eight wrote more than one. The mean elapsed time since note writing was 14.30 years ($SD = 11.75$). In a logistic regression model with the variable of writing a suicide note as a predictor, significant sociodemographic variables were also included as predictors (which significantly related to lifetime suicide attempts): Marital status, chronic disease, and the diagnosis of a mental disorder. The logistic regression model was globally significant, $\chi^2_{(4)} = 62.68$, $p < .001$; -2 Log likelihood $= 228.39$, $p < .001$; R^2(Nagelkerke) $= .25$; $\chi^2_{(3)}$(Hosmer and Lemeshow Test) $= 3.61$, $p > .05$. The correct percentage of classification was 96.7%. Writing a suicide note made a significant contribution in predicting the lifetime presence of a suicide attempt, $B = 2.474$, $SE = .422$, $p < .001$, 95% CI [1.630, 3.426]; $OR = 11.87$, 95% CI [4.93, 28.60] (see Table 1).

In the second sample, 83 participants (8.2%) had written a suicide note in their lifetime and 50 (4.9%) had previously attempted suicide. 46 had individuals started to write a note but did not finish it, and 37 had finished the note. Of those who

indicated starting or finishing a note, the majority, 36, stated that they wrote only one note and 30 reported more than one. The mean elapsed time was 34.73 months since note writing ($SD = 27.24$). In a logistic regression model with writing a suicide note as a predictor, significant sociodemographic variables were also included as predictors: Sex, working-student status, chronic disease, and the diagnosis of a mental disorder. The model was globally significant, $\chi^2_{(5)} = 128.05$, $p < .001$; -2 Log likelihood $= 263.17$, $p < .001$; R^2(Nagelkerke) $= .37$; $\chi^2_{(3)}$(Hosmer and Lemeshow Test) $= 1.63$, $p > .05$. The correct percentage classification was 96.1%. Writing a suicide note significantly contributed to predicting the lifetime presence of a suicide attempt, $B = 2.777$, $SE = .391$, $p < .001$, 95% CI [2.012, 3.806]; $OR = 16.08$, 95% CI [8.04, 32.16].

Suicide Notes and Self-Harming Behaviors

In the first sample, 92 (10.9%) described the occurrence of lifetime self-harming behaviors. In a logistic regression model with writing a suicide note as a predictor, significant sociodemographic variables (which significantly related to lifetime self-harming behaviors) were also included as predictors: Sex, marital status, being currently unemployed, chronic disease, and the diagnosis of a mental disorder. The regression model was globally significant, $\chi^2_{(6)} = 90.79$, $p < .001$; -2 Log likelihood $= 489.92$, $p < .001$; R^2 (Nagelkerke) $= .21$; $\chi^2_{(5)}$ (Hosmer and Lemeshow Test) $= 5.24$, $p > .05$. The correct percentage classification was 90.1%. Writing a suicide note made a significant contribution in predicting the lifetime presence of self-harming behaviors, $B = 2.561$, $SE = .397$, $p < .001$, 95% CI [1.755, 3.470]; $OR = 12.95$, 95% CI [6.19, 27.08].

In the second sample, 178 (17.6%) described the occurrence of lifetime self-harming behaviors. In a logistic regression model with writing a suicide as a predictor, significant demographic variables were also included as predictors: Sex, chronic disorder, and the presence of a diagnosis of a mental disorder. The regression model was globally significant, $\chi^2_{(4)} = 175.12$, $p < .001$; -2 Log likelihood $= 764.31$, $p < .001$; R^2(Nagelkerke) $= .26$; $\chi^2_{(3)}$(Hosmer and Lemeshow Test) $= 0.29$, $p > .05$. The correct percentage classification was 85.9%. Writing a suicide significantly contributed to predicting the lifetime presence of self-harming behaviors, $B = 2.176$, $SE = .278$, $p < .001$, 95% CI [1.608, 2.818]); $OR = 8.81$, 95% CI [5.17, 15.01].

Table 1. Regression Models predicting Suicidal Behaviors for Both Samples

Suicidal behavior	χ^2/R^2	B	SE	p	95% CI of B		OR	95% CI of OR	
					LL	UL		LL	UL
Suicide attempt – Sample 1	62.68			.001					
Writing a suicide note		2.474	.442	.001	1.630	3.426	11.87	4.93	28.60
Suicide attempt – Sample 2	128.05			.001					
Writing a suicide note		2.777	.391	.001	2.012	3.806	16.08	8.04	32.16
Self-harming behaviors – Sample 1	90.79			.001					
Writing a suicide note		2.561	.376	.001	1.755	3.470	12.95	6.19	27.08
Self-harming behaviors – Sample 2	175.12			.001					
Writing a suicide note		2.176	.278	.001	1.608	2.818	8.81	5.17	15.01
Suicidal ideation - Sample 1	.450			.001					
Writing a suicide note		4.656	1.202	.001	2.526	7.051	–	–	–
Suicidal ideation - Sample 2	.453			.001					
Writing a suicide note		6.739	1.045	.001	4.656	8.948	–	–	–

Suicide Notes and Suicidal Ideation

In the first sample, the mean score for the SIS was 11.93 (SD = 4.68). In a multiple linear regression model, in addition to the variables of writing a suicide note and depressive symptoms, significant sociodemographic variables were included (which significantly related to suicidal ideation): Marital status, education, being unemployed, chronic disease, and the diagnosis of a mental disorder. The model was globally significant, R^2 =. 450, F = 97.19, p <. 001. Writing a suicide note related significantly to suicidal ideation, controlling for current depressive symptoms and relevant sociodemographic variables, B = 4.656, SE = 1.202, p <. 001, 95% CI [2.526, 7.051].

In Sample 2, the mean score for the SIS was 12.66 (SD = 5.71). The variable diagnosis of a mental disorder correlated with suicidal ideation, thus it was included in the regression model as a predictor in addition to the variables of writing a suicide note and current depressive symptoms. The model was globally significant, R^2 =. 453, F = 237.35, p <. 001. Writing a suicide note was also significantly related to suicidal ideation, B = 6.739, SE = 1.045, p <. 001, 95% CI [4.656, 8.948].

Results: Qualitative Study

The analysis of the suicide notes of the 18 participants revealed the presence of 58 units of meaning that allowed for the definition of 5 domains: Suffering; Guilt; Relationship with survivors; Around the suicidal act; *Postmortem* desires (see Table 2). Besides the domain around the suicidal act, the suffering domain has the highest number of units of meaning. It reveals the participants' psychological pain expressed in the categories: Self-devaluation; Pain/distress; Abuses; Giving up/unwillingness to live. The third domain with the highest number of units of meaning has to do with guilt and the need to apologize. The respective categories are: Blaming; Excusing others; Apology and forgiveness. Another domain refers to the relationship with survivors, including the categories: Direct expression of affection towards survivors; Concern for survivors; Thanks; Burden to others. The other two remaining domains contain categories related to aspects surrounding the suicidal act, including the categories: Pre-suicide Doubts/Outbursts; Farewell; Reasons for suicide, and related to what individuals wanted to happen after their death, including the categories: Distribution of belongings; Desire for reunion; Afterlife wishes.

Table 2. Domains and its Frequency, Categories, and Illustrative Meaning Units

Domain / Frequency	Category	Meaning units
Suffering / 15	Self-devaluation	I wrote that I was nothing in simple outlines: that I hate myself,
		I'm a waste of space, that even collegue can't achieve with good grades
		That I thought it was better that I didn't exist
	Pain/distress	getting out of bed was bad enough
		how terrible I felt for as long as I could remember and I didn't know why,
	Abuses	He exposed the abuses I suffered
		That I had been desecrated, I was dirty and no longer deserved to live.
	Giving up/unwillingness to live	and no longer wanted to try. I was tired of trying and always feeling bad
		and there was always this black hole that sucked the will to exist
		and it was not worth continuing
		and that I was tired of living and breathing
		and that it wasn't worth it because I've always been, am and will always be alone
		or that I should have already ended my life.
Relationship with survivors / 11	Direct expression of affection towards survivors	I really like you mom
		and that despite being an idiot I love them all with every atom of my being. (I can't be more detailed because this question is triggering)
		And I left a text about each one that affected me positively or negatively in my life in some detail.
	Concern for survivors	It was a farewell letter with an attempt at humor, because of not wanting people to be sad about my departure,
		That because of them it took me so long to do it and for my brother not to be sad.
		I tried to find solutions and approaches with the view to mitigating my potential absence.
	Thanks	I thanked the people who were by my side,
		I thanked the friends I had at the time for helping me when I needed it.
	Burden to others	How I felt that it was for the best of all that he disappeared, that
		I'm tired of being a stumbling block in everyone's way

(Continued)

Table 2. (*Continued*)

Domain / Frequency	Category	Meaning units
Guilt / 12	Blaming	a disappointment to my mother,
		a bad sister to my brothers
		and a terrible friend to everyone around me.
	Excusing others;	that it wasn't their fault,
		I wrote that it was nobody's fault but mine
	Apology and forgiveness	Apologies to everyone around me
		apologizing for everything.
		I apologized to my parents and grandparents.
		and apologized to them
		I apologized for everything
		and that I hoped that one day they could forgive me
		I apologized to my family for having to deal with me, for the expenses they had with treatment (I stopped walking after the trauma and nobody knew why).
Around the suicidal act / 15	Pre-suicide doubts/Outbursts	outbursts,
		although I thought I wouldn't me missed it anyway
		and I spent my days wondering if anyone would even notice that I was dead
		when people knew it had happened what would they think.
	Farewell	I say goodbye of my family,
		I said goodbye to my parents and sisters
		Farewell note not only to life, but especially to my mother.
		I don't remember, but I was probably saying goodbye to a friend I had at the time or something like that
		When I was younger I wrote a goodbye letter and two years later I wrote one where I really meant everything I wrote, it just didn't end up being a goodbye letter because I didn't have the courage to commit suicide.
	Reasons for suicide	I also mentioned the reason for not wanting to live any longer.
		I wrote some, and some time ago, I no longer think much about these situations and therefore, I no longer remember them in detail. I tried to explain why,
		It would serve to explain why to do it
		I also said what I really felt about what was going on in my head.
		And how it would go to meet my will, in a thoughtful way.
		Namely taking an optimistic perspective on my possible suicide
Post-mortem desires / 5	Distribution of belongings;	I left it defined who had my belongings and which ones
		In the note I left the password for everything that belongs and needs one
	Desire for reunion	I'm going to be close to my grandmother, and I'll be really well and being loved!
		It was a letter to the family I don't remember exactly what I wrote, but I know it referred to the fact that I was going to meet my aunt (who had already died)
	Afterlife wishes	and that my wish was to be cremated.

Discussion

According to the results of the exploratory quantitative study, in each sample, writing a suicide note at some point in one's life significantly related to the presence of a lifetime suicide attempt and lifetime self-harming behaviors. Writing a suicide note was also significantly related to suicidal ideation in the two weeks prior to the assessment, controlling for the presence of current depressive symptoms and other relevant demographic variables. These results align with previous evidence from other countries that writing a suicide note is an important risk factor and a warning sign to consider for suicidal behaviors. It is noteworthy that, according to our results, writing a suicide note at some point in one's life statistically predicts suicidal ideation in the present moment, giving additional support to the evidence that writing a suicide note is an important risk factor to consider, even in a long duration. It seems to be relevant to consider a suicide note as being a last and desperate attempt to communicate (Critchley, 2018). According to Szasz

(2011), all the life-span can be considered a constant act of communication, so the act of dying should not be different. Regarding the frequency of suicidal behaviors in our samples, results align weal with previous research in Portugal. Campos and Holden (2014), within a sample of 810 Portuguese community adults, reported that 4.3% of the participants had previously attempted suicide. In a recent communication, Campos et al. (2023) reported a percentage of 16.7% of participants in a sample of 251 Portuguese adolescents who had previously exhibited self-harming behaviors.

In the exploratory qualitative study and, in general, the obtained results partly follow those of studies undertaken in other countries, namely those that have used the methodology of psychological autopsy. Similar themes were observed in previous studies, such as inner aggression (Arbeit & Blatt, 1973), love for those left behind (Pestian et al., 2012), apologies, hopelessness and advice for those left behind (Foster et al., 1997). Other themes that emerged from the texts in the present study and that also align with the literature were: Feelings of guilt (Leenaars et al., 1992), fed up with life (Shneidman & Farberow, 1960), feelings of hatred and self-punishment (Pestian et al., 2012), practical postmortem instructions (Foster et al., 1997), usually addressing to the first grade parents and more references to persons than to material goods (Arbeit & Blatt, 1973). Themes observed in previous studies that did not emerge in the descriptions of notes in the present study are economic bankruptcy, unemployment, loneliness (Leenaars et al., 1992) and pressures of everyday life (Shneidman & Farberow, 1960), which may be partly due to the age of the individuals in our sample, (i.e., in young adults these themes may not be central, due to their developmental stage). There was also an absence of themes such as terminal diseases, loss of a loved one, disabling chronic diseases (Leenaars et al., 1992) and adult trauma experience (Pestian et al., 2012), that may also have been absent because participants in our study were young adults.

Generally, the results of the present qualitative study suggest that people who wrote a suicide note have a marked focus on themselves, but also a great concern for the survivors. The focus on themselves is observed, for example, in the expression of their suffering, which is very present (the domain of "Suffering" is one of the domains with the most categories and meaning units), but also in the domain of "Guilt". When individuals wrote a suicide note, they might be directing their attention inward, expressing their personal emotions such as pain, distress, a sense of hopelessness, a lack of will to live, self-devaluation, and guilt. However, the concern with survivors also stands out. The domain "Relationship with survivors" presents four categories, which seem to reflect the relevance of others in the participants' lives. It is logical that when they wrote the suicide note, (being a moment that can be considered of thinking and farewell) they felt the need to "look" at their significant others, to say goodbye, to express what they felt for them, as well as to thank what they did for them; but in a certain way as being a burden in the lives of others. Participants were concerned about asking for forgiveness and explaining the reason(s) for suicide. Finally, even though the domain "Postmortem desires" is the one that comprises the fewest number of meaning units, it is still relevant to highlight the concern of individuals regarding a future in which they would no longer be present. A future that would be marked by their absence, but at the same time, by their indirect "presence", through the demonstrating of affection towards others, to whom they leave their personal belongings, or alternatively, joining deceased family members.

It can be said that the study of suicide notes is clinically important, given that writing a suicide note significantly relates to suicidal behaviors, like suicidal ideation, self-harming behaviors and suicide attempts which, in turn, are important proxies for suicide. Particularly noteworthy is the significant statistical relationship between writing a suicide note at some point in one's life and suicidal ideation in the present moment. This result has clinical relevance because it suggests that writing a suicide note can indicate the presence of risk, even a long time after its occurrence. Additionally, according to our results, the themes contained in suicide notes align with those of other studies, focusing on suffering and guilt, on the relationship with survivors, on the suicidal act and on post-suicide. From a clinical standpoint, addressing this kind of themes in individuals who have previously written a suicide note could be important. The possibility of working through psychological distress and guilt, and working on the individual's relationship with family and close friends, may reduce risk. Results also suggest that from a public health perspective, there should be an emphasis on educating people about warning signs, particularly about the importance of taking the writing of a suicide note seriously. This warning sign serves as both an indicator of risk for suicidal behaviors and as a form of communication. However, the results may have been influenced by the development stage of our participants. It may happen, and this should be studied in future research, that age/developmental stage may influence the perception that individuals have about suicidal acts and, therefore, what they write in a suicide note.

The studies present several potential limitations, namely that we evaluated non-clinical samples with the consequent low frequency of suicidal behaviors, as well as of suicide notes. Additionally, the number of participants in the qualitative study was small, and the studies were retrospective, thus not guaranteeing that suicidal behaviors (suicidal attempts and self-harming behaviors), did not actually occur temporally before the writing of the suicide note. Another limitation was that we grouped into a single occurrence of the variable the cases that started writing at least one note with those who concluded the note. Finally, it should be noted that researchers didn't directly analyze the actual texts that participants wrote in their notes, rather and retrospectively, researchers analyzed what participants remembered having written. This may have resulted in participants reporting a relatively smaller amount of text (relative to the actual suicide note they had previously written), and that the text might have been influenced by various memory biases. It could be also possible that individuals omitted information on purpose.

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Data sharing. Data will be made available upon reasonable request to the first author.

Authorship credit. All authors: Writing, reviewing and editing. Rui C. Campos: Conceptualization, methodology, formal analysis and writing original draft. Cátia Reixa: Investigation, formal analysis, and data curation; Paulo Cardoso: Formal analysis; Bruna Passos; Investigation and data curation.

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