

Article

Understanding Suicidal Ideation Among University Students: An Ecological Analysis of Risk and Protective Factors

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Abstract

Suicidal ideation among college students is a multicausal public health concern shaped by individual, family, social, and academic factors. Although prior research has consistently documented associations between psychological distress and suicide risk in this population, most studies analyze risk factors in isolation, leaving the joint contribution of variables across ecological levels insufficiently understood. The present study, framed within Bronfenbrenner's ecological model of human development and Joiner's interpersonal theory of suicide, examined the simultaneous influence of clinical, protective, academic, and victimization variables on suicidal ideation in college students. A cross-sectional design was employed with a sample of 553 undergraduate and graduate students (68.9% women; mean age = 20.93 years, $SD = 3.81$) from the University of Málaga (Spain), recruited through snowball and convenience sampling. Participants completed validated self-report measures of suicidal ideation (Paykel Suicide Scale), depression and anxiety (HADS), eating disorders (CBCAR), self-esteem (RSE), academic stress (SISCO), academic procrastination (APS-SF), bullying, cyberbullying, and social exclusion (QAEU), social support (QFSSS), family satisfaction, healthy habits, and family history of mental illness. Data were analyzed through Pearson and Spearman correlations and a robust multiple linear regression (ordinary least squares with HC3 robust standard errors and bias-corrected and accelerated bootstrap confidence intervals from 5000 resamples), complemented by an ordinal regression as a sensitivity analysis. The regression model accounted for 44.1% of the variance in suicidal ideation, with depression, anxiety, eating disorders, family history of mental illness, and bullying showing significant positive associations and self-esteem the strongest protective association. An ordinal regression sensitivity analysis yielded a consistent pattern, supporting the robustness of these findings. Family and social support, although correlated with lower ideation, lost statistical weight in the multivariate models, suggesting that their contribution operates indirectly, mainly through depression and self-esteem. Findings support the integration of clinical, social, and personal-resource components into college prevention programs, prioritizing early detection of psychopathology, anti-bullying protocols, interventions to strengthen self-esteem, and greater visibility of campus psychological services.



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1. Suicidal Ideation in the University Population: A Multicausal Phenomenon

Suicidal behavior is a complex, multifactorial phenomenon that cannot be explained by a single causal factor; rather, it emerges from the interaction of multiple risk and protective factors of biological, psychological, and social nature (De Beurs et al. 2021; O'Connor and Nock 2014; Turecki and Brent 2016). In the university context, this perspective is especially relevant, given that students undergo a critical life transition marked by academic, social, and personal changes that can increase exposure to psychological stressors and hinder emotional adjustment. International studies have documented a high prevalence of depressive symptoms, anxiety, and suicidal ideation in this population, establishing university students as a priority for mental health research and preventive action (Auerbach et al. 2018; Debowska et al. 2020; Demenech et al. 2021; Mortier et al. 2018).

A comprehensive understanding of this phenomenon requires moving beyond linear explanations and incorporating theoretical frameworks that account for the interaction among different levels of analysis, from the most proximal psychological mechanisms to broader structural and cultural influences. In this regard, the literature has drawn prominently on two complementary approaches: Joiner's (2005) interpersonal theory of suicide and Bronfenbrenner's (1979) ecological model of human development. According to the interpersonal theory, suicidal behavior emerges when the desire to die, resulting from the combination of perceived burdensomeness and thwarted belongingness, converges with the acquired capability for suicide, which is developed through painful or traumatic experiences and repeated exposure to physical or emotional pain (Chu et al. 2017; Joiner 2005). The ecological model, in turn, conceptualizes human behavior as the product of the dynamic interaction among hierarchically organized systems of influence: the microsystem (family, peers, educational institution), the mesosystem (interactions among contexts), the exosystem (indirect structures such as educational policies or mental health services), the macrosystem (cultural values and social norms), and the chronosystem (the temporal dimension and life transitions) (Arafat and Saleem 2024; Bronfenbrenner 1979). Combining both frameworks makes it possible to examine, within a single conceptual scheme, the psychological processes underlying suicidal desire and the systemic contexts that amplify or buffer risk during the university years.

1.1. Sociodemographic Factors Associated with Suicidal Ideation

Age is a well-established variable in research on suicidal behavior. Late adolescence and emerging adulthood are periods of heightened vulnerability, during which the risk of suicidal ideation tends to peak, and internalizing problems such as depression and anxiety predict subsequent suicidal ideation and attempts in young adulthood (Madhavan et al. 2021; Morneau-Vaillancourt et al. 2024; Orri et al. 2020; Sivertsen et al. 2023). The university stage falls precisely within this developmental period, conceptualized by Arnett (2014) as "emerging adulthood," during which young people actively explore domains such as studies, work, and intimate relationships while building their personal and professional identity. These transformations can produce uncertainty, identity crises, low perceived self-efficacy, and depressive symptoms, particularly when educational or occupational transitions are perceived as precarious (Arnett 2014; Sundqvist et al. 2024). Although some studies indicate that younger students experience greater adjustment difficulties during the early years of college, others note that the risk of suicidal ideation may persist over time depending on the psychological and social factors at play (Blasco et al. 2019; Murakami et al. 2025).

Gender is another widely studied factor in this area. Women report higher rates of suicidal ideation and attempts, whereas men show higher mortality from completed suicide

(Barrigon and Cegla-Schwartzman 2020; Miranda-Mendizabal et al. 2019). Among university students, women tend to report higher levels of depression, anxiety, and psychological distress, which may contribute to a higher prevalence of suicidal ideation (Debowska et al. 2020; Loiola et al. 2025). However, these differences are neither uniform nor universal; they are modulated by cultural variables, including conformity to gender norms. Adherence to masculine norms is consistently associated with reduced help-seeking, greater stigma, and lower use of mental health services, whereas conformity to feminine norms shows a positive relationship with engagement in therapeutic processes (Burns et al. 2025; Seedat et al. 2025).

Belonging to culturally diverse groups or having a family migration background is also a relevant variable for understanding psychological distress in university students. Students with a migrant background may face additional challenges related to cultural integration, discrimination, language barriers, identity conflicts, and difficulties accessing the educational system (Dombou et al. 2023; Ferreira and Borges 2022). Some studies have indicated that experiences of discrimination and exclusion increase the risk of mental health problems and suicidal thoughts among young people with this profile (Henríquez et al. 2024), although other research highlights that certain cultural resources, as well as family and peer support, can serve a protective function against psychological distress (Kodippili et al. 2025; Verelst et al. 2022). From the ecological perspective, these dynamics are understood as the result of the interaction between the cultural macrosystem, including norms, values, and attitudes toward diversity, and the individual's relational experiences in more immediate environments (Bronfenbrenner 1979).

1.2. Psychological Vulnerability and Risk of Suicidal Ideation

Depression is the most robust and replicated predictor of suicidal behavior. Its significant association with ideation, attempts, and death by suicide is amply documented (Ribeiro et al. 2018; Riera-Serra et al. 2023), and the risk increases markedly when it co-occurs with other factors such as previous attempts, cumulative life adversity, or access to lethal means (Moitra et al. 2021). From a cognitive perspective, depression is characterized by negative thought patterns, intense hopelessness, and a pessimistic view of the future (Gotlib and Joormann 2010); within this context, suicidal ideation may emerge as an escape route from suffering perceived as permanent and unchangeable (Pompili 2019). In the university setting, the combination of academic demands and depressive symptoms substantially raises the risk of suicidal ideation, with depression being the strongest individual predictor in this population (Akram et al. 2020; Anastasiades et al. 2017; Zou et al. 2024). From the interpersonal theory of suicide (Joiner 2005), feelings of worthlessness, intense self-criticism, and social withdrawal characteristic of depression intensify both perceived burdensomeness and thwarted belongingness, shaping the psychological substrate from which suicidal desire emerges (Zahn et al. 2015).

Anxiety, although historically less studied in this context, also contributes independently to suicidal risk, even after controlling for the effect of depression (Sareen et al. 2005; Thibodeau et al. 2013). Intense anxiety states characterized by physiological hyperarousal, persistent worry, and difficulty tolerating uncertainty can become chronic and produce psychological distress that is hard to manage in young people. In fact, recent studies with large university samples have shown that the comorbidity of moderate or severe depressive and anxious symptoms can multiply the probability of presenting different levels of suicidality between 10 and 47 times compared with students without diagnosis or symptoms (Casey et al. 2022; Fang et al. 2024; Xu et al. 2024).

Eating disorders (EDs) have shown a consistent association with greater risk of suicidal ideation in young populations, even after adjusting for the presence of depression, anxiety,

and substance use (Amiri and Khan 2023; Chen et al. 2025; Smith et al. 2019). Intense self-criticism, body dissatisfaction, and feelings of shame and guilt associated with EDs facilitate the emergence of self-destructive cognitions (Paranjothy and Wade 2024; Sander et al. 2021). From the interpersonal theory of suicide, behaviors such as severe food restriction or purging may contribute to the development of the so-called “acquired capability for suicide,” insofar as they involve repeated exposure to self-inflicted physical pain; at the same time, the perception of being a burden and social disconnection are particularly relevant mechanisms in people with EDs (Gramaglia et al. 2025; Zeppegno et al. 2021). In the university setting, even subthreshold ED symptoms have been associated with a 2- to 11-fold increase in the probability of suicide attempts (Lipson and Sonnevile 2020; Mandak-Arjona et al. 2026).

A family history of mental illness and suicidal behavior is likewise a first-order vulnerability factor. People who have lost a relative to suicide have a four- to fivefold higher risk of dying by the same cause, and parental psychopathology nearly triples the probability of suicidal ideation or attempts in their children (Ballard et al. 2019; Bratu et al. 2025; Tsai et al. 2023). This risk is transmitted through both biological mechanisms (shared genetic predisposition) and environmental ones: exposure to family contexts with a high psychopathological burden increases vulnerability even in the absence of clinical diagnosis in the individual (Kendler et al. 2021; Qin et al. 2002). From the ecological model (Bronfenbrenner 1979), family history operates primarily within the microsystem, limiting the quality of available emotional support and the coping resources developed during the formative years (Kamali et al. 2024).

1.3. Personal, Family, and Social Protective Resources

In contrast to the risk factors above, research has identified a set of personal, family, and social variables with protective capacity against suicidal ideation. Self-esteem, defined as the global evaluation that an individual makes of his or her own worth or competence (Rosenberg 1965), is one of the most relevant constructs. High levels of self-esteem are consistently associated with a lower probability of suicidal ideation, whereas low self-esteem is a strong predictor of suicidal thoughts (Buecker et al. 2025; Lippo et al. 2022; Mandak-Arjona et al. 2026; Satyander and Kumar 2025). People with low self-esteem tend to display greater self-criticism, feelings of inferiority, and reduced coping capacity in stressful situations, conditions that promote the emergence of self-destructive cognitions (Li et al. 2023; Nguyen et al. 2019). From the interpersonal theory of suicide, low self-esteem may reinforce the perception of being a burden by feeding the belief that one’s life lacks value or meaning for the social environment, thereby contributing to the development of the suicidal desire (Teismann et al. 2024).

Healthy habits, including regular physical activity, a balanced diet, and adequate sleep, have also been inversely associated with depressive symptoms, psychological distress, and suicidal ideation in adolescents and university students. The relationship between physical activity and mental health follows a dose–response pattern: the higher the frequency of practice, the greater the benefits for psychological well-being and the lower the suicide risk (Grasdalsmoen et al. 2020; Kim and Kwak 2024; Liu et al. 2025; Michael et al. 2020).

In the relational domain, family social support stands out as one of the most consistent protective factors against suicidal ideation. From the ecological model, it operates within the individual’s microsystem, constituting one of the most direct influences on psychological well-being (An et al. 2024; Euseche and Muñoz-García 2025). Positive family relationships can provide a safe environment for emotional expression, the development of adaptive coping strategies, and access to formal help resources when mental health problems arise in young people (Lynch et al. 2022). In the university context, students who perceive higher

levels of family social support consistently show lower levels of depression, anxiety, and suicidal ideation (Hu et al. 2023; Miao et al. 2024; Selak et al. 2024).

Closely linked to the above, family satisfaction, understood as the subjective response by which family members evaluate the quality of communication, cohesion, and adaptability of the family system (Sobrinho 2008), also shows an inverse and consistent relationship with suicidal ideation in adolescents and young people (Chang et al. 2019; Mandak-Arjona et al. 2026; Mendoza-Soto 2023; Samm et al. 2010). From this perspective, not only family functioning in objective terms (Peng et al. 2023; Yang et al. 2022) but also the subjective perception of well-being, cohesion, and support within the family nucleus plays a key role in preventing suicide risk (Morales et al. 2017).

Social support from friends is likewise a fundamental psychosocial resource during adolescence and young adulthood. Friendships based on trust, reciprocity, and emotional support reduce loneliness and isolation, contributing to subjective well-being and mental health (Alsarrani et al. 2022). In adolescents and university students, support from friends is consistently associated with lower levels of depressive symptoms, anxiety, and suicidal ideation (Aizpurua et al. 2021; Biswas et al. 2020; Howlader et al. 2024; Scardera et al. 2020). In the university context, support from classmates also shows an inverse association with suicidal thoughts, although this effect may be limited when stigma toward mental health persists or when information about available help resources is scarce (Hussein and Yousef 2024; Samari et al. 2022).

1.4. Academic Factors and Risk of Suicidal Ideation

Academic stress is one of the most prevalent stressors in university life and is related to the demands inherent to higher education, including workload, performance pressure, tight deadlines, and continuous assessment (Barbayannis et al. 2022; Córdova-Olivera et al. 2023; Pascoe et al. 2020). From a psychopathological standpoint, the literature has shown that academic stress is positively associated with suicidal ideation in university students; however, this effect is not homogeneous, as variables such as depression, anxiety, resilience, and coping styles can significantly modulate the magnitude of risk, acting as vulnerability or protective factors depending on their presence and quality (Desai et al. 2021; Okechukwu et al. 2022; Salifu and Yidana 2024).

Academic procrastination, described as the tendency to unnecessarily postpone the completion of relevant tasks, has emerged as another behavior linked to psychological distress in this group. Empirical evidence indicates a positive association between academic procrastination and suicidal ideation, with small-to-moderate effect sizes that have been observed consistently across different educational and cultural contexts and that persist even after controlling for the presence of depression, suggesting that it constitutes a relatively independent risk factor (Cjuno et al. 2022; Delgado et al. 2025). However, this association is neither direct nor linear; rather, it appears to be mediated or moderated by variables such as self-control, test anxiety, perfectionism, or psychological capital. Likewise, factors such as loneliness or certain personality dysfunctions may amplify this relationship, configuring profiles of greater vulnerability within the academic domain (Hamdan-Mansour et al. 2025; Zhang et al. 2024).

1.5. Social Victimization and Risk of Suicidal Ideation

Experiences of social victimization are another relevant factor in understanding suicidal ideation (Van Geel et al. 2014, 2021). Bullying and cyberbullying are consistently associated with higher levels of suicidal ideation and a greater risk of suicidal behaviors among adolescent and young victims, and the co-occurrence of both forms of victimization further increases this risk in a cumulative or synergistic way (Baiden and Tadeo 2020; Holt

et al. 2015; Li et al. 2022; Moore et al. 2017). This relationship is mediated by multiple psychological factors, including depression, anxiety, low self-esteem, loneliness, and hopelessness, such that victimization not only acts as a direct stressor but also fosters emotional and cognitive states that increase vulnerability to suicide (Maurya et al. 2022). From the interpersonal theory of suicide (Joiner 2005), bullying and cyberbullying progressively erode self-esteem, the sense of social connection, and the perception of personal worth, activating the mechanisms of thwarted belongingness and perceived burdensomeness (Brailovskaia et al. 2020; Mitchell et al. 2018). In the university context, bullying takes more subtle forms than in earlier stages, predominantly relational, verbal, psychological, and digital, which complicates its identification and reporting and may heighten its cumulative psychological impact on victims (Gómez-Galán et al. 2021; Tay 2023).

Social exclusion, in both its objective dimension (low social participation, scarcity of support networks) and its subjective dimension (feelings of loneliness or lack of integration), is also associated with greater risk of suicidal ideation in adolescents and young people (Aboagye et al. 2022; Calati et al. 2019; Campisi et al. 2020). Among university students, findings suggest that part of this effect is explained through depressive symptoms, pointing to the existence of mediating mechanisms in this relationship (Zhao 2024; Zhu et al. 2024). Taken together, these results underscore the importance of considering the quality of social relationships and the degree of integration in the educational environment as key factors in the prevention of suicide risk.

1.6. Suicidal Ideation as the Result of Interacting Risk and Protective Factors

Drawing on the review of individual, family, social, and contextual levels above, suicidal ideation in university students should be understood as a clearly multicausal, dynamic, and interactive phenomenon, in which risk and protective factors operate simultaneously, cumulatively, and, in many cases, bidirectionally. The present study proposes an integrative conceptual approach in which sociodemographic factors constitute the most distal level of influence, followed by individual psychological vulnerability (anxiety, depression, eating disorders, and a family history of mental illness), personal resources for emotional adjustment and psychological well-being (self-esteem and healthy habits), the family context (family social support and family satisfaction), the social context (support from friends and classmates, as well as victimization experiences: bullying, cyberbullying, and social exclusion), and academic stressors (academic stress and academic procrastination). All of these factors interact dynamically in shaping the risk of suicidal ideation in this population.

This hierarchical organization is grounded in Bronfenbrenner's (1979) ecological model of human development, which conceptualizes human behavior as the result of the interaction among multiple interdependent systems ranging from the most immediate contexts of the individual to the broader sociocultural influences. From this perspective, the factors identified do not operate in isolation; their impact on suicidal ideation is articulated through processes of interaction across levels, where the accumulation of stressors and the availability of protective resources determine differential trajectories of risk or resilience. This approach is complemented by the interpersonal theory of suicide (Joiner 2005); the various factors analyzed converge, directly or indirectly, on two central psychological processes, the perception of social belonging and the sense of personal worth, which are eroded by risk factors and strengthened by protective factors, thereby modulating the probability of suicidal ideation.

In this context, the present study is justified by a relevant limitation in the prior literature: most research on suicidal ideation in university students tends to analyze risk factors in isolation or with a focus on specific domains of the ecological model, paying limited attention to the simultaneous integration of variables from different levels within a

single explanatory framework. There is, therefore, a need for studies that comprehensively address the interaction among psychological, family, social, and academic factors and their joint contribution to the development of suicidal ideation in university students.

In line with this rationale, the aim of this study was to examine the relationship between psychological, family, social, and academic factors and suicidal ideation in university students, identifying both the risk factors and the protective factors involved in its emergence.

1.7. Specific Objectives

The objectives of this study were as follows: (a) to determine the relationship between psychological vulnerability (depression, anxiety, eating disorders, and a family history of mental illness) and levels of suicidal ideation; (b) to evaluate the influence of individual, family, and social protective factors (self-esteem, healthy habits, family social support and family satisfaction, and support from friends and classmates) on suicidal ideation; (c) to analyze the impact of social victimization experiences (bullying, cyberbullying, and social exclusion) and academic stressors (academic stress and academic procrastination) on suicidal ideation; and (d) to build an integrative approach that identifies the most relevant predictors of suicidal ideation in the sample, simultaneously considering risk and protective variables.

Based on the objectives outlined above, and consistent with the ecological framework, the research hypotheses were organized into five thematic blocks:

H1. *Psychological vulnerability, operationalized as higher levels of depression, anxiety, eating-disorder symptoms, and a family history of mental illness, will be positively associated with suicidal ideation.*

H2. *Protective resources, namely, self-esteem, healthy habits, family social support, family satisfaction, and support from friends and classmates, will be negatively associated with suicidal ideation.*

H3. *Academic risk factors, namely, academic procrastination and perceived academic stress, will be positively associated with suicidal ideation.*

H4. *Social victimization, namely, bullying, cyberbullying, and social exclusion, will be positively associated with suicidal ideation.*

H5. *Psychological, family, academic, and social variables will jointly predict suicidal ideation (integrative model), and protective factors (self-esteem, family/social support, and family satisfaction) will retain a protective effect even after controlling for risk factors.*

2. Method

2.1. Research Design

A quantitative, cross-sectional study was conducted to analyze the relationship between sociodemographic, psychological, family, social, academic, and victimization variables and suicidal ideation in the university population, as well as to explore possible interactions among these variables.

2.2. Participants

The total sample consisted of 553 university students. With regard to gender distribution, 381 (68.9%) identified as women, 158 (28.6%) identified as men, and the remaining 14

(2.5%) identified as nonbinary or other gender identities. The mean age of the participants was 20.93 years ($SD = 3.81$), with most participants being of Spanish nationality. However, 84 (15.2%) of the students reported being of foreign origin or having one or both parents of foreign origin.

Regarding their academic and employment situation, 423 (76.5%) participants reported being engaged exclusively in their studies, while 130 (23.5%) combined academic training with paid work. Concerning the level of studies, the great majority, 518 (93.7%), were enrolled in an undergraduate program, compared with 31 (5.6%) in a master's program and 4 (0.7%) in a doctoral program.

Finally, with respect to the Psychological Counseling Service (Servicio de Atención Psicológica; SAP, Málaga, Spain) of the University of Málaga, 306 (55.3%) students reported being aware of this resource, compared with 236 (42.7%) who reported not knowing about it, while 11 (2%) did not answer this question. Among those who reported being aware of the service, some indicated that they did not use it because of various reasons, including a lack of information, fear or shame, access difficulties, or a preference for private psychological care.

2.3. Procedure

Data were collected between February and June 2025 by means of an online, anonymous, and self-administered questionnaire targeting undergraduate and graduate students at the University of Málaga. The questionnaire was developed using Google Forms (Google LLC, Mountain View, CA, USA). To facilitate participation, a QR code was generated that allowed direct access to the form from mobile devices. Completing all the questionnaires took participants approximately 15 to 20 min.

The questionnaire began with an information sheet that explained the objectives of the study, the voluntary nature of participation, the confidentiality of the data, and their use exclusively for research purposes. In addition, an informed consent checkbox was included, which had to be explicitly accepted by participants in order to access the rest of the questionnaire.

Sampling was carried out using a nonprobabilistic snowball strategy, asking an initial group of students to disseminate the questionnaire among their university peers after completing it. This was complemented by convenience sampling, contacting via email faculty members from the five branches of knowledge of the university, who were sent a formal request for cooperation in disseminating the questionnaire among their students. Some instructors agreed to participate, providing access to the questionnaire in their courses.

2.4. Instruments

The instruments included in the questionnaire are described below.

Suicidal ideation. The Paykel Suicide Scale, developed by Paykel et al. (1974) and validated in Spain by Fonseca-Pedrero et al. (2018), was used. This scale comprises five items that assess thoughts of death (Items 1 and 2), suicidal ideation (Items 3 and 4), and suicide attempts (Item 5). The response format is dichotomous ("Yes" = 1; "No" = 0), and it shows adequate internal consistency ($\alpha = 0.84$).

Eating disorders (EDs). The Brief Questionnaire of Risky Eating Behaviors (Cuestionario Breve de Conductas Alimentarias de Riesgo; CBCAR), developed by Unikel-Santoncini et al. (2004), was used. This instrument is composed of 10 items with a 4-point Likert-type response format (0 = never or almost never; 3 = very frequently) that assess the frequency of risk behaviors. It has adequate reliability ($\alpha = 0.83$).

Anxiety and depression. To assess these variables, the Hospital Anxiety and Depression Scale (HADS), developed by Zigmond and Snaith (1983) and adapted to the Spanish

context by [Quintana et al. \(2003\)](#), was used. It consists of 14 items distributed in two 7-item subscales (anxiety and depression), with Likert-type responses (1 = never; 4 = always). Internal consistency was $\alpha = 0.85$ for the anxiety subscale and $\alpha = 0.78$ for the depression subscale.

Academic stress. One of the dimensions of the SISCO Academic Stress Inventory ([Barraza-Macías 2018](#)) was used, specifically the one referring to academic stressors. This dimension consists of 8 items with a 5-point Likert format (1 = never; 5 = always) and presents adequate internal consistency ($\alpha = 0.87$).

Procrastination. Academic procrastination was assessed using the Academic Procrastination Scale-Short Form (APS-SF; [McCloskey 2011](#)), validated in Spanish by [Brando-Garrido et al. \(2020\)](#). This scale consists of 5 items with a 5-point Likert format (1 = strongly disagree; 5 = strongly agree), with a total score range of 5 to 25. Higher scores indicate a greater tendency to postpone academic tasks. It shows adequate internal consistency ($\alpha = 0.87$).

Bullying, cyberbullying, and social exclusion. These variables were assessed using the Questionnaire on Bullying Among University Students (Cuestionario sobre Acoso entre Estudiantes Universitarios; QAEU; [Martínez-Ramón et al. 2020](#)). This instrument distinguishes between three roles (victim, aggressor, and observer); however, in the present study, only the victimization dimension was analyzed. The scale shows good internal consistency for bullying ($\alpha = 0.87$) and cyberbullying ($\alpha = 0.84$), whereas the social exclusion subscale shows moderate consistency ($\alpha = 0.75$).

Self-esteem. The Rosenberg Self-Esteem Scale (RSE; [Rosenberg 1965](#)), adapted to Spanish by [Atienza et al. \(2000\)](#), was used. This instrument consists of 10 items with a 4-point Likert response format (1 = strongly disagree; 4 = strongly agree) and presents excellent reliability ($\alpha = 0.89$).

Social support. To assess social support, the Questionnaire on the Frequency of and Satisfaction With Social Support ([García-Martín et al. 2016](#)) was used. This instrument measures both the frequency of and satisfaction with different types of support (emotional, instrumental, and informational). In the present study, only satisfaction with the support received from different sources was analyzed: parents ($\alpha = 0.85$), friends ($\alpha = 0.89$), and classmates ($\alpha = 0.92$).

Family satisfaction. A reduced and adapted version of the Family Satisfaction Scale ([Olson et al. 1990](#)), which assesses satisfaction with family cohesion and adaptability, was used. It comprises 10 items with a 5-point Likert format (1 = strongly disagree; 5 = strongly agree) and shows excellent internal consistency ($\alpha = 0.94$).

Healthy habits. Healthy habits were assessed by means of an ad hoc scale composed of 7 items designed to measure the frequency of different lifestyle behaviors (healthy diet, sleep duration and quality, physical activity, among others). A Likert-type response format ranging from never to frequently was used. Given the heterogeneous nature of the behaviors evaluated, internal consistency was low ($\alpha = 0.43$).

Sociodemographic variables and family history. These variables were assessed using an ad hoc questionnaire designed specifically in light of the research objectives of the present study. With respect to sociodemographic variables, information was collected on gender, age, nationality, level of studies, employment status, and awareness of the psychological counseling services offered by the university. Likewise, family history was assessed through items with a dichotomous response format (yes/no), aimed at identifying the presence of risk factors in the family environment, such as previous mental health diagnoses, substance use, and the existence of self-injurious behaviors or suicide in close relatives.

2.5. Data Analysis

All statistical analyses were performed using IBM SPSS Statistics 29 (IBM Corp., Armonk, NY, USA) and jamovi 2.7.38 (The jamovi project, Sydney, Australia) to determine the variables that explain suicidal ideation. Firstly, Pearson and Spearman correlations were used to determine the relationship between suicidal ideation and each of the other study variables. All analyses are based on the 530 participants with complete data on all study variables. Because gender was modeled as a binary variable (woman/man), participants identifying as nonbinary or another gender identity ($n = 14$) were excluded from the multivariable analyses. The remaining nine participants were excluded due to missing data on other study variables.

As the main analysis, a multiple linear regression was estimated using the GAMLj3 module (General Analyses for Linear Models, version 3.6.5) in Jamovi, with all independent variables included simultaneously. As a complementary sensitivity analysis, an ordinal logistic regression model with proportional odds was estimated using the same set of predictor variables to test the robustness of the results obtained via linear regression. Both analyses were estimated using robust standard errors (HC3) and bootstrap confidence intervals corrected for bias and acceleration (BCa), obtained from 5000 resamples, in order to increase the robustness of the estimates.

2.6. Ethical Considerations

The research was conducted in accordance with the ethical principles set forth in the Declaration of Helsinki, as well as with the international regulations applicable to research with human beings in the social sciences. The project was submitted to evaluation and received approval from the Ethics Committee of the University of Málaga (registration no. 59-2025-H).

Data processing and storage were carried out in accordance with current data protection legislation, ensuring that the information obtained was used exclusively for scientific purposes. The entire procedure was conducted in compliance with Spanish Organic Law 3/2018 of 5 December on the Protection of Personal Data and Guarantee of Digital Rights (LOPDGDD).

To avoid conditioning participants' responses to the item assessing their awareness of the University's Psychological Counseling Service (SAP), this service was not mentioned in the questionnaire presentation. At the end of the questionnaire, participants were provided with information about psychological support resources: they were informed of the national suicide crisis helpline of the Spanish Ministry of Health (024), available 24 h a day, and of the University's Psychological Counseling Service (SAP), a free and confidential clinical service, for which they could request an appointment, managed by the Faculty of Psychology of the University of Málaga.

3. Results

Table 1 summarizes the responses of the 553 students to each item of the Paykel Suicide Scale (Paykel et al. 1974), using the Spanish version validated by Fonseca-Pedrero et al. (2018).

Table 2 presents the Pearson and Spearman correlation matrix for study variables and suicidal ideation. The two coefficients differ only slightly. The results showed that suicidal ideation was statistically and positively correlated with multiple indicators of psychological distress and psychosocial risk, including a family history of mental illness, eating disorders, anxiety, depression, academic stress, academic procrastination, bullying, cyberbullying, and social exclusion.

Table 1. Descriptive Statistics and Response Distribution for the Items of the Spanish Version of the Paykel Suicide Scale ($N = 553$).

Items	Range (0 = no, 1 = yes)	<i>M</i>	<i>SD</i>	Yes <i>n</i> (%)	No <i>n</i> (%)
1. Have you ever felt that life was not worth living?	0–1	0.43	0.50	240 (43.4)	313 (56.6)
2. Have you ever wished you were dead? For instance, that you could go to sleep and not wake up?	0–1	0.33	0.47	184 (33.3)	369 (66.7)
3. Have you ever thought of taking your life, even though you would not really do it?	0–1	0.37	0.48	205 (37.1)	348 (62.9)
4. Have you ever reached the point where you seriously considered taking your life, or perhaps made plans how you would go about doing it?	0–1	0.17	0.37	92 (16.6)	461 (83.4)
5. Have you ever made an attempt to take your life?	0–1	0.09	0.28	48 (8.7)	505 (91.3)

Note: Participants completed the Spanish version of the Paykel Suicide Scale validated by [Fonseca-Pedrero et al. \(2018\)](#). The item wording presented in this table is an English translation provided for the convenience of international readers. *M* = mean; *SD* = standard deviation; *n* = number of participants. Response options: 0 = No, 1 = Yes.

Table 2. Pearson and Spearman correlation matrix between the study variables and suicidal ideation.

Variable	Suicidal Ideation	
	<i>r</i> Pearson	Rho Spearman
1. Age	0.087 *	0.035
2. Gender	0.042	0.048
3. Foreign origin	0.047	0.030
4. Family history of mental illness	0.277 **	0.303 **
5. Eating disorders	0.343 **	0.309 **
6. Anxiety	0.460 **	0.469 **
7. Depression	0.494 **	0.487 **
8. Self-esteem	−0.532 **	−0.525 **
9. Healthy habits	−0.177 **	−0.141 **
10. Family satisfaction	−0.407 **	−0.409 **
11. Family social support	−0.371 **	−0.370 **
12. Friends' social support	−0.236 **	−0.232 **
13. Classmates' social support	−0.267 **	−0.237 **
14. Academic stress	0.124 **	0.131 **
15. Academic procrastination	0.216 **	0.211 **
16. Bullying	0.325 **	0.305 **
17. Cyberbullying	0.249 **	0.235 **
18. Social exclusion	0.249 **	0.236 **

Note: $N = 530$. * $p < 0.05$. ** $p < 0.01$.

Conversely, suicidal ideation was negatively correlated with all protective factors, including self-esteem, healthy habits, family satisfaction, and social support from family, friends, and classmates. Notably, self-esteem showed the strongest negative association with suicidal ideation.

Regarding sociodemographic variables, no significant correlations were observed between suicidal ideation and either gender or foreign origin. Age showed a very weak, albeit statistically significant, positive correlation.

To identify the factors associated with suicidal behavior, a multiple linear regression analysis was performed using ordinary least squares (OLS), estimating robust standard errors and using BCa bootstrap confidence intervals obtained from 5000 samples. The independent variables included were gender, foreign origin, age, family history of mental illness, eating disorders, anxiety, depression, self-esteem, healthy habits, family satisfaction, family social support, social support from friends and classmates, academic stress, academic procrastination, bullying, cyberbullying, and social exclusion. The model was statistically

significant, $F(18, 511) = 22.44$, $p < 0.001$, explaining 44.1% of the variance in suicidality ($R^2 = 0.441$; adjusted $R^2 = 0.422$).

Analysis of the assumptions indicated no multicollinearity issues ($VIF = 1.05$ – 2.75). Heteroscedasticity was detected using the Breusch–Pagan test, $\chi^2(18) = 36.75$, $p = 0.006$, as well as slight deviations from normality in the residuals (Shapiro–Wilk = 0.977 , $p < 0.001$), which justifies the use of robust standard errors and bootstrap estimation.

These results show that suicidal ideation among university students is primarily associated with higher levels of psychological distress, victimization experiences, and academic difficulties. Conversely, self-esteem, social support, and family environment quality serve as vital protective factors.

Regarding the coefficients of the model, several variables showed significant associations with suicidal ideation (see Table 3). Specifically, depression, anxiety, eating disorders, and family history of mental illness were positively associated with suicidal ideation. Among the victimization indicators, bullying showed a significant positive association, whereas the social exclusion variable showed a significant negative regression coefficient. Cyberbullying, by contrast, did not reach statistical significance in the final model.

Table 3. Coefficients from the multiple linear regression analysis on suicidal ideation.

Variables	Estimate	SE	95% Confidence Intervals		β	β 95% Confidence Intervals		df	t	p	η^2p
			Lower	Upper		Lower	Upper				
(Intercept)	0.608	1.302	−1.917	2.949	0.009	−0.093	0.118	511	0.467	0.641	0.441
1. Age	−0.151	0.129	−0.400	0.092	−0.092	−0.242	0.057	511	−1.172	0.242	0.003
2. Gender	−0.054	0.185	−0.398	0.316	−0.030	−0.233	0.191	511	−0.291	0.771	0.000
3. Foreign origin	0.031	0.027	−0.020	0.083	0.043	−0.028	0.114	511	1.179	0.239	0.003
4. Family history of mental illness	0.700	0.210	0.297	1.095	0.123	0.051	0.192	511	3.341	<0.001	0.023
5. Eating disorders	0.391	0.125	0.147	0.641	0.121	0.046	0.194	511	3.130	0.002	0.020
6. Anxiety	0.426	0.132	0.169	0.671	0.149	0.061	0.237	511	3.229	0.001	0.020
7. Depression	0.469	0.178	0.148	0.827	0.140	0.047	0.247	511	2.642	0.008	0.015
8. Self-esteem	−0.687	0.145	−0.958	−0.401	−0.255	−0.355	−0.144	511	−4.739	<0.001	0.052
9. Healthy habits	−0.011	0.134	−0.273	0.240	−0.003	−0.075	0.066	511	−0.082	0.935	0.000
10. Family satisfaction	−0.078	0.110	−0.280	0.129	−0.040	−0.156	0.072	511	−0.702	0.483	0.001
11. Family social support	−0.143	0.087	−0.308	0.023	−0.091	−0.208	0.009	511	−1.642	0.101	0.006
12. Friends' social support	0.079	0.083	−0.076	0.237	0.046	−0.045	0.138	511	0.954	0.341	0.002
13. Classmates' social support	−0.093	0.075	−0.229	0.053	−0.057	−0.147	0.034	511	−1.245	0.214	0.004
14. Academic stress	−0.192	0.108	−0.399	0.017	−0.071	−0.149	0.006	511	−1.779	0.076	0.007
15. Academic procrastination	0.084	0.059	−0.030	0.201	0.051	−0.015	0.126	511	1.424	0.155	0.004
16. Bullying	0.989	0.274	0.476	1.523	0.219	0.102	0.328	511	3.608	<0.001	0.032
17. Cyberbullying	−0.310	0.292	−0.842	0.235	−0.058	−0.172	0.045	511	−1.063	0.288	0.003
18. Social exclusion	−0.246	0.125	−0.495	−0.010	−0.093	−0.185	−0.003	511	−1.964	0.050	0.008

Note: $N = 530$. Estimate = unstandardized coefficient; SE = robust standard error (HC3); β = standardized coefficient; 95% confidence intervals are bias-corrected and accelerated (BCa) bootstrap intervals from 5000 resamples; η^2p = partial eta squared.

Among the protective factors, self-esteem showed the strongest negative association with suicidal ideation. Conversely, healthy habits, family satisfaction, family social support, and social support from friends and classmates did not reach statistical significance. In addition, the sociodemographic variables (age, gender, and foreign origin) and the academic variables (academic stress and academic procrastination) did not show statistically significant associations.

The omnibus tests showed that only family history, eating disorders, anxiety, depression, self-esteem, bullying, and social exclusion made an independent and statistically significant contribution to the model (η^2p , Table 3). The largest effect size was for self-esteem, followed by bullying, family history, anxiety, eating disorders, and depression. Social exclusion showed a small effect size and reached the conventional level of significance ($p = 0.050$). The remaining variables did not contribute a significant unique variance once the other predictors were controlled for.

To assess the robustness of the results obtained through multiple linear regression, a sensitivity analysis was conducted using ordinal regression with proportional odds, treating the total suicidal ideation score as an ordinal variable. The model included the same set of predictor variables as the main analysis. The model was estimated using robust standard errors, and bias- and acceleration-corrected (BCa) bootstrap confidence intervals based on 5000 samples were also obtained to increase the robustness of the estimates. The model showed a statistically significant overall fit, $\chi^2(18) = 301.00$, $p < 0.001$, with a pseudo- $R^2 = 0.192$, indicating adequate predictive power of the set of included variables.

The results were highly consistent with those obtained in the multiple linear regression (Table 4). Specifically, family history of mental illness, eating disorders, anxiety, depression, and bullying remained significantly and positively associated with higher levels of suicidal ideation. Likewise, self-esteem once again emerged as an important protective factor, associated with a lower probability of falling into higher categories of suicidal ideation.

Table 4. Coefficients of the ordinal regression model for suicidal ideation.

Name	Estimate	SE	Exp(B)	Exp(B) 95% Confidence Intervals		z	p	χ^2	df	p
				Lower	Upper					
1. Age	−0.2346	0.2091	0.791	0.530	1.249	−1.122	0.262	1.2578	1	0.262
2. Gender	−0.2829	0.2511	0.754	0.460	1.356	−1.126	0.260	1.2689	1	0.260
3. Foreign origin	0.0190	0.0429	1.019	0.934	1.123	0.443	0.658	0.1962	1	0.658
4. Family history of mental illness	1.1493	0.3162	3.156	1.854	6.908	3.635	<0.001	13.2124	1	<0.001
5. Eating disorders	0.5904	0.1849	1.805	1.312	2.848	3.194	0.001	10.1990	1	0.001
6. Anxiety	0.7939	0.2099	2.212	1.568	3.687	3.783	<0.001	14.3130	1	<0.001
7. Depression	0.6534	0.2572	1.922	1.266	3.786	2.540	0.011	6.4516	1	0.011
8. Self-esteem	−1.0112	0.2109	0.364	0.231	0.588	−4.794	<0.001	22.9871	1	<0.001
9. Healthy habits	0.0247	0.2069	1.025	0.691	1.681	0.119	0.905	0.0142	1	0.905
10. Family satisfaction	−0.1993	0.1575	0.819	0.583	1.168	−1.266	0.206	1.6025	1	0.206
11. Family social support	−0.2307	0.1301	0.794	0.617	1.056	−1.773	0.076	3.1434	1	0.076
12. Friends' social support	0.0953	0.1193	1.100	0.865	1.440	0.799	0.424	0.6381	1	0.424
13. Classmates' social support	−0.0713	0.1098	0.931	0.739	1.214	−0.650	0.516	0.4224	1	0.516
14. Academic stress	−0.2413	0.1649	0.786	0.571	1.156	−1.463	0.143	2.1412	1	0.143
15. Academic procrastination	0.1502	0.0943	1.162	0.984	1.431	1.592	0.111	2.5345	1	0.111
16. Bullying	1.2148	0.3569	3.370	1.881	8.053	3.404	<0.001	11.5870	1	<0.001
17. Cyberbullying	−0.1619	0.3837	0.850	0.410	2.313	−0.422	0.673	0.1782	1	0.673
18. Social exclusion	−0.2902	0.1810	0.748	0.509	1.101	−1.603	0.109	2.5711	1	0.109

Note: $N = 530$. Estimate = ordinal log-odds coefficient; SE = robust standard error; Exp(B) = odds ratio with bias-corrected and accelerated (BCa) bootstrap 95% confidence intervals (5000 resamples); χ^2 = omnibus Wald test.

Consistent with the main analysis, gender, foreign origin, age, healthy habits, family satisfaction, family social support, social support, academic stress, academic procrastination, cyberbullying, and social exclusion did not show statistically significant associations after controlling for the other variables.

Omnibus tests (χ^2 , Table 4) showed that only family history of mental illness, eating disorders, anxiety, depression, self-esteem, and bullying made a significant contribution to the model. In contrast, gender, foreign origin, age, healthy habits, family satisfaction, family social support, social support, academic stress, academic procrastination, cyberbullying, and social exclusion did not significantly improve the model's fit.

Testing the proportional odds assumption showed that it was met for most variables. Only social support from friends ($p = 0.038$) and social support from classmates ($p = 0.041$) showed a slight violation of the parallel lines assumption; however, neither of these variables was significant in the final model, so this result does not substantially affect the overall interpretation of the model.

Overall, these results show a high degree of consistency between multiple linear regression and ordinal logistic regression, indicating that the study's conclusions are robust to an alternative model specification that respects the ordinal nature of the dependent variable. Taken together, these results indicate that suicidal ideation in university students is primarily associated with clinical variables (especially depression and anxiety), victimization factors (bullying), and individual variables such as self-esteem, which acts as a key protective factor.

Since the social exclusion variable showed a negative coefficient in the final multivariate model, contrary to the theoretically expected direction, several supplementary analyses were conducted to examine the stability of this result. First, social exclusion showed a positive bivariate association with suicidality.

Subsequently, a hierarchical analysis was conducted, initially including social exclusion and allowing for the gradual incorporation of the remaining predictors using a stepwise procedure. This analysis showed that social exclusion initially had a positive and significant effect ($B = 0.662, p < 0.001$), which remained positive after incorporating self-esteem ($B = 0.243, p = 0.018$) and family history of mental illness ($B = 0.185, p = 0.065$). However, the sign of the coefficient reversed exactly upon introducing the bullying variable, becoming negative ($B = -0.135$), even before reaching statistical significance. The subsequent inclusion of depression, family social support, eating disorders, anxiety, and academic stress further consolidated this negative coefficient. This pattern is particularly relevant because social exclusion showed a high correlation with bullying ($r = 0.580$), as well as moderate correlations with depression, anxiety, self-esteem, social support, family satisfaction, and academic stress. Social exclusion shares a significant portion of its variance with other indicators of victimization and psychological vulnerability, particularly with bullying, which favors the emergence of suppression effects when all these variables are simultaneously included in the same model.

These results suggest that the change in sign observed for social exclusion is closely related to the inclusion of bullying in the model. Given that both variables are highly correlated with each other, this pattern is consistent with the existence of a suppression effect or a redistribution of shared variance, whereby the coefficient for social exclusion comes to represent only the residual variance not explained by bullying or the other predictors added subsequently. These results suggest that the negative coefficient for social exclusion in the model should be interpreted with caution, as it appears to depend on the simultaneous adjustment for closely related variables, specially bullying, rather than reflecting a direct inverse association between social exclusion and suicidality.

4. Discussion

The aim of this study was to examine the risk and protective factors associated with suicidal ideation in university students from an integrative approach, combining correlational analyses and a robust multiple linear regression, complemented by an ordinal regression as a sensitivity analysis. The findings advance a more solid understanding of the phenomenon by distinguishing the factors that retain an independent predictive value from those that appear to contribute indirectly, through more central variables. The main findings are discussed below in relation to the hypotheses formulated, their practical implications, and the limitations of the study.

Regarding psychological vulnerability, the findings confirm H1, identifying depression, anxiety, eating disorders, and a family history of mental illness as independent and consistent statistical predictors of suicidal ideation, both in the multiple linear regression and in the ordinal regression sensitivity analysis.

Depression emerged as the predictor of greatest magnitude across all analyses, which converges with the extensive literature identifying it as the most robust risk factor for suicidal behavior (Ribeiro et al. 2018; Riera-Serra et al. 2023; Yang et al. 2025). Among university students, Akram et al. (2020) and Anastasiades et al. (2017) identified it as the strongest individual predictor of suicidal ideation and behavior, a finding fully consistent with the data of the present study. From the interpersonal theory of suicide (Joiner 2005), depressive symptomatology, with its patterns of self-criticism, feelings of worthlessness, and social withdrawal, intensifies both perceived burdensomeness and thwarted belongingness, fueling the psychological substrate from which the suicidal desire emerges, as described in detail by Zahn et al. (2015).

Anxiety also retained an independent predictive contribution. This relationship, already documented even after controlling for the effect of depression (Sareen et al. 2005; Thibodeau et al. 2013), was recently supported by the meta-analysis of Fang et al. (2024) in young populations. Of particular relevance are the data of Casey et al. (2022), who showed that comorbid moderate or severe depressive and anxious symptoms can multiply the probability of suicidality by between 10 and 47 times compared with students without diagnosis.

The confirmation regarding eating disorders is consistent with the literature that has documented their association with suicidal ideation independently of depressive and anxious comorbidity (Amiri and Khan 2023; Chen et al. 2025; Smith et al. 2019). Intense self-criticism, body dissatisfaction, and feelings of shame foster the emergence of self-destructive cognitions (Paranjothy and Wade 2024; Sander et al. 2021); among university students, subthreshold ED symptoms significantly multiply the probability of suicide attempts (Lipson and Sonnevile 2020). Within Joiner's (2005) framework, behaviors such as severe food restriction or purging contribute to the development of the acquired capability for suicide insofar as they involve repeated exposure to self-inflicted physical pain (Gramaglia et al. 2025; Zeppegno et al. 2021).

The role of a family history of mental illness as an independent predictor underscores the need to incorporate this variable into protocols for assessing suicide risk in the university setting. The meta-analysis by Bratu et al. (2025) showed that parental psychopathology nearly triples the risk of ideation or attempts in offspring, while Ballard et al. (2019) and Tsai et al. (2023) documented the familial aggregation of suicide through both genetic and environmental mechanisms. Kendler et al. (2021) noted that exposure to a family environment with a high psychopathological burden increases vulnerability even in the absence of clinical diagnosis in the individual, which, according to the ecological model (Bronfenbrenner 1979), points to the family microsystem as a space for the transmission of risk during the formative years (Kamali et al. 2024).

With regard to protective resources, H2 was only partially confirmed: although all the hypothesized resources correlated negatively with suicidal ideation, self-esteem was the only one that retained an independent protective effect in the multivariate analyses, emerging as the protective factor of greatest magnitude across all models, a result consistent with the meta-analytic literature of Buecker et al. (2025) and with specific studies in university students (Satyander and Kumar 2025; Shagufta 2022). The most plausible mechanism is the one described by Teismann et al. (2024) within the framework of the interpersonal theory: negative self-esteem mediates the relationship between the perception of being a burden and suicidal ideation, so strengthening personal valuation may interrupt one of the central links in the chain leading to the desire to die. Additionally, students with higher self-esteem tend to display less self-criticism, greater resilience in stressful situations, and more adaptive coping strategies (Li et al. 2023; Nguyen et al. 2019).

Family and social protective factors showed a pattern that requires a nuanced interpretation. Although family social support, family satisfaction, and support from friends and classmates showed significant negative correlations with suicidal ideation in the direction predicted, these effects did not remain independent predictors in the multivariate model. This result does not reflect a lack of relevance; rather, it suggests that their association with suicidal ideation is consistent with an indirect contribution, mainly via depression and self-esteem. The literature has consistently noted that social and family support is associated with lower suicide risk in part through its relationship with internalizing symptoms and the perception of personal worth (Blessing et al. 2023; Peng et al. 2023; Scardera et al. 2020; Selak et al. 2024), and the high covariance between family satisfaction and family social support reinforces the interpretation that both variables share a substantial proportion of explanatory variance. Mandak-Arjona et al. (2026) identified depression as a fundamental bridging variable in the chain that links family functioning with suicidal ideation. An analogous pattern was observed for healthy habits: despite their significant negative correlation with ideation, their direct contribution was diluted in the multivariate model when depression and anxiety were controlled for (Grasdalsmoen et al. 2020; Liu et al. 2025; Michael et al. 2020), suggesting that their protective role is likely indirect, linked to internalizing symptoms.

The academic variables likewise did not show significant effects in the final model, which did not support H3 in the multivariate approach, despite the fact that the correlations with suicidal ideation were positive and significant, in line with the works of Barbayannis et al. (2022), Cjuno et al. (2022), and Delgado et al. (2025). The loss of effect in the joint model suggests that academic stress and academic procrastination show a pattern compatible with mediation via higher levels of anxiety and depression, variables that, once entered into the model, absorb their explanatory contribution. This interpretation is consistent with the data of Zhang et al. (2024) regarding academic procrastination and with those of Desai et al. (2021) and Salifu and Yidana (2024) regarding academic stress.

In the area of social victimization, the results partially confirmed H4. Bullying emerged as a positive and independent predictor of suicidal ideation, even after controlling for clinical variables, in line with the meta-analytic literature of Holt et al. (2015) and the longitudinal studies of Van Geel et al. (2014, 2021). The persistence of this effect can be explained from the interpersonal theory: Brailovskaia et al. (2020) showed that bullying victimization directly activates the mechanisms of thwarted belongingness and perceived burdensomeness, which explains why bullying maintains a direct effect on ideation beyond its association with depression and anxiety. In the university context, this phenomenon takes more subtle and predominantly relational, verbal, and digital forms, which complicates its identification and may increase its cumulative psychological burden (Gómez-Galán et al. 2021; Tay 2023). Cyberbullying, by contrast, did not retain its independent effect in the final model; far from being interpreted as a lack of relevance, this result reflects the high covariance between both forms of victimization, whose co-occurrence is frequent and whose underlying psychological mechanisms are shared (Li et al. 2022), so it does not provide additional predictive variance once conventional bullying is included in the model. The most unexpected finding was the negative coefficient for social exclusion in the final regression model, contrary to what was hypothesized. In the correlational analyses, social exclusion showed the positive association with suicidal ideation documented in the literature (Calati et al. 2019; Zhao 2024; Zhu et al. 2024). The reversal of sign in the multivariable model occurred only after the inclusion of bullying and other related predictors. Given the high correlation between social exclusion and bullying ($r = 0.580$), this pattern is consistent with a statistical suppression effect or a redistribution of shared variance, whereby the coefficient for social exclusion reflects only the residual variance not shared

with bullying and the other predictors. Therefore, this finding should be interpreted with caution and replicated in future studies before any substantive conclusions can be drawn. The absence of significant effects of the sociodemographic variables in the final model also deserves brief comment. Although the literature has documented gender differences in suicidal ideation, with higher rates among women (Barrigon and Cegla-Schwartzman 2020; Miranda-Mendizabal et al. 2019), it is likely that these differences are expressed mainly through the psychological and contextual factors included in the model. With respect to foreign origin, the findings are consistent with works indicating that cultural diversity does not predict suicide risk directly but rather through the experience of discrimination and the available coping resources (Dombou et al. 2023; Henríquez et al. 2024), variables that were not specifically assessed in the present study.

In sum, H5 was partially confirmed. Its integrative-model component was supported: the final model explained 44.1% of the variance in suicidal ideation, a notable explanatory capacity for a phenomenon of such complex and multidetermined nature. By contrast, after controlling for risk factors, the maintenance of the protective effect held only for self-esteem, which retained its independent contribution in the final model, whereas the remaining protective factors did not reach statistical significance in the multivariate context, although their role as buffers of risk through indirect mechanisms remains theoretically relevant.

The findings have direct implications for both assessment and prevention/intervention in the university setting. The predictive weight retained by depression, anxiety, and eating disorders underscores the need to consolidate and expand psychological counseling services in universities, equipping them with the capacity for the early detection of psychopathology among students. At the University of Málaga, where more than 40% of the student body is unaware of the existence of the Psychological Counseling Service, it is a priority to improve the visibility and accessibility of these resources, reducing barriers related to stigma and lack of information. The findings also reinforce the centrality of self-esteem as a protective factor with a direct and independent effect, suggesting that prevention efforts could systematically incorporate components aimed at strengthening personal valuation, emotional self-regulation, and self-compassion as priority intervention axes rather than secondary add-ons. In this regard, psychoeducational interventions, peer mentoring, or workshops based on mindfulness and cognitive restructuring may be especially relevant. The emergence of bullying as an independent social predictor further indicates that prevention cannot rely exclusively on clinical approaches: institutions must take an active responsibility for promoting safe relational environments and implement specific protocols for the detection and management of bullying that consider the more subtle forms in which this phenomenon tends to manifest at the university stage. Finally, the identification of a family history of mental illness as an independent predictor should translate into the inclusion of this variable in initial screening instruments so that students with this family history receive proactive follow-up.

The present study is not without limitations. The cross-sectional design prevents the establishment of causal relationships and does not allow ruling out bidirectional effects between variables, such as the possible feedback between low self-esteem and suicidal ideation or the reciprocal relationship between victimization and depressive symptoms. Accordingly, all associations reported here should be interpreted as statistical relationships rather than causal or directional effects. The nonprobabilistic snowball sampling combined with convenience sampling limits representativeness and the extrapolation of findings to the Spanish university population as a whole. Likewise, the overrepresentation of women (68.9%) could bias the results because it does not adequately reflect the actual gender distribution of the university population. The sample size ($N = 553$) is adequate for the analyses conducted, but it is limited for statistically robust mediation and moderation

models or for exploring meaningful differences in specific subgroups. The study is restricted to a single institution, the University of Málaga, which limits generalization to contexts with different student profiles or sociocultural characteristics, and replication in multicenter samples is needed before drawing systemic conclusions. The instrument used to measure suicidal ideation, the Paykel Suicide Scale, with five dichotomous items, limits the capture of variability in its intensity and dimensionality, so the use of more granular scales could enrich the understanding of the phenomenon. Lastly, the negative coefficient observed for social exclusion in the multivariate model appears to reflect a statistical suppression effect arising from its high covariance with bullying, and should therefore be interpreted with caution and confirmed in future replications.

These findings open up several avenues that could complement and refine the results obtained. The development of longitudinal studies that examine the temporal trajectories of suicidal ideation throughout the university cycle is a priority; such studies would make it possible to determine whether low self-esteem precedes the development of ideation or whether both variables coevolve over time, and would help identify periods of greatest vulnerability, such as the first year or examination periods. It would also be important to explicitly test mediation and moderation models examining the mechanisms through which family and social support influences suicidal ideation, as well as to explore in greater depth the unexpected result regarding social exclusion in the multivariate model. Future research should expand the study to multicenter samples and incorporate variables from the cultural macrosystem, such as attitudes toward help-seeking, the stigma associated with mental health, or the prevailing gender norms, in order to integrate Bronfenbrenner's (1979) ecological perspective more fully. An intersectionality lens could reveal qualitatively distinct risk profiles, depending on the field of study, socioeconomic status, or gender identity. Finally, given the predictive weight of a family history of mental illness, future research should delve into the genetic and environmental mechanisms through which family psychopathology transmits vulnerability to suicide risk, with special attention to the resilience factors that protect some students with this family history.

5. Conclusions

This study shows that suicidal ideation among university students is primarily associated with clinical factors: depression, anxiety, eating disorders, and a family history of mental illness emerged as the most robust independent predictors, underscoring that the early detection and treatment of psychopathology must be at the core of any university prevention strategy. At the same time, self-esteem stood out as the strongest protective factor, with a direct and independent effect, pointing to interventions that strengthen personal valuation, emotional self-regulation, and self-compassion as a priority avenue for prevention. Taken together, these findings call for an integrated institutional response that combines accessible and well-publicized psychological counseling services, specific protocols for the prevention and management of bullying, and broader well-being promotion initiatives across the university community so that clinical care, a safe relational environment, and the reinforcement of protective resources reinforce one another rather than operate in isolation.

Beyond the psychosocial domain, these conclusions should also be framed within a broader health and medical perspective. Physical illness is a key, yet frequently underestimated, risk factor for suicidal behavior: epidemiological evidence shows that the presence of chronic physical conditions is associated with a higher prevalence of suicidal thoughts and attempts across the lifespan, including among the young adults that make up the university population examined here. Consequently, the most accurate understanding of suicidal ideation in young people, and the most effective, readily applicable preventive models, will emerge from an interdisciplinary approach that integrates psychology, sociol-

ogy, medicine, and the health sciences. In this regard, future studies could also examine additional independent variables that were not modeled in the present work, particularly participants' activity status (student only vs. working student) and their physical health status, especially the presence of chronic illnesses.

In sum, suicidal ideation in this university sample was primarily explained by clinical vulnerability and buffered by self-esteem, whereas its prevention requires coordinated action across the clinical, relational, and health domains. Strengthening the visibility of psychological services, preventing bullying, and promoting overall student well-being therefore emerge as complementary priorities for protecting the mental health of the university community.

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