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Original Research

University Students' Attitudes Toward Severe Mental Disorders: Effects of Gender, Age, and Prior Contact

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Abstract

Background: Stigma toward individuals with severe mental disorders (SMD), such as schizophrenia or psychosis, remains a significant social barrier that adversely affects psychological well-being, social inclusion, and access to professional support. Educational environments play a key role in shaping attitudes toward mental illness, making university populations particularly relevant for examining factors associated with stigmatizing beliefs. This study aimed to analyze differences in stigma toward individuals with SMD among university students according to sociodemographic variables (gender and age), prior contact with individuals with SMD, and field of study. **Methods:** A cross-sectional, ex post facto observational design was employed. The study population comprised 673 university students from a Spanish university in 2025. Stigma was assessed using the Community Attitudes Toward the Mentally Ill (CAMI) scale, which evaluates four dimensions: Authoritarianism, Benevolence, Social Restrictiveness, and Community Mental Health Ideology. Independent-samples *t*-tests were used to examine gender and field-of-study differences, and Pearson correlation analyses were conducted to assess associations with age. Welch's one-way analysis of variance (ANOVA) with Games–Howell post hoc comparisons examined differences according to frequency of contact with individuals with SMD. Effect sizes were estimated using Cohen's *d*, Hedges' *g*, and omega squared. **Results:** Significant gender differences were observed across all CAMI dimensions. Female participants exhibited lower levels of Authoritarianism and Social Restrictiveness, and higher levels of Benevolence and Community Mental Health Ideology. Age was significantly associated with three dimensions: Authoritarianism, Benevolence, and Community Mental Health Ideology, indicating more favorable attitudes with increasing age. Additionally, significant differences were observed according to level of contact with individuals with SMD across all stigma dimensions, with greater contact associated with less stigmatizing attitudes. Furthermore, students enrolled in psychoeducational fields exhibited lower levels of Authoritarianism and higher levels of Benevolence and Community Mental Health Ideology compared to students from other academic fields, with no significant difference found in Social Restrictiveness. **Conclusions:** The findings highlight the importance of demographic and experiential factors in shaping university students' attitudes toward individuals with SMD. Advanced age, female gender, and greater contact with individuals with SMD were associated with lower levels of stigma. These results support the development of educational interventions that promote contact-based learning and mental health literacy within higher education settings to reduce stigmatizing attitudes and foster social inclusion.

Keywords: severe mental disorders; mental health stigma; university students; contact with mental illness; higher education

1. Introduction

Stigma can be understood as a set of negative reactions, behaviors, and beliefs directed toward a specific group (Corrigan et al., 2009; Corrigan et al., 2010). It is not merely a label that devalues and discriminates against a person, but rather a complex psychosocial process based on the interaction between those who stigmatize and those who are stigmatized, a dynamic characteristic of what is known as public stigma (Goffman, 1963).

From labeling theory, public stigma is understood as a sociocultural process through which certain marginalized groups are defined by others as abnormal, shameful, or undesirable (Muñoz López and Zamorano Castellanos, 2024; Porta Antón et al., 2026). In terms of psychosocial impact, public stigma has significant effects on everyday life, as negative perceptions threaten psychological well being. Moreover, these threats affect quality of life and interpersonal relationships, especially among caregivers and family members, who may experience a considerable emotional burden (Abojabel and Werner, 2019; Lovell and Wetherell, 2019; Rodríguez-Rivas et al., 2024; Werner et al., 2020).

Likewise, public stigma limits access to essential resources such as education, employment, housing, and healthcare (Porta Antón et al., 2025), generating high levels of stress and anxiety (Link et al., 1999; Quiles del Castillo, 2019; Thompson et al., 2002). These experiences may contribute to the development of self stigma, understood as the internalization of negative social stereotypes and prejudices, with consequences for self esteem, self concept, and personal identity.

In the case of disorders classified as severe (hereafter, severe mental disorders (SMD)), such as schizophrenia or

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psychosis, stigmatization is exacerbated due to the persistence of stereotypes that portray individuals as violent, incapable, or unpredictable (Mascayano et al., 2015). These beliefs foster various forms of discrimination, including coercion, segregation, and infantilization, which limit personal autonomy and reinforce situations of exclusion and social vulnerability (Sheehan et al., 2022; Thornicroft et al., 2022). Moreover, the adverse effects of stigma may persist even after psychiatric symptoms have disappeared or when individuals have achieved normalized daily functioning, hindering their full social inclusion (Link et al., 1987; Porta Antón et al., 2026). Among its main consequences are resistance to seeking professional help (Corrigan et al., 2010), reduced social interactions, and difficulties in daily life and access to employment (Kranke et al., 2010; Naslund et al., 2016). Thus, stigma acts as an additional barrier that significantly affects rehabilitation and recovery processes.

Furthermore, as Muñoz López and Zamorano Castellanos (2024) note, when analyzing stigma associated with mental illness it is necessary to consider that the same individual may be simultaneously labeled based on different social or personal conditions. When this occurs, an overlap or intersection of stigmas may emerge, placing the affected individual in a position of greater vulnerability and increasing the risk of social exclusion.

To overcome the effects derived from these prejudices, education is considered a key tool for reducing stigma in society (Moreno-Rodríguez et al., 2018), and various studies highlight its role in improving knowledge, raising awareness, and transforming attitudes toward mental illness (Corrigan and Penn, 1999; Del Casale et al., 2013; Michaels et al., 2012; Overton and Medina, 2008; Rüsch et al., 2005). However, although the literature has addressed stigma among university students, the available findings show some variability due to methodological and sample related differences. Limitations such as small sample sizes and the limited attention paid to the quality of contact, beyond its frequency, have led to inconsistent results. In addition, there is still a limited understanding of how academic training and personal experience converge in contemporary university settings (Mampaso Desbrow et al., 2024; Porta Antón et al., 2025).

In this regard, it remains relevant to further explore how factors such as gender, age, academic training, and prior contact may jointly influence attitudes toward people with severe mental illness, especially among university students, a life stage characterized by the consolidation of values, beliefs, attitudes, and social skills. Variables such as gender, age, and prior contact are particularly relevant, as socialization processes, personal maturity, and the accumulation of experiences may influence the development of empathy, social sensitivity, and perceptions of mental health. Moreover, university students represent a strategic group, both because they are in a key period of personal development and because of their future professional and social role as agents of change. Likewise, specific academic training may also play a relevant role, since certain fields of knowledge promote greater exposure to content related to mental health, diversity, and inclusion. Therefore, identifying the factors associated with stigma is essential for guiding more effective anti stigma interventions tailored to the university context, with potential long term impact both in academia and in society (Taylor et al., 2020).

To address these issues, the present study is structured around the following objectives: (i) to examine differences in stigma toward individuals with SMD between male and female university students; (ii) to assess the relationship between university students' age and stigma toward individuals with SMD; (iii) to explore differences in stigma toward individuals with SMD among university students based on their level of prior contact; and (iv) to evaluate differences in stigma toward individuals with SMD between students enrolled in psychoeducational programs and those enrolled in other academic fields.

Based on the literature review, the following hypotheses were formulated: H1: Female students will report lower levels of Authoritarianism and Social Restrictiveness than male students. H2: Age will be negatively correlated with stigmatizing attitudes. H3: Students with higher levels of prior contact with individuals with SMD will show more favorable attitudes than those with no or low contact. H4: Students in psychoeducational programs will exhibit lower levels of stigma compared to students from other academic fields.

This study provides significant value by identifying specific target groups for anti-stigma interventions within the university setting, offering a more nuanced understanding of how academic background and personal experience converge to influence mental health perceptions. Specifically, this study contributes to the literature by examining the interaction of these variables in a large, diverse sample, filling a gap in contemporary evidence within the Spanish higher education context.

The remainder of this paper is organized as follows: Section 2 describes the methodology and instruments; Section 3 presents the statistical results; Section 4 discusses the findings in relation to previous research and study limitations; and finally, Section 5 summarizes the main conclusions.

2. Materials and Methods

2.1 Design

This study adopted a cross-sectional ex post facto design, which allows for examining relationships between variables at a single point in time and the exploration of factors associated with a phenomenon that preclude manipulation as they have already occurred (Campbell and Stanley, 1963; Fox, 1981; Kerlinger, 1987).

2.2 Sample

The sample consisted of 673 university students selected through non-probability convenience sampling approach, all enrolled at a Spanish university during 2025. The sample included both undergraduate and postgraduate students, which accounts for the wide age range observed. The mean age was 27.71 years (Standard Deviation (SD) = 9.89), with a range from 18 to 64 years. To provide a clearer overview of the age distribution, participants were grouped into intervals (see Table 1). The gender distribution was 29.27% men (N = 197) and 70.73% women (N = 476). Regarding inclusion and exclusion criteria, participants were required to be currently enrolled students at the university and provide informed consent. To ensure the study focused strictly on public stigma and to avoid the confounding effect of self-stigma or "double stigma", students who self-identified as having a diagnosed SMD were excluded from the final analysis.

Table 1. Distribution of participants by age group (N = 673).

Age group	N	%
18–25 years	410	60.9%
26–35 years	150	22.3%
36–45 years	75	11.1%
>45 years	38	5.7%
Total	673	100%

2.3 Instruments

Students were asked about their age, gender, and academic field of study. In addition, their contact with individuals with SMD was explored, allowing them to specify the frequency as occasional, frequent, or daily.

Stigma was assessed using the Community Attitudes toward the Mentally Ill scale (CAMI; Taylor and Dear, 1981), in its Spanish adapted-and-validated version by (Ochoa et al., 2011). The scale consists of 40 items rated on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree) and measures social stigma through four dimensions. Each subscale includes ten items, five positively worded and five negatively worded, which were reverse-coded. After recoding the reversed items, the instrument includes the following four dimensions:

● Authoritarianism: Assesses beliefs that portray individuals with mental illness as inferior, irresponsible, or incapable of making decisions for themselves, thereby justifying external control and strict discipline. Higher scores reflect a hierarchical and coercive view of mental illness treatment.

● Benevolence: Measures attitudes of acceptance and protection toward individuals with mental illness, sometimes with a paternalistic tone. Higher scores indicate a more empathetic and understanding disposition oriented toward care rather than punishment or exclusion.

● Social Restrictiveness: Assesses the extent to which individuals with mental illness are perceived as a threat to society, thereby justifying their social isolation or limitation, as well as a greater desire for social distance.

● Community Mental Health Ideology: Measures attitudes and beliefs regarding the integration of individuals with mental illness into the community and the use of community-based resources rather than closed institutions. Higher scores reflect a more inclusive and normalizing view of mental illness in social life, as well as greater community acceptance of this group.

Overall, the CAMI subscales enable differentiation between more coercive dimensions of stigma (Authoritarianism and Social Restrictiveness) and more inclusive dimensions (Benevolence and Community Mental Health Ideology). After reverse-coding the negatively worded items, higher scores on Benevolence and Community Mental Health Ideology indicate fewer stigmatizing attitudes, whereas higher scores on Authoritarianism and Social Restrictiveness reflect more stigmatizing attitudes. In the sample of the present study, the CAMI subscales showed adequate levels of internal consistency, with Cronbach's alpha values of 0.74 for Authoritarianism, 0.85 for Benevolence, 0.76 for Social Restrictiveness, and 0.81 for Community Mental Health Ideology.

2.4 Procedure

Data were collected in 2025 through the online platform Google Forms under the principle of non-intervention, ensuring the complete independence of the analyzed population. Participants were given full freedom to respond to the questionnaire, participation was voluntary and uncompensated, while maintaining the anonymity and confidentiality of all respondents.

A cross-sectional design using an online survey was employed, which enabled the efficient collection of data from a large sample of students and the exploration of attitudes and perceptions toward individuals with SMD.

In addition, informed consent was obtained for the use of data exclusively for research purposes, in accordance with the ethical principles of scientific research outlined in the Declaration of Helsinki. The Research Ethics Committee of the Universidad Camilo José Cela determined that the ethical, methodological, and legal aspects of the study were appropriate and compliant (code: 13_25_ISESTM).

2.5 Data Analysis

Before conducting the analyses, normality was assessed using the Kolmogorov–Smirnov test ($p_{K-S} > 0.05$). Based on the results obtained, parametric statistical techniques were applied.

To address the first objective regarding gender, independent-samples Student's *t*-tests were performed to

Table 2. Descriptive statistics and independent-samples hypothesis testing for stigma toward individuals with SMD by gender.

Dimension	Men (N = 197)		Women (N = 476)		*t*	*df*	*p*	*d*
	M	SD	M	SD				
Authoritarianism	22.7	5.00	21.2	4.61	3.86	671	<0.001	0.33
Benevolence	39.6	5.16	41.5	5.24	−4.33	671	<0.001	0.37
Social Restrictiveness	21.3	5.02	20.2	4.76	2.69	671	0.007	0.23
Community Mental Health Ideology	37.4	5.34	39.3	5.48	−4.02	671	<0.001	0.34

M, Mean; SD, Standard Deviation; *t*, Student's *t*-test; *df*, degrees of freedom; *p*, *p*-value; *d*, Cohen's *d* effect size; SMD, severe mental disorders.

compare stigma levels, with effect size estimated using Cohen's *d*. For the second objective, Pearson's correlation coefficient (*r*) was used to examine the relationship between age and stigma. Regarding the third objective, which focused on the level of contact with individuals with SMD, Welch's one-way analysis of variance was assessed, with the overall effect size estimated using omega squared (ω^2). Post hoc differences were examined using the Games–Howell test (ΔM), and effect sizes were reported using Hedges' *g*. Finally, to address the fourth objective, independent-samples *t*-tests were performed, together with Cohen's *d*, to analyze differences in stigma levels between students enrolled in psychoeducational degrees and those from other academic fields. All statistical analyses were conducted using Jamovi software, version 2.3 (The Jamovi Project, 2022), based on the R statistical environment and the lavaan software package (R Core Team, 2021).

3. Results

Regarding the first objective, a detailed analysis of statistically significant differences in stigma toward individuals with SMD according to gender were analyzed. The results are presented in Table 2.

The table presents detailed descriptive statistics and the results of the independent-samples hypothesis tests, showing the dimensions analyzed for each gender group. The analyses revealed statistically significant differences across all dimensions according to gender ($p < 0.05$). Women showed more favorable attitudes, with lower levels of Authoritarianism ($t = 3.86$; $p < 0.001$; $d = 0.33$) and Social Restrictiveness ($t = 2.69$; $p = 0.007$; $d = 0.23$), and higher scores in Benevolence ($t = -4.33$; $p < 0.001$; $d = 0.37$) and Community Mental Health Ideology ($t = -4.02$; $p < 0.001$; $d = 0.34$). According to Cohen's (1988) criteria, the observed effect sizes were small.

Similarly, with respect to age (see Table 3), the correlational analysis revealed significant associations between age and stigma levels in three of the four dimensions: Authoritarianism ($r = -0.176$; $p < 0.001$), Benevolence ($r = 0.094$; $p = 0.015$), and Community Mental Health Ideology ($r = 0.111$; $p = 0.004$). These results indicate more favorable attitudes associated with increased age.

On the other hand, to address the third research objective, descriptive analyses of stigma toward individuals with SMD were conducted according to the degree of contact with individuals with SMD (G1: daily contact; G2: frequent contact; G3: occasional contact). The results are presented in Table 4. This table provides an overview of stigma levels and statistically significant differences, allowing the identification of patterns according to participants' degree of contact with individuals with SMD. Statistically significant differences were observed across all dimensions: Authoritarianism ($F = 29.30$; $p < 0.001$; $\omega^2 = 0.08$), Benevolence ($F = 17.73$; $p < 0.001$; $\omega^2 = 0.05$), Social Restrictiveness ($F = 13.36$; $p < 0.001$; $\omega^2 = 0.04$), and Community Mental Health Ideology ($F = 19.75$; $p < 0.001$; $\omega^2 = 0.05$). According to Field's (2018) interpretation, the effect sizes can be considered large.

Post hoc comparisons using the Games–Howell test are presented in Table 5. Statistically significant differences were observed in most of the evaluated dimensions, consistently showing more favorable values among students with greater contact with individuals with SMD.

Students with daily contact (G1) showed significant differences compared to those with occasional contact (G3) in Authoritarianism ($\Delta M = -3.82$; $p < 0.001$; $g = 0.84$), Benevolence ($\Delta M = 3.47$; $p < 0.001$; $g = 0.67$), Social Restrictiveness ($\Delta M = -2.75$; $p < 0.001$; $g = 0.58$), and Community Mental Health Ideology ($\Delta M = 4.05$; $p < 0.001$; $g = 0.78$). The effect sizes for these differences were large for Authoritarianism, Benevolence, and Community Mental Health Ideology, and moderate for Social Restrictiveness.

In contrast to the frequent contact group (G2), students with daily contact showed statistically significant differences only in Community Mental Health Ideology ($\Delta M = 2.33$; $p = 0.012$; $g = 0.40$). Differences in Authoritarianism ($\Delta M = -1.53$; $p = 0.063$; $g = 0.32$), Benevolence ($\Delta M = 1.61$; $p = 0.081$; $g = 0.34$), and Social Restrictiveness ($\Delta M = -1.03$; $p = 0.364$; $g = 0.20$) did not reach statistical significance. In this case, the effect size was moderate for Community Mental Health Ideology and small for the remaining dimensions.

Regarding comparisons between frequent contact (G2) and occasional contact (G3), significant differences were found in Authoritarianism ($\Delta M = -2.29$; $p < 0.001$; $g = 0.50$), Benevolence ($\Delta M = 1.86$; $p < 0.001$; $g = 0.35$), Social Restrictiveness ($\Delta M = -1.72$; $p < 0.001$; $g = 0.36$),

Table 3. Correlation matrix between age and CAMI dimensions.

		(1)	(2)	(3)	(4)	(5)
Age (1)	Pearson's *r*	—				
	p-value	—				
Authoritarianism (2)	Pearson's *r*	−0.176	—			
	p-value	<0.001	—			
Benevolence (3)	Pearson's *r*	0.094	−0.668	—		
	p-value	0.015	<0.001	—		
Social Restrictiveness (4)	Pearson's *r*	0.015	0.690	−0.715	—	
	p-value	0.691	<0.001	<0.001	—	
Community Mental Health Ideology (5)	Pearson's *r*	0.111	−0.689	0.663	−0.751	—
	p-value	0.004	<0.001	<0.001	<0.001	—

Pearson's *r*, Pearson's correlation coefficient; *p*, probability value.

Table 4. Descriptive statistics and Welch's ANOVA for stigma toward individuals with SMD according to degree of contact.

Dimension	Group	N	M	SD	*F*	*df*1	*df*2	*p*	ω^2
Authoritarianism	G1	63	18.7	4.44	29.30	2	156.87	<0.001	0.08
	G2	163	20.2	4.74					
	G3	447	22.5	4.55					
Benevolence	G1	63	43.7	5.05	17.73	2	159.11	<0.001	0.05
	G2	163	42.0	4.91					
	G3	447	40.2	5.26					
Social Restrictiveness	G1	63	18.5	5.12	13.36	2	151.27	<0.001	0.04
	G2	163	19.5	5.03					
	G3	447	21.2	4.62					
Community Mental Health Ideology	G1	63	42.0	5.14	19.75	2	154.34	<0.001	0.05
	G2	163	39.7	5.96					
	G3	447	37.9	5.15					

Degree of contact with individuals with SMD (G1: daily contact; G2: frequent contact; G3: occasional contact). M, Mean; SD, Standard Deviation; *F*, Welch's *F*-test; *df*, degrees of freedom; *p*, probability value; ω^2, omega squared effect size; ANOVA, analysis of variance.

Table 5. Post hoc comparisons (Games–Howell) of stigma toward individuals with SMD according to degree of contact.

Dimension	Group	G2			G3		
		ΔM	*p*	Hedges' *g*	*ΔM*	*p*	Hedges' *g*
Authoritarianism	G1	–1.53	0.063	0.321	–3.82	<0.001	0.838
	G2				–2.29	<0.001	0.500
Benevolence	G1	1.61	0.081	0.342	3.47	<0.001	0.672
	G2				1.86	<0.001	0.350
Social Restrictiveness	G1	–1.03	0.364	0.197	–2.75	<0.001	0.578
	G2				–1.72	<0.001	0.360
Community Mental Health Ideology	G1	2.33	0.012	0.399	4.05	<0.001	0.777
	G2				1.72	0.004	0.316

Degree of contact with individuals with SMD (G1: daily contact; G2: frequent contact; G3: occasional contact). *ΔM*, mean difference; *p*, adjusted probability value; *g*, Hedges' *g* effect size.

and Community Mental Health Ideology (*ΔM* = 1.72; *p* = 0.004; *g* = 0.32). The effect size of these comparisons was moderate for Authoritarianism and small for the remaining dimensions. Overall, these findings reveal a distinct gradient according to degree of contact: greater contact with individuals with SMD is associated with less stigmatizing and more inclusive attitudes.

Finally, regarding the fourth objective, statistical differences in stigma levels toward individuals with SMD were examined according to the field of study (psychoe-

Table 6. Descriptive statistics and differences in stigma toward individuals with SMD between students from psychoeducational and non-psychoeducational programs.

Dimension	Psychoeducational field (N = 277)		Other fields (N = 396)		*t*	*df*	*p*	*d*
	M	SD	M	SD				
Authoritarianism	20.7	4.58	22.2	4.81	−4.120	671	<0.001	0.32
Benevolence	41.8	5.38	40.4	5.14	3.456	671	<0.001	0.27
Social Restrictiveness	20.5	4.83	20.6	4.89	−0.296	671	0.767	0.02
Community Mental Health Ideology	39.5	5.34	38.2	5.47	2.967	671	0.003	0.23

M, Mean; SD, Standard Deviation; *t*, Student's *t*-test; *df*, degrees of freedom; *p*, *p*-value; *d*, Cohen's *d* effect size.

ducational vs. other academic fields). Table 6 presents detailed descriptive statistics and the results of independent-samples hypothesis testing, showing the analyzed dimensions and total scores for each group of students according to their field of study.

The analyses revealed statistically significant differences in several dimensions of stigma toward individuals with SMD. Students in psychoeducational fields demonstrated significantly lower levels of Authoritarianism ($t = -4.12$; $p < 0.001$; $d = 0.32$) and higher levels of Benevolence ($t = 3.46$; $p < 0.001$; $d = 0.27$) and Community Mental Health Ideology ($t = 2.97$; $p = 0.003$; $d = 0.23$). In contrast, no significant differences were found in Social Restrictiveness ($t = -0.30$; $p = 0.767$; $d = 0.02$). According to Cohen's (1988) interpretation, the observed effect sizes was small.

4. Discussion

The results of the present study indicate that female students exhibit more inclusive attitudes toward individuals with SMD, characterized by lower levels of Authoritarianism and Social Restrictiveness, as well as higher levels of Benevolence and support for community integration. These findings align with previous studies reporting that women tend to show lower levels of stigmatization than men (Gallego et al., 2020; García-Soriano and Roncero, 2017; Masedo et al., 2021). Notably, the small-to-moderate effect sizes observed in gender differences may reflect the relative homogeneity of the university population. Shared educational environments and contemporary social values in Spanish higher education likely foster a convergence in mental health attitudes, attenuating the magnitude of gender-based disparities despite their statistical significance. More recent research further supports this trend, suggesting that women tend to demonstrate higher levels of empathy toward mental health problems, more favorable attitudes toward their understanding, and a greater willingness to seek professional help when needed (Bradbury, 2020; Lahera et al., 2019; Porta Antón et al., 2026; Zamorano Castellanos et al., 2023).

Age also emerged as a significant factor in the present study. Older students showed more favorable attitudes toward individuals with SMD, as reflected in lower levels of Authoritarianism and higher levels of Benevolence and Community Mental Health Ideology. These findings are consistent with previous research indicating that inclusive attitudes and social acceptance toward people with mental health problems tend to increase with age (Mackenzie et al., 2019; Moraleda et al., 2023), a pattern that may be explained by the accumulation of experiences across the life course, which could foster greater social sensitivity and a gradual reduction in prejudice. In the Spanish university context, characterized by increasing diversity in student profiles due to more flexible academic pathways, the presence of students of different ages, and the expansion of lifelong learning, this finding is particularly relevant, as it highlights the need to adapt stigma awareness and prevention strategies to the heterogeneity of the student population. Nevertheless, education and access to specific information remain essential for strengthening this relationship, as they contribute significantly to reducing stigmatizing attitudes (Mampaso Desbrow et al., 2024; Pande et al., 2011).

Furthermore, the findings of this study indicate that students who reported greater contact with individuals with SMD displayed more inclusive attitudes, characterized by lower levels of Authoritarianism and Social Restrictiveness, as well as higher levels of Benevolence and Community Mental Health Ideology. These results can be understood in light of direct contact as a key mechanism in stigma reduction. Scientific evidence consistently shows that personal and close interaction with individuals experiencing mental health problems constitutes one of the most effective strategies for modifying stigmatizing attitudes and beliefs (Henderson et al., 2014; Lien et al., 2019; Rodríguez-Rivas et al., 2024; Thornicroft et al., 2016; Yamaguchi et al., 2013).

In this regard, several studies have reported that individuals with greater familiarity with mental health problems—that is, those with higher levels of direct contact or experience—are less likely to perceive individuals with SMD as dangerous and tend to express a lower desire for social distance (Angermeyer and Dietrich, 2006; Kolodziej and Johnson, 1996; Moraleda et al., 2019; Vera Noriega et al., 2022). However, alternative interpretations such as reverse causality must be considered; students with lower baseline levels of stigma may be more predisposed to seeking out or maintaining contact with individuals with SMD. Given the cross-sectional nature of this study, the temporal direction of this relationship cannot be definitively es-

tablished, highlighting the need for longitudinal research to clarify whether contact drives stigma reduction or whether inclusive attitudes precede the engagement in such interactions.

Finally, the results indicate that field of study influences attitudes toward individuals with SMD. Specifically, students in education and psychology related fields showed more inclusive attitudes, characterized by lower levels of Authoritarianism and higher levels of Benevolence and Community Mental Health Ideology, compared with students from other academic disciplines. In the Spanish university context, where higher education is organized into clearly differentiated branches of knowledge and degree programs vary in their level of exposure to mental health related content, this finding is particularly relevant, as it suggests the value of incorporating cross curricular training strategies focused on mental health awareness and literacy into degree programs outside the social and health sciences (Porta Antón et al., 2025). However, no significant differences were observed in the Social Restrictiveness dimension.

Overall, these findings suggest that training in education or psychology is associated with a more understanding and inclusive perspective toward individuals with SMD. This phenomenon may be explained by the humanistic orientation present in these academic programs, as well as by the promotion of skills such as empathy, active listening, and critical reflection, which facilitate the questioning of social stereotypes.

At the same time, mental health education emerges as a key tool for increasing awareness and understanding, as well as for reducing the stigma associated with mental disorders (Shim et al., 2022). In this sense, the direct or indirect inclusion of this topic within the curricula of these academic programs promotes a deeper understanding of the phenomenon and contributes to the development of more objective and less stigmatizing attitudes. More specifically, several interventions implemented with this population have demonstrated significant effects. Among them, the three interventions reported in the study by Moraleda et al. (2023) with teacher education students stand out, as well as the research conducted by Saavedra and Murvartian (2022), which reported a reduction in stigma toward mental health problems within a Faculty of Education following the implementation of programs aimed at reducing prejudice.

Limitations and Future Research

Despite the relevance of these findings, several limitations must be acknowledged. First, the study's cross-sectional ex post facto design identifies associations but precludes establishing causal relationships. To address this, future research should adopt longitudinal tracking designs to explore how stigmatizing attitudes evolve over time and to determine causal directions between variables.

Second, the use of non-probabilistic convenience sampling from a single university and the gender imbalance (with a predominance of women) may limit the generalizability of the findings. Future studies should employ multicenter, cross-university sampling strategies with more balanced demographic distributions to improve the representativeness and generalizability of the results to broader populations.

Third, although the CAMI scale allows for a multidimensional assessment, its reliance on self-report measures may introduce social desirability bias. Future research would benefit from mixed-methods approaches, integrating quantitative scales with qualitative interviews to capture more nuanced perspectives. Regarding instrument reliability, while all CAMI subscales demonstrated acceptable internal consistency (>0.70), certain dimensions yielded values below 0.80. Although these results align with previous validation studies, further refinement of these items is warranted to enhance psychometric robustness. Additionally, as contact was measured solely by frequency, its qualitative nature (e.g., emotional intensity or intimacy) remains unexplored, representing a critical avenue for future inquiry.

Finally, while this study examined the independent effects of gender, age, contact, and academic field, potential interaction effects between these variables (e.g., gender and academic major) were not explored. Furthermore, uncontrolled confounding variables, such as family socioeconomic status or parental education level, could influence the observed relationships. Future research should employ more complex multivariate models or hierarchical regressions to account for these joint effects and potential confounders, thereby further strengthening the robustness of the findings.

5. Conclusions

The present study shows that university students' attitudes toward individuals with SMD are influenced by a combination of sociodemographic and educational factors. In particular, being female, older age, direct contact with people experiencing mental health problems, and training in fields related to education and psychology are associated with more inclusive attitudes. These attitudes are characterized by lower levels of Authoritarianism, as well as higher levels of Benevolence and Community Mental Health Ideology.

Beyond confirming trends described in previous research, this study is especially relevant in the Spanish university context, a key setting for the training of future professionals and agents of social change. In this regard, the findings provide a better understanding of which student profiles are at greater risk of maintaining stigmatizing attitudes and which factors may act as protective elements. Thus, the results reinforce the importance of interpersonal contact and mental health education as key tools for reducing stigma.

From an applied perspective, these findings suggest the need for university counseling services and clinical and educational professionals to incorporate awareness raising strategies and meaningful contact opportunities that promote a closer understanding of SMD and encourage help seeking without fear of stigma. In terms of implementation, this could take the form of psychoeducational workshops, peer mentoring programs, first person testimonies from individuals with mental health problems, campus awareness campaigns, and the cross curricular inclusion of mental health content in courses across different degree programs, among other initiatives. Likewise, it is essential that these interventions be accompanied by evaluation mechanisms and impact analyses to assess their effectiveness and introduce the necessary improvements.

Similarly, in the field of educational management, the results provide a useful empirical basis for universities and higher education policymakers to promote cross curricular mental health training plans, awareness campaigns, and institutional actions aimed at fostering more inclusive university environments. Overall, this study provides relevant evidence for designing preventive, educational, and institutional strategies that are better aligned with the realities of the Spanish university system, fostering more understanding, empathetic, and socially inclusive attitudes toward individuals with SMD.

Availability of Data and Materials

The data supporting the findings of this study are not publicly available due to privacy and ethical restrictions regarding participant confidentiality, but are available from the corresponding author upon reasonable request.

Author Contributions

AMR conceptualized the study, designed the methodology, and developed the results. DGC contributed to the theoretical framework and co-conceptualized the study. Both AMR and DGC contributed equally to data interpretation, manuscript writing, and critical revision. Both authors read and approved the final manuscript and agree to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

The study was conducted in accordance with the Declaration of Helsinki. The research protocol was approved by the Research Ethics Committee of Universidad Camilo José Cela (Approval Code: 13_25_ISESTM). All participants provided signed informed consent for the use of their data exclusively for research purposes.

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Conflicts of Interest

The authors declare no conflicts of interest.

Declaration of AI and AI-Assisted Technologies in the Writing Process

During the preparation of this manuscript, the authors used ChatGPT 5.0 only for minor assistance with grammar and language translation. After using this tool, the authors reviewed and edited all content as needed and take full responsibility for the content of the publication.

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