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The role of religion on stress and social skills of university students in multi-religious border environments

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Keywords

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Religious behavior
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Religious minorities

Abstract

When it comes to constructing the professional profile of university students, it is essential to consider the competencies and skills necessary for their personal and social development. In this regard, both social skills and the way in which students experience and cope with stress will be paramount. These variables will be influenced by the impact of religions in environments where several converge, in turn, shape the profile of the student population. The analysis of this interaction will contribute to refining the teaching-learning process. The aim of this study, employing a quantitative, descriptive, exploratory, and correlational design, is to examine the relationship between religion and the social skills and stress levels of university students in cross-border and multi-religious environments in Ceuta and Melilla. For this endeavor, a sample of 436 students (78.9% women; M_{age} = 22.5, *SD* = 5.26) was selected, and they were administered a questionnaire comprising two scales: the *Social Skills Scale* and the *Perceived Stress Scale*. The main results indicate that religion is related to social skills, with Muslim students exhibiting higher levels of social skills in expressing feelings and anger, while students of religions with mid-lower presence present higher levels in interrupting social interactions and expressing denial. This study demonstrates the need to establish training program for these skills as a bridge of connection between religions.

El papel de la religión en el estrés y las habilidades sociales de los estudiantes universitarios en entornos fronterizos multirreligiosos

Palabras clave

Estrés mental
Conducta religiosa
Estudiantes universitarios
Habilidades sociales
Minorías religiosas

Resumen

A la hora de construir el perfil profesional del alumnado universitario, es fundamental tener en cuenta las competencias y habilidades necesarias para su desarrollo personal y social. En este aspecto, las habilidades sociales, así como el estrés que experimenta y cómo lo afronta van a ser esenciales dentro del mismo. En entornos donde confluyen diversas religiones, analizar la influencia de estas sobre este perfil y, por tanto, sobre estas variables, contribuye a perfeccionar el proceso de enseñanza-aprendizaje. El objetivo de este estudio, mediante un diseño cuantitativo, descriptivo, exploratorio y correlacional, consistió en analizar la relación entre la religión y las habilidades sociales y el estrés del estudiantado universitario en entornos transfronterizos y multirreligiosos de Ceuta y Melilla. Para ello, se seleccionó una muestra de 436 (78.9% mujeres; M_{edad} = 22.5, *DT* = 5.26) estudiantes universitarios, a la que se aplicó un cuestionario formado por dos escalas: la *Escala de Habilidades Sociales* y la *Escala de Estrés Percibido*. Los principales resultados exponen que la religión se relaciona con las habilidades sociales, siendo el estudiantado musulmán el que mostró niveles más altos de habilidades sociales sobre expresión de sentimientos y enfado, mientras que el alumnado de religiones con menor presencia manifestó niveles más altos en cortar interacciones y expresar negación. Este estudio demuestra la necesidad de establecer programas de entrenamiento de estas habilidades como puente de unión entre religiones.

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The role of religion, due to its cross-cutting nature and its relationship with the psychosocial well-being of individuals, especially in multi-religious university and border contexts, influences various aspects of a person's life. Additionally, the coexistence of different religious beliefs and practices can generate tensions, but also unique opportunities (Eric et al., 2024). Religion extends beyond mere beliefs and rituals, encompassing spiritual values or community practices that can have a significant impact on the student's life. It is necessary to determine how religiosity can influence specific aspects such as social skills and stress management. For instance, participation in religious community practices can enhance social skills by fostering interaction with other community members and promoting teamwork (Cardozo-de A. et al., 2019). Furthermore, it is important to acknowledge that religious beliefs and social expectations can generate additional pressures and internal conflicts, which can negatively affect the mental health and interpersonal relationships of the student. In this study, both social skills and stress were analyzed considering their specific subdimensions: social skills include domains such as self-expression, anger management, making requests, or initiating interactions, while stress comprises perceived stress and coping strategies. Therefore, understanding how religion influences these areas may be crucial for providing effective support and promoting overall well-being in multi-religious educational environments (Sánchez-Bolívar et al., 2021). In this sense, religious diversity may create opportunities to strengthen intercultural dialogue, promote tolerance, and foster the development of social skills that are essential in diverse educational settings.

Religion, stress and social skills

Stress, understood as a response of the body to physical and mental demands, is a disruptive factor that affects mental balance and decreases functional efficiency, adversely impacting on the student's overall performance and well-being (Antczak-Komoterska et al., 2023; Brachtl et al., 2023). Stress level depends on two dimensions: first, perceived stress understood as the individual's appraisal of the situation as excessive and beyond their psychological resources. This interpretation is buffered by the coping strategies and psychological tools available to face such stressful circumstances, that is, the coping strategies the second dimension of stress (Remor & Carrobles, 2001). Religion plays a meaningful role in the perception and management of stress. Participation in religious communities provides strong social support and a sense of belonging, which can reduce stress perception by offering an emotional and practical support system (Sánchez-Bolívar et al., 2023). In addition, religious beliefs provide a framework for understanding life's challenges and finding deeper meaning in stressful experiences, offering comfort and hope. Beliefs regarding destiny and control can help reduce the sense of powerlessness over stressful events, thereby contributing to better stress management and greater resilience in the face of adversity (Park et al., 2023; Sokolovskaya et al., 2020; Vishkin et al., 2019).

The learning process of human beings is largely underpinned by social interaction, as it allows people to relate to each other through the use of unwritten and implicit standards (Kärtner et al., 2020). These relationships are essential for nurturing social skills, which are the ability to effectively use behavioral strategies that enable individuals to cope with situations in different social contexts (Solas-Martínez et al., 2022). Among the specific domains of social skills explored in this study, self-expression refers to the capacity to communicate one's own ideas and feelings respectfully, forming the basis of assertiveness; anger management involves expressing disagreement or frustration without harming interpersonal relationships; making requests reflects the ability to ask for help or resources appropriately; and initiating interactions captures the individual's ability to start and maintain positive exchanges with others (Gismero, 2002). Various agents such as family, friends, educational, or religious institutions play a substantial role in the development of social identity and interaction skills (Calderón-Castro et al., 2016; Lara-Logroño & Lorenzo-Bertheau, 2023; Solas-Martínez et al., 2022). Consequently, religion is emerging as an essential contributor in the development of these social skills. There is an increasingly recognized importance in considering religious influences in the educational environment and their impact on the acquisition of key social competencies (Sánchez-Bolívar et al., 2023). Religion can contribute to the development of skills such as management, leadership, and labor relations by providing a moral and ethical frame of reference that guides social interactions and promotes values of cooperation, empathy, and mutual respect (Diener et al., 2011; Weaver, & Agle, 2002). Therefore, understanding how religion modulates the development of these social skills fosters an educational environment that promotes personal growth and social integration (Sánchez-Bolívar et al., 2023; Vázquez et al., 2025).

Border and multi-religious contexts: Ceuta and Melilla

Cross-border and multi-religious contexts, exemplified by regions such as Ceuta or Melilla, are characterized by high unemployment rates and a significant portion of the population living below the poverty line. These features significantly influence the development of social skills. This is because in areas of this nature, the coexistence of various religious cultures, notably Christianity and Islam, shapes everyday interactions, with religious culture acting as a social modulator of community life and social relationships (Cacchione & Amici, 2020; Kärtner et al., 2020; Sánchez-Bolívar & Escalante-González, 2020).

Four religions coexist in Ceuta and Melilla: Christianity, Islam, Judaism, and Hinduism. The fusion of these religious influences leads to the multiculturalism of these places, where religious communities interact in daily life, creating a diverse environment at the architectural, gastronomic, and family level. Interreligious dialogue and mutual respect are essential for maintaining harmony in this multicultural context (Sánchez-Bolívar et al., 2021; Zhang et al., 2023). Challenges may also arise due to differences in beliefs, practices, and values among different religious communities, including interreligious tensions, ideological conflicts, or even discrimination (Kärtner et al., 2020). Religious diversity can lead to misunderstandings and communication

barriers that impede integration and peaceful coexistence among diverse religious groups, although it also presents an opportunity to foster enriching intercultural dialogues and the building of bridges of understanding (Zhang et al., 2023).

In summary, analyzing the relationship between religion, social skills, and stress management in multi-religious and cross-border contexts such as Ceuta and Melilla highlights both the challenges and opportunities that religious diversity brings, underlining the need to promote intercultural dialogue and educational strategies that foster coexistence, resilience, and social integration.

The present study

Despite substantial literature on religiosity, social competence, and mental health, little is known about how religion operates as a psychosocial modulator in border, multi-religious university settings such as Ceuta and Melilla. Addressing this gap, the present study examines the relationship between students' religious affiliation, perceived stress, and social skills. Based on previous literature some hypotheses were proposed: 1) There are no statistically significant differences in social skills among individuals based on their religious affiliation. H_0: $\mu_1 = \mu_2 = \mu_3 = \ldots = \mu_k$; 2) There are no statistically significant differences in perceived stress among individuals based on their religious affiliation. H_0: $\mu_1 = \mu_2 = \mu_3 = \ldots = \mu_k$; and 3) The magnitude of the differences in social skills and perceived stress among individuals of different religious affiliations is not statistically significant within the border, multi-religious context. H_0: $\eta^2 = 0$.

Method

Design and setting

The present study employed a non-experimental design (ex post facto), with a quantitative, descriptive, exploratory, and correlational nature, with a cross-sectional approach. Data were collected at the cross-border university campuses of Ceuta and Melilla in Spain.

Participants

The sample was selected through stratified random sampling, comprising a total of 436 university students (M_{age} = 22.5, *SD* = 5.26). Participants were enrolled at the Ceuta campus (*n* = 320; 73.4%) and the Melilla campus (*n* = 116; 26.6%). Women represented 78.9% (*n* = 344) and men 21.1% (*n* = 92). The gender imbalance reflected the composition of the par-

Table 1

Sociodemographic descriptives of the sample

			Christian/Catholic	Muslim	Other	Atheist	Total
Gender	Male	*n*	43	20	5	24	92
		%	46.7	21.7	5.4	26.1	100
	Female	*n*	171	98	11	64	344
		%	49.7	28.5	3.2	18.6	100
Campus	Ceuta	*n*	144	107	13	56	320
		%	45	33.4	4.1	17.5	100
	Melilla	*n*	70	11	3	32	116
		%	60.3	9.5	2.6	27.6	100
Degree	Early Childhood	*n*	32	24	1	4	61
		%	52.5	39.3	1.6	6.6	100
	Primary Education	*n*	1	5	0	0	6
		%	16.7	83.3	0	0	100
	Social Education	*n*	19	31	2	15	67
		%	28.4	46.3	3	22.4	100
	Computer Science	*n*	0	1	0	1	2
		%	0	50	0	50	100
	Business Admin	*n*	34	37	5	11	87
		%	39.1	42.5	5.7	12.6	100
	Nursing	*n*	128	20	8	57	213
		%	60.1	9.4	3.8	26.8	100
Total		*n*	214	118	16	88	436
		%	49.1	27.1	3.6	20.2	100

Note. The category of "Other" includes the responses to the religious affiliation as: Hindu, Jewish, and other religions.

ticipating degree program and voluntary participation patterns. Regarding religious affiliation, Christian/Catholic students constituted the 49.1% (n = 214), Muslim students 27.1% (n = 118), and minorities as Jewish, Hindu, and other religions the 3.6% (n = 16) of the participant. The remaining 20.2% (n = 88) were atheistic. A maximum sampling error of 4% was established, indicating that the sample estimates may differ by up to ±4 percentage points from the true population parameters at a 95% confidence level. Proportional representation of each religion was similar between genders (see Table 1).

Regarding the degree programs, in Early Childhood Education and Nursing, most students identified themselves as Christian/Catholic. In contrast, in Primary Education, Social Education, Computer Science, and Business Administration and Management degrees, most students declare themselves to be Muslims.

Measures

Demographic information was collected with a brief, closed-ended demographic form consisting of four single-choice items: age, gender (male or female), religious affiliation (Christian, Muslim, Hindu, Jewish, other religions, or Atheist), campus (Ceuta or Melilla), and current degree program (Early Childhood, Primary Education, Social Education, Computer Science, Business Administration, or Nursing). Gender, affiliation, campus, and current degree program were codified as categorical variables. Due to the low number of participants who answered the options of Hindu, Jewish, and other religions on religious affiliation, all of these response options were categorized as "Other".

Social skills were measured with the *Social Skills Scale* (SSS) by Gismero (2002). It consisted of 33 items across six dimensions: (1) self-expression in social situations, (2) defense of one's rights, (3) expression of anger or disagreement, (4) saying no and ending interactions, (5) making requests, and (6) initiating positive interactions with the opposite sex. Out of these, 28 items were formulated in the direction of lack of assertion or deficit in social skills, and 5 items were formulated positively. Responses were given on a 4-point scale from 1 = *I do not identify at all* to 4 = *I strongly agree and would feel* or *Act this way in most cases.* Internal consistency in this study was α = .91.

Perceived stress was assessed with the *Perceived Stress Scale* (PSS), Spanish adaptation by Remor and Carrobles (2001) based on Cohen et al. (1983). This questionnaire comprised 14 items, organized on a Likert scale from 0 = *Never* to 4 = *Very often,* measuring two dimensions: 7 items for perceived stress and 7 items for stress coping. The scale achieved a reliability index, measured by Cronbach's alpha, of α = .81 for perceived stress and α = .82 for stress coping.

Procedure

Initially, coordinators of each degree and professors of compulsory subjects were contacted to obtain the desired sample. Following approval from the coordinator and academics, appointments were scheduled to apply the tool with each group.

During the data collection session, students were informed that the survey was completely anonymous, and that by completing the survey, they were consenting to participate in the study (with the option to withdraw at any time). At least one researcher was on site to answer any questions or concerns that students may have had regarding the instruments.

After data collection, the questionnaires were coded, and all data were entered into the SPSS database. The research followed the ethical standards of the Ethics Committee in Human Research of the University Granada, code no. 2950/CEIH/2022.

Data analysis

First, the descriptive statistics of the variables under study were calculated, including means (M) and standard deviations (SD) for each item. Normality and homoscedasticity tests were conducted to ensure variance homogeneity, normal distribution in the data was confirmed, using the Kolmogorov-Smirnov test. Skewness and kurtosis indices were calculated, with all values falling between -2 and 2, thus allowing the use of factorial techniques (George & Mallery, 2010). To analyze the relationship between variables, one-way ANOVA was employed for polytomous variables, and effect sizes were estimated with partial eta squared (η^2_p). Post-hoc comparisons were performed using the Bonferroni test. Pearson correlations analyses of the variables under study were calculated. A General Linear Model (GLM) with Type III sums of squares was employed to examine differences in social skills and stress levels across religious affiliations. This approach is recommended when predictors are not independent, and correlations exist among variables (McCullagh & Nelder, 1998). Assumptions of normality, homoscedasticity, and independence were examined and met, ensuring the feasibility of the procedure.

In the multivariate GLM, Wilks' Lambda was used as the reference statistic for inference, and we report Wilks' Λ, F, df, p, and η^2_p. This choice follows common practice and facilitates comparability across studies when assumptions are met (e.g., Box's M non-significant), whereas Pillai's trace is typically preferred only when assumption violations are suspected (Huberty & Olejnik, 2006; Tabachnick & Fidell, 2019;). Effect sizes were interpreted with partial eta squared (η^2_p = .01 small, .06 medium, .14 large; Cohen, 1988).

Results

Descriptive, correlations and comparison analyses

On the one hand, the students demonstrated moderate to high levels of social skills, as shown in Table 2, with mean values above 2 across dimensions, particularly excelling in social skills related to "making requests" *(M* = 2.69; *SD* = 0.52). On the other hand, the analyzed students display moderate to

Table 2

Relationship between religion and social skills and stress

	Religion	Mean	*SD*	*n*	
Social skills	Christian/Catholic	2.47	0.52	214	
	Muslim	2.7	0.6	116	
	Other	2.76	0.52	18	
	Atheist	2.44	0.53	88	
		Mean	*SD*	*p*	η^2_p
Self-expression	Christian/Catholic	2.44	0.7	< .001	0.24
	Muslim	2.79	0.73		
	Other	2.76	0.89		
	Atheist	2.35	0.76		
	Total	2.53	0.74		
Defense of own rights	Christian/Catholic	2.57	0.66	.072	0.13
	Muslim	2.76	0.7		
	Other	2.56	0.69		
	Atheist	2.58	0.59		
	Total	2.62	0.66		
Expressing anger or disagreement	Christian/Catholic	2.39	0.77	< .001	0.23
	Muslim	2.79	0.84		
	Other	2.66	0.86		
	Atheist	2.32	0.81		
	Total	2.49	0.82		
Saying no and ending interactions	Christian/Catholic	2.41	0.75	.003	0.18
	Muslim	2.7	0.85		
	Other	2.77	0.7		
	Atheist	2.38	0.79		
	Total	2.5	0.79		
Making requests	Christian/Catholic	2.67	0.53	.104	0.12
	Muslim	2.66	0.56		
	Other	2.96	0.42		
	Atheist	2.75	0.45		
	Total	2.69	0.52		
Initiating positive interactions	Christian/Catholic	2.37	0.67	.027	0.15
	Muslim	2.54	0.74		
	Other	2.71	0.68		
	Atheist	2.33	0.63		
	Total	2.42	0.69		
	Religion	Mean	*SD*	*n*	
Stress	Christian/Catholic	2.41	0.41	214	
	Muslim	2.55	0.47	116	
	Other	2.45	0.44	18	
	Atheist	2.45	0.41	88	
		Mean	*SD*	*p*	η^2_p
Perceived stress	Christian/Catholic	2.34	0.76	.248	0.1
	Muslim	2.51	0.8		
	Other	2.51	0.95		
	Atheist	2.46	0.84		
	Total	2.41	0.8		
Stress soping	Christian/Catholic	2.49	0.69	.519	0.07
	Muslim	2.58	0.71		
	Other	2.51	0.62		
	Atheist	2.44	0.72		
	Total	2.50	0.7		

high levels of stress coping *(M* = 2.5; *SD* = 0.7) and low levels of perceived stress *(M* = 2.41; *SD* = 0.8).

Table 2 displays the findings obtained through descriptive analysis considering the overall scale values: Social skills and Stress. Considering the religion variables, it can be observed that higher average Social skills scores were achieved in the Other (*M* = 2.76) and Muslim (*M* = 2.7) categories. The lower scores were seen in the Christian/Catholic *(M* = 2.47) and Atheist (*M* = 2.44) groups. All religion affiliation categories showed standard deviations between 0.52 and 0.6, indicating a certain homogeneity among the scores that comprise them. In the meantime, the crosses between the different religions with the stress variable also produced varying results. In this respect, the Muslim religion group obtained the highest average stress score, with a mean of 2.55, while other religions and Atheist groups had the same average of 2.45. Finally, the Christian/Catholic group had the lowest average stress at 2.41. The standard deviations indicated the uniformity of the scores of the four groups under scrutiny, which range from 0.41 to 0.47. However, when testing for statistical significance, no meaningful differences were found.

The results of ANOVA analyses showed that statistically significant differences were identified between religion and social skills of "self-expression" ($F(3, 432) = 34.21$; $p < .001$; $\eta^2_p = .24$), where Muslim students (*M* = 2.79; *SD* = 0.73) presenting the highest mean and atheist students the lowest (*M* = 2.35; *SD* = 0.76) (see Table 2). Post-hoc comparisons indicated that Muslims scored higher than Catholics and atheists, and Other religions group scored higher than atheists; the remaining pairwise contrasts were non-significant.

Furthermore, significant differences were found in "Expressing anger or disagreement" ($F(3, 432) = 33.59$; $p < .001$ $\eta^2_p = .23$), with post-hoc tests showing that Muslims scored significantly higher than Catholics and Atheists, and students from Other minority denominations scored significantly higher than both Catholics and Atheists. For "Saying no and ending interactions" ($F(3, 432) = 4.82$; $p = .003$; $\eta^2_p = .18$), the Other minority denominations group presented the highest mean (*M* = 2.77; *SD* = 0.7), while Atheist students presented the lowest (*M* = 2.38; *SD* = 0.79). Post-hoc results indicated that students from Other minority denominations and Muslims scored significantly higher than Atheists in this domain. Other pairwise differences did not reach significance. Finally, significant differences were identified in "Initiating positive interactions" ($F(3, 432) = 3.09$; $p = .027$; $\eta^2_p = .15$), with Other minority denominations group showed the highest mean (*M* = 2.71; *SD* = 0.68). Post-hoc tests showed that students from Other minority denominations group scored significantly higher than Catholics and Atheists, and Muslims scored significantly higher than Atheists. The remaining contrasts were not significant. According to Cohen's (1988) criteria, these η^2_p values correspond to large effect sizes. As far as stress is concerned, although mean differences were observed, the ANOVAs were not significant, indicating no relationship between stress dimensions and religious affiliation (perceived stress: ($F(3, 432) = 1.39$, $p = .248$, $\eta^2_p = .01$) and stress coping: $F(3, 432) = 0.75$, $p = .519$, $\eta^2_p = .01$). This suggests that, despite slight mean variations, religious affiliation was not significantly associated with differences in stress levels or coping strategies.

Regarding the direction and degree of relationship between the analyzed variables, as evidenced in Table 3, Pearson's bivariate correlation was used for this purpose. It is worth noting that all dimensions of the analyzed social skills count with a strong positive correlation among themselves, which is statistically significant in all cases. These correlations were moderate between the "Making requests" dimensions and all other dimensions. Only one significantly positive correlation was found between social skills dimensions and stress dimensions. Specifically, between "Making requests" and "Stress coping" (*r* = .13). Concerning the measured dimensions of perceived stress, in addition to what was mentioned earlier, there is a negative and moderate, although statistically significant ($p < .01$), correlation between perceived stress and stress coping (*r* = -0.34).

Differences on social skills and stress levels among religious affiliation

A multivariate GLM was conducted to test differences in social skills and stress levels according to religious affiliation. Preliminary analyses confirmed the assumptions of homogeneity: Box's *M* = 11.64, $F(9, 25295.96) = 1.27$, $p = .25$. Leve-

Table 3

Correlation matrix of the dimensions of the analyzed constructs

	DOR	EAD	SEI	MR	IPI	PS	SC
Self-expression (SE)	.58*	.7*	.7*	.32*	.59*	.09	.01
Defense of own rights (DOR)		.56*	.64*	.35*	.42*	.01	.01
Expressing anger or disagreement (EAD)			.68*	.25*	.46*	.09	-.07
Saying no and ending interactions (SEI)				.4*	.52*	.03	-.06
Making requests (MR)					.31*	-.05	.13*
Initiating positive interactions (IPI)						-.04	.01
Perceived stress (PS)							-.34*
Stress coping (SC)							

*$p < .01$

ne's tests was non-significant ($p > .05$). Thus, the GLM design 'Intercept + Religion' was adequate.

Concerning the GLM results, Table 4 shows the impact of both the intercept and the variable religion. The intercept was statistically significant, Wilks' $\Lambda = 0.04$, $F(2,431) = 5486.49$, $p < .001$, $\eta^2_p = .96$, indicating a very strong effect that explained most of the variance in social skills and stress. This confirms that the intercept (β_0) has a decisive impact on the dependent variables reflecting full capacity to detect existing effects. In contrast, religion presented a small but significant multivariate effect (Wilks' $\Lambda = 0.94$, $F(6,862) = 4.62$, $p < .001$, $\eta^2_p = .03$.) This indicates that religious affiliation contributed to differences across groups, but its explanatory power was limited compared to the intercept.

The results achieved from the inter-subject effects tests through the type III model were reported on Table 5). As for the source of variation, the intercept has an extremely significant effect on social skills ($p < .001$) with a partial eta square of 0.91, indicating that 91.2% of the variance in social skills is explained by the intercept. The observed power is 1, meaning any effect present would be always detected. The intercept also has an extremely significant influence on stress ($p < .001$) and a partial eta square value of 0.94, indicating that 93.9% of the variance in the stress variable is explained by the intercept. The observed power is 1 and, as before, if there is an effect it would still be detected in 100% of cases.

Meanwhile, religion had a statistically significant effect on social skills ($p < .001$) and a partial eta squared of 0.044, indicating that 4.4% if the variance in social skills is explained by

Table 4

Effect of the intercept and the independent variable religion

Effect	Wilks' Λ	*F*	Hypothesis df	Error df	Sig.	η^2_p
Intercept	0.04	5486.49	2	431	< .001	.96
Religion	0.94	4.62	6	862	< .001	.03

Note. Multivariate inference was based on Wilks' Λ. Effect sizes are reported as partial eta squared (η^2_p), with thresholds of .01 = small, .06 = medium, and .14 = large (Cohen, 1988). Degrees of freedom reflect the SPSS multivariate output.

Table 5

Tests of intersubject effects using the type III model

Source	Dependent variable	df	*F*	Sig.	η^2_p
Intercept	Social skills	1	4488.213	< .001	.912
	Stress	1	6598.739	< .001	.939
Religion	Social skills	3	6.674	< .001	.044
	Stress	3	2.766	.042	.019
Error	Social skills	432			
	Stress	432			

Note. Multivariate inference was based on Wilks' Λ. Effect sizes are reported as partial eta squared (η^2_p), with thresholds of .01 = small, .06 = medium, and .14 = large (Cohen, 1988). Degrees of freedom reflect the SPSS multivariate output.

Table 6

Results of post-hoc analyses, Bonferroni adjustment

Dependent variable	*Groups compared*	*Mean difference*	*Sig. (Bonferroni)*
Social Skills	Muslim – Christian/Catholic	+0.23	.001
	Muslim – Atheist	+0.25	< .001
	Muslim – Other	-0.06	.742
	Other – Christian/Catholic	+0.29	.008
	Other – Atheist	+0.31	.004
Stress	Muslim – Christian/Catholic	+0.14	.036
	Muslim – Atheist	+0.09	.211
	Muslim – Other	+0.04	.588
	Other – Christian/Catholic	+0.10	.263
	Other – Atheist	+0.05	.467

Note. Bonferroni correction applied.

religion. This represents a small effect. The observed power is high (0.97), which shows that the effects would be detected in 97.4% of the cases. Similarly, religion has a significant effect on stress ($p < .05$) and a Partial Eta Square value of 0.019, suggesting that 1.9% of the variance in stress can be attributed to the religion variable. This represents a small effect. The observed power is moderate (0.667). Effects would only be detected in 66.7% of cases in which they were present.

Finally, and in relation to the differential effects of the religion variable, we present the results of the various post hoc comparisons. We have conducted and reported the post-hoc tests (Bonferroni adjustment) to specify between which religious groups the statistically significant differences occur. The results in Table 6 indicate significant differences in social skills by religion, particularly between Muslim students compared to Christian/Catholic and atheist groups, as well as between religious minorities and those same groups. Regarding stress, only the comparison between Muslims and Christians/Catholics reached statistical significance, while the other pairwise differences were not significant.

Discussion

This study analyses the sociodemographic profile of university students and its relationship with psychosocial variables, stress, and social skills in a border and multi-religious educational context.

The students demonstrate a high capacity of stress soping and low levels of perceived stress. This is related to the negative relationship between these two dimensions, which suggests an association whereby students with higher stress soping skills or greater perceive social support tend to report lower levels of perceived stress compared to those with fewer coping resources or less support from their environment. This aligns with the findings of Cajas-Bravo et al. (2020) and Gómez-Jiménez (2022), who suggest that individuals with better developed social skills also develop a positive emotional attitude that facilitates peer relationships, while improving students' emotional management (Murano et al., 2021). At the group-comparison level, differences in perceived stress by religious affiliation were largely non-significant, despite small correlational links at the construct level.

Furthermore, a low relationship was found between stress coping and making requests, which may be because individuals may resort to different strategies to cope with stress (Lee & Song, 2022). Making requests involves seeking help or external resources, which can be perceived as a form of dependency for some individuals. While some people may be more proactive and seek social support by making requests, others may use less direct coping strategies, such as avoidance or distraction, which do not necessarily involve making requests to others (Vestad & Tharaldsen, 2022). This aligns with a small correlation between these dimensions.

It is noteworthy that university students obtained particularly high values of social skills in the dimension of making requests. This may be explained by the fact that, in an environment where multiple religious beliefs coexist, the establishment of positive and effective interpersonal relationships depends on individual's ability to accept, with understanding and respect, the religious practices and beliefs of their peers. Consequently, students need to further develop intercultural communication skills to be able to thrive in cross-border and religiously diverse environments, a point supported by the idea of Virtanen and Tynjala (2022) that social skills are acquired through collaborative interaction.

In addition, students who grow up in cross-border and multi-religious environments may benefit from stronger cultural and religious ties that can foster resilience. However, according to Fridkin et al. (2023), the constant need for adaptation may increase stress levels, as students must continually negotiate cultural and social expectations. For Zhuo et al. (2021), development in complex social environments can be emotionally demanding and may not be accompanied by a supportive social connection as a protective factor against stress, especially following the COVID-19 pandemic. Consistent with acculturation and minority stress frameworks, stress can remain elevated despite strong community ties due to stigma vigilance and adaptation demands, especially under border-region socio-economic strain (Berry, 2005; Meyer, 2003). In this sample, the association between religion and stress was small and likely contingent on contextual factors (e.g., socioeconomic conditions, experiences of discrimination, post-COVID campus climate). In contrast, Zeladita-Huaman et al. (2023) found that religion predicts stress highlighting that the relationship may vary across contexts and populations. This phenomenon is related to the multicultural environment of the autonomous cities of Ceuta and Melilla, where religion has a strong influence on living conditions, educational dynamics, and labor markets, as described by Sánchez-Bolívar et al. (2022). Therefore, religion has a significant impact on social skills suggesting that religious communities with strong social bonds and community support facilitate the development of interpersonal skills. However, in light of small effects, practical implications should emphasize targeted, low-cost skills training rather than strong predictive claims.

Taken together, these overall patterns provide the context for the group comparisons by religious affiliation. Muslim students showed higher scores in Self-expression and Expressing anger or disagreement than other believers, consistent with small effects. The control of this dimension of social skills may be because this community has strong religious and cultural ties, receiving significant reinforcement from their community (Saroglou, 2011; Vishkin et al., 2019). This suggests that there are strong social ties and, in line with Sokolovskaya et al. (2020), as religious beliefs increase, stronger social ties are established and social support becomes stronger, which contributes to an increase in social skills and the benefits of religion (Cohen et al., 2017). One possible explanation is that a collectivistic orientation, characterized by dense community networks, may support assertive expression while reducing interpersonal risk, although this was not directly measured in the present study (Saroglou, 2011). Related to the above, in such a religious context, students belonging to minority religions develop more the

social skill of Saying no and Ending interactions and Initiating positive interactions. This may be because by learning to say "no" in a respectful way, students can establish healthy boundaries while demonstrating respect for the religious beliefs and practices of others (Solas-Martínez et al., 2022).

Lastly, although religion influences stress, its effect is smaller compared to the impact of the intercept. Muslim students report higher levels of stress, which is in accordance with the study by Smart et al. (2024), which shows that students, when faced with specific academic and social demands, develop a variety of coping strategies to manage stress. While religion may provide a supportive framework, Muslim students may experience higher levels of stress due to the constant need to adapt to multi-religious environments. This finding suggests that, along with religious support, there is a necessity to encourage problem-focused coping techniques, which have been shown to be more effective in reducing psychosocial distress.

Limitations and future directions

Although the study presents important implications, some limitations should be underlined. The main limitation of this research was the challenging access to an already limited sample. The single-context focus (Ceuta/Melilla) may constrain external validity; multi-site studies are recommended. There was an over-representation of women, which may limit generalizability; future studies should consider stratified sampling or statistical controls. As well as the cross-sectional design precludes causal inference. The exclusive use of self-report measures raises the possibility of social desirability and fatigue effects. Additionally, the social skills scale, although it demonstrated high levels of validity and reliability, included a large number of items, which combined with the sociodemographic factors and the stress scale, may have excessively burdened the participants. Finally, given the small effects observed, interpretations should be cautious and framed in terms of modest practical significance. Future work should examine additional variables (e.g., socioeconomic status, perceived discrimination, social support) and potential moderation by gender and minority status, ideally using longitudinal or mixed-method designs with pre–post program evaluation.

Practical implications

The findings highlight that differences in social skills and stress across religious affiliations were statistically significant but small in magnitude. These results suggest that educational interventions in border and multi-religious contexts should prioritize fostering inclusive environments and promoting intercultural dialogue, while recognizing that the practical impact of religious affiliation on students' psychosocial outcomes is modest.

Conclusion

With this research, aimed at analyzing the relationship between religion and social skills among university students in multi-religious environments, it is evident that there is a relationship between students' religion and their level of social skills, with a particular emphasis on those related to making requests. Given the small effects, these associations should be framed as modest rather than strongly predictive. Muslim students display a significant ability to express their concerns as well as their anger or opposition to ideas, compared to the rest of the students, while students from minority religions stand out for showing greater initiative in interpersonal interactions. However, students from minority denominations exhibit higher values in social skills related to taking the initiative to establish interpersonal relationships and those related to expressing denial and effectively finishing social interactions. Regarding stress, its association with religion was small, suggesting limited practical impact and dependence on contextual factors.

Author contributions

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Validation, L. S.-B.
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Investigation, L. S.-B.
Resources, L.M.V.
Visualization, M. J. C.-R., S. E.-G.
Supervision, L.M.V., C. R.-S., L. S.-B.
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AI usage and assistance

Artificial intelligence tools were used to support the revision of grammar, syntax, and overall clarity of the manuscript.

Declaration of interests

The authors declare no conflicts of interest.

Data availability statement

Research data are not shared.

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