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Cultural and Sex Differences in Emerging Adults: Identity Uncertainty, Psychological Symptoms and Adjustment at University

Barbara M. Gfellner [1,*], Ana I. Cordoba [2] and Maria Fernanda Cordero-Hermida [3]

[1] Department of Psychology, Brandon University, Brandon, MB R7A 6A9, Canada
[2] Department of Psychology, University of Valencia, 46010 Valencia, Spain; Ana.cordoba@uv.es (A.I.C.)
[3] Department of Psychology, University of Cuenca, Cuenca 010107, Ecuador; Fernanda.cordero@ucuenca.edu.ec (M.F.C.-H.)

* Corresponding author. E-mail: gfellner@brandonu.ca (B.M.G.)

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ABSTRACT: From the perspective of emerging adulthood, we investigated the role of culture and sex in associations between uncertainty and distress in identity development, psychological symptoms, and functioning at university among students in Canada, Spain, and Ecuador. The countries were categorized as individualistic or collectivistic according to Hofstede's cultural dimensions. Participants included 661 students (median = 18 years, 76.6% female) in Canada (51.6%), Spain (16.2%), and Ecuador (32.2%). They completed the Identity Distress Scale, College Assessment of Psychological Problems Scale, and Student Adjustment to College Questionnaire with online surveys. Spanish students reported the greatest identity distress. Elevated academic adjustment was found for Ecuadorian students, who along with Spanish students exceeded those in Canada on social adjustment. Psychological symptoms mediated linkages between identity distress and academic and social adjustment for Canadian and Spanish women. Conversely, mediation was supported for the personal-emotional functioning of all students. Unexpected differences were found between males and females for identity distress and psychological difficulties among students in the individualistic countries. The findings underscore the need for the attention of researchers and counselors to potential variations in culture, sex, and other relevant personal and contextual factors and how they influence the identity development and well-being of university students worldwide.

Keywords: Emerging adulthood; Identity distress; Psychological symptoms; Adjustment to university; Cultural comparisons; Sex differences; Individualism-collectivism

1. Introduction

From the lifespan perspective, emerging adulthood (EA) refers to the transitional period from adolescence until young people fully assume the roles and responsibilities associated with adult status in their society [1,2]. In post-modern and developing countries, it follows from advances in technology and social changes that have led to greater time requirements for education and increases in the age of marriage and parenthood [3]. In line with Erikson's theory [4] identity development has become the major psychosocial task of this stage. It involves searching, exploring, and evaluating options in relevant life domains in the process of constructing an integrated sense of self. EA is an important juncture and the first time that many young people have enough autonomy to direct their future life goals. It is not surprising that EA has been studied most extensively among college and university students as post-secondary environments provide the opportunity to explore identity issues [5,6]. Nevertheless, identity work involves considerable ambiguity, given the increased freedom and lack of adult supervision often with few guidelines and direction available. The EA perspective emphasizes the role of culture and context [7] yet much of the research has involved samples in the western world where norms for EA may vary. In a recent position paper Schwartz [8] stressed the need to identify the role of cultural variations for a comprehensive understanding of EA adjustment and well-being throughout the world.

In general, EA is associated with greater optimism and well-being in comparison with adolescence [9]. Nevertheless, there is also increased anxiety, despair, and worry about one's future [10]. A certain amount of identity

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distress that is, uncertainty, ambivalence, confusion, and/or discontent with one or more identity issues is expected and normative but for some individuals this may become overwhelming and seriously interfere with everyday functioning [11,12]. Challenges in modern societies including wars, social and political unrest, natural disasters, climate-change events, and epidemics have added to increased identity distress [13–17]. At the same time, psychological problems often worsen or first become apparent when young people are in the process of identity construction [18]. Mental health difficulties have been increasing steadily among university students worldwide [19–23] to the extent that this elevation has become a crisis situation [24]. Indeed, it is not surprising that psychological problems in combination with uncertainty and worry over identity concerns complicate and interfere with identity synthesis and functional well-being during EA [12,18,25].

This study provided an opportunity to extend earlier research on the role of psychological problems in the linkage of identity distress and college adjustment among students in Canada and Spain [26] with an enhanced international sample of university students. Previous studies [27] indicated differences between identity distress, psychological problems, and functional outcomes among university students in Canada and Spain. These variations were interpreted in terms of macro-contextual distal (e.g., high youth unemployment) and proximal (e.g., social disruption on campus, programs of studies, class structure, *etc.*) factors. Drawing on Hofstede's [28,29] Cultural Dimensions Theory, in this study we investigated potential differences among students in countries that varied along the dimension of individualism-collectivism to elucidate associations between identity distress, psychological problems, and adjustment at university and how they may vary by cultural context. In addition, sex differences were examined given the increased incidence of mental health problems among females [20] and inconsistent findings for identity distress [25,27,30–35].

The objective was to explore the role of culture and sex differences in associations between these variables to contribute to our understanding of EA in different countries [8]. The findings are expected to contribute to theory and research in the identity framework and to provide some directions for relevant supportive services to university students in these diverse cultural contexts.

1.1. Identity Distress

Identity development is the major psychosocial task of EA in the transition to adulthood [4]. It involves searching and questioning in the process of exploring and evaluating potential identity alternatives and making commitments to construct a coherent self-conceptualization that integrates the past with the present to influence future decision-making [3,4,36]. During this period, students are actively querying and examining relevant aspects of their lives including education, vocational pursuits, relationships, values, and lifestyle choices before they have fully assumed adult roles and responsibilities [5]. A certain amount of distress with identity issues in these various identity domains is normative and expected in the process of resolving one's sense of self. However, some individuals become distraught and incapacitated with identity concerns to the extent that identity distress seriously interferes with their daily activities and behavior [12,30,37].

Identity distress deals with the content of identity development. In terms of identity processes, identity distress is related positively to moratorium, the identity status that involves the active exploration of identity issues before making commitments [30]. It is associated positively with maladaptive identity exploration (ruminative exploration) and negatively with identity resolution [25,38–40]. Identity distress is most evident among university students as the college environment promotes active exploration of life choices across many domains, especially long-term goals and career choice [25].

Based on the DSM nomenclature, Berman and colleagues [30,31] developed the Identity Distress Scale. The clinical significance of identity distress is seen in the diagnostic criteria of the DSM classification of identity dysfunction to identify individuals who experience severe distress due to an inability to integrate different aspects into a coherent sense of self which interferes with everyday functioning. The diagnostic criteria of Identity Disorder in the DSM-III [41] included the domains of long-term goals, career choice, friendships, sexual orientation and behavior, religion, moral values, and group loyalties with consequent distress and disruption to normal functioning. In the DSM-IV [42], it was downgraded to a less stringent diagnostic criteria, Identity Problem under "conditions that may be a focus of clinical attention" (p. 685). This was due to infrequent clinical study, diagnosis, or misdiagnosis as depression or borderline personality disorder [12,31]. The DSM-5 [43] retained the clinical importance of identity distress but included identity impairment as a diagnostic feature in the new alternative model of personality disorders.

Developmental psychopathology emphasizes the role of identity distress in mental health and conceptualizes identity functioning in terms of a continuum that ranges from normal (adaptive) functioning to pathological identity

disturbance [44]. In comparison with community adolescent and EA samples [25,31,45] identity distress is elevated in clinical samples [37], high-risk adolescents [46], and college students diagnosed or in treatment [34]. Identity distress has been associated with internalizing and externalizing symptoms [32,37,47], negative emotions [34], disturbed body image [48], PTSD [15], delayed psychosocial development and malfunctioning at university [27,45]. These findings indicate that identity distress is a common concern for many young people, especially for those with mental health problems [31,49]. Indeed, recent research is focused on the utility of identity distress in the understanding and treatment of diagnostic psychiatric disorders [24,44,50].

As noted earlier, EA is the period when psychological problems often first become evident with notable intensification during the college years [23,51–53] Clearly, such an increase in psychological difficulties has been found to interfere with identity synthesis and integration [12,18,25]. This study provided the opportunity to investigate the role of psychological symptoms and disturbances in identity development in relation to functioning at university with a diverse sample of students in Canada, Spain, and Ecuador.

There is still a lack of clarity regarding sex differences in identity distress. Some studies reported no sex differences [30,33,46] or higher scores among women in several content areas [31]. Other studies found higher rates of Identity Distress and Problem among EA women [25,31] and in more domains, for a longer time, and with greater impact on their lives than men [25,31,35]. This has been explained in terms of differences in sex/gender roles that emphasize communion, nurturance and emotionality in women and lead to more challenges in daily living. Research with Canadian and Spanish students did not find sex differences in identity distress incidence or scores [27,30,32,33,45]. This study provided the opportunity to examine sex differences in identity distress among students in different countries including Canada and Spain. This may provide some insight on how cultural context may relate to sex differences in identity distress.

1.2. Psychological Problems

The rates of psychological symptoms have risen dramatically among university students throughout the world [19,51,54–57]. Auerbach and colleagues [20] reported that nearly a third of first-year students surveyed in 8 countries (United States, Spain, South Africa, North Ireland, Mexico, Germany, Belgium, and Australia) at 19 universities screened positive for at least one common diagnostic disorder. Similarly, Ballester et al. [58] found that a third of Spanish university students indicated a common mental health disorder in the past year and one-third of those reported severe functional impairment. In Ecuador Moreta-Herrera et al. [59] noted increases in mental health problems among university students with even higher rates reported in other studies [60,61] including a greater incidence among university students than EAs not attending university [62]. Overall, females consistently exceed males on indices of psychological symptoms in these reports throughout the world (20]. In the present study we were able to examine sex differences in identity distress among students in different countries, and associations with psychological problems and diverse facets of adjustment at university, respectively. Given the increased incidence of mental health difficulties among women and elevated identity distress in several EA samples [25,35], sex would be predicted to moderate the associations between identity distress, psychological symptoms, and personal emotional functioning at university. However, as other studies [6,30,33] have not reported sex differences in identity distress the current study provided an opportunity to examine these ambiguous findings.

1.3. Adjustment to University

Academic, social, and personal-emotional adjustment to university are the outcome measures in this study. They are related but reflect unique dimensions of student functioning at university. Baker and Siryk [63] developed the Student Adjustment to College Questionnaire (SACQ) as a screening measure to assess the basic psychological needs and well-being of university students. Academic adjustment refers to the extent to which students adapt to academic requirements including attitudes toward courses, engagement with material, study habits, and academic motivation. Social adjustment indicates students' involvement in activities at university, meeting new people and making new friends as opposed to experiencing loneliness and missing family. Personal-emotional adjustment indexes students' experience of stress, anxiety, and physical demands of the college environment [63]. In a comprehensive review, Crede and Neihorster [64] reported lower personal-emotional development scores among females.

1.4. The Role of Culture

Hofstede [28] describes culture as a pattern of thinking, feeling, and responding that distinguishes members of one group from another. It includes beliefs, values, and presumptions learned in the formative years and part of one's national history influencing prominent characteristics evidenced in societies and members' cognitions and behaviors [65]. Cultural values are shared intangible ideas regarding appropriate social collectivity [66]. Hofstede's [28,29] Cultural Dimensions Theory is the most extensive ecologically grounded assessment of cultural values. It involves six comprehensive dimensions that have been used to describe, understand, and predict many differences between cultures, mainly in terms of cognition and emotion [67]. The Individualism-Collectivism dimension has been studied most extensively. It reflects the extent to which people in a culture prefer independence over interdependence. Individualistic cultures value personal goals and freedom whereas collectivistic cultures emphasize dependence on families and groups so that group cohesion, norms, loyalty, and connection are important. The other cultural dimensions in Hofstede's model are power distance, uncertainty avoidance, short *vs.* long-term orientation, motivation toward achievement and success (formerly masculinity-femininity), and restraint *vs.* indulgence. Overall, individualism, power distance, motivation toward achievement, and uncertainty avoidance index the strength of relationships between individuals and social groups, the degree of acceptance of equality, the expected emotional gender roles, and people's intolerance for uncertainty in ambiguous situations. Long-term oriented societies emphasize planning for the future and indulgence refers to the extent of permissiveness for decadent, pleasure-seeking behaviors. The relevance of each of these specific dimensions is based on a 100-point rating for every culture/country.

In this study we used Hofstede's ratings [29] to categorize countries in terms of the individualism-collectivism dimension. Canada and Spain are individualistic cultures, and Ecuador is a collectivistic culture with variations on other dimensions. According to the World Bank [68] Canada and Spain are high income countries while Ecuador is a developing lower-middle income country. This study extends earlier research with EAs in Canada and Spain by the inclusion of a sample of Ecuadorian students. Greater identity distress (uncertainty with identity issues) was expected in the individualistic countries given the focus on independence and personal achievement [28]. Alternatively, findings are inconsistent for sex differences with elevated identity distress among Swedish [35] and Flemish [25] females in comparison with no sex differences in Spanish and Canadian samples [13,38,45]. This study enabled an examination of potential sex differences in Canada, Spain, and Ecuador. In line with this earlier research in two of the three cultures/countries sex differences in identity distress were not anticipated in Canada and Spain and minimal differences were anticipated in Ecuador, the collectivistic culture with a focus on achievement and accomplishment in terms of Hofstede's model [29].

Following global trends in mental health rates of university students [19] overall differences were not anticipated between the groups for psychological symptoms or personal-emotional adjustment to university. However, as indicated in earlier research [19,69], females were expected to have elevated scores on these indices.

Alternatively, culture and sex differences may be anticipated in relations between psychological symptoms, identity distress, and the different facets of adjustment at university. In a recent study, Ozcan and Bulus [69] found more factors related to academic resilience among adolescents in collectivistic than individualistic cultures defined by Hofstede's [29] model. These included greater focus on life goals, task mastery, perspective taking abilities, positive attitude toward school, perceptions of school as both competitive and cooperative, motivation to succeed based on competition, and feeling more socially connected with parents. Other reports indicate a significantly greater proportion of women than men in tertiary education in western countries [70,71] and the sex ratio for women is increasing in Ecuador [72]. Women do better academically, and have a higher graduation rate [70,73]. Based on these findings academic adjustment may be expected to be higher among students in collective cultures and women.

According to Hofstede's model [29] students in collectivistic cultures would be expected to have elevated social adjustment scores due to the focus on group cohesion and connectiveness. In comparison, individualistic cultures emphasize personal rights and freedom, an egoistic orientation. At the same time, gender role differences underscore females' social, communal, interdependent, and supportive competencies which are prominent in collectivistic cultures. These perspectives provide the rationale for predicting elevated social adjustment among women in the collective culture.

As with sex differences in psychological symptoms [19] males evidence greater personal-emotional adjustment at university than females [64]. Consistent with these results females are expected to score lower on personal-emotional adjustment than their male contemporaries.

The findings are expected to contribute to the growing literature on the role of culture in EA [7,8] including the paucity of research in Latin America [74]. A similar concern is being echoed with the need to consider culture and

context in the identity development framework [75]. This study examined sex differences in relation to culture given inconsistent findings in identity distress in earlier research with individualistic countries by the inclusion of a collectivistic country. This is in tandem with the cultural developmental approach to understanding psychological development in today's global world [76].

1.5. The Current Study

This study examined:

(1) Country by Sex comparisons and associations between psychological symptoms, identity distress, and academic, social, and personal-emotional adjustment at university among students in Canada, Spain, and Ecuador;
(2) country and sex differences in the role of psychological symptoms as a mediator in the linkage of identity distress with students' academic, social, and personal adjustment at university; and
(3) sex as a moderator in the relationship between identity distress, psychological symptoms and the adjustment to university variables for the respective cultures.

The predictions were as follows.

(1) Greater identity distress was expected in the individualistic than collectivistic cultures. Consistency was predicted in psychological symptoms and personal-emotional adjustment across the countries. Academic and social adjustment was expected to be higher in the collectivistic than in the individualistic countries.
(2) Psychological symptoms and identity distress were expected to be associated positively with each other and inversely with the adjustment to university variables.
(3) Psychological symptoms were expected to mediate the associations between identity distress with academic, social, and person-emotional adjustment to university, respectively, and by country.
(4) The moderating role of sex was examined in relation to identity distress and psychological symptoms, with the student adjustment to university variables in the different cultures. Females were expected to score higher on academic adjustment and social adjustment, and lower on personal-emotional adjustment than their respective male cohorts.

2. Method and Measures

2.1. Participants

Overall, 661 university students 17 and 26 years of age completed a survey. There were: 341 participants in Canada (median = 18 years; 80.4% women); 107 in Spain (median = 19 years; 84.1% women); and 213 in Ecuador (median = 21 years; 67.6% women). Table 1 provides a description of the samples by country. The universities in Spain and Ecuador were in large metropolitan centers and a smaller city in Canada. The university system in the former countries employed academic entrance requirements with state/government funding with students entering specific programs in contrast to an open access entrance policy and a heterogeneous arts and sciences model in Canada where students were not required to select a major until second year or later.

Table 1. Demographic characteristics of the students in Canada, Spain, and Ecuador.

Variable		Canada	Spain	Ecuador
N		341	107	213
Females		80.4% (274)	84.1% (90)	67.6% (144)
Males		19.7% (67)	15.9% (17)	32.4% (69)
Age		19.23 (1.99)	19.82 (1.74)	21.29 (2.07)
Race or Ethnicity	White	77.4%	96.2%	1.4%
	First Nation/Indigenous	8.2%	-	1.0%
	Mestizo/a	-	-	97.7%
	Asian	6.2%	-	-
	African	3.5%	-	-
	Arab	-	3.8%	-
	Other/International	4.7%	-	-
Marital Status	Single	94.1%	99.1%	65.6%
	Married/Common-law	5.6%	0.93%	29.9%
	Divorced	0.3%	-	8.5%
Father's Education Attained	Elementary school	2.3%	21.5%	21.9%
	Some high school	14.2%	14.0%	11.0%

	High school	27.8%	25.2%	7.6%
	Some university/college diploma	25.4%	14.0%	34.4%
	University degree	21.0%	17.8%	17.6%
	Post-graduate degree	9.2%	7.5%	7.6%
Mother's Education Attained	Elementary	1.5%	18.7%	22.5%
	Some high school	2.9%	12.2%	4.7%
	High school	22.7%	29.9%	5.6%
	Some university/college diploma	29.4%	7.5%	43.2%
	University degree	32.9%	24.3%	18.8%
	Post-graduate degree	10.6%	7.5%	5.2%
Current Living Situation	With parents	36.4%	78.5%	65.3%
	With spouse/common-law/partner	5.3%	15%	5.2%
	Friends in apartment	36.1%	3.7%	8.5%
	Residence	11.7%	-	0.9%
	Alone	7.6%	2%	9.4%
	Other (grandparent, other family)	2.9%	-	10.8%

2.2. Procedure

Students completed online surveys in their respective languages. The Spanish version has been used extensively in Spain [27,38]. The Spanish survey was translated for applicability in Ecuador and back translated to English. It was pilot tested for understandability with a sample of 10 students. In each country, students were invited by instructors to volunteer to complete a survey in their psychology classes and they received a bonus point for participation. In Canada and Spain students completed surveys available from their class websites. Ecuadorian students completed surveys under supervision in the university computer lab. The discrepant ratio of men and women across the groups reflects the sex differential in the respective classes at these universities. The project received ethical approval from the Brandon University Research Ethics Committee (Certificate #200325).

2.3. Measures

The Identity Distress Scale (IDS) [30,31] based on the DSM-IV categorization of Identity Problem [42] was used to assess interference or severe disturbance in identity development. The IDS provides continuous measures for seven areas of difficulty: long-term goals, career choice, friendships, sexual orientation and behavior, religion, values or beliefs, and group loyalties. Items are rated on a 5-point scale from 1 ("not at all") to 5 ("very severely") to indicate the extent to which respondents have been recently upset, distressed, or worried over each of these identity-related issues. Another two items ask respondents to rate the overall level of discomfort these issues upset or distressed them and how much uncertainty these issues interfered with their lives. An additional item probes how long the respondent felt upset, distressed, or worried over these issues overall (1 = "never or less than a month", 2 = "1 to 3 months", 3 = "3 to 6 months", 4 = "6 to 12 months", and 5 = "more than 12 months"). Following Berman and colleagues [30,31] items may be categorized in terms of Identity Distress [41] and Identity Problem [42]. In this study we used the mean score of the 10-items as a continuous measure of Identity Problem. See Berman and colleagues [30,31], Janowicz et al. [39], and Verchueren et al. [25] for psychometrics.

Psychological symptoms were assessed by the Counseling Center Assessment of Psychological Symptoms (CCAPS) developed by Locke and colleagues [77,78] as a screening instrument to address the mental health needs of university students. It has widespread use for clinical screening, assessment, treatment planning, outcome monitoring and evaluation in numerous universities. The CCAPS-34 is the short form that consists of 34 items rated on a 5-point scale from 0 ("not at all like me") to 4 ("extremely like me") to indicate the extent to which the symptom has been experienced in the past two weeks. The CCAPS-34 scales include depression, generalized anxiety, social anxiety, academic distress, eating concerns, hostility, and substance/alcohol abuse. This study used the Distress Index (CCAPS-DI) that provides a composite score of 20 psychological symptoms [79]. Psychometric properties are available in the CCAPS user Manual [49,78,80] and a recent psychometric analysis [81].

The Student Adjustment to College Questionnaire (SACQ) [63] was developed to evaluate students' academic, social, and personal-emotional functioning at university. The short form consists of 27 items rated on a 9-point scale from 1 ("does not apply to me at all") to 9 ("applies very closely to me"). Mean scores are calculated for each scale. Table 2 provides the alpha coefficients for the variables in the study by country.

Table 2. Means (SD) for the Study Variables by Group and Sex by Country.

Variable		Country			Effect Size
		Canada	Spain	Ecuador	Omega^2
Identity Distress	Total	2.29 (0.74) ^{b}	2.76 (0.74) ^{a}	2.26 (0.58) ^{b}	0.215
	Females	2.33(0.72) ^{c}	2.68 (0.74) ^{b}	2.22 (0.55) ^{c}	
	Males	2.15 (0.83) ^{c}	3.20 (0.63) *^{a}	2.35 (0.62) ^{c}	
Psychological Symptoms	Total	1.30 (0.79)	1.22 (0.65)	1.35 (0.79)	NS
	Females	1.39 (0.79) *^{a}	1.20 (0.67) ^{a}	1.32 (0.80) ^{a}	
	Males	0.93 (0.65) ^{b}	1.35 (0.52) ^{a}	1.41 (0.79) ^{a}	
Academic Adjustment	Total	6.40 (1.19) ^{b}	6.62 (1.11) ^{b}	7.17 (1.12) ^{a}	0.332
	Females	6.42 (1.17)	6.64 (1.12)	7.33 (1.09) *	NS
	Males	6.29 (1.25)	6.51 (1.09)	6.85 (1.13)	
Social Adjustment	Total	5.39 (1.39) ^{b}	6.07 (1.12) ^{a}	5.88 (1.48) ^{a}	0.246
	Females	5.26 (1.37)	6.00 (1.17)	5.74 (1.46)	NS
	Males	5.93 (1.37) *	6.45 (0.74)	6.15 (1.48)	
Personal Emotional Adjustment	Total	4.93 (1.72)	5.11 (1.67)	4.82 (1.67)	NS
	Females	4.77 (1.66) ^{b}	5.14 (1.62) ^{a}	4.83 (1.68) ^{b}	
	Males	5.56 (1.84) *^{a}	5.00 (1.99) ^{a}	4.80 (1.65) ^{b}	

Notes. ^{abc} Different superscripts indicate significant between-group mean differences. * Asterisks indicate significant within-group mean differences. NS = non-significant effect size (Omega^2).

2.4. Data Analysis

A repeated cross-sectional (RCS) design provided the data for Canadian and Spanish university students in 2018, and data was collected in Ecuador during the same period. Descriptive statistics were computed for all variables in the study including country by sex ANOVAs and cross-correlations by group. The major analysis used Hayes [82] PROCESS macro for version 3 model 15 for SAS with decisions about significant effects made with the use of bootstrap confidence intervals. This macro assesses direct and indirect effects in mediated, moderated, and moderated mediation models. Figure 1 illustrates the conceptual model for the second stage moderation of the effects of identity distress (X) on the adjustment to university variables (Y) with psychological problems as the mediator (M) and sex as the moderator (W). Moderated mediation was examined given sex differences in the research literature on mental health. Separate models were run for each group due to divergent sex differences in the within- and between-group comparisons of the study variables. This enabled us to examine sex effects obscured with the inclusion of group as a moderating variable in the full model. Using G*Power [83] post-hoc analysis was done to estimate the required sample size for the ANOVAs in this study. The sample size required for an effect size of 0.25, 0.05 probability, 0.95 power for 6 groups is 306 with a critical F = 3.03 for ANOVAs; this was exceeded in the total sample. For within-group means comparisons the sample size for an effect size = 0.50, probability = 0.05, power = 0.95 is 52 for the total sample. The current group samples meet the requirements.

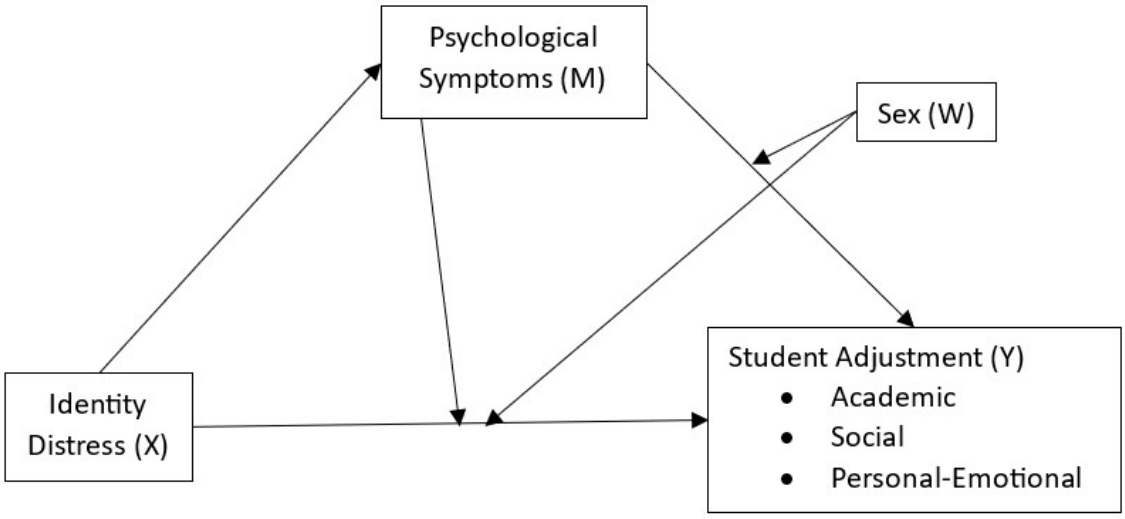

Figure 1. Conceptual model of 2nd stage moderated mediation with identity distress (X) the antecedent of the student adjustment to university (Y) variables with psychological symptoms (M) the mediator and sex (W) the moderator.

3. Results

Table 2 shows the study variables by group and sex. Spanish students' identity distress scores significantly exceeded those of the other two groups. The reverse was seen for academic adjustment with elevated scores among students in Ecuador relative to the other cohorts. For social adjustment students in Spain and Ecuador scored significantly above Canadian students. The effect size was large in each of these main effects.

As seen in Table 2, the predicted within-group sex differences showed Canadian female scores were significantly higher than their male contemporaries for psychological symptoms and the reverse were found for social and personal-emotional adjustment. Alternatively, Spanish males' identity distress scores exceeded those of their female classmates, and Ecuadorian females scored higher than male cohorts in academic adjustment.

Country by sex differences achieved significance for identity distress, $F(2) = 21.34$, $p < 0.0001$, $\eta = 0.021$. Spanish males scored significantly higher than females and these women's scores exceeded those of the other cultural groups. For psychological symptoms, $F(2) = 7.27$, $p < 0.008$, $\eta = 0.024$, Canadian males scored significantly lower than students in all the other groups. Similarly, personal-emotional adjustment scores, $F(2) = 3.76$, $p < 0.02$, $\eta = 0.011$, were highest among Canadian males and Spanish students in comparison with Canadian females and Ecuadorian females and males.

Correlations between the study variables by group are given in Table 3. The only inconsistencies were seen in the magnitude of the relationship between identity distress with academic and social adjustment of Canadian and Spanish students in comparison with students in Ecuador. The magnitude of association among Ecuadorian students for identity distress and academic adjustment exceeded those for Canadian, $z = 4.79$, $p < 0.0001$, and Spanish students, $z = 4.11$, $p < 0.0001$, and with social adjustment for Canadian, $z = 2.74$, $p \leq 0.003$, and Spanish students, $z = 2.84$, $p < 0.002$, respectively.

Table 3. Correlations between the study variables by country.

	Variable	2	3	4	5	Alpha
Canada	1. Identity Distress	0.52 [a]	−0.14 [c]	−0.11 [d]	−0.50 [a]	0.85
	2. Psychological Symptoms	-	−0.32 [a]	−0.31 [a]	−0.66 [a]	0.84
	3. Academic Adjustment		-	0.31 [a]	0.24 [a]	0.80
	4. Social Adjustment			-	0.21 [b]	0.80
	5. Personal-Emotional				-	0.84
Spain	1. Identity Distress	0.39 [a]	−0.23 [d]	−0.13	−0.28 [c]	0.78
	2. Psychological Symptoms	-	−0.49 [a]	−0.35 [b]	−0.80 [a]	0.80
	3. Academic Adjustment		-	0.46 [a]	0.39 [a]	0.75
	4. Social Adjustment			-	0.23 [d]	0.84
	5. Personal-Emotional				-	0.80
Ecuador	1. Identity Distress	0.50 [a]	−0.51 [a]	−0.44 [a]	−0.45 [a]	0.82
	2. Psychological Symptoms	-	−0.50 [a]	−0.54 [a]	−0.71 [a]	0.77
	3. Academic Adjustment		-	0.58 [a]	0.38 [a]	0.86
	4. Social Adjustment			-	0.40 [a]	0.72
	5. Personal-Emotional				-	0.81

Notes: [a] $p < 0.0001$, [b] $p < 0.001$; [c] $p < 0.01$; [d] $p < 0.05$.

As seen in Figure 1 moderated mediation was tested for each of the groups separately. Table 4 shows the regression coefficients for the predictors of the respective adjustment variables by country. The conditional direct effects of the identity distress scores on the SACQ variables were significant for academic adjustment of Ecuadorian students for women, Effect = −0.5451, SE = 0.1560, t = −3.4930, $p < 0.0006$, LLCI = −0.8527 to ULCI = −0.2374, and men, Effect = −0.7798, SE = 0.2068, t = −3.7707, $p < 0.0006$, LLCI = −1.1875 to ULCI = −0.3720; and for social adjustment of these students, for women, Effect = −0.4526, SE = 0.2040, t = −2.2185, $p < 0.03$, LLCI = −0.8548 to ULCI = −0.0504, and men, Effect = −0.9567, SE = 0.2704, t = −3.5385, $p < 0.0005$, LLCI = −1.4897 to ULCI = −0.4236, respectively. The conditional direct effect achieved significance among Canadian men for personal-emotional adjustment, Effect = −1.0473, SE = 0.2207, t = −4.7445, $p < 0.0001$, LLCI = −1.4818 to ULCI = −0.6128.

The conditional indirect effects or mediation of psychological symptoms in the linkage of identity distress with the adjustment to university variables are seen in Table 5. The results supported psychological symptoms as a mediator in the linkages between identity distress and academic and social adjustment of female students in Canada and Spain. In Ecuador this indirect effect was found for both women and men. Alternatively, psychological symptoms mediated the identity distress relationship with personal-emotional adjustment for all students.

Moderation was found among Canadian students in the highest order unconditional effect of sex by identity distress (X*W) for personal-emotional adjustment, R^2-chng = 0.0182, F (1, 287) = 10.0148, $p < 0.002$. The conditional effect

was significant for males, Effect = −1.0473, SE = 0.2207, t = −4.7445. $p < 0.0000$, LLCI = −1.4818, UCLI = −0.6127, but not for females, Effect = −0.2199, SE = 0.1401, t = −1.5691, $p < 0.1177$, LLCI = −0.4957, UCLI = 0.0559. Figure 2 illustrates the gradients. The slopes were significantly different, t = 3.17, df = 304, $p < 0.002$ [84]. As expected for males, elevated personal-emotional functioning was seen at low identity distress and scores declined in conjunction with high identity distress. Conversely the gradient for women was stable and indicated no change in relation to identity distress.

Figure 2. The interaction effect of identity distress (centered) on personal-emotional adjustment among females and males in Canada.

Table 4. Regression coefficients (SE in parenthesis) and confidence intervals for the predictors of Academic, Social, and Personal-Emotional Adjustment to University by Country.

		Psychological Symptoms (M)		**Academic (Y)**		**Social (Y)**		**Personal-Emotional (Y)**	
Canada	Identity Distress (X)	0.556 (0.054)	0.450; 0.662	0.206 (0.639)	−0.701; 0.509	0.157 (0.380)	−0.589; 0.905	0.608 (0.357)	−0.095; 1.310
	Psych Symptoms (M)			0.798 (0.320)	−1.423; −0.169	−0.681 (0.380)	−1.459; 0.097	−1.726 (0.372)	−2.457; −0.995
	Sex (W)			−0.979 (0.770)	−1.912; −0.040	0.352 (0.590)	−0.808; 1.14	1.694 (0.555)	0.603; 2.786
	X*W			0.133 (0.225)	−0.310; 0.576	0.574 (0.270)	−0.605; 0.499	−0.827 (0.262)	−1.342; −0.313
	M*W			0.210 (0.259)	−0.299; 0.720	0.135 (0.320)	−0.495; 0.705	0.416 (0.301)	−0.176; 1.009
	R^2	0.267		0.134		0.998		0.479	
	F	106.17 [a]		8.88 [a]		6.36 [a]		52.87 [a]	
Spain	X	0.355 (0.092)	0.173; 0.538	0.316 (0.684)	−1.047; 1.679	−0.421 (0.666)	−1.746; 0.904	−0.400 (0.714)	−1.820; 1.021
	M			−0.906 (0.779)	−2.485; 0.647	−0.807 (0.793)	−2.386; 0.772	−0.407 (0.809)	−2.018; 1.204
	W			1.552 (1.466)	−1.369; 4.472	−0.636 (1.51)	−3.643; 2.372	1.179 (1.545)	−1.896; 4.254
	X*W			−0.469 (0.612)	−1.688; 0.750	0.137 (0.713)	−1.281; 1.555	0.411 (0.645)	−0.873; 1.695
	M*W			0.129 (0.705)	−1.275; 1.532			−1.543 (0.745)	−3.025; −0.060
	R^2	0.169		0.277		0.178		0.674	
	F	14.998 [b]		5.74 [c]		3.49 [c]		33.02 [a]	
Ecuador	X	0.623 (0.082)	0.521; 0.845	−0.310 (0.374)	−1.049; 0.428	0.052 (0.490)	−0.914; 1.012	0.015 (0.484)	−0.938; 0.968
	M			−0.365 (0.272)	−0.921; 0.151	−0.935 (0.355)	−1.635; −0.234	−1.503 (0.351)	−2.195; −0.811
	W			0.242 (0.532)	−0.807; 1.290	1.533 (0.695)	0.162; 2.904	0.639 (0.687)	−0.715; 1.993
	X*W			−0.235 (0.259)	−0.746; 0.276	−0.504 (0.339)	−1.172; 0.164	−0.269 (0.335)	−0.929; 0.391
	M*W			−0.061 (0.196)	−0.447; 0.325	0.110 (0.256)	−0.395; 0.615	0.820 (0.253)	−0.416; 0.581
	R^2	0.370		0.370		0.371		0.53	
	F	24.08 [a]		24.08 [a]		24.96 [a]		46.19 [a]	

Notes. Codes: Sex (W): 1 = female, 2 = male; [a] $p < 0.0001$, [b] $p < 0.001$, [c] $p < 0.01$.

Table 5. Indirect effects between Identity Distress and the Adjustment to University Variables for Sex as mediated by Psychological Symptoms.

Outcome		**Canada**		**Spain**		**Ecuador**	
		Effect (Boot SE)	**95% CI**	**Effect (Boot SE)**	**95% CI**	**Effect (Boot SE)**	**95% CI**
Academic Adjustment	Females	−0.3619 (0.0669)	−0.4706; −0.2028	−0.2759 (0.0903)	−0.4783; −0.1194	−0.3046 (0.0664)	−0.4552; −0.1789
	Males	−0.2099 (0.1438)	−0.4898; 0.0881	−0.2302 (0.3027)	−0.9715; 0.3138	−0.3464 (0.1199)	−0.6088; −0.1273
Social Adjustment	Females	−0.3036 (0.0861)	−0.4780; −0.1281	−0.2539 (0.1179)	−0.5034; −0.0594	−0.5633 (0.1247)	−0.8221; −0.3361
	Males	−0.2286 (0.2155)	−0.6571; 0.1959	−0.2019 (0.2926)	−0.5995; 0.5923	−0.4883 (0.1948)	−0.9175; −0.1485
Personal-Emotional Adjustment	Females	−0.7281 (0.1062)	−0.9389; −0.5244	−0.7155 (0.1677)	−1.0466; −0.3817	−0.9703 (0.1458)	−1.2613; −0.6977
	Males	−0.4965 (0.2697)	−1.1256; −0.0561	−1.2816 (0.0561)	−2.4320; −0.3907	−0.9142 (0.1852)	−1.3382; −0.5872

For Spanish students, the highest order unconditional interaction of sex by psychological problems (M*X) was significant for personal-emotional adjustment, R^2-chng = 0.0175, F (1, 80) = 4.2899, $p < 0.04$. The conditional effects attained significance for females, Effect = −1.9499, SE = 0.1829, t = −10.6615, $p < 0.0001$, LLCI = −2.3138, ULCI = −1.5859, and males, Effect = −3.4925, SE = 0.7720, t = −4.9294, $p < 0.0001$, LLCI = −4.9294, ULCI = −2.0557. Figure 3 illustrates the personal emotional adjustment gradients in relation to psychological symptoms by sex. However, the difference between the slopes approached but did not achieve significance, t = 1.94, df = 89, $p < 0.055$ [84]. As expected for both men and women in Spain higher personal-emotional adjustment was seen in conjunction with low psychological symptoms and personal-emotional functioning decreased with increased psychological symptoms. Nevertheless, visual inspection indicated a trend for a steeper slope among men than women. Moderated mediation was not supported.

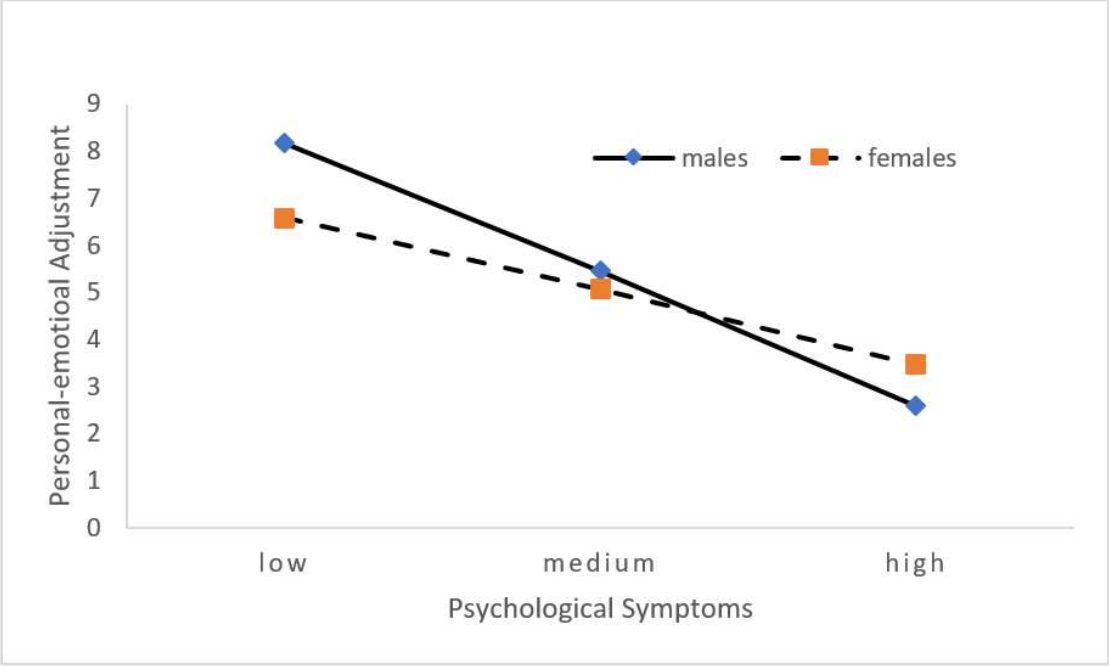

Figure 3. The interaction effect of psychological symptoms (centered) on personal-emotional adjustment among females and males in Spain.

4. Discussion and Conclusions

This study investigated the role of culture and sex in the configuration of EA's uncertainty or distress with identity issues, psychological symptoms, and academic, social, and personal-emotional functioning at university among students in Canada, Spain, and Ecuador. These countries were categorized as individualistic or collectivistic on Hofstede's [29] cultural dimensions.

The first set of predictions involved mean comparisons of the study variables by country. Consistent with prior research [27], Spanish students demonstrated the highest identity distress scores. However, in contrast to other studies [25] these males scored higher on identity distress than females. This finding may be spurious, or they may reflect a selective sample of men in the education-teaching stream, which is typically a feminine-oriented occupation [85]. This result requires further investigation with a larger and more diversified sample as it may reflect specific identity concerns of these students.

As expected, psychological symptoms were consistent among students across the countries [19,20]. The significant interaction revealed low scores for Canadian males, yet they did not differ from Spanish students in terms of elevated personal-emotional adjustment to university relative to all other groupings. Indeed, for Canadian students, these sex differences are consistent with research findings of increased mental health difficulties and poorer personal-emotional adjustment among females [20,64].

In comparison with country/cultural differences, effect sizes were low for the country by sex interactions. Nevertheless, academic adjustment scores were highest for the Ecuadorian students, especially women. According to the Hofstede [29] dimensions, this may reflect motivation to succeed associated with status and rewards linked to

performance and educational achievement. These findings are consistent with elevated protective factors for academic resilience among adolescents from deprived backgrounds in collectivistic as compared with individualistic cultures [69]. Further research is required to investigate specific contextual and personal aspects that support and enhance academic proficiency among Ecuadorian EAs, especially females. This finding has practical implications for supportive services considering the reported greater incidence of psychological problems among university students in comparison with non-student EAs in Ecuador [62].

Finally, the elevated social adjustment among students in Spain and Ecuador in comparison with Canadian contemporaries appears to mirror increased open expression of emotion and avoidance of confrontation and competitiveness in these Spanish/Latinx countries [29]. Although Spain is classified as an individualistic culture, it scored closer to Ecuador than Canada on this social/communal dimension. Again, further study of the protective factors that promote social competence at university in these respective cultures has practical implications for student services and would benefit from further research.

The conceptual model (Figure 1) was examined using Hayes [82] process app for each country separately given the divergent sex differences in these groups. Consistent with the ANOVAS, the conditional direct effect of identity distress attained significance for academic and social adjustment among Ecuadorian women and men, and for personal-emotional adjustment among Canadian men.

As predicted psychological symptoms mediated the relationship between identity distress and academic and social adjustment at university for Canadian and Spanish females and for both women and men in Ecuador. This is consistent with the low magnitude of correlation between these variables for students in Canada and Spain compared to those in Ecuador. These results appear to reflect the low psychological problem scores among males in Canada and elevated identity distress among Spanish males relative to respective females. As noted above, these findings warrant study with subsequent samples. Nevertheless, the role of psychological symptoms as a mediator between identity distress and these females' academic and social adjustment at university indicates a need for greater attention to counseling and supportive services at universities for women in individualistic countries. As indicated below, this may be addressed by considering identity interventions given the recursive relationship between identity distress and psychological difficulties [86]. These findings are consistent with associations between ruminative exploration and identity distress [25], increased ruminative exploration among women [87], and a ruminative response style among women [88].

As predicted psychological symptoms mediated the linkage between identity distress and personal-emotional adjustment for both women and men in each of the countries. These results have important implications for identity intervention given the reciprocal relationship between identity distress and psychological symptoms [86]. Identity interventions tailored for use with university students are designed to enhance personal development and well-being including functioning at university [85,89]. In addition, as indicated previously [19] current findings highlight the importance of early screening for mental health problems when students are transitioning to university to ensure appropriate attention to these potential liabilities to augment personal well-being and success at university.

As seen in Figure 2, the conditional interaction of sex by identity distress for Canadian students indicated the expected relationship between identity distress and personal-emotional functioning for men but not women. These women's personal-emotional functioning was relatively consistent and low irrespective of reported identity distress. This unexpected lack of differentiation in relation to identity distress appears to reflect a myriad of psychological difficulties associated with the unique gender role challenges faced by these women [90] as well as greater loan debt and lower pay in subsequent jobs relative to male cohorts [73]. In a community sample of mostly university EAs, Matud et al. [91] found that in comparison with men, women reported more chronic stress, minor daily hassles, emotional coping, and psychological problems including suicide attempts, and social support. Alternatively, men indicated a rational and detached coping style and self-esteem. This diversity of stressors in the lives of women may be less disabling to identity distress but a significant mental health concern. Indeed, higher ruminative (maladaptive) exploration in women is not only potentially recursive with identity distress [87,92] but occurs in other areas of life linked with elevated psychological symptoms [93] that may not be reflected in the identity distress measure. Vosylis et al. [94] emphasized that different domains during EA can have important and diverse outcomes in relation to adjustment.

Several studies [35,90,95,96] indicated that females are more advanced in identity development than males by the mid-20s. This may be seen in less involvement with identity issues but not psychological problems. Such findings warrant the attention of counseling and supportive services to address the increased vulnerability of these women.

The configuration in Figure 3 for the sex by psychological symptoms interaction of students in Spain shows the expected trend for men and women in the association between psychological symptoms and personal-emotional

adjustment. The difference between the slopes approached but did not attain significance. Inspection of the gradients shows a tendency for higher personal-emotional functioning for men with low psychological symptoms and a crossover that suggested greater personal-emotional adjustment among women when psychological symptoms were elevated. This trend is at variance with research on the SACQ with university women [64] and sex differences in mental health among Spanish students [58]. It requires further investigation and consideration of potential contextual and personal factors that impact the resilience of these Spanish students. For example, the high proportion of women in a female-oriented program of studies may provide additional support that enhances personal-emotional functioning in the university context.

Taken together, these results for Canada and Spain reflect some consistency. Canadian males with lower identity distress and Spanish males with low psychological symptoms demonstrated higher personal-emotional adjustment scores relative to their female contemporaries. However, despite the crossover of gradients these sex differences were reduced substantially with elevated identity distress and psychological symptoms, respectively. Such results raise questions about the interrelationship between these dichotomous mental health variants and how they may diverge in different countries and university contexts. The results suggest the potential benefits of adapting supportive services, counseling, and intervention to the specific requirements of students in various contexts including specialized and diverse programs and universities in different countries.

There are several limitations in this study. The findings are based on a static view of students' functioning. Ongoing follow-up would provide information about the extent to which associations between these variables may change as students proceed through university and the EA years. Nevertheless, the repeated cross-sectional (RCS) design provides comparative information from the same student populations over successive cohorts. It is expedient, efficient, and effective. Attention to individual universities in different countries and contexts provides information about the specific needs of students in a variety of programs to assist counselors and educators in the development of supportive services. In this study our Spanish students represent a special sample in a professional teaching program that favors women. These students present some concerns that may not generalize broadly to university students in other situations. The Ecuadorian students were in psychology courses largely focused on education and counseling career paths. In both these countries, government funded tuition contingent on academic excellence may exert additional pressure on students. Alternatively, Canadian students were more heterogeneous and typical of those in liberal arts and sciences programs where they are not required to select a major until second year or later. Admission requirements are less restrictive, although entrance scholarships are provided based on high school grades. Many of these students are taking pre-nursing courses with program acceptance contingent on academic achievement and many courses are not transferable to other degrees. The low participation of males is typical of research with university students [97]. Unfortunately, this often impedes the evaluation of sex differences. This concern has been raised in the study of identity distress [39]. Nonetheless, the diversity of sex differences in the current study directs the attention of researchers and counselors to culture, ethnicity, and other relevant personal and contextual factors that may affect students' mental health and functional well-being. This study used self-report measures with items that respondents may not always interpret consistently. The availability of external sources of information including clinical assessments and academic records would increase reliability. In addition, an open-ended interview format would provide a detailed and nuanced account of the students' mental health and identity concerns.

Berman et al. [86] emphasized the bidirectional relationship between identity distress and psychological symptoms. Indeed, identity distress may be exacerbated in people with psychological problems [17,49] and psychological problems foment distress with identity issues. Mental health information before students enter university would permit evaluation of the onset of psychological problems (long-term versus recent) in relation to identity distress [19]. Such screening would enable students' mental health difficulties to be addressed early to alleviate subsequent identity distress and foster functional adaptation.

In summary, these results contribute to the theoretical identity framework as well as the EA perspective in terms of cultural and sex effects in relation to challenges with identity development, psychological difficulties, and different areas of functioning at university among EAs in individualistic and collectivistic cultures. The findings address the call for research in terms of cultural context and sex differences to provide insight on the evolution of healthy identity and adjustment among young people globally [8,39,44,74–76,86]. Attention to directions for supportive services to enhance students' well-being in relation to different contexts and sex differences in relation to disturbance in identity work is indicated.

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Author Contributions

Conceptualization, B.M.G. and A.I.C.; Methodology, B.M.G.; Software, B.M.G.; Validation, B.M.G., A.I.C. and M.F.C.-H.; Formal Analysis, B.M.G.; Investigation, B.M.G., A.I.C. and M.F.C.-H.; Resources, B.M.G.; Data Curation, B.M.G.; Writing—Original Draft Preparation, B.M.G.; Writing—Review & Editing, B.M.G., A.I.C. and M.F.C.-H.; Visualization, B.M.G.; Supervision, B.M.G.; Project Administration, B.M.G.; Funding Acquisition, N/A.

Ethics Statement

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Research Ethics Committee of Brandon University (certificate #200325 date of approval 10 January 2017).

Informed Consent Statement

Informed consent was obtained from all participants in the study.

Data Availability Statement

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

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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