

## Perceived stress, coping resources, and life satisfaction among U. S. and Mexican college students: A cross-cultural study

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**Título:** Estrés percibido, recursos de afrontamiento y satisfacción con la vida entre estudiantes universitarios de México y Estados Unidos: un estudio trans-cultural.

**Resumen:** Este artículo presenta un estudio trans-cultural del estrés percibido, los recursos de afrontamiento ante el mismo y la satisfacción con la vida de estudiantes universitarios en México y los Estados Unidos. 206 estudiantes universitarios de México (41 hombres y 165 mujeres) y 241 estudiantes universitarios de Estados Unidos (69 hombres y 172 mujeres) completaron la Escala de Estrés Percibido, el Inventario de Recursos para el Afrontamiento del Estrés y la Escala de Satisfacción con la Vida. El análisis de los resultados estuvo basado en un modelo transaccional del estrés, y se intentó determinar en qué medida el estrés percibido y los recursos de afrontamiento ante el mismo predicen la satisfacción con la vida. Por otro lado, se presenta una descripción comparativa de las diferencias trans-culturales y masculino – femeninas que fueron encontradas. Finalmente, los autores discuten la pertinencia del modelo transaccional del estrés y el uso de los tres instrumentos tanto en México como en Estados Unidos.

**Palabras clave:** Estrés percibido; recursos de afrontamiento; satisfacción vital; inter-cultural.

**Abstract:** This article presents a cross-cultural study of the perceived stress, coping resources, and life satisfaction of college students in Mexico and the United States. Two-hundred-six Mexican college students (41 males and 165 females) and 241 U.S. college students (69 males and 172 females) completed the Perceived Stress Scale, the Coping Resources Inventory for Stress, and the Satisfaction with Life Scale. The analysis of the results was based on a transactional stress model, and it was intended to assess the extent to which perceived stress and coping resources predict life satisfaction. In addition, a description of the cross-cultural and male-female differences is presented. Finally, the authors discuss the appropriateness of the transactional stress model and the use of the three instruments for both Mexican and U.S. students.

**Key words:** Perceived stress; coping resources; life satisfaction; cross-cultural.

### Introducción

The history of cross-cultural studies between Mexico and the United States is very rich and extensive. Díaz-Guerrero (1994) noted that no other two nations in the world have had so many comparative studies been conducted. Conspicuously missing from this literature are comparisons of U.S. and Mexican college students; however, there are studies comparing the coping resources of U.S. college students with students from countries other than Mexico. Makhnack, Postlyakova, Curlette, and Matheny, (1999) compared the coping resources of Russian and U.S. college students. Matheny, Curlette, Aysan, Herrington, Gfroerer, Thompson, and Hamarat (2002) studied the coping resources, perceived stress, and life satisfaction of Turkish and U.S. college students; and Chung, Matheny, and Chang (2008) compared the coping resources, perceived stress, and life satisfaction of Taiwanese and U.S. college students.

In this cross-cultural study, we examine the impact of perceived stress and coping resources on life satisfaction among college students in Mexico and the United States, two countries with different cultural, economic, social, and political conditions. The Latino American college student population in U.S. colleges may increase in the near future as a result of the rapidly swelling size of this population cohort.

Presently, however, Latinos are grossly under-represented in U.S. colleges. According to the National Center for Educational Statistics, the percentage of 25-to-29-year-old Hispanics in the U.S. in 2000 with at least a bachelor's degree was lower for Hispanics (10%) than for African Americans (18%) or Whites (34%) (Arbona & Nora, 2007). The percentage of Hispanic/Latino students in one of the large, urban universities from which the U.S. sample was drawn is merely 5%. In order to improve the enrolment and retention of Latin American college students, it will be important for counselors to understand the cultural values and practices that influence their coping resources. Latinos that have lived in the U.S. for some period likely will have had their native cultural influences somewhat diluted by exposure to the U.S. culture. To gain a sharper picture of the influence of Latin culture on the perception of stress, coping resources, and life satisfaction, a sample of students from private and public Mexican colleges will be compared with a U.S. college sample.

American college students consistently report high levels of stress and a greater number of stressors than ever before (American College Health Association, 2004; American Freshman National Norms, 2000). College students must manage the many stressors of college life (Towbes & Cohen, 1996). There are challenging academic hurdles, financial obligations, time pressures, the need to make new friendships and to balance priorities, and, often, the necessity of adjusting to living away from home (Greenberg, 2002). These challenges draw heavily upon the coping resources of students. Students differ strikingly in regard to the richness of their social, physical, and financial resources. Inadequate

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coping resources may increase the student's vulnerability to drug use, physical and emotional problems, and the likelihood of dropping out of college.

Our study was based on a transactional stress model (Lazarus, 1991; Lazarus & Folkman, 1984; Matheny & McCarthy, 2000). This model views stress as the result of an imbalance between perceived demands and perceived resources. Demands that seriously tax or exceed personal resources for coping with them trigger stressful reactions. In an earlier study of Turkish and U.S. college students (Matheny, *et al.*, 2002) perceived stress and an overall measure of coping resources predicted life satisfaction; and the prediction models for genders included different sets of coping resources. In the Conservation of Resources model of stress, Hobfoll (1989) maintained that the measurement of coping resources is the single most important factor in predicting stress. In the Turkish-American study (Matheny *et al.*), coping resources moderated the effect of perceived stress on life satisfaction. In this current study we examine the robustness of these results using a different cross-cultural sample. This study will be a partial test of the transactional stress model and of the moderating effect of perceived stress on the impact of coping resources upon life satisfaction.

## Method

### Participants and Procedures

Participants were 206 Mexican college students (41 males and 165 females) and 241 U.S. college students (69 males and 172 females) who volunteered for the study. Approximately 88% of Mexican students (181) and 62% (149) of U.S. students were single. The mean age for Mexican students was 22.50 (SD = 7.14) years and 23.38 (SD = 7.75) for U.S. students. All Mexican students were enrolled in B.A. level programs in psychology. The sample was taken both from a state university (99 participants) and from a private upper-middle class Catholic university (107 participants).

Participants completed in one setting the *Perceived Stress Scale (PSS)*, the *Coping Resources Inventory for Stress (CRIS)*, and the *Satisfaction with Life Scale (SWLS)*, all of which had been translated into Spanish and then back-translated into English to insure comparability. The *Coping Resources Inventory for Stress* was computer scored, and the other two tests were scored by hand.

### Instruments

*Perceived Stress Scale (PSS)* (Cohen, Kamarck, & Mermelstein, 1983). The PSS is a 14 Likert-item scale that offers a nonspecific measure of appraised stress with internal consistency reliabilities ranging from .84 to .86 across two groups of university students and one group of participants in a community smoking-cessation program. The coefficient alpha for the Mexican sample in this study was .835 and for

the U.S. sample .885. The instrument has been significantly correlated with life events, depressive and physical symptoms, utilization of health services, social anxiety, smoking-reduction maintenance, and lower life satisfaction (Cohen *et al.*, 1983; Kent, Gorenflo, Daniel, & Forney, 1993). It is said to be an appropriate measure of global stress with all age groups (Cohen, Kessler, & Gordon, 1995).

*Coping Resources Inventory for Stress (CRIS)* (Matheny, Curlette, Aycock, Pugh, & Taylor, 1987). The CRIS is a 280-item true-false inventory measuring 15 coping resources, and is based on a transactional model of stress (Lazarus & Folkman, 1984). The CRIS yields 37 scores: an overall coping resources effectiveness score (CRIS-CRE), 15 more specific resource scales, 16 Wellness Inhibiting items, and 5 validity keys. The 12 primary resource scales are: Self-Disclosure (SD), Self-Disclosure (DI), Confidence (CF), Acceptance (AC), Social Support (SS), Financial Freedom (FF), Physical Health (PH), Physical Fitness (PF), Stress Monitoring (MN), Tension Control (TC), Structuring (ST), and Problem Solving (PS). It also has three composite scales: Cognitive Restructuring (CR), Functional Beliefs (FB), and Social Ease (SE). These three composite resource scales were not used in this study. They contain some of the items in the 12 primary scales, so their use would be somewhat confounding of the results. The normative sample ( $n = 1199$ ) is weighted by race, sex, and age. Scales have high internal consistency reliabilities (.84 to .97; Mdn. = .88;  $n = 814$ ) and test-retest reliabilities (.76 to .95 over 4 week period; Mdn. = .87;  $n = 34$  university students) and moderate to low intercorrelations (range .05 to .62, Mdn = .33). Internal consistency reliabilities for the CRIS scales for the Mexican sample in this study ranged from  $r = .80$  to  $.94$  (Mdn. = .86) and for the U. S. sample .78 to .97 (Mdn = .87). Studies supporting the validity of the CRIS have used as wide range of dependent measures, such as illness, emotional distress, personality type, drug dependency, occupational choice, acculturation, and life satisfaction (Matheny & Curlette, 1998).

*Satisfaction with Life Scale (SWLS)* (Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is a 5-item measure of subjective well-being using a seven-point Likert scale. It is the most widely used measure of life satisfaction to date. Internal reliability of the scale has been estimated to range between .80 to .89, and temporal stability to range from .64 to .84. The internal consistency reliability for the Mexican sample in this study was .783 and for the U.S. sample .873. Principle components analysis resulted in one factor, which represents an overall evaluation of satisfaction with one's life. Concurrent and divergent validity for the scale have been established using undergraduate samples (Diener *et al.*, 1985; Lucas, Diener, & Suh, 1996). Correlations between the SWLS and other measures of life satisfaction and subjective well-being range from  $r = .35$  to  $r = .82$  (Pavot & Diener, 1993).

*Appropriateness of Measures for Mexican Students.* Because the instruments used in this study were developed in the U.S., it was important to establish their appropriateness for use with

Mexican students. In partially addressing this issue, we note that the relationships among the CRIS, the Perception of Stress Scale (PSS), and the Satisfaction with Life Scale (SWLS) are quite similar for both groups of students, and in both samples the CRIS and the PSS contributed to the prediction of SWLS scores. As a further evidence of appropriateness, we note that the internal consistencies (Cronbach's alpha) of these instruments are highly similar for both student groups. The internal consistency of the PSS for Mexican students was .836 and for U.S. students .885; for the SWLS .783 and .837, respectively. Internal consistency reliabilities for the CRIS scales for the Mexican sample ranged from  $r = .80$  to  $.94$  (Mdn. =  $.86$ ) and for the U. S. sample from  $.78$  to  $.97$  (Mdn =  $.87$ ). In each case the difference in reliabilities for the two samples was non-significant. Because there is a mathematical relationship between reliability and factor structure, the equivalency of the two *alphas* for the CRIS scales may offer modest support for the assumption that the strongest factor underlying the structure of the instrument may be similar for both student groups. Thus, these observations offer some support for the appropriateness of the use of these instruments with Mexican students.

### Research Questions

From previous studies using these instruments with foreign populations that were discussed earlier (Makhnack, Postlyakova, Curlette, & Matheny, 1999; Chung, Matheny,

& Chang, 2008; Matheny *et al.*, 2002), we have constructed the following research questions:

1. Will students in Mexico and the United States differ in respect to their mean perceptions of stress, coping resources, and life satisfaction?
2. Will males and females likewise differ in regard to their mean perceptions of stress, coping resources, and life satisfaction?
3. Will perceived stress and coping resources predict life satisfaction?
4. Will coping resources moderate the effects of perceived stress on life satisfaction?

## Results

### Intercorrelations of Instruments

For the combined Mexican and U.S. samples, the overall CRIS score (CRE), the Perception of Stress Scale (PSS), and the Satisfaction with Life Scale (SWLS) were found to have small to moderate intercorrelations. The CRE was negatively correlated with the PSS ( $r = -.66, p < .01$ ) and positively correlated with the SWLS ( $r = .48, p < .01$ ). The PSS was negatively correlated with the SWLS ( $r = -.50, p < .01$ ). All 15 CRIS subscales correlated positively ( $p < .05$ ) with SWLS and negatively ( $p < .05$ ) with PSS. Table 1 below shows these correlations.

**Table 1:** Correlations of CRIS CRE and Primary Subscales with SWLS and PSS.

	SWLS	PSS	SD	DI	CF	AC	SS	FF	PH	PF	MN	TC	ST	PS	CRE
SWL	---														
PSS	-.51	---													
SD	.29	-.32	---												
DI	.25	-.41	.44	---											
CF	.36	-.66	.32	.56	---										
AC	.12	-.48	.34	.50	.60	---									
SS	.40	-.40	.48	.30	.38	.28	---								
FF	.35	-.39	.22	.27	.36	.31	.36	---							
PH	.34	-.47	.25	.35	.47	.37	.34	.35	---						
PF	.19	-.17	.11	.11	.20	.09	.17	.18	.31	---					
MN	.31	-.31	.28	.29	.46	.27	.30	.30	.23	.20	---				
TC	.34	-.41	.24	.37	.57	.38	.26	.27	.30	.22	.56	---			
ST	.37	-.49	.24	.39	.59	.33	.35	.38	.35	.27	.47	.45	---		
PS	.31	-.50	.24	.41	.72	.44	.32	.30	.34	.15	.54	.55	.60	---	
CRE	.48	-.66	.56	.65	.66	.64	.60	.57	.62	.41	.63	.66	.71	.73	---

NOTE: All correlations are statistically significant at  $p > .01$  with the following exceptions:  $p > .05$  for PF with DI, and  $p$  for PF with ACC is non-significant. Abbreviations: SWLS = Satisfaction with Life Scale; PSS = Perceived Stress Scale; SD = Self-Disclosure; DI = Self-Direction; CF = Confidence; AC = Acceptance; SS = Social Support; FF = Financial Freedom; PH = Physical Health; PF = Physical Fitness; MN = Stress Monitoring; TC = Tension Control; ST = Structuring; and PS = Problem Solving.

### Group Differences

In order to examine country and sex differences on the SWLS, PSS, CRIS (CRE), and 15 CRIS subscales, we first

ran a MANOVA entering all the above variables and followed up with *F* tests of the significance of differences between means. The main effects for both country ( $\lambda = .801, p < .000$ ), and sex ( $\lambda = .845, p = .000$ ) were significant; how-

ever, the sex-by-country interaction was not ( $\lambda = .968, < .761$ ). Because the interaction was non-significant, examining the data by country and sex, but not by sex within countries, is justified. Consequently, separate one-way ANOVAs were run for country and sex.

**National Differences.** The means and significant F values for differences between countries on the three instruments appear in Table 2. There were no significant differences between countries on perceived stress or overall coping resources (CRIS-CRE); however, Mexican students reported higher life satisfaction ( $M = 5.25, SD = .998$ ) vs.  $M = 4.69, SD = 1.293$ ;  $F = 25.512, p < .001$ ). There were several significant differences on CRIS subscales. Mexican students scored significantly higher than U.S. students on Self-Disclosure ( $M = 69.70, SD = 24.799$ ) vs.  $M = 63.62, SD = 28.445, F = 5.495, p < .05$ ), a measure of the freedom with

which one discloses one's feelings, thoughts and opinions, Self-Directedness ( $M = 67.68, SD = 21.385$ ) vs.  $M = 61.00, SD = 25.8314, F = 4.688, p < .01$ ), a measure of the degree to which one respects his/her judgment and wisdom as a guide to decision-making and behavior, Stress Monitoring ( $M = 79.54, SD = 22.886$ ) vs.  $M = 71.29, SD = 25.315, F = 13.108, p < .001$ ), a measure of awareness of tension build-up and situations and events that are likely to prove stressful, and Tension Control ( $M = 59.34, SD = 21.801$ ) vs.  $M = 54.75, SD = 22.143, F = 4.802, p < .05$ ), a measure of the ability to use reduce tension through relaxation procedures and thought control. U.S. students scored higher than Mexican students on Confidence ( $M = 62.194, SD = 27.449$ ) vs.  $M = 56.91, SD = 26.056, F = 3.870$ ), a measure of faith in one's ability to deal successfully with environmental demands while maintaining emotional control.

**Table 2:** Means and Tests of Significant Differences on PSS, SWLS, and CRIS Scales for US and Mexican Students

Scale	Country	Mean	Std. Deviation	Std. Error Mean	F
Satisfaction with Life	Mexico	5.25	.998	.070	25.512***
	U.S.	4.69	1.293	.083	
Perceived Stress	Mexico	1.88	.528	.037	.140
	U.S.	1.86	.626	.0405	
CRIS-CRE	Mexico	63.91	13.871	.952	.347
	U.S.	63.06	16.130	1.028	
CRIS Subscale: Self-Disclosure	Mexico	69.70	24.799	1.688	5.667*
	U.S.	63.62	28.445	1.824	
CRIS Subscale: Self-Directedness	Mexico	67.68	21.385	1.451	8.628**
	U.S.	61.00	25.831	1.660	
CRIS Subscale: Confidence	Mexico	56.91	26.056	1.786	3.870*
	U.S.	62.194	27.449	1.744	
CRIS Subscale: Acceptance	Mexico	52.134	20.802	1.410	2.563
	U.S.	55.69	24.122	1.544	
CRIS Subscale: Social Support	Mexico	69.41	22.264	1.526	2.747
	U.S.	73.02	23.359	1.490	
CRIS Subscale: Financial Free.	Mexico	58.84	25.497	1.756	.214
	U.S.	57.64	28.818	1.839	
CRIS Subscale: Physical Health	Mexico	68.23	22.360	1.543	.784
	U.S.	71.10	22.034	1.404	
CRIS Subscale: Physical Fitness	Mexico	40.64	26.965	1.825	.751
	U.S.	43.01	30.191	1.922	
CRIS Subscale: Stress Monitoring	Mexico	79.54	22.886	1.515	13.103***
	U.S.	71.29	25.315	1.614	
CRIS Subscale: Tension Control	Mexico	59.34	21.801	1.499	4.802*
	U.S.	54.75	22.143	1.415	
CRIS Subscale: Structuring	Mexico	61.94	22.024	1.502	.239
	U.S.	61.83	25.430	1.613	
CRIS Subscale: Problem Solving	Mexico	67.78	23.417	1.611	.361
	U.S.	66.46	22.836	1.447	

$n = 247$  for U.S. students  $n = 214$  for Mexican students

\* $p < .05$  (2-tailed), \*\* $p < .01$  (2-tailed), \*\*\* $p < .001$  (2-tailed)

**Sex Differences.** The means and significant F values for differences between sexes on the three instruments appear in Table 3. Males and females did not differ in regard to Satisfaction with Life ( $M = 4.824, SD = 1.318$ ) vs.  $M = 4.968, SD = 1.157, F = .160$ ) or Perceived Stress ( $M = 1.801, SD = .632$ ) vs.  $M = 1.908, SD = .558, F = 3.438$ ). However, males

scored significantly higher on the overall coping resource scale ( $M = 66.35, SD = 13.733$ ) vs.  $M = 62.22, SD = 15.407, F = 5.745, p < .05$ ) and five CRIS subscales. Males reported greater Confidence ( $M = 68.14, SD = 24.888$ ) vs.  $M = 56.34, SD = 26.898, F = 12.917, p < .001$ ); more Acceptance of themselves and others ( $M = 60.86, SD = 22.705$ ) vs.  $M =$

51.23,  $SD = 22.087$ ,  $F = 13.824$ ,  $p < .001$ ); greater Physical Health ( $M = 75.80$ ,  $SD = 18.061$ ) *vs.*  $M = 68.12$  ( $SD = 23.169$ ,  $F = 7.686$ ,  $p < .01$ ); better Physical Fitness ( $M = 49.43$ ,  $SD = 28.101$ , *vs.*  $M = 39.12$ ,  $SD = 28.585$ ,  $F = 7.649$ ,  $p < .01$ ), and greater Problem Solving ( $M = 71.06$ ,  $SD = 20.760$ , *vs.*  $M = 65.33$ ,  $SD = 23.593$ ,  $F = 5.627$ ,  $p < .05$ ).

In summary, males and females did not differ significantly in regard to life satisfaction (SWLS) or perceived stress (PSS), but males reported greater coping resources—both on an overall measure of coping resources (CRE) and

on four specific coping resources. Because in no case did females score higher than males, we examined gender scores on the CRIS Social Desirability scale, a validity key measuring the tendency to over-report one's resources. The results, however, were insignificant ( $X$  for males 61.54, ( $SD = 23.24$ ) *vs.*  $X$  for females 60.44 ( $SD = 15.76$ );  $F = 1.659$ ,  $p < .20$ ); moreover, the means on the key for the CRIS Administrative Manual for both genders were too low to suggest response invalidity (Curllette, Aycock, Matheny, Pugh, & Taylor, H. F., 1992, 2006).

**Table 3:** Means and Tests of Significant Differences on the PSS, SWLS, and the CRIS Subscales Male and Female University Students.

Scale	Sex	Mean	Std. Deviation	Std. Error Mean	F
Satisfaction with Life	Male	4.87	1.311	.12643	.391
	Female	4.96	1.157	.06417	
Perceived Stress	Male	1.79	.627	.06054	.3596
	Female	1.91	.558	.03098	
CRIS-CRE	Male	66.27	13.732	1.309	5.983*
	Female	62.30	15.478	.839	
CRIS Subscale: Self-Disclosure	Male	67.19	26.864	2.585	.115
	Female	66.20	27.046	1.475	
CRIS Subscale: Self-Directedness	Male	65.73	22.493	2.151	.786
	Female	63.42	24.716	1.346	
CRIS Subscale: Confidence	Male	67.39	24.906	2.373	14.326***
	Female	56.60	26.978	1.465	
CRIS Subscale: Acceptance	Male	60.51	22.547	2.165	13.975***
	Female	51.51	22.261	1.203	
CRIS Subscale: Social Support	Male	71.39	20.688	1.957	.038
	Female	71.34	23.753	1.289	
CRIS Subscale: Financial Freedom	Male	61.14	24.665	2.259	2.104
	Female	56.89	28.075	1.535	
CRIS Subscale: Physical Health	Male	75.87	18.202	1.722	8.837**
	Female	68.32	23.193	1.262	
CRIS Subscale: Physical Fitness	Male	48.48	27.786	2.679	8.500**
	Female	39.52	28.762	1.557	
CRIS Subscale Stress Monitoring	Male	76.16	21.748	2.074	.373
	Female	74.55	25.221	1.361	
CRIS Subscale: Tension Control	Male	57.95	19.177	1.816	.535
	Female	56.22	22.889	1.247	
CRIS Subscale: Structuring	Male	60.20	23.060	2.208	.1095
	Female	62.89	24.112	1.306	
CRIS Subscale: Problem Solving	Male	71.09	21.033	1.979	5.263*
	Female	65.42	23.562	1.285	
CRIS Subscale: Social Desirability	Male	60.47	21.851	6.710	1.659
	Female	60.44	15.763	2.088	

$n = 110$  for males  $n = 337$  for females

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Prediction of Life Satisfaction

In previous studies using these instruments with both U.S. and foreign populations (Makhnack *et al.*, 1999; Chung, *et al.*, 2006; Matheny *et al.*, 2002) coping resources and perceived general stress predicted life satisfaction. Moreover, perceived stress moderated the influence of coping resources on life satisfaction in these studies. To investigate the usefulness of coping re-

sources and perceived stress as predictors of life satisfaction we conducted a series of stepwise regression analyses with alpha set to enter at .05 and to delete at .10. Because the main effects for country and sex were found to be significant in the MANOVA, and the interaction between them was not (see Table 1), separate regression analyses were conducted for both country and sex. The results of the regression analyses are presented in Table 4.

**Table 4:** Stepwise Regression Analysis Predicting Satisfaction with Life for Country and Sex.

Category	Predictor Variable	Step Entered	R at Step Entered	Adjusted R <sup>2</sup> at Step	Increase in Adj. R <sup>2</sup> at Step	Standardized Coefficient Beta <sup>a</sup> for Final Model	t Value for Final Model
United States	Perceived Stress	1 <sup>st</sup>	.576	.329		-.450	-7.156***
	Social Support	2 <sup>nd</sup>	.627	.388	.059	.249	4.556***
	Acceptance	3 <sup>rd</sup>	.648	.412	.024	-.230	-4.047***
	Financial Free.	4 <sup>th</sup>	.667	.435	.023	.168	2.996**
	Tension Control	5 <sup>th</sup>	.677	.446	.011	.130	2.355**
Mexico	Perceived Stress	1 <sup>st</sup>	.434	.185		-.324	-4.408***
	Social Support	2 <sup>nd</sup>	.499	.241	.056	.192	2.718**
	Acceptance	3 <sup>rd</sup>	.517	.256	.015	-.225	-3.191**
	Structuring	4 <sup>th</sup>	.537	.274	.018	.171	2.564*
	Self-Disclosure	5 <sup>th</sup>	.556	.292	.018	.180	2.462*
Males	Perceived Stress	1 <sup>st</sup>	.435	.182		-.265	-2.921**
	Social Support	2 <sup>nd</sup>	.514	.252	.070	.278	3.266*
	Tension Control	3 <sup>rd</sup>	.539	.271	.019	.176	2.025*
Females	Perceived Stress	1 <sup>st</sup>	.544	.294		-.425	-7.911**
	Social Support	2 <sup>nd</sup>	.577	.329	.035	.162	3.77**
	Acceptance	3 <sup>rd</sup>	.607	.363	.034	-.275	-5.649***
	Stress Monitoring	4 <sup>th</sup>	.633	.393	.030	.163	3.446**
	Financial Freedom	5 <sup>th</sup>	.646	.408	.015	.131	2.660**
	Physical Health	6 <sup>th</sup>	.655	.419	.011	.131	2.598*

<sup>a</sup>Values for Standardized Coefficients, *t* values, and Probability in Tail are taken from the last step in the model.

\**p* < .05, \*\**p* < .01, \*\*\**p* < .001

*Models for Countries.* The Mexican model for predicting life satisfaction included the Perceived Stress ( $\beta = -.324, t = -4.408, p < .001$ ), Social Support ( $\beta = .192, t = 2.718, p < .01$ ), Acceptance ( $\beta = -.225, t = -3.191, p < .01$ ), Structuring ( $\beta = .171, t = 2.564, p < .01$ ) and Self-Disclosure ( $\beta = .180, t = 2.462, p < .05$ ), and accounted for 30% of variance in SWLS scores. The U.S. model included Perceived Stress ( $\beta = -.450, t = 7.156, p < .001$ ), Social Support ( $\beta = .249, t = 4.556, p < .001$ ), Acceptance ( $\beta = -.230, t = -4.047, p < .01$ ), Financial Freedom ( $\beta = .168, t = 2.30, p < .01$ ) and Tension Control ( $\beta = .130, t = 2.36, p < .05$ ), and accounted for 45% of variance in SWLS scores.

*Models for Sexes.* When the data for both countries were combined, the model for males included Perceived Stress ( $\beta = -.265, t = -2.921, p < .005$ ), Social Support ( $\beta = .278, t = 3.266, p < .01$ ), and Tension Control ( $\beta = 1.76, t = 2.025, p < .05$ ), and accounted for 27% of variance in SWLS scores. The model for females included the PSS ( $\beta = -.425, t = -7.911, p < .001$ ), Social Support ( $\beta = .162, t = 3.277, p < .01$ ), Acceptance ( $\beta = -.275, t = -5.649, p < .001$ ), Stress Monitoring ( $\beta = .163, t = 3.446, p < .001$ ), Financial Freedom ( $\beta = .131, t = 2.660, p < .01$ ), and Physical Health ( $\beta = .131, t = 2.598, p < .05$ ) and accounted for 42% of variance.

Note that the betas for Acceptance are negative values for all but the male model. Thus, in three of the four regression models in Table 4 Acceptance is a suppressor variable. A suppressor variable occurs when the Pearson correlation with the criterion variable has a different algebraic sign than the beta weight of this variable when it enters the regression

equation (Tabachnick, & Fidell, 2001). Acceptance has a negative beta weight in the prediction model for life satisfaction (SWLS); however, Acceptance has a positive statistically significant correlation with the life satisfaction scores in Table 1. It appears to be suppressing the effect of PSS, or PSS and SS, on SWLS. Thus, there appears to be a small tendency on the part of people with higher Acceptance scores to underestimate stressors (PSS).

In summary, the U.S. prediction model accounted for greater variance in SWLS scores than the Mexican model and the female model accounted for greater variance in SWLS scores than the male model. All models included Perceived Stress and Social Support, along with other CRIS subscales.

*The Interaction Effect of Coping Resources.* Although the CRIS-CRE correlated moderately ( $r = .46, p < .01$ ) with the SWLS, transactional stress theory would suggest that coping resources are likely to exert their effects on life satisfaction indirectly by lowering perceived stress. According to Meyers, Gamst, & Guarino (2006, p. 189), moderation can be examined by the use of an interaction term. Consequently, in order to investigate the relationship between the overall resource scale (CRE), the Perception of Stress Scale (PSS), and the Satisfaction with Stress Scale (SWLS), we regressed the CRE, PSS, and the interaction term, CRE-by-PSS, on the SWLS for the total sample. In the resulting stepwise regression model, the CRE by itself did not enter. The PSS entered first with a  $R^2$  of .256 ( $\beta = -.658, t = -13.612, p < .01$ ) and, on the next step, the CRE-by PSS interaction term entered with a  $R^2$  of .301 ( $\beta = .266, t = 5.507, p < .01$ ), and the

model accounted for 30% of the variance in SWLS scores. Much like the suppressor function of Acceptance discussed in an earlier paragraph, the CRE-by-PSS interaction term seems to have a suppressor function. In this study the Pearson correlation of CRE-by-PSS with SWLS is a negative value (-.108), and when the CRE-by-PSS entered the regression equation, it had a positive beta weight ( $\beta = .266$ ). This suggests that it works as a suppressor variable, reducing invalid variance in PSS and, thereby, improving the strength of the PSS as a predictor of SWLS. Thus, it appears that coping resources have their effects on life satisfaction through their interaction with perceived stress.

## Discussion

### National Differences

Mexican students were younger (22.5 years *vs.* 23.38 years) more likely to be single (88% *vs.* 62%), and reported greater life satisfaction than their U.S. counterparts. Although there were no significant differences on a measure of overall coping resources (CRE), there were differences in specific coping resources. In comparison with U.S. students, Mexican students reported that they were more Self-Disclosing, more Self-Directing, better at Stress Monitoring and Tension Control, and had a greater ability to lower unpleasant arousal through relaxation procedures and thought control. U.S. students, however, reported more having more confidence.

### Sex Differences

Males and females did not differ in reported life satisfaction (SWLS), an outcome consistent with other cross-cultural studies (Diener, *et al.*, 2000; Matheny *et al.*, 2002). Likewise, there were no differences in their perceptions of the amount of stress in their lives (PSS). They did differ, however, in regard to estimates of their overall coping resources (CRE) and five specific resources. In each case, males scored significantly higher than females. Their scores suggested that they saw themselves as being more confident, more accepting of themselves and others, as having greater Physical Health, Physical Fitness, and Problem Solving ability. This tendency of males to report greater coping resources than females was consistent with results from studies of Turkish students (Matheny *et al.*, 2002) and Russian students (Makhnack, *et al.*, 1999). As stated earlier, there was no interaction of sex with country, and the proportion of females was about the same in both countries; consequently, the higher male scores may accurately reflect their perceptions of their coping resources. It may be that the socialization process, which in most societies favors the empowerment of males, may positively influence their perceptions of personal resources. The common stereotype holding that females would score higher on Social Support and Self-

Disclosure, perhaps as a result of producing greater amounts of the bonding hormone, oxytocin, (Taylor, 2002), was not supported by the results of this study.

### Predicting Life Satisfaction

Perceived stress and coping resources were useful in predicting life satisfaction for both U.S. and Mexican students, but the U.S. model accounted for a greater amount of variance in life satisfaction (47% *vs.* 27%). Perceived stress and coping resources were useful as well in predicting life satisfaction for the genders, with the female model superior to the male model (42% *vs.* 27%). Perceived stress and social support were the first and second variables to enter all four of the prediction models. The female prediction model included twice as many predictors as the male model. Perhaps this is not surprising given that females have been found to use a greater number of coping strategies than males (Folkman, & Lazarus, 1985).

Social Support was the only coping resource to enter all of the regression models, and it entered second only to PSS. This CRIS scale measures the perceived availability of a network of caring others that acts as a buffer against stressful life events (Curllette, Aycock, Matheny, Pugh, & Taylor, 1992, 2006). Its prominent position in these prediction models highlights its importance in promoting life satisfaction for college students. It has been found to effectively lower stress and improve life satisfaction among U.S. and international students (Matheny *et al.*, 2002; Solberg & Villarreal, 1997). It also has been found to mediate the relationships between personality factors and college adjustment (Lidy, & Kahn, 2006).

### Implications for Mental Health Providers

The results of this study highlight the critical role that perceived coping resources play in the life satisfaction experienced by college students. This role for coping resources becomes increasingly important as student stress increases. Indeed, it appears that the positive effect of these resources in promoting life satisfaction is by way of their interaction with perceived stress. The greater the stress, the greater are the effects of coping resources in suppressing error variance in perceived stress and in this way improving the prediction of life satisfaction. As long as stress is perceived to be low, the strength of the student's coping resources is not critical to a sense of life satisfaction. Thus, students with poor resources may be reasonably satisfied with their lives in periods of low stress. When perceived stress reaches moderate to severe intensity, however, usually higher coping resources significantly lessen the negative effect of the stress on life satisfaction.

Students seeking to increase their life satisfaction may pursue two courses of action: They may attempt to reduce stressors or they may increase their coping resources. Those with little confidence in their resources may strive to avoid

stressors or to withdraw once they have engaged the stressor. This retiring approach to life may work reasonably well for them as long as the option to avoid or withdraw is available. Their discomfort may rise appreciably, however, when encountering stressful events that cannot be avoided or escaped. It is often this condition, wherein stressors cannot be avoided and coping resources are perceived to be substantially inadequate, that drives students to seek counseling.

In addressing the resources perceived to be inadequate, mental health providers may help students acknowledge heretofore unrecognized resources. The natural tendency of persons with poor self-esteem is to underestimate their resources. Skillfully guiding them to focus on resources already in place may reduce stress by creating a better balance between perceived demands and perceived resources. At times, however, certain resources critical to healthy adjustment may, in fact, be deficit, in which case the direction of therapy should shift to the building of new ones. This study suggests that mental health providers in U. S. colleges should give special attention to the buffering effects of social support, as it was the only coping resource to enter all prediction models. Assisting students to join Latino support groups and to develop friendship skills may prove to be useful ways of developing social support.

### Support for Transactional Stress Theory

The results of this study seem compatible with the tenets of transactional stress models. These models maintain that perceiving one's coping resources to be adequate for the demands being faced will lessen the perception of stress. It also suggests that perceived stress will threaten one's sense of well being. For both U.S. and Mexican students and for males and females the overall measure of coping resources (CRE) was significantly negatively correlated with the Perceived Stress (U.S.  $r = -.696$  and Mexican  $r = -.607$ ; males,  $r = -.677$  and females,  $r = -.651$ , respectively) and positively correlated with the Satisfaction with Life (U.S.  $r = .514$  and Mexican  $r = .434$ ; males  $r = .458$  and females  $r = .495$ , re-

spectively). Moreover, perceived stress was negatively correlated with life satisfaction (U.S.  $r = -.576$  and Mexican  $r = -.434$ ; males  $r = -.435$  and females  $r = -.544$ ).

Further support for transactional modes comes from the interaction of coping resources with perceived stress. Coping resources appear to have their effect on life satisfaction through their interaction with perceived stress. This outcome is fully compatible with transactional theory. Because these relationships held up for both U.S. and Mexican students, this study offers cross-cultural support for the usefulness of the transactional stress model.

### Limitations and Future Research

Although the results of this study present cross-cultural data that are relevant to college counselors and that contribute to our theoretical understanding of life satisfaction, there are certain limitations to its usefulness. For example, all instruments used in this study were self-report measures, so there is an element of social comparison in the self-ratings that might have affected the results. It is possible that one gender, or students from one country, might have held a response set more conducive to favorable answers. Another potential limitation to the study's usefulness is the possibility of a confound stemming from the lack of information regarding the proportion of the U.S. sample that is of Hispanic/Latino descent. In this respect it should be noted that the U.S. sample was drawn from a large urban universities located in the Southeastern region of the country, and that the percentage of Hispanic/Latino students is less than 5%. Although there were several statistical findings, the correlational coefficients were modest to moderate, only accounting for a medium amount of the variance in life satisfaction. Finally, the present study targeted the perceptions of stress, coping resources and life satisfaction held by Mexican students in their native country, not the U.S.; consequently, it also would be interesting to compare the perceived stress, coping resources, and life satisfaction of Latino students with other ethnic groups in U.S. colleges.

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