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The Reliability and Validity of the Cultural Congruity and University Environment Scales with Chicana/o Community College Students

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ABSTRACT

Following the calls for increased research on the educational experiences of Chicana/o community college students, and the development of culturally applicable measures for communities of color, this study examined the utility and the applicability of the Cultural Congruity Scale (CCS) and University Environment Scale (UES) for use with Chicana/o community college students. Applying a psychosociocultural framework, the reliability, construct, and criterion-related validity of the scales for use with a sample of 110 Chicana/o community college students was examined. Results demonstrated adequate reliability and construct validity, with indication of applicability of these scales for the study's sample. Overall, the study challenges normative practices in educational research that students—despite their race/ethnicity, backgrounds, and histories—face similar educational experiences. Implications are discussed.

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Latina/o student enrollment in higher education has reached substantial firsts; their enrollment exceeds 2 million for 18 to 24 year olds, making them the largest racial/ethnic minority on college campuses (Fry & Lopez, 2012). Despite the “browning of higher education,” Latina/o students experience challenges related to academic preparedness (Oseguera, Locks, & Vega, 2009); access into universities (Hagedorn, Chi, Cepeda, & McLain, 2007); finances, and overall persistence (Oseguera et al., 2009). As a result, community colleges are a critical educational access point for many Latina/os. Although 25.2% of Latina/os begin their postsecondary education in the community college system (Fry & Lopez, 2012), they are less likely to obtain an associate degree, transfer to a 4-year college, or complete a bachelor's degree compared to their counterparts who begin at a 4-year college or university (Martinez & Fernández, 2004; Oseguera et al., 2009). Of the Latina/o students pursuing higher education, those of Mexican descent (who are hereafter referred as Chicana/os) are most likely to begin their higher education at 2-year colleges (Ornelas & Solorzano, 2004; Zell, 2010). As community colleges are critical access points for many students of color, the complex educational experiences of Chicana/os in particular (Campa, 2010; Zell, 2010), warrant further exploration.

In reviewing the current research, emic scales incorporating the complexity of background and culture continue to be crucial (Hardin, Robitschek, Flores, Navarro, & Ashton, 2014; Quintana, Troyano, & Taylor, 2001). Specifically, assessments examining the educational experiences of community college students of color (e.g., Barnett, 2011) and Latina/os in particular (e.g., Kraemer, 1997) are needed. As Chicana/os are more likely to enroll in community colleges (Campa, 2010; Martinez & Fernández, 2004), the field of multicultural educational research is inhibited until culturally-centered

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The term Chicana/o is used to reference individuals of Mexican descent in this study. Although the term carries sociopolitical nuances, it is used here to reference ethnic background.

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theoretical constructs are appropriately represented (Hardin et al., 2014; Quintana et al., 2001; Segura-Herrera, 2008), and cultural and environmental educational experiences are adequately assessed for Chicana/o community college populations. Scales examining Chicana/o community college students' educational experiences are critical, as perceived cultural fit is culturally and socially constructed by individuals based on their environment (Hurtado, Griffin, Arellano, & Cuellar, 2008). As such, this study examined the applicability of current emic educational scales (i.e., Cultural Congruity Scale and University Environment Scale, Gloria & Robinson Kurpius, 1996) to Chicana/o community college students.

Guiding theoretical framework

The present study implemented a psychosociocultural (PSC) approach (Castellanos & Gloria, 2007; Gloria & Rodriguez, 2000). Originally developed and applied as an integrative meta-model to understand Latina/o undergraduates' educational experiences (Castellanos & Gloria, 2007; Gloria & Rodriguez, 2000), three dimensions are emphasized. The psychological (P, self-beliefs and attitudes), social (S, connections and relationships), and cultural (C, values and worldviews) dimensions are considered in understanding the individual and collective experiences of Latina/o students within the context of higher education (Castellanos & Gloria, 2007). As a meta-model, different variables are explored within each dimension. Although the examination of three dimensions is made in combination (Gloria & Rodriguez, 2000), in-depth exploration of the specific unique processes and relationships within a single dimension is also needed to best assist racial and ethnic minority students, and Chicana/os and Latina/os in particular (Aguinaga & Gloria, 2015). As such, this study focused on the cultural dimension of Chicana/o students' processes of fitting into the culture of college (Cabrera & Padilla, 2004).

Cultural fit

Cultural fit is defined as the combination of internal and external processes Latina/o students experience within the college or university setting (Castellanos & Gloria, 2007; Gloria & Robinson Kurpius, 1996). The internal processes encompass students' feelings about themselves and their cultural values in comparison to the college or university environment (i.e., cultural congruity). The external process incorporates students' perceptions of their experiences in college or university settings (i.e., perception of the university environment). Although the constructs are closely related, they are distinct in that they provide a comprehensive understanding of students' dynamic internal and external exchanges within their higher education setting (Aguinaga & Gloria, 2015; Gloria & Robinson Kurpius, 1996).

Cultural congruity

Higher education mirrors White American values that often dismiss Latina/o values centered on family, interdependence, and cooperation (Anzaldúa, 2007; Castellanos & Gloria, 2007). Cultural congruity, or a match of one's cultural or personal values with those of the university (Gloria & Robinson Kurpius, 1996), is used to understand Latina/o undergraduates' academically-related experiences. Cultural congruity is also significantly predictive of educationally-emphasized constructs such as academic resilience (Castellanos & Gloria, 2007) and achievement (Cerezo & Chang, 2013); persistence decisions (Oseguera et al., 2009); and etic (Gloria, Castellanos, Lopez, & Rosales, 2005a; Gloria, Castellanos, Scull, & Villegas, 2009) and emic (Segura-Herrera, 2008) well-being.

An incongruence of values can be psychologically taxing for students of color who feel they need to inhibit their genuine cultural identity and cultural self-expression (Anzaldúa, 2007) in college settings. For instance, Latina/o students are often pressured to give up their values as means of navigating higher education and coping (Gloria, Castellanos, Segura-Herrera, & Mayorga, 2010). In

relation to working cultures of many higher education institutions (e.g., Castillo et al., 2006), Latina/o college students often report feeling disconnected to the campus (Delgado-Guerrero & Gloria, 2013); misunderstood by White peers (Cabrera & Padilla, 2004); or disengaged from faculty (Oseguera et al., 2009) due to their cultural values and emphasis on collectivism (Castillo, Conoley, & Brossart, 2004). Clearly, cultural-related experiences play a critical role in understanding the various dimensions and complexities of Latina/o educational experiences (Cerezo & Chang, 2013).

Exploration and application of cultural congruity with Chicana/o community college students has yet to be fully examined. Of the available literature, Campa (2010) conducted interviews with community college students of Mexican descent, and found that the ability to navigate “codes of power” in academia was critical to their academic success. Specifically, the ability to “play the game” meant gaining social capital while maintaining one’s cultural integrity and not assimilating to mainstream values. Similarly, in a study of Latina/o, Asian American, African American, and White community college students, Edman and Brazil (2009) reported positive perceptions of the cultural climate and cultural fit, yet low campus involvement. Results were attributed to long hours and off-campus commitments limiting students’ opportunities to participate in other nonclassroom campus activities (Edman & Brazil, 2009).

As the educational realities and academic contexts of universities and community colleges are different for Latina/os in general (Castellanos & Gloria, 2007; Marti, 2008) and Chicana/os in particular (Campa, 2010), the need for assessments that aptly examine their experiences holistically is heightened. Although Edman and Brazil (2009) used a modified CCS scale to assess cultural fit and academic success for a diverse community college student sample (Edman & Brazil, 2009), the CCS has not been validated for the specific use with Chicana/o community college students. Thus, the utility of the CCS (Gloria & Robinson Kurpius, 1996) is warranted as a first step in examining such experiences.

Perceptions of university environment

Noted as a critical component of academic success, perceptions of the university environment is the degree students feel welcomed and comfortable within their educational setting (i.e., perception of the day-to-day educational experiences; Gloria & Robinson Kurpius, 1996). Consistently highlighted in the literature, perceptions of welcoming educational environments significantly influence, and are predictive of, academic persistence processes (Schmitt & Duggan, 2011) and psychological well-being (Gloria et al., 2005a, 2009). Such reported experiences reinforces the notion that educational achievement requires more than academic motivation (Cabrera & Padilla, 2004).

Although positive perceptions and experiences in the college environment are associated with academic persistence (Gloria et al., 2005a; Schmitt & Duggan, 2011), Latina/os often report an unwelcoming college environment, higher racial hostility, and discrimination (Gloria, Castellanos, & Orozco, 2005b). For instance, Cabrera and Padilla (2004) reported that Chicana/o students experience overt and covert racism in their educational settings. Such negative educational experiences impact students’ sense of belonging (Locks, Hurtado, Bowman, & Oseguera, 2008) and psychological well-being (Gloria et al., 2005a, 2009), often resulting in perceived alienation and a sense of isolation from the institution (Cerezo & Chang, 2013; Hurtado & Carter, 1997).

Alternatively, literature suggests that community college Latina/os may experience higher degrees of cultural congruity and more positive views of the educational environment (compared to Latina/o undergraduates), as these institutions are more ethnically diverse and offer opportunities for closer interactions and connections (Zell, 2010). For example, in a qualitative study of the psychological experiences of 17 Latina/o community college students, Zell (2010) indicated students viewed the campus as hospitable. Neither cultural congruity nor environmental perceptions were identified as influencing their educational experiences or academic persistence decisions; rather, it was students’

sense of purpose to assist their family financially that served as the protective factor to their experiences (Zell, 2010).

As students find spaces and connections that allow them a sense of congruity and positive experience of the environment, how students experience their sense of wellness or well-being while on campus has yielded a small literature base specifically regarding Latina/o college students (e.g., Gloria et al., 2005a, 2009; Iturbide, Raffaelli, & Carlo, 2009; Rodriguez, Mira, Myers, Morris, & Cardoza, 2003). Although psychological well-being has been explored with Latina/o students in higher education with success, Segura-Herrera (2008) implemented a multiphase, multistep process to develop a culturally-valid and value-specific measure of Latina/o college students' well-being within the content of higher education. Segura-Herrera (2008) found that increased congruity and positive perception of the university context was positively related to emic well-being.

Considering the equivocal findings of campus environment and the potential psychological repercussions of experiencing negative campus climate (Locks et al., 2008), use of proper assessment tools is warranted. Although scales measuring campus climate exist (Hurtado et al., 2008), none are available that were specifically developed for use with Chicana/o students or Chicana/o community college student samples in particular. Thus, the Cultural Congruity Scale and the University Environment Scale (Gloria & Robinson Kurpius, 1996) were used in this study as an initial step to examine the complex experiences of Chicana/o community college students.

Purpose of study and study research questions

As culture and context influence students' educational experiences, assuring cultural equivalency of measurements across cultures and within populations is critical (Hardin et al., 2014; Quintana et al., 2001). Although modified versions of the CCS and UES scales have been used for community college students (Edman & Brazil, 2009), scales created and normed with Latina/o undergraduates cannot be assumed valid for Chicana/o community college students, or any community college populations of color, without measuring scale equivalence and cultural applicability (Marti, 2008; Padilla, 2004). Merging the calls for research on the educational experiences of Chicana/o community college students (Zell, 2010) and the development of culturally applicable scales for students of color (Padilla, 2004; Quintana et al., 2001), the present study assessed the reliability and validity of the Cultural Congruity Scale (CCS) and University Environment Scale (UES) for use with Chicana/o community college students.

Reliability

Instruments initially developed and normed for one population need careful translation procedures and tests (Angell, 2009) of cultural equivalency prior to use with other populations (Hardin et al., 2014; Quintana et al., 2001). Assessment of a scale's reliability (i.e., internal consistency coefficient) is critical (Helms, Henze, Sass, & Mifsud, 2006); thus, the following question was posed: What are the internal and test-retest consistencies of the CCS and UES for Chicana/o community college students?

Validity

The cultural validity of assessments is warranted to avoid imposing a sense of sameness in scale development and implementation across populations (Hardin et al., 2014; Quintana et al., 2001). Using scales not validated for Chicana/o community college students can result in discounting unique educational experiences. As such, construct and criterion-related validity were assessed, and the following questions were posed for Chicana/o community college students: What is the convergent validity of the campus climate and student success with the CCS and UES? What is the

discriminant validity of etic and emic well-being and the CCS and UES? What is the predictive validity of the CCS and UES to etic and emic well-being?

Methods

Settings and procedures

Students were recruited from a large, two-year, Hispanic-serving, public community college on the west coast. The enrollment of the institution was approximately 30,000 at the time of the study. The graduation rate was 22.5%, with an approximate 9.8% transfer rate.

Participants were recruited from general education classes (i.e., two psychology courses, two biology courses, and one human sexuality course), which were required classes for transfer to a university or to earn an associate degree. Participants were informed that their involvement included completion of online surveys at two different times. Students interested in participating were provided a flyer with the online link of the survey and a randomly assigned number. The number was used at both survey completion times to track completion during Time 1 and 2 and to provide extra credit. After the first survey was completed (i.e., Time 1), the researchers returned two weeks later to recruit Time 1 survey participants to complete the retest survey (i.e., Time 2). Similar procedures were used to recruit students during Time 2.

Community college participants

A total of 288 students participated at Time 1 (test) and 170 of these same students participated at the Time 2 (retest) of the study. Only those who completed both the pre- and posttests and met the study's criteria (i.e., community college students of Mexican heritage) were included in the analyses. Students who completed the test/retest surveys but did not meet study criteria were nine Asians, three African Americans, 12 Euro-Americans, one Middle Eastern student, seven self-identified Multiracials (without specifying heritages), 26 Latina/os (i.e., South American, Central American, Puerto Rican, Cuban, Other "Hispanic"), 1 self-identified "Mulato," and one Native American. A total of 110 Chicana/o community college students were included in the study.

Of the 110 students, the majority were female ($n = 76$, 69.7%), with students' ages ranging from 18 to 49 years ($M = 21.49$, $SD = 4.54$). The majority of students ($n = 70$, 78.7%) were working on an associate degree, with self-reported cumulative GPAs ranging from 1.97 to 4.0 ($M = 2.87$, $SD = .53$). Most students identified as first-generation ($n = 78$, 71.6%) (i.e., first to be born in the United States). Almost three quarters of the students ($n = 79$, 73.1%) reported being single and 21 reported being in a committed relationship (19.4%). A total of 32 different majors were reported that ranged from business to medical assistant; however, the most frequently reported majors were nursing ($n = 18$, 16.5%), psychology ($n = 14$, 13.8%), and criminology ($n = 13$, 11.9%).

Most students reported living with family ($n = 82$, 75.2%), with their main source of educational finance coming from family ($n = 40$, 36.7%), working part time off-campus ($n = 33$, 30.3%), and scholarships ($n = 21$, 19.3%). Finally, most students indicated being continuously enrolled ($n = 94$, 86.2%) since beginning their education. Of those who stopped out of school, the primary reason was due to financial difficulties ($n = 5$). The highest degree aspiration reported was a master's degree ($n = 43$, 39.4%), followed closely by a bachelor's degree ($n = 39$, 35.8%).

Survey instruments

The study participants completed the same survey at Time 1 and Time 2, which took approximately 15 to 25 minutes each time to complete. The survey included a demographic sheet followed by six counterbalanced scales. Internal consistency coefficients for the study's scales are provided in Table 1.

Table 1. Scale descriptives by time.

Variable	Time 1			Time 2		
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α
Cultural Congruity	3.06	.35	.75	3.02	.37	.80
University Environment	3.09	.36	.83	3.08	.38	.86
Student Success	3.59	.32	.80	3.58	.33	.82
Campus Climate	3.38	.44	.75	3.37	.50	.73
Well-being	4.10	.57	.60	4.15	.68	.75
Latina/o Student Well-being	3.45	.54	.92	3.49	.60	.93

Demographic information

Participants completed demographic questions only at Time 1 that included a total of 20 items addressing seven general, six educational, and seven historical areas. General questions focused on personal elements (e.g., age, race/ethnicity, marital status), while educational questions asked about class standing, grade point average, and financing education. Historical questions addressed family background (e.g., generation status, mother's and father's highest completed level of education, sibling's college attendance).

The cultural congruity scale (CCS)

The Cultural Congruity Scale (CCS) assesses students' sense of fit or congruity between their cultural values and those of the university (Gloria & Robinson Kurpius, 1996). Seven items are reverse-scored with higher scores reflecting an increased sense of cultural congruity. Participants responded to a 4-point Likert-type scale from 1 (*strongly disagree*) to 4 (*strongly agree*), with a sample item of, "I feel I have to change myself to fit in school." Adequate internal consistencies for Latina (.84, Gloria et al., 2010) and Latino male (.85, Gloria et al., 2009) undergraduates and a racially diversity sample of community college students (.84, Edman & Brazil, 2009) have emerged.

The university environment scale (UES)

The University Environment Scale (UES) examines racial and ethnic students' perceptions of the university environment (Gloria & Robinson Kurpius, 1996). The 14-item scale includes five reverse-coded items such that higher scores indicate more positive view of the university environment. Participants responded to a 4-point Likert-type scale from 1 (*strongly disagree*) to 4 (*strongly agree*), with a sample item of, "Class sizes are so large that I feel like a number." Internal consistencies range from .73 for Latinas (Gloria et al., 2010) to .80 for Latino males (Gloria et al., 2009). A modified version of the scale with a racially diverse community college student sample (Edman & Brazil, 2009) yielded an internal consistency of .74. Similar to Edman and Brazil (2009), wording on scale items was changed from "university to college" to "community college."

Student success

The Non-Cognitive Questionnaire-Revised (NCQ-R) is 40-item scale that assesses eight non-cognitive dimensions of student success (i.e., Academic Positive Self Concepts, Realistic Self Appraisals, Support of Academic Plans, Leadership, Long Range Goals, Ability to Establish Community Ties, and Understanding of Racism and Academic Familiarity) (Tracey & Sedlacek, 1989). Based on a 5-point Likert-type format from 1 (*strongly disagree*) to 5 (*strongly agree*), a sample question includes "I expect to have a harder time than most students here." The original study's internal consistencies ranged from

.55 to .84 for African American undergraduates. The NCQ-R was used to assess convergent validity with the CCS and UES.

Campus climate

The Campus Attitudes and Climate Scale ([CACS]; Helm, Sedlacek, & Prieto, 1998) measures students' perceptions and experiences of the university's racial and ethnic climate. The scale includes six diversity factors: Racial Ethnic Climate, Diversity, General Experiences on Campus, Your Experiences on Campus, Diversity Programs, and Future Intentions. For the current study, only questions from General Experiences on Campus (six questions; 1 = *strongly disagree*, 5 = *strongly agree*), and Your Experiences on Campus (seven questions; 1 = *little/none*, 4 = *a great deal*), were used. A question on experience in the residence halls and from the Your Experiences on Campus subscale was not applicable to the study sample and was excluded. A sample item includes "The school provides an environment for the free and open expression of ideas opinions and beliefs." The total item scale yielded an internal consistency of .81 with undergraduate students (Helm et al., 1998). The CACS was used to determine convergent validity with the CCS and UES.

Well-being

The Psychological Well-Being Scale-Short (PWBS) was designed to measure six psychological domains of well-being: self-acceptance, positive relations with others, autonomy, environment mastery, purpose in life, and personal growth (Ryff & Keyes, 1995; Schmutte & Ryff, 1997). The original scale has 120-items; however, the current study used a 10-item shortened version of the scale. The PWBS is based on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), where higher scores indicate an increased level of psychological well-being. A sample item includes "I have confidence in my own opinions, even if they are contrary to the general consensus." Previous use of the PWBS-short with 98 Latina undergraduates yielded an adequate alpha of .71 (Gloria et al., 2005b). The PWBS-short was selected as an etic measure of well-being to assess the discriminant and predictive validity of the CCS and UES.

Latina/o student well-being

The Latina/o College Student Well-Being (LCSWB) scale is a 27-item scale developed to assess the emic- and context-specific well-being of Latina/o college students (Segura-Herrera, 2008). Items are rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item includes "My relationship with other Latinas/os on-campus are characterized by *confianza* (e.g., cultural familiarity, trust, comfort)." Segura-Herrera (2008) reported a Cronbach's alpha of .94 for 140 Latina/o college students. The LCSWB was selected as an emic measure of well-being to assess the discriminant and predictive validity of the CCS and UES.

Results

Item-response frequency

Overall, the CCS and UES items were answered, with no more than four items left unanswered at Time 1 and 2. For UES, questions on perceived willingness of financial aid staff to help (Time 1), and perception that the campus values ethnic minority students (Time 2) were unanswered. For the CCS, items regarding having to change oneself to fit on campus, and perceptions that family and school values conflict (Time 2), were left unanswered.

Reliability

The CCS and UES showed adequate reliability, all above .70, at each administration (see Table 1). The internal consistency coefficients for CCS ranged from .75 at Time 1 to .80 during Time 2, whereas UES was .83 during Time 1 and .86 for Time 2. Further, to determine how the items added to the overall reliability of the CCS and UES, interitem coefficients were examined. For UES, the item “Class sizes are so large that I feel like a number,” marginally influenced the internal consistencies at Time 1 (from .83 to .84 if item omitted) and Time 2 (from .81 to .85 if item omitted). Alternatively, the CCS item “I often feel like a chameleon, having to change myself depending on the ethnicity of the person I am with at school,” influenced internal consistencies at Time 1 (from .75 to .82) and Time 2 (from .80 to .87) if omitted.

Validity

To determine the construct validity for the CCS and UES, both convergent and discriminant validity were examined (Hoyt, Warbasse, & Chu, 2006; see Table 2). To assess convergent validity, campus climate and student success were correlated with CCS and UES, yielding significant relationships at Time 1 (i.e., .31 to .40) and Time 2 (i.e., .33 to .45); disattenuated correlations revealed increased correlation coefficients. For discriminant validity, LCSWB and WB were correlated with the CCS (.20 to .28) and UES (.27 to .26) at Time 1 and Time 2. The correlations were low but significant, as were the disattenuated correlations.

Finally, to assess the predictive validity of the CCS and UES to etic and emic well-being, four separate regressions analyses were conducted (see Tables 3 and 4). For etic well-being (PWBSS), the regression equations were also significant at Time 1 [$F(1, 105) = 7.34, p = .001$] and Time 2 [$F(1, 106) = 5.06, p = .008$] and accounted for an approximately equal amounts of variance (12.3% and 7.0%), respectively. For emic well-being (LSWB), the regression equations were significant at Time 1 [$F(1, 105) = 4.41, p = .015$] and Time 2 [$F(1, 106) = 20.73, p = .000$], with 6.0% and 26.8% of the total variance accounted for, respectively.

Table 2. Correlations of study's variables by time.

Variable	Time 1						Time 2					
	1	2	3	4	5	6	1	2	3	4	5	6
Cultural Congruity	–	.57**	.34**	.31**	.26*	.20*	–	.69**	.49**	.33**	.28**	.27**
University Environment	.72	–	.39**	.40**	.34**	.27**	.83	–	.40**	.45**	.26**	.52**
Student Success	.44	.48	–	.04	.37**	.32**	.60	.48	–	.12	.37**	.33**
Campus Climate	.41	.51	.05	–	.20*	.20*	.43	.57	.16	–	.21*	.27*
Well-being	.39	.48	.53	.30	–	.17	.36	.32	.47	.28	–	.22*
Latina/o Student Well-being	.25	.31	.37	.24	.23	–	.31	.58	.38	.33	.26	–

Notes. * $p \leq .05$; ** $p \leq .01$. Correlations below diagonal represent disattenuated correlations.

Table 3. Prediction of etic well-being by time.

Variable	Time 1						Time 2					
	B	SE(B)	β	Δr^2	ΔF	t	B	SE(B)	β	Δr^2	ΔF	t
Step 1: University Environment	.54	.14	.34	.12	14.10	3.76***	.46	.17	.26	.07	7.40	2.72**
Step 2: University Environment	.46	.18	.29	.01	.67	2.62**	.20	.23	.11	.02	2.58	.89
Cultural Congruity	.15	.19	.09			.82	.38	.24	.21			1.06

Notes. * $p \leq .05$; ** $p \leq .01$. *** $p \leq .001$. PWBSS; Time 1 [$F(1, 105) = 7.34, p = .001$], Adjusted $R^2 = 10.9\%$; $p = .001$; Time 2 [$F(1, 106) = 5.06, p = .008$], Adjusted $R^2 = 7.0\%$; $p = .008$.

Table 4. Prediction of emic well-being by time.

Variable	Time 1						Time 2					
	B	SE(B)	β	Δr^2	ΔF	<i>t</i>	B	SE(B)	β	Δr^2	ΔF	<i>t</i>
Step 1: University Environment	.41	.14	.27	.08	8.60	2.93**	.77	.12	.52	.27	3.91	6.25***
Step 2: University Environment	.36	.17	.24	.00	.27	2.11*	.93	.17	.63	.01	2.00	5.54*
Cultural Congruity	.09	.18	.06			.52	-2.47	.18	-.16			-1.41

Notes. * $p \leq .05$; ** $p \leq .01$. *** $p \leq .001$. PWBSS; Time 1 [$F(1, 105) = 7.34, p = .001$], Adjusted $R^2 = 10.9\%$; $p = .001$; Time 2 [$F(1, 106) = 5.06, p = .008$], Adjusted $R^2 = 7.0\%$; $p = .008$. LCSWB; [$F(1, 105) = 4.41, p = .015$], Adjusted $R^2 = 6.0\%$; $p = .015$; Time 2, [$F(1, 106) = 20.73, p = .000$], Adjusted $R^2 = 26.8\%$; $p = .001$.

Discussion

This 2-week test/retest study examined the utility and applicability of the CCS and UES scales with Chicana/o community college students. The study assessed the internal reliability and construct and criterion-related validity of the scales. The study's theoretical framework, recruitment procedures, measures, and analyses, addressed the importance of culture and context guidelines for cultural validity in research (Hardin et al., 2014; Quintana et al., 2001).

Overall, participants responded to the large majority of items at Time 1 and 2 with no single item or items left unanswered. These findings suggest that the CCS and UES items are generally applicable to the cultural and educational experiences of Chicana/o community college students. Many community college students infrequently engage in college life experiences due to holding multiple roles (e.g., full-time work, family; Ornelas & Solorzano, 2004), in comparison to university undergraduates. Thus, the unanswered items may have been judged irrelevant or inapplicable to their experience given the high diversity of their context. Yet, as the items were unanswered no more than four times at any one assessment (i.e., Time 1 or Time 2), and no patterns emerged for non-responders (i.e., same student not responding to an item across time), it is also feasible that the students may have inadvertently skipped or overlooked a particular item.

The relative stability, consistency, and repeatability of the reliability coefficients at Time 1 and Time 2 suggest test-retest reliability (Helms et al., 2006). The item response frequency and the consistent reliability coefficients together may suggest the measures are applicable to the experiences of Chicana/o community college students. Although the cultural experiences of Latina/o undergraduates and community college students differ (Martinez & Fernández, 2004), the results suggest scale equivalence (Quintana et al., 2001) for use with students at different education levels or types of institutions (e.g., 2-year community college vs. 4-year university).

Overall the results generally suggested that the constructs of cultural congruity and perceptions of the university environment have construct validity in use with Chicana/o community college students. First, the correlation coefficients for similar constructs (i.e., campus climate and student success) evidenced convergence with perceptions of the university environment. The relationships met criteria for convergent validity (i.e., correlations of .40 and higher) per Hoyt et al. (2006), with the exception of student success, which yielded a .39 at Time 1. Further, the correction for disattenuated correlations revealed higher correlation coefficients for all the constructs. For cultural congruity, the correlation coefficients were below .40 (i.e., .31 and .33); however, the results may have been due to measurement error as the disattenuated correlations coefficients had a notable increase (i.e., .41 and .43; Hoyt et al., 2006). Although the campus climate and student success scales were deemed as strong measures of racial/ethnic minority students' experiences and fit within higher education, they were not specific to Mexican-heritage or even Latina/o students. And perhaps the scales are not as theoretically-aligned to the cultural features of the cultural congruity construct, thus yielding the lower coefficients.

Next, the study's results revealed that the study's scales are discriminate from dissimilar constructs. The results and the correction for attenuation are evidence that the constructs of cultural congruity and etic and emic well-being are theoretically divergent measures (Hoyt et al., 2006).

Further, the results showed an increased correlation between emic well-being and perceptions of university from Time 1 to Time 2. Such results may indicate perceptions of university environment shares variance with Latina/o student well-being. These are findings consistent with previous studies that Latina/o students' sense of wellness is often driven by perceived feelings of being comfortable or welcomed on college campuses (Castellanos & Gloria, 2007). The Time 2 data collection was near the end of the semester, and students had more academic responsibilities (e.g., exams, papers). Therefore, the increased correlation coefficient may have reflected students drawing on their cultural dimensions of values and beliefs that enhanced their sense of emic wellness. Although the cultural fit scales are similar to—and share variance within notions of well-being—they are distinct constructs and warrant study with Chicana/o community college students.

Finally, to determine criterion-related validity, results indicated that cultural congruity and university environment were predictive of well-being and Latina/o student well-being for community college students. Specifically, perceptions of the university environment predicted substantially more of the variance of emic well-being at Time 1, whereas cultural congruity was most predictive of emic well-being at Time 2. The difference in variance between cultural congruity and perceptions of the university environment may indicate that Chicana/os community college students' dynamic cultural internal and external educational processes (Aguinaga & Gloria, 2015; Gloria & Robinson Kurpius, 1996) may influence their cultural-specific perceptions and experiences of wellness. The results call attention to how Chicana/o students' cultural fit generally, and cultural congruity and university environment specifically, are critical precursors to understanding their psychological wellness (Zell, 2010). This is a relationship that has had similar theoretical relationships and prediction (Gloria et al., 2005a, 2005b, 2010) for university undergraduates. Similar to previous findings (Segura-Herrera, 2008), the increased variance accounted for Latina/o student well-being highlights the importance of culturally-appropriate emic scales (Marín & Marín, 1991). The increased variance also underscores the importance of culture in the experiences of racial and ethnic minority students (Cerezo & Chang, 2013), particularly in times of stress (i.e., Time 2 during course examination and end of the semester responsibilities) when students most likely relied on cultural processes to assist their coping.

Overall, the results provide evidence of construct and criterion-related validity of the scales. No current scales encompassing the construct of cultural fit for community college racial and ethnic minority students are available. However, the study suggests that our scales are generally applicable and measure Chicana/o community college students' sense of cultural fit. Further, the findings counter the notion that assessing the experiences of specific ethnic groups (i.e., Chicano and community college students) through a "one size fits all" approach without proper validation is not accurate or valid. The study's findings support a call for an increased consciousness of conducting scholarship with Latina/o and Chicana/o students that fully captures their realities (Castellanos & Gloria, 2007; Christopher, 1999). The findings do this by challenging the normative practices in educational research that students—because of their race/ethnicity, backgrounds, and histories—experience education similarly (Padilla, 2004).

Limitations and future research

First, as the community college from which the students were surveyed was primarily a Hispanic-serving Institution (HSI; i.e., 25% or more of the student population was Hispanic, qualifying it for federal funds), the use of the measures with other non-HSI community college student populations should be conducted with caution. Also, as the study sample was primarily female, exploring how gender may have influenced the study's findings merits consideration. For example, as Latinas are more likely to take an active role in coping with educational processes than their male counterparts (Gloria et al., 2005a, 2009), the way in which they perceive congruence or the educational environment may have influenced their item interpretation.

Further, as extra credit was offered at the second administration of the survey (i.e., three weeks before the end-of-the-semester), the opportunity for course points may have influenced an increased participation or higher completion of survey items. Yet, the online method of data collection may have also deterred participation from those students with limited access to, or comfort with, technology. It is suggested that the survey start time and second administration be considered within the context of the academic semester. It is also suggested to include paper-pencil questionnaires and gaining individual narratives in order to offer multiple methods of participation to increase the generalizability and cultural validity of the constructs (Quintana et al., 2001).

The students' length of enrollment was not assessed and may have influenced their perceptions and sense of congruity about their educational setting. Future research would do well to determine how increased time within the community college may subsequently influence their sense of congruity and perceptions of the educational environment. This is suggested because Latina/os students later in their educational processes (i.e., upper division students) have been found to have lower congruity and decreased perceptions of the environment in their sense of congruity than more recent students (i.e., lower division students). Although the scale constructs were applicable for these community college students, qualitative research could determine if additional dimensions or items are needed as part of the overall assessment. Also, conducting a factor analysis of the scales' items using archival data sets is recommended to determine the dimensionality of the scales. Finally, conducting a meta-analysis of the relationships of the CCS and UES to constructs such as well-being or academic persistence decisions could identify patterns and relationships that can lend direction to future research.

Implications for practice

Several implications emerged from the study's findings. Although there were several items that warranted word change (e.g., replacement of university with community college) to match students' educational context or their differing salience, the findings evidence applicability and serve as an initial step for further investigation of the multifaceted internal and external educational experiences of Chicana/o community college students. The scales also seem appropriate to use as an aid for the creation of programs and resources to assist in Chicana/o students' educational experiences. Next, use of the CCS and UES as measures for research and notions of discussion within student services can assist community college educators and administrators to create more culturally inclusive campus climates. In particular, faculty, advisors, and administrators can consider how the assessment and understanding of these variables, as well as their complexities, may influence Chicana/o community college students' experiences and wellness, as cultural fit and climate appear to be experienced differently for this sample.

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