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Abstract

The use of depression scales as screening tools at university and college centers is increasing and thus, the question of whether scales are culturally valid for different student groups is increasingly more relevant with increased severity of depression for students and changing student demographics. As such, this study examined the reliability and validity of three commonly used depression scales with 203 Latina/o undergraduates. The scales varied in item response, assessment, reliability, convergent and construct validity, and

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detection of sex and class standing differences for the study's sample. The strengths and limitations of implementing the scales with Latina/o undergraduates are addressed for research and within practice settings.

Keywords

depression, Latina/o undergraduates, validity and reliability

The incidence of depressive symptomatology and depression among college students is a growing challenge (American College Health Association [ACHA], 2008; Del Pilar, 2008; Voelker, 2003), which has in part prompted agency changes in mental health screening and service delivery on college campuses (Benton, Robertson, Tseng, Newton, & Benton, 2003). ACHA reported depression as the sixth-rated health barrier to academic achievement and the fourth-rated health concern for 11,434 students (ACHA, 2008). From a multi-site assessment of 1,455 college students' suicidality and depression, more than half reported having experienced depression since beginning college (Furr, McConnell, Westefeld, & Jenkins, 2001). Issues of grade difficulties, loneliness, money concerns, boy/girlfriend problems were reasons cited for depression for those students who indicated that they first experienced depression since attending college (Furr et al., 2001). Relatedly, university counseling centers have reported an increase in the complexity and severity of student concerns (Benton et al., 2003), including depression-related concerns (Furr et al., 2001; Voelker, 2003) and school-related interpersonal problems (Heiligenstein, Guenther, Hsu, & Herman, 1996).

Although the developmental processes and transitions to college are difficult for all college students, educational challenges and subsequent mental health concerns, such as depression and related suicidality (Garlow et al., 2008), warrant investigation for racial and ethnic minority students (Hwang & Goto, 2008). Literature consistently reveals that racial and ethnic minority students experience different and often-intensified stress and distress relative to their White college counterparts (Walker, Wingate, Obasi, & Joiner, 2008). In particular, Latina/o college students report increased stressors and a vulnerability to depression than their college student counterparts (Gore & Aseltine, 2003). Studies reveal that Latina/o students manifest psychological symptoms differently than the general population (Del Pilar, 2009; Pina, 2004), report a higher prevalence of depressed mood (Gore & Aseltine, 2003; DeMelo & Farber, 2005), and have a greater history of depression than their college peers (Del Pilar, 2008).

Specifically, Latina/o college students tend to be vulnerable to depression given the stressors and obstacles encountered, such as non-supportive university environments (Hurtado & Carter, 1997), financial and socioeconomic issues, disparaging educational assumptions and lack of supportive university personnel (Gloria & Rodriguez, 2000; Rodriguez, Guido-Brito, Torres, & Talbot, 2000). Latina/o students also report perceived discrimination associated with interpersonal stressors and challenging educational climates (Gloria, Castellanos, Segura-Herrera, & Mayorga, 2010; Saenz & Ponjuan, 2009). As such, the exploration of the reliability and cultural validity of depression scales/assessments are needed (Quintana, Troyano, & Taylor, 2001) as they are commonly used as screening tools with college populations (Duke, Kellgren, & Storch, 2006). Although the depression scales have been revised and adapted in Spanish and used with Latina/o student samples (Bonilla, Bernal, Santos, & Santos, 2004; Bonicatto, Dew, & Soria, 1998), the development of the scales were not intended student populations with intentional integration of the educational concerns and considerations within the context of higher education by which cultural validity was addressed. As a result, it is reasonable to question whether the current assessments and scales implemented by mental health practitioners in college counseling centers are accurate measures of depression or depressive symptoms of Latina/o students.

Review of Three Commonly Used Depression Scales

Beck Depression Inventory-II (BDI-II)

The Beck Depression Inventory is widely used to assess the severity of depression in psychiatric patients and screening for possible depression in non-clinical populations (Beck, Steer, & Brown, 1996). The BDI-II is a revision of the original BDI-I, which reflects the diagnostic criteria for Major Depressive Disorder (MDD) as reported by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM-IV]; American Psychiatric Association, 1994). Changes from the BDI-I include dropping four symptoms (i.e., weight loss, body image change, work difficulty, and somatic preoccupation) and adding four symptoms (i.e., agitation, concentration difficulty, worthlessness, and loss of energy), while assessing on a time frame of the “past 2 weeks including today.”

In a study with 576 college students (60.8% White, 20.8% Asian/Pacific Islander, 6.3% African American, 6.3% Hispanic, 3.8% other ethnic, 1.9% missing), the BDI-II evidenced adequate reliability (.89) and two underlying factors

of cognitive-affective and somatic symptoms of depression (Whisman, Perez, & Ramel, 2000). The authors suggested that as the BDI-II was constructed to measure diagnostic symptoms more closely, more research to determine “case detection” for clinical depression is needed (Whisman et al., 2000, p. 551).

The BDI-I and BDI-II have yielded strong internal consistencies and test-retest reliability with Latina/o students (Contreras, Fernandez, Malcarne, Ingram, & Vaccarino, 2004; Wiebe & Penley, 2005). Comparing 1,110 Latina/o and 2,703 White American college students, an internal consistency coefficient of .82 was reported for the BDI-I, in which Latina/os scored significantly higher on depression than Whites (Contreras et al., 2004). Both the English (.89) and Spanish (.91) versions of the versions of the BDI-II had adequate internal had adequate internal consistency coefficients with 404 Latina/o college students (Wiebe & Penley, 2005). With little difference in overall scores attributable to language, Wiebe and Penley reported adequate reliability for the English and Spanish versions of the BDI-II for use with Latina/o students.

Center for Epidemiology Study-Depression (CES-D)

Another well-known and commonly used depression scale is the CES-D, a self-report instrument designed to measure epidemiology of depressive symptomatology in the general population (Radloff, 1977). The scale’s items were taken from previously validated depression scales (e.g., Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Zung, 1965) and included symptoms such as depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance (Radloff, 1977).

Use of the CES-D with adolescents revealed that Latina/os tend to score higher than White adolescents (Roberts, 1992; Roberts & Chen, 1995). In a study of late adolescent Hispanics (ages 18 to 23), Iwata, Turner, and Lloyd (2002) reported that they did not identify the expression of positive affect (i.e., feeling good about oneself, feeling happy, enjoying life), resulting in exaggerated CES-D scores. More specifically, approximately one-third of both U.S.-born (32.6%) and immigrant (35.1%) Hispanics scored high on the CES-D. Pooling data from three studies of urban Latina/os ($n = 1,403$) from California, Posner, Stewart, Marin, and Pérez-Stable (2001) reported that the CES-D factor structure varied by sex, resulting in their caution of whether a summary or total score assessment of the CES-D was appropriate for Latino males. Similarly, Cho et al. (1993) reported the different ranges to assess depression for Latina/os. Specifically, in an analysis of the Hispanic Health

and Nutrition Survey (HHANES) data, the cut-off scores of 17 and 20, respectively, were identified as better predictors for current major depression for Cubans and Puerto Rican Americans (Cho et al., 1993) than the originally established cut-off score of 16 by Radloff (1977).

Self-Rating Depression Scale (SDS)

Using clinical diagnostic criteria for depression, the Self-Rating Depression Scale (SDS; Zung, 1965) is a frequently implemented scale measuring symptoms specifically related to depression experienced during the past 2 weeks. Covering the most common bases of depression, the SDS includes items relating to psychological and physiological symptoms as well as descriptors of affect frequently associated with depressive disorders.

Kochkine (2006) assessed the relationship of depressive symptoms and academic impairment in immigrant and American-born adolescents finding that Hispanic adolescents born abroad reported the highest degree of depressive symptoms and had the lowest academic achievement compared with their African American, Chinese, Italian, and Russian peers. Data on the internal consistency coefficients were not reported. Similarly, studying 455 undergraduates (67.2% White and 57% freshman) from a large public institution in the Southwest, Dixon and Robinson Kurpius (2008) reported that perceived mattering, self-esteem, and college stress in combination predicted a substantial portion of the variance of depression as measured by the SDS. The authors reported an internal consistency coefficient of .81.

Used as an intake screening tool at a college counseling center with 324 college students at a mid-sized urban university, a single second-order factor of depression and three first-order factors (i.e., affect, somatic, and psychological symptoms) were revealed for the SDS (Smith, Rosenstein, & Granaas, 2001). An internal consistency coefficient of .87 was reported, consistent across age, sex, and race for undergraduate and graduate students (stratified by race) who included Whites (51%), African Americans (23%), and Asian Americans (23%). Although Smith et al. reported the SDS as “a reliable and valid screening tool for symptoms of depression among students across three racial groups” (p. 138), they cautioned the use of a single screening instrument to assess for depression given the likelihood of Type II error.

Purpose of the Study

Because university counseling center clinicians are increasingly and routinely using depression screening tools without adequate understanding of

their application for college students, and REM students in particular (Smith et al., 2001), this study assessed the use of three widely-used depression scales for a Latina/o undergraduate sample. As Latina/o undergraduates experience being a “minority” in higher education, which has been linked to experiencing additional stressors and obstacles, they are prone to poor mental health and more vulnerable to depression than their student counterparts. Due to the paucity of literature which addresses depression and depression assessment specifically for Latina/os in higher education, the study assessed the reliability and validity of three depression scales (i.e., BDI-II, CES-D, and SDS) with Latina/o undergraduates. First, item frequency responses for the depression scales, in addition to internal consistency coefficients were determined. Next, the diagnostic assessment, along with convergent and construct validity of the three scales were explored. Differences for sex and class were also assessed.

Method

Procedure and Setting

After securing IRB approval for the study, the researchers approached course instructors and Latina/o-based organization leaders to request permission to enter their class/student meetings to solicit student participation at a mid-size West Coast university. A description of the study was also posted on a “subject pool” website, in which students would receive class extra credit for participating in the study.

Students were informed in writing and verbally that participation was voluntary and that return of their completed survey would serve as their participation consent. The survey took 35 to 40 minutes to complete with 1 hour extra credit incentive. Surveys were also returned individually at classes or organizational meetings. Given the nature of the study, all students received a resource list of available campus support and counseling services. A total of 280 surveys were distributed and 203 were returned complete for a response rate of 72%.

Student Participants

All participants were Latina/o undergraduates, with 147 (73.5%) females and 53 (26.5%) males. Three students did not report their sex. Ranging in age from 18 to 34 years ($M = 21.14$; $SD = 2.12$, 2 missing) most students were single ($n = 188$, 94.9%; 9 married students, 4.5%; 1 student in process of divorce .5%; 5 did not respond). By class standing, students were primarily

upper division (69 juniors, 34.8%; 81 seniors, 40.9%) with fewer lower-division students (18 freshman, 9.1%; 30 sophomores, 15.2%). Five students did not report their class standing. Student-reported grade point averages ranged from 1.00 to 4.00 ($M = 3.03$, $SD = .50$; 25 did not respond). Most students began their education at the university at which the study took place ($n = 86$, 61.9%) with the remaining ($n = 53$, 38.1%) having transferred from a junior college or other institution. Several students ($n = 64$) did not respond to the transfer question. Regarding housing, most students lived off-campus with friends ($n = 75$, 39.1%), closely followed by those living on-campus ($n = 66$, 34.4%). One-quarter of the students ($n = 47$, 24.5%) reported living with family or other arrangements ($n = 4$, 2.1%). Eleven students did not respond to the question regarding living arrangements. Furthermore, the large proportion of students indicated that they had been continuously enrolled ($n = 185$, 95.4%) since beginning their undergraduate degrees. Of those who had not been continuously enrolled, five students had stopped-out for one quarter and four had stopped-out for two quarters.

By ethnicity, the majority of students were of Mexican heritage ($n = 156$, 78.4%) and the remaining were Central American ($n = 17$, 8.5%), South American ($n = 10$, 5.0%), Cuban American ($n = 4$, 2.0%), and Puerto Rican American ($n = 1$, .5%). Six (3.0%) students reported being "multicultural," of Mexican and some non-Latina/o heritage. Nine students did not report their ethnicity. Most students ($n = 132$, 65.7%) were second generation [i.e., self or sibling(s) U.S.-born], followed by first (no one in family U.S.-born; $n = 26$, 12.5%) and third generation (parents U. S.-born; $n = 25$, 12.4%). Fourth (i.e., grandparents U.S.-born) and fifth generation (i.e., great grandparents U.S.-born) students in combination accounted for approximately 10% (4th $n = 12$, 6.0%; 5th $n = 6$, 3.0%). Two students did not report their generation status.

When asked about familial education, almost two-thirds of mothers ($n = 131$, 67.3%) and fathers ($n = 126$, 63.6%) had a high school education or less. Students reported that 17.3% of mothers ($n = 35$) and 17.7% fathers ($n = 35$) had some college experience (no degree earned). A total of 31 mothers (15.4%) and 37 fathers (18.6%) were reported as having completed a bachelor's or advanced degree and more than half ($n = 112$, 62.2%) reported having siblings who attended college. Almost all students ($n = 195$, 97%) and their parents ($n = 185$, 93.5%) reported valuing the academic degree that they were working toward. Furthermore, when asked what was the highest academic degree they expected to earn, the large portion of students ($n = 176$, 90.7%) anticipated earning a graduate or professional degree. Only 16 (8.2%) students planned to end their educational tenure with a bachelor's degree and 9 students did not respond to this question.

The majority of students ($n = 72$, 36%) estimated their familial income as \$20, 000 to \$39,000, followed by \$60, 000 and above ($n = 56$, 28%) and \$40,000 to \$59,000 ($n = 50$, 25%). Twenty-two students (11%) reported a family income of less than \$20,000. Three students did not respond. To finance their education, students worked part-time ($n = 107$, 55.2%), secured scholarships ($n = 107$, 55.2%), and used student loans ($n = 100$, 51.5%). Resources from family ($n = 93$, 47.9%) and savings ($n = 43$, 22.2%) were infrequently reported and working full-time was the least-reported method of educational finance ($n = 11$, 5.7%).

Survey Instruments

The questionnaire packet consisted of a demographic sheet and four standardized instruments. The scales were administered in English only and counter-balanced with the demographic sheet always placed first.

Demographic sheet. The demographic sheet included 18 (i.e., 7 personal and 11 education) questions. Personal questions addressed sex, age, race/ethnicity, marital status, living arrangements, family income, and generational status. Education questions examined self-reported grade point average, class standing, transfer status, degree sought, highest academic degree intended, department affiliation, financial resources, enrollment continuity, parental and sibling education, and value of degree currently seeking.

Beck Depression Inventory-II (BDI-II). The Beck Depression Inventory-II consists of 21 items used to measure depressive symptomatology in clinical, non-clinical, and research settings (Beck et al., 1996). Each item reflects a symptom with a corresponding 4-point scale. For example, the item of sadness has the corresponding response anchors of 0 (*I do not feel sad*), 1 (*I feel sad much of the time*), 2 (*I am sad all of the time*), 3 (*I am so sad or unhappy that I can't stand it*). Summing the highest ratings for each symptom, total scores range from 0 to 63. Cut-off scores include minimal (0 to 13), mild (14 to 19), moderate (20 to 28) and severe (29 and above; Beck et al., 1996).

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D is a 20-item scale designed to assess depressive symptomatology (i.e., affective and somatic symptoms associated with depression) with the general population over a 1-week period (Radloff, 1977). Symptom frequency range includes 0 (*Rarely or none of the time, less than one day*), 1 (*Some or little of the time, 1-2 days*), 2 (*Occasionally or a moderate amount of the time, 3-4 days*), and 3 (*Most or all of the time, 5-7 days*). A sample item includes "I had trouble keeping my mind on what I was doing." Scores include the sum total of the 20 items (0 to 60). If more than four items are missing (i.e., not responded to), the

scale is not considered valid. The cut-off score of 16 is suggested to indicate depression (Radloff, 1977).

Zung Self-Rating Depression Scale (SDS). A 20-item scale, the SDS was designed to measure depressed affect and related symptomatology (Zung, 1965). Ten items are worded positively (e.g., Morning is when I feel the best) and ten items are worded negatively (e.g., I get tired for no reason) and reverse-scored. Respondents indicate how frequently each item applies to them at the time of testing on a 4-point Likert-type scale: 1 (*none or little of the time*), 2 (*some of the time*), 3 (*a good part of the time*), and 4 (*most or all of the time*). Scores range from 20 to 80, with cut-off scores of less than or equal to 49 (no depression), 50 to 59 (mildly depressed), 60 to 69 (moderate to marked major depression) and 70 plus (severe or extreme major depression).

Memorial Symptom Assessment Scale (MSAS). The MSAS is a 32-item self-assessment of common symptom prevalence, characteristic and distress (Portenoy et al., 1994). Developed to provide multi-dimensional information about psychological and physical symptoms based on frequency, severity, and distress, the scale was originally evaluated with 297 inpatients and outpatients with cancer (Portenoy et al., 1994). The scales include the Psychological Symptom subscale (MSAS-PSYCH, 6 items), Physical Symptom subscale (MSAS-PHYS, 12 items), and Global Distress Index (MSAS-GDI, 10 items). The MSAS-PSYCH consists of symptoms including worrying and feeling sad, whereas the MSAS-PHYS includes symptoms of lack of energy and weight loss. The MSAS-GDI measures overall symptom distress assessing the frequency of the four most common psychological symptoms and the distress associated with the six most prevalent physical symptoms. For this study, the MSAS-PSYCH was used as a measure of construct validity while the MSAS-PHYS addressed the relationship of physical symptoms and depression. The internal consistency coefficients were .75 and .88, respectively.

Results

Item Frequency and Distribution

Each BDI-II item was not responded to from 2 to 13 times ($M = 6.57$, $SD = 3.37$, mode = 4). The most frequently unanswered item was “loss of interest in sex” (item 21), followed by Item 16 (i.e., changes in sleeping pattern) and Item 18 (i.e., changes in appetite), each left blank 11 times. Items 11 (i.e., agitation) and 14 (i.e., worthlessness) were left unanswered 10 times. Five items (i.e., 6, 9, 10, 14, and 21) were positively skewed (2.46 to 3.89) and

had unusually leptokurtic distributions (4.91 to 15.78). The five items address feelings of punishment, suicidal thoughts or wishes, crying, worthlessness, and loss of interest in sex.

Each of the CES-D items were also left unanswered 2 to 7 times ($M = 3.70$, $SD = 1.30$, mode = 3). The most frequently unanswered item was “I felt depressed” (Item 6), followed by “I felt hopeful about the future” (Item 8, 6 missing). Two items (“I thought my life had been a failure”—Item 9 and “I felt the people dislike me”—Item 19) were positively skewed (2.02 and 3.01) and had leptokurtic distributions (9.76 and 3.93), respectively.

The range of unanswered items was largest for the SDS (i.e., 1 to 28, $M = 6.70$, $SD = 6.78$, mode = 3), with each item having been left unanswered at least once. Item 6 (i.e., I still enjoy sex) was the most frequently unanswered item. Item 19 (i.e., I felt that others would be better off if I were dead) was unanswered 18 times and Item 8 (i.e., I have trouble with constipation) was unanswered 15 times. Three items (8, 9, and 19) were positively skewed (2.89, 2.03, and 4.89) and had leptokurtic distributions (8.14, 3.79, 25.48), respectively. These three items include, “I have trouble with constipation,” “My heart beats faster than usual,” and “I feel that others would be better off if I were dead,” respectively.

Internal Consistency Coefficients

The BDI-II yielded an internal consistency coefficient of .88. Due to missing data, a total of 21 (10.3%) cases were excluded for the analyses. All item-total correlations were positive (.29 to .64) and contributed to the overall internal consistency coefficient.

For the CES-D, the Cronbach's alpha was also .88. A total of 17 (8.4%) cases were omitted from analyses due to missing data. Each of item-total correlations were positive; however, three items (i.e., 4, 7, and 8) had lower correlations (i.e., .20, .11, and .16, respectively). Removal of these items individually resulted in a minimal increase to .89, whereas removal of the items in combination yielded a Cronbach's alpha of .91.

Yielding an internal consistency coefficient of .77, 52 cases (25.6%) were excluded for the SDS. Two negative inter-item correlations (i.e., 5 and 7) and six items (i.e., 2, 8, 9, 13, and 19) had low inter-item correlations (i.e., .12 to .27). Removal of the items individually resulted in a minimal increase to .78, however, removal of one item (item 5, “I eat as much as I used to”) yielded an alpha of .81. When the two items with negative item-total correlations were removed, the alpha increased to .82. Removal of the negative and low-total item correlations in combination yielded a Cronbach's alpha of .83.

Table 1. Overview of Scales' Diagnostic Performance for Total Sample

BDI-II				CES-D			SDS				
	Cut-off	<i>n</i>	%	Cut-off	<i>n</i>	%	Cut-off	<i>n</i>	%		
Minimal	0-13	134	73.6	None	0-15	130	69.9	None	≤49	140	92.7
Mild	14-19	26	14.2	Probable	16+	56	30.1	Mild	50-59	11	7.3
Moderate	20-28	16	8.5					Moderate	60-69	—	—
Severe	29+	6	3.1					Severe	70+	—	—

Note: BDI-II = Beck Depression Scale-II; CES-D = Center for Epidemiological Studies-Depression; SDS = Self-Rating Depression Scale.

Scales' Descriptive Information and Diagnostic Performance

The cut-off scores for depression scales were evaluated to assess probable depression for the study's Latina/o undergraduates (See Table 1). Scores for the BDI-II (182 valid) ranged from 0 to 50 ($M = 10.13$, $SD = 7.74$). Almost three-quarters (73.6%, $n = 134$) of the sample scored in the "minimal" range for probable depression. Twenty-six students (14.2%) scored within the "mild," 16 (8.5%) in the "moderate," and 6 (3.1%) in the "severe" range for probable depression.

For the CES-D (186 valid), scores ranged from 0 to 47 ($M = 13.16$, $SD = 9.19$). More than two-thirds ($n = 130$, 69.9%) of the sample did not meet criteria for depression. The remaining 56 (30.1%) were indicated as meeting criteria for probable depression.

Scores for the SDS (151 valid) ranged from 23 to 57 ($M = 36.69$, $SD = 7.40$). The majority of the sample ($n = 140$, 92.7%) scored below 50, indicative of no depression symptoms. The remaining 11 (7.3%) students scored within the range (50 to 59) of "mildly depressed."

When examined across scales, there were only three students who were identified by all three scales as meeting criteria for mild (BDI-II and SDS) or probable (CES-D) depression. The BDI-II and the CES-D were the most consistent in identifying individuals as having "mild" ($n = 10$), "moderate" ($n = 11$), or "severe" ($n = 5$) depression. Similarly, each scale identified individuals as having depression that were not identified by the other two scales, with the CES-D doing so most frequently (24 probable), followed by the BDI-II (4 moderate and 12 mild depression) and SDS (6 mild).

Convergent and Construct Validity

The BDI-II, CES-D, and SDS were positively and significantly ($p \leq .001$) correlated with each other (i.e., .61 to .75). Similarly, the depression scales

were each positively and significantly ($p \leq .001$) related to the MSAS-PSYCH and MSAS-PHYS (See Table 2).

Differences in Depression Scores by Sex and Class Standing

Differences by sex were evident for the BDI-II ($t = 2.12$ [$df = 178$], $p \leq .05$) in which women ($M = 10.90$, $SD = 8.43$) reported significantly higher scores than men ($M = 8.18$, $SD = 5.32$). No differences were yielded by sex for the CES-D and SDS. When examined by class standing, group mean differences again emerged only for the BDI-II, $F(3, 176) = 3.45$, $p \leq .05$. Specifically, differences emerged between freshman ($M = 15.39$, $SD = 12.59$) and seniors ($M = 8.94$, $SD = 6.15$) as per a Tukey's post hoc analysis ($p \leq .01$).

Discussion

As depression scales are increasingly being implemented with college students as screening measures (Benton et al., 2003) without adequate understanding of their utility (Smith et al., 2001), this study assessed the reliability and validity of the three commonly used scales (i.e., BDI-II, CES-D, and SDS) with 203 Latina/o undergraduates. Assessment of item frequency response, internal consistency coefficients, diagnostic performance, convergent and construct validity, and evaluation of student status differences were conducted.

Findings indicated that the Latina/o students did not respond to items for each of the scales with the frequently unanswered items addressing personal issues (e.g., sexuality, feelings of worthlessness). It is plausible that the students were uncomfortable answering frank questions about sex (i.e., "loss of interest in sex," "I still enjoy sex") and direct questions (e.g., "I felt depressed," "I felt that others would be better off if I were dead") and thus left them unanswered. In that communication about one's sexuality is infrequent (Hovell et al., 1994), indirect (Rafaelli & Ontai, 2001), approached with reticence and caution (McKee & Karasz, 2006), or simply not supported as a topic of open discussion (Guilamo-Ramos et al., 2006) for many Latina/os, in particular for women, it is not surprising that items that presume sexual activity and/or enjoyment of sex were left unanswered. As an issue that is infrequently discussed at home (as a function of traditionality or religious beliefs), it is similarly unlikely that it would be addressed or acknowledged *en la calle* ("on the street" or outside of the home; McKee & Karasz, 2006). Further, direct communication about negative or critical personal concerns (e.g., verifying depression, admitting constipation) is not a typical mode of communication for many Latina/os (Panigua, 1998; Torres, 2000), in particular outside of

Table 2. Descriptives and Correlations for Depression Scales

Scale	<i>n</i>	<i>M</i>	<i>SD</i>	Range	Number of items	<i>M</i> (missing)	<i>SD</i> (missing)	Range (missing)	α	CES-D	SDS	Psych	Phys
BDI-II	182 (89.7)	10.13	7.74	0-50	21	6.57	3.37	2-13	.88	.75**	.61**	.44**	.34**
CES-D	186 (91.6)	13.16	9.19	0-47	20	3.70	1.30	2-7	.88		.69**	.47**	.32**
SDS	151 (74.4)	41.80	6.42	21-54	20	6.70	6.78	1-28	.77			.48**	.37**

Note: BDI-II = Beck Depression Scale-II; CES-D = Center for Epidemiological Studies-Depression; SDS = Self-Rating Depression Scale; Psych = Memorial Symptom Assessment Scale-Psychological subscale; Phys = Memorial Symptom Assessment Scale-Physical subscale. Numbers in parentheses reflect percentages of total sample.
* $p \leq .01$. ** $p \leq .001$.

the family (Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002) and the context of university counseling services (Constantine, Chen, & Ceesay, 1997; Kearney, Draper, & Barón, 2005). Without a sense of *confianza* (trust and knowledge of the person within the relationship), such direct or personal self-disclosures are likely tempered (Santiago-Rivera et al., 2002). As such, posing direct questions may yield an underreporting of depressed mood or symptom. Instead, indirectly questioning how Latina/o students feel as they attempt to synthesize and negotiate often contrasting worlds of school and family roles and responsibilities (González, Jovel, & Stoner, 2004) may lend insight into and differentiate depressive symptoms while increasing the cultural validity of the construct (Quintana et al., 2001) with Latina/o college students.

Overall, the reliability of the three scales were adequate; however, there were several items that had either negative or low item-total correlations. In particular, the CES-D had two negative item-total correlations for item 5 (“I eat as much as I used to”) and 7 (“I notice that I am losing weight”) which are of interest within the context of Latina/o college student lifestyle. In a study of eating habits, Rowland (2008) reported that Latina/o college students indicated that healthy eating and weight management were of considerable concern. As students often eat poorly (e.g., high caloric or “junk food”), infrequently (e.g., eat one meal a day), or eat off-schedule (e.g., early morning or late night), this study’s student responses may in part be due to limited resources to buy food or lack of time to eat given their class schedule and academic and personal responsibilities (Rowland, 2008). As such, exploring the reasons behind eating patterns as well as weight gain or loss for Latina/o students may be related to accessibility and affordability within the context of the university environment rather than solely an indicator of depression.

The assessment of probable depression for the Latina/o college students varied for each depression scale. Both the BDI-II and CES-D identified approximately one-quarter and one third of the students as having some degree of depression, respectively. The BDI-II had the widest range of depression assessment with 26 students identified as “mildly depressed,” 16 “moderately depressed,” and 6 “severely depressed.” The SDS, however, identified only eight students or approximately 5% of the students as having probable depression. Given the different assessments and identification of the same students, this finding underscores the need for more than one measure for depression screening given the likelihood of Type II error (Smith et al., 2001).

It is thus recommended that if the BDI-II, CES-D, or SDS is used as a screening tool for Latina/o college students that it be given in combination with a second depression scale as well as a contextual assessment of the

Latina/o students within the university context. That Latina/o students may be “. . . in a continual low-level state of “worry” and/or “sadness” because they experience the subtle mental frustration of not functioning at their full potential because of an unevaluated subclinical psychological problem” (Del Pilar, 2008, p. 278), it is similarly recommended that an assessment of the educational context and its influence on students be considered. For example, addressing the psychological (e.g., feelings of alienation or sense of phoniness, homesickness), social (e.g., longing for value-driven interactions and connections), and cultural (e.g., frustrations with cultural competence testing) responses which are prevalent for Latina/o college students (Castellanos & Gloria, 2007; Gloria & Segura-Herrera, 2004; González, 2004; Hurtado, Carter, & Spuler, 1996) can contextualize and lend breadth to the notion of depression and other mental health considerations (Gloria et al., 2010).

The scales were strongly correlated with each other evidencing convergent validity. When examined in relation to common psychological and physical symptoms, the scales evidenced construct validity yielding slightly stronger positive correlations MSAS-PSYCH (psychological symptoms) than to the MSAS-PHYS (physical symptoms). Extended exploration of whether the depression scales are related to ethnocultural syndromes (e.g., *susto*, *ataque de nervios*), cultural beliefs (e.g., *si Dios quiere*—If God wills it) or other resilience-based body-focused practices (e.g., *aguantarse*, *sufrimiento*) in response to challenges is thus recommended. Doing so, could lend explanation as to how depression manifests differently (Canino, Rubio-Stipec, Canino, & Escobar, 1992) or varies in acceptability (Hernandez & Sachs-Ericsson, 2006) for Latina/o students within the context of higher education.

Finally, differences by sex and class standing were only demonstrated for the BDI-II. Consistent with the general depression literature (e.g., Contreras et al., 2004), the Latina students’ reported higher levels of depression. Similarly, first-year students reported higher levels of depression than did the seniors. Perhaps, a function of Latina/o students having a difficult transition in being away from home for the first time (McDonough, 2004, p. 139), first-year students may evidence increased symptoms of depression or other mental health concerns than do seniors. As lower-division students (i.e., 1st- and 2nd-year) contend with new areas of transition (e.g., management of personal and financial resources, separation from family, and negotiation of physical, social, and cognitive geographies of college), they similarly experience increased stressors and distress (Hurtado et al., 1996). Further, research suggests that more advanced students (i.e., upper division—juniors and seniors) may have had the time and experiences to “figure out” or understand how to manage such transitions. For example, Gloria et al. (2010) reported that

upper-division Latina college students were more likely to seek psychological services than their lower-division counterparts, having perhaps adapted and developed a repertoire of coping and navigation skills to negotiate the university setting (e.g., seek counseling for their mental health concerns). It is clear that additional use of the scales with different Latina/o student sub-populations (i.e., first-generation college, first time away from home) is needed to contextualize student concerns.

Limitations and Future Considerations

There are several limitations that warrant discussion and in turn direct future research and practice. Like most survey research, the study was a non-randomized cross-sectional study, assessing students who may have had particular interest in the topic and may have participated more readily. The students' interest in study participation however may have reflected their own depressed mood or wanting to know more about the topic. Assessing students who are seeking mental health services along with those from the general student populace might provide better insight into the different scale's utility. As with many non-student of Latina/o college students, the majority of the sample was female and of Mexican American descent and thus the findings should be applied cautiously with other Latina/o ethnicities and non-student Latina/o populations. In particular to Latina/o gender roles and scripts, intentional differentiation of what it means and how difficult emotions are expressed and managed by Latino men versus Latina women merits consideration (Gloria, Castellanos, Scull, & Villegas, 2009).

Finally, the study did not assess level of acculturation or cultural and gendered perspectives of depression. For example, exploring the degree to which the Latina/o students adhere to cultural notions of personal challenge (e.g., *la vida es dura*—life is hard) and how low levels of depressed mood may be a common experience within the university context (Del Pilar, 2008) is needed. Similarly, how adherence to cultural values (i.e., acculturation level) and negative culture-blaming conceptualizations of gendered scripts (e.g., *marianismo*, *machismo*) may influence Latina/o students educational experiences and expression of depressive symptoms is an area of continued investigation. More specifically, assessing the unique educational oppressions and cultural incongruities (Castellanos & Gloria, 2007) as well as students' internal notions of personal and cultural self as experienced on campus (Hurtado et al., 1996; Miville, Koonce, Darlington, & Whitlock, 2000; St. Louis & Liem, 2005) could provide a much needed cultural and contextual perspective when using depression scales as a screening tool for Latina/o college students.

Authors' Note

Marlen Kanagui-Muñoz and Melissa A. Rico contributed equally.

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