American Journal of Community Psychology, Vol. 22, No. 6, 1994

An Examination of the Cross-Ethnic Equivalence of Measures of Negative Life Events and Mental Health Among Hispanic and Anglo-American Children[1]

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Recently there has been concern over the need for mental health research within ethnic minority populations, particularly Hispanic populations. Although there has been research focusing upon the similarity of mental health problems among Hispanic and Anglo-American samples, the absence of information regarding the cross-ethnic measurement equivalence of the assessment tools used in these comparisons seriously limits the interpretability of these findings. The two reported studies were designed to (a) examine the cross-ethnic functional and scalar equivalence of several mental health measures by examining the interrelations of these mental health indicators and examining the regression equations using negative life events to predict mental health outcomes; and (b) compare several mental health indicators among Hispanic and Anglo-American 8- to 14-year-old children. Findings suggest considerable cross-ethnic functional and scalar equivalence for the measure of depression, conduct disorders, and negative life events. In addition, findings indicate that the Hispanic children scored higher in depression than did the Anglo-American children, but this difference could be a function of differences in SES. The reader is cautioned that the present samples included only English-speaking and primarily Mexican American children.

KEY WORDS: ethnic minorities; mental health; negative life events.

[1]This study was funded by the National Institute for Mental Health Grant 2-P50-MH39246-06 to support the Preventive Intervention Research Center at Arizona State University. The authors gratefully acknowledge the contributions made by Tim Ayers, Carolyn Berg, Leah Gensheimer, Joanne Gersten, Nancy Groppenbacher, Lisa Jack, Lillian Lengua, Marcia Michaels, Irwin Sandler, and Jerome Short.

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0091-0562/94/1200-0767$07.00/0

There is a substantial body of research that indicates similar rates of serious mental health problems among Hispanic and Anglo-American adults (Burnam et al., 1987; Cuellar & Roberts, 1984; Karno et al., 1987; Vernon & Roberts, 1982). Few differences have been found in the lifetime prevalence rates of mental health disorders between U.S. Hispanics and Anglo-Americans (Snowden & Cheung, 1990). In addition, lower rates of utilization of mental health services by Hispanics appear to reflect language and accessibility barriers rather than differential rates of mental health problems (Hough et al., 1987). However, there is also some evidence that Hispanic children and adults experience more minor depression (Bird et al., 1988; Vernon & Roberts, 1982) and lower self-esteem (Leung & Drasgow, 1986) than do Anglo-American children and adults.

On the other hand, the findings from comparative studies of the mental health of Hispanics and Anglo-Americans have not provided completely consistent findings (Malgady & Rogler, 1993; Snowden & Cheung, 1990; Vega & Rumbaut, 1991) and the interpretation of this research literature may not be straightforward. Some authors (e.g., Hughes, Seidman, & Williams, 1993; Kleinman & Good, 1985) have suggested that aspects of mental health are experienced and expressed through different symptoms in different cultures. Malpass and Poortinga (1986) have suggested that cross-cultural comparisons require scales with metric properties that are identical across the groups being compared. Hughes et al. (1993) have suggested that the utility of a community research program is dependent upon the relevance and meaning of the research constructs to the target population and the equivalence of the measures of these constructs. Therefore, a clear and unambiguous interpretation of any observed ethnic differences, or cross-ethnic similarities, in mental health is dependent upon having assessment tools that exhibit cross-ethnic scalar equivalence. That is, comparisons of the mean scores of different ethnic groups on any mental health indicator is only meaningful when any given score refers to the same degree, intensity, or magnitude of the construct across ethnic groups. Indeed, Vega and Rumbaut (1991) have suggested that the research literature would be advanced significantly by comparative designs using common instrumentation after preliminary validity studies assessing the cultural grounding and the equivalence of the measurement instruments.

A variety of forms of measurement equivalence, and the difficulties associated with assessing these, have been discussed in the literature (Hines, 1993; Hughes et al., 1993; Hui & Triandis, 1985; Malpass & Poortinga, 1986). Hui and Triandis (1985) have categorized different notions of measurement equivalence into four basic types including functional and scalar equivalence. Functional equivalence exists when the

scores on a measure of a construct have similar precursors, consequents, and correlates across groups. Essentially, the assessment of this type of equivalence is accomplished by comparing the validity coefficients associated with a measure across ethnic groups. Particularly relevant are comparisons of empirical validity coefficients (i.e., relations between two measures of the same construct) and construct validity coefficients (i.e., relations to measures of other constructs as theoretically expected). For example, measures of depression and self-worth would exhibit cross-ethnic functional equivalence if the correlation between these two constructs was the same in each ethnic group. Scalar equivalence, which is more difficult to establish, exists when any given score on the measure of a construct refers to the same degree, intensity, or magnitude of the construct across groups. For example, a measure of depression would exhibit cross-ethnic scalar equivalence if the scale value identified as indicating clinical depression was the same value in each ethnic group.

The primary purpose of the present investigations was to examine elements of the functional and scalar equivalence of measures of depression, conduct disorders, and self-worth by comparing the interrelations of these measures and the relation of these measures to a theoretically prescribed antecedent (i.e., negative life events). The specific mental health measures used were the Child Depression Inventory (CDI; Kovacs, 1981), the Child Hostility Scale (Cook, 1986), and the Global Self-Worth Scale (Harter, 1985). The specific negative life events measure used was the General Life Events Schedule for Children (GLESC; Sandler, Ramirez, & Reynolds, 1986). These measures were used because the assessments were available from archival data sets generated in two large community-based prevention projects. In addition, the recent emphasis upon obtaining normative data for minority populations and the shift towards preventive intervention strategies in child clinical research generally necessitates reliance upon survey-type measures such as these. That is, as the movement toward community-based intervention and prevention attempts to influence mental health grows, there will be an increasing need for survey-type assessment tools that can be used legitimately with a variety of ethnic groups.

To conduct needs assessments among ethnic minorities or to evaluate the impact of interventions on ethnic minorities, community psychologists need to have measures of critical variables that meet the standards of cross-ethnic equivalence (Hughes et al., 1993). Simply assuming that measures developed primarily with white, middle-class samples are appropriate for all ethnic groups can result in very misguided efforts. Although the need for cross-ethnically equivalent measures has been discussed for many years, relatively little research has addressed the

cross-ethnic equivalence of commonly used measures in community mental health research or community-based service delivery. Given that the Spanish-origin segment of our population is growing approximately three times faster than the general population (U.S. Bureaus of the Census, 1986), the overrepresentation of Hispanics in the lower income groups, and the overrepresentation of low-income people among those in need of mental health services (Robins et al., 1984), greater attention to measurement issues is needed if community psychologists are to have the tools to adequately serve these populations.

There have been few studies that have examined the functional and scalar equivalence of these child mental health measures among Hispanic samples. Evidence of the functional equivalence of the CDI for Hispanics has been generated in studies examining the relations of CDI scores to social behavior (Helsel & Matson, 1984) and parenting and family processes (Knight, Virdin, & Roosa, 1994), as well as studies examining the intercorrelations among CDI items (e.g., Worchel, Nolan, & Wilson, 1987). However, only Knight et al. (1994) conducted analyses that bear upon the scalar equivalence of the CDI and their findings did not strongly support an interpretation of scalar equivalence. In addition, Knight et al. presented some evidence supporting the functional and scalar equivalence of the Child Hostility Scale and the Global Self-Worth Scale among a Hispanic and Anglo-American sample.

In the present investigations the intercorrelations of several standard mental health indicators are compared across ethnic groups to provide some evidence of functional equivalence. Evidence regarding the scalar equivalence of the mental health measures was generated in the present investigations by examining cross-ethnic regression equations using a negative life events measure to predict each mental health outcome measure. Negative life events is a useful predictor for examining cross-ethnic scalar equivalence because life events has consistently been related to mental health (e.g., Kliewer & Sandler, 1992; Sandler, Gersten, Reynolds, Kallgren, & Ramirez, 1988) and because of the likely causal role of negative life events in producing mental health problems. If the regression equations from the analysis of each mental health criterion have similar slopes and intercepts across ethnic groups, then it is likely that both the predictor measure and criterion measures have scalar equivalence. That is, if any given negative life events score leads to the same expected score on a mental health measure for the Hispanic and Anglo-American children, then it is most likely that comparable scores on the negative life events measure and the mental health measure refer to the same degree, intensity, or magnitude of the respective construct across ethnic groups.

STUDY 1

Sample

The sample consisted of 231 nine- to thirteen-year-old children (M = 10.5, SD = 1.08) and their mothers. The children and mothers consisted of 70 Hispanic children and mothers from English-speaking households and 161 Anglo-American children and mothers. The distribution of children's ages was very comparable across ethnic groups. Targeted recruitment areas encompassed communities surrounding 10 schools in three center-city school districts located in a large southwestern United States metropolitan area.

The Anglo-American mothers reported a mean of 13.3 (SD = 2.02) years of education for themselves, 14.1 (SD = 2.18) years of education for their spouse, and a mean family income in the $20,000 to $25,000 range (with 56% of the families at or below this range). The Hispanic mothers reported a mean of 11.1 (SD = 2.58) years of education for themselves, 11.6 (SD = 3.46) years of education for their spouse, and a mean family income in the $10,000 to $15,000 range (with 60% of the families at or below this range). Among the Hispanic mothers; 14.3% were first-generation Americans (i.e., were born in Mexico and immigrated to the United States), 28.6% were second generation, and 50.5% were third generation or beyond. Information regarding migration for 7.1% of the Hispanic mothers was not available. In addition, the mothers' scores on the Acculturation Rating Scale for Mexican Americans (Cuellar, Harris, & Jasso, 1980) ranged from 1.50 to 4.11 (M = 3.06) indicating that these mothers were similar to the most acculturated Mexican Americans in the original standardization sample for this scale. All of the participating children were at least second generation. Further, 97% of the Hispanic mothers were descendant from families in Mexico (i.e., were Mexican American).

These samples were considered at risk because 50% of the families had at least one parent classified as a problem drinker (Roosa, Michaels, Groppenbacher, & Gersten, 1993), 44% were single parent families, the modal annual income was $5,000–10,000, and 43% made less than $15,000 per year. Although there was a small mean difference in income across ethnic groups, these samples came from a very restricted lower income range community. There were no differences in risk status across ethnic groups and families with an alcoholic member were evenly distributed across ethnic groups.

This study was part of a larger project to study families of children who did and did not participate in a school-based prevention program for children of alcoholics (Michaels, Roosa, & Gensheimer, 1992). Thus, families were recruited from the communities around those schools that offered the prevention program. Families whose children had at least shown an interest in joining the prevention program (cf. Gensheimer, Roosa, & Ayers, 1990) and were presumed to be at high risk for alcohol abuse were oversampled using several methods. Families of children who showed an interest in the prevention program were recruited systematically via fliers, telephone calls, or home visits (when there was no telephone in the home) to make sure that 50% of the sample came from this group. However, the attempt to overrepresent children of alcoholics was not successful and parental alcohol abuse was evenly distributed among this half of the sample and the remaining half of the sample. Thus, there was no evidence of a clinical bias because of children's self-selection into the program (Michaels et al., 1992).

Measures

The children's reports of their own symptomatology were assessed with the CDI (Kovacs, 1981), Child Hostility Scale (Cook, 1986), and Global Self-Worth Scale from the Self-Perception Profile for Children (Harter, 1985). The CDI is a 27-item scale that assesses affective, cognitive, and behavioral symptoms of depression. Internal consistency reliabilities (Cronbach's alpha) range from .70 (Kovacs, 1985) to .94 (Saylor, Finch, Spirito, & Bennett, 1984). Conduct problems were addressed by the 28-item Child Hostility Scale (Cook, 1986) using 3-point response scales. There is evidence for both convergent and discriminant validity of the Hostility Scale (Gersten, Beals, West, & Sandler, 1987). The children's sense of self-worth was assessed with the 6-item global self-worth scale from Harter's (1985) Self-Perception Profile for Children using 4-point response scales. Harter has reported Cronbach's alpha coefficients ranging from .71 to .82 for children in this age range. Finally, the children's report of negative life events was assessed with the GLESC (Sandler et al., 1986). The GLESC is a 20-item checklist (e.g., "Your Mom and Dad talked about having serious money troubles.") which asked the children whether each of the events happened within the last 3 months.

Procedures

Once recruited, in-home sessions were scheduled and conducted by trained professional interviewers. One interviewer was assigned to the target child and one to each participating parent. Parent(s) and the target

child completed the measures in separate rooms and away from other family members. Upon arrival at the home, interviewers described the study and obtained informed consent from the parent(s) and assent from the target child. All measures were administered using laptop computers with the survey questions displayed on the screen at the same time the interviewer was reading them aloud to the participant. Parents and children responded on a separate keypad so that their responses were not observable to the interviewer. Each session took approximately 2 hours and included scheduled breaks to minimize fatigue.

STUDY 2

Method

Study 2 was designed to replicate Study 1 using a second archival data set. Although there were minor methodological differences between the two studies (described below), the data sets contained the same measures. Thus, replication of findings across these studies would represent an impressive test of cross-ethnic equivalence.

Sample

The sample consisted of 737 nine- to thirteen-year-old children (M = 10.3, SD = 1.03). The children consisted of 201 English-speaking Hispanic children and 536 Anglo-American children. The distribution of children's ages was very comparable across ethnic groups. Targeted recruitment areas encompassed 10 schools in three center-city school districts located in a large southwestern United States metropolitan area. These children were sampled from schools very similar in ethnic composition and economic backgrounds to those schools participating in Study 1. As in Study 1, this sample was drawn from a community where a vast majority of the Hispanic mothers were descendant from families in Mexico with the very small proportion of the remaining Hispanic mothers descendant from families in Central America.

Measures and Procedures

The measures and procedures in Study 2 were identical to those in Study 1 with only three exceptions. First, shortened versions of most of the measures were used due to time constraints imposed by the participating school districts. The shortened versions were created by eliminating any

items that an expert panel judged to have potential problems for this age group, and that contributed less to the internal consistency of the scale in other data sets. There was also an attempt to retain as many Child Hostility Scale items reflecting interpersonal hostility as possible. Therefore, only 15 CDI items, 10 Child Hostility Scale items, and 11 negative life events items were administered. Second, the measures were administered to children in classroom groups rather than in individual interviews. Third, due to the time constraints, the GLESC was administered to only 41 of the Hispanic children and 116 of the Anglo-American children who completed the mental health measures.

RESULTS

Interrelations Among Mental Health Variables

To examine the interrelations among the three mental health indicators, Pearson product-moment correlation coefficients were computed. Table I presents these intercorrelations separately for the Hispanic and Anglo-American children in Study 1 (above the diagonal) and Study 2 (below the diagonal). Other than the correlation between conduct disorders and self-worth in the Hispanic sample in Study 2, these correlations are significant at the $p < .001$ level.

To determine if these correlations differed significantly across ethnic groups, the within-group covariance matrices among these mental health indicators were compared using a Box's M test. No significant difference across ethnic group was found in Study 1 (Box's M = 7.20, ns) or in Study 2 (Box's M = 10.53, ns). Maximum-likelihood structural equation modeling revealed that when these covariances were constrained to be equal across ethnic groups, the correlational model provided an excellent fit to the data for both Study 1: χ^2 (3, N = 231) = 1.61, ns, Bentler-Bonett Normed Fit Index = 0.99, Bentler-Bonett Non-Normed Fit Index = 1.02, Comparative Fit Index = 1.00; and Study 2: χ^2 (3, N = 714) = 8.41, ns, Bentler-Bonett Normed Fit Index = 0.98, Bentler-Bonett Non-Normed Fit Index = 0.98, Comparative Fit Index = 0.98. Thus, these correlations indicate that depression and conduct disorders are positively related, and both are negatively related to self-worth. Furthermore, these relations are stable across ethnic groups in each study sample.

Table I. Intercorrelations of the Three Mental Health Variables for this Hispanic (H) and Anglo-American (AA) Children in Study 1 and Study 2[a]

	Mental health variable					
	Depression		Conduct disorders		Self-worth	
	H	AA	H	AA	H	AA
Depression	-	-	.57	.53	-.58	-.60
Conduct disorders	.44	.42	-	-	-.40	-.30
Self-worth	-.45	-.60	-.09	-.30	-	-

[a] The sample sizes in Study 1 are 70 Hispanic and 161 Anglo-American children (above the diagonal). In Study 2 the sample sizes range from 198–201 Hispanic and 530–536 Anglo-American children (below the diagonal). All but one of these correlations (i.e., $r = -.09$) are significant at the $p < .001$ level.

Relation of Negative Life Events to Mental Health Variables

To examine the relation of the negative life events variable to the mental health variables, a series of simple and multiple regression analyses were performed. Each analysis used the negative life events variable to predict a mental health variable. For each mental health variable, a series of three regression analyses were performed. First, the mental health indicator was regressed on negative life events for each ethnic group separately. Second, the mental health indicator was regressed on negative life events, ethnic group, and the negative life events by ethnic group interaction. A significant interaction indicates a significant ethnic group difference in the slopes obtained from the first set of regression analyses. These analyses provide evidence bearing upon the cross-ethnic scalar equivalence by allowing comparison of the unstandardized regression coefficients (i.e., the slopes of the regression lines) and the intercepts obtained from the regression of each mental health variable on the negative life events variable for each ethnic group. If the regression coefficients and intercepts for any specific mental health variable are not significantly different across the Hispanic and Anglo-American samples, then a common regression equation is appropriate across ethnic groups. This, in turn, means that any given value on the negative life events variable leads to the same predicted value on the mental health variable for each ethnic group. Such a pattern of findings would most likely occur only if the measures exhibited cross-ethnic scalar equivalence.

Table II presents the correlations, unstandardized regression coefficients, and intercepts of the negative life events variable with each of the mental health variables from the separate analyses (i.e., the first set of analyses described above) for the Hispanic and Anglo-American samples in each study. The second set of analyses described above indicated that in no case did the negative life events by ethnic group interaction account for a significant proportion of the variance in a mental health indicator. Indeed, the regression analyses outlined above revealed no significant ethnic group differences in intercepts or unstandardized regression coefficients in either study.

Ethnic Differences

To examine the ethnic differences in the negative life events and mental health variables, each variable was used as the dependent measure in a 2 × 2 (Ethnicity × Gender) analysis of variance. These analyses revealed no significant Ethnicity × Gender interactions in either study. Table III presents the means, standard deviations, and Cronbach's alpha coefficients (where appropriate) for the negative life events variable and each mental health variable for the Hispanic and Anglo-American children in each study. As can be seen in Table III, the internal consistency coefficients (Cronbach's alphas) were adequate and not significantly different across ethnic groups in either study, nor were these coefficients significantly different across studies.

Table III also presents the F values for each ethnicity mean effect. These analyses indicate that the Hispanic children, compared to the Anglo-American children, reported more depression in Study 1 and Study 2 (ds = .37 and .26, respectively; d indicates the difference between the means for each group in standard deviation units). In addition, the Hispanic children compared to the Anglo-American children, scored higher in negative life events in Study 1 (d = .29) and lower in self-worth in Study 2 (d = .25).[3] Table III also presents the F values for each ethnicity main effect in Study 1 after controlling for SES (a composite of standard scores for the family income and the mother's level of education). These analyses indicated that the ethnic differences in negative life events and depression were reduced to nonsignificance when SES was entered as a covariate. Indicators of SES were not available in the data used for Study 2.

[3]There were also several significant sex differences observed in these analyses. However, there was no consistency in the nature of these sex differences. In Study 1, the girls scored significantly lower in negative life events and conduct disorders compared to the boys. In Study 2, the girls scored significantly higher in conduct disorders and self-worth compared to the boys. Given the inconsistency in the sex differences across studies these effects are not presented in detail nor are these findings discussed.

Table II. Correlation (r), Slope (b), and Intercept (a) for the Regressions Using Negative Life Events to Predict Each Mental Health Variable Among the Hispanic (H) and Anglo-American (AA) Children in Study 1 and Study 2[a]

Criterion	Ethnic group	r	b	a
Study 1				
Depression	H	.39[c]	.03	.20
	AA	.27[c]	.02	.17
Conduct disorders	H	.44[c]	.04	1.26
	AA	.38[c]	.04	1.26
Self-worth	H	.05	.01	3.20
	AA	−.16	−.04	3.43
Study 2				
Depression	H	.42[c]	.08	1.12
	AA	.30[c]	.05	1.26
Conduct disorders	H	.43[c]	.12	1.16
	AA	.25[c]	.05	1.34
Self-worth	H	.09	.01	3.05
	AA	−.18[b]	−.08	3.23

[a] The sample sizes in Study 1 are 67 Hispanic and 147 Anglo-American children. In Study 2 the sample sizes are 41 Hispanic and 116 Anglo-American children.

[b] $p < .01$.

[c] $p < .001$.

Given the evidence that minority status and social class may function as moderators of the influence of one another on mental health (see Kessler & Neighbors, 1986), tests of the Ethnicity × SES interaction were performed by entering Ethnicity and SES on the first step and the Ethnicity × SES interaction on the second step of hierarchical multiple regression analyses using negative life event and each mental health index as criterion variables. These analyses revealed no significant Ethnicity × SES interaction effects in Study 1.[4] Since the indicators of SES were not available in the data set used for Study 2, these interactions could not be examined in Study 2.

[4]SES also did not moderate any of the regression effects described earlier.

Table III. Means, Standard Deviations, and Cronbach's Alpha Coefficients for Negative Life Events and Each Mental Health Indicator for the Hispanic and Anglo-American Children in Study 1 and Study 2

	Hispanic			Anglo-American				
Variable	*M*	*SD*	α	*M*	*SD*	α	*F* (η^2)	F^a
Study 1								
Negative life events	3.65	2.69	na	2.78	2.33	na	5.85 (.03)[b]	0.30
Depression	0.32	0.25	.85	0.24	0.20	.83	6.51 (.03)[b]	2.23
Conduct disorders	1.39	0.24	.83	1.35	0.22	.79	1.45	0.01
Self-worth	3.24	0.61	.67	3.32	0.59	.73	0.72	0.04
Study 2								
Negative life events	2.17	1.52	na	2.36	1.83	na	0.01	
Depression	0.43	0.29	.74	0.35	0.32	.82	9.79 (.01)[d]	
Conduct disorders	1.53	0.34	.75	1.49	0.33	.75	3.37	
Self-worth	2.97	0.71	.71	3.14	0.68	.76	8.50 (.01)[c]	

[a] *F*-value for the ethnic difference after controlling for differences in SES.
[b] $p < .05$.
[c] $p < .01$.
[d] $p < .001$.

DISCUSSION

The intercorrelations among the mental health indicators are generally consistent with an interpretation of cross-ethnic functional equivalence. That is, the similarity of the correlations between the indices of depression and conduct disorders across ethnic groups in both studies suggests that these measures are assessing either the same or very similar underlying constructs in the Hispanic and Anglo-American samples. Furthermore, the regression findings support the conclusion that there is cross-ethnic scalar equivalence among the mental health indicators. The similarity of the regression coefficients (i.e., regression slopes) and intercepts observed in the present studies is likely to occur only if specific scale values on the measures of depression, conduct disorders, and negative life events refer to the same degree, intensity, or magnitude of each respective construct in each ethnic group. This similarity of regression statistics across ethnic groups could only occur with measures that are not scalar equivalent in the unlikely case that a nonequivalence in the negative life events measure corresponds precisely with biases in the mental health measures.

The present findings also suggest that the interrelations of these psychological constructs are quite similar across these samples. Ethnic differences in the regression statistics or correlations among the negative life events and mental health constructs could be indicative of differences in psychological processes across ethnic groups. That is, it is possible that negative life events is simply related to the mental health outcomes in different ways among some ethnic groups because of differences in life circumstances and cultural experiences. However, if there were ethnic differences in these psychological processes across the present samples, these findings could only have occurred in the unlikely case that the differences in psychological processes corresponded precisely with a counterbalancing set of measurement nonequivalences. Perhaps the greatest challenge for researchers will occur when the ethnic groups being compared differ enough that the regression statistics and correlations describing the interrelations among constructs are significantly different across ethnic groups. In this latter case, it may prove very difficult to determine whether these differences are the result of nonequivalence of the measures, of the psychological processes, or both.

There is one potential exception to the general picture of cross-ethnic equivalence of measures and psychological processes noted above. This exception involves the measure of self-worth, for which the evidence is mixed. Although the structural modeling analysis constraining the covariances among the mental health indicators to be equal across ethnic groups fit the data quite well, the correlation between self-worth and conduct disorders among

the Hispanic children in Study 2 is not very similar to that correlation among the Anglo-American children or the corresponding correlations in Study 1. In addition, although the correlations and regression coefficients for the analyses using negative life events to predict self-worth are not significantly different across ethnic groups, negative life events is not significantly related to self-worth in either Hispanic sample. Additional evidence regarding the cross-ethnic equivalence of the self-worth measure is needed before comparisons of the Hispanic and Anglo-American samples on scores on this measure will lead to unambiguous interpretations.

The present findings also indicate that in both studies the Hispanic children scored higher in depression than the Anglo-American children. Furthermore, these ethnic differences are meaningful given the evidence of cross-ethnic scalar equivalence of the depression measure. Although the magnitudes of the ethnic differences in depression are relatively small (i.e., accounting for 3 and 1% of the variance, or a difference of 0.37 and 0.26 standard deviation units, in Study 1 and Study 2, respectively), such small mean differences produce much larger differences in the extreme tails of the distributions. That is, although the mean depression scores for the Hispanic and Anglo-American children differ by only a small amount, there may well be a substantial difference in the frequency of Hispanic and Anglo-American children scoring very high in depression. For example, based upon the mean ethnic difference of 0.37 standard deviation units in Study 1 and assuming normal distributions, approximately 57.3% of the Hispanic children would score above the mean of the Anglo-American children. In contrast, while approximately 8.3% of the Hispanic children would score at or above a cutoff for inferring clinical depression (i.e., a score of 18 on the CDI, which is equivalent to a score of 1.67 using the present scoring system), only approximately 1.6% of the Anglo-American children would score at or above this cutoff. Thus, the implication of this relatively small mean ethnic difference in depression scores in Study 1 is that approximately five times as many Hispanic children as Anglo-American children will score in the clinically depressed range of the scale.

It is also noteworthy that the ethnic differences in depression, as well as negative life events, were attenuated in Study 1 when differences in SES were controlled. This suggests that the ethnic differences in these variables may be due to SES differences rather than any culturally based phenomena (see Kessler & Neighbors, 1986, for a review of similar findings). However, regardless of the precise cause of these ethnic differences, the differential rates on clinical depression suggested above existed among children who were from similar environments but who differed in ethnicity.

The absence of a significant ethnic difference in conduct disorders is also notable. The conduct disorders measure not only displays evidence of cross-ethnic equivalence but the samples are large enough to detect even very small ethnic differences. Thus, the appropriate interpretation is that the Hispanic and Anglo-American children do not differ in conduct disorders.

Finally, there are some observed ethnic differences in the negative life events scores and the self-worth scores in the present findings. However, given that the ethnic difference in negative life events and self-worth did not replicate across studies and given the ambiguity regarding the cross-ethnic equivalence of the self-worth measure, the interpretation of these findings is difficult. Furthermore, the lack of SES data in the data set from which Study 2 comes prevents us from determining if the absence of ethnic differences in negative life events in Study 2 is due to a similarity of SES in this sample. Therefore, inferences regarding ethnic differences or similarities in self-worth or negative life events are inappropriate at this time.

The present evidence of cross-ethnic equivalence appears to be incompatible with the suggestion of, and evidence of, cultural specificity of these types of mental health constructs (e.g., Kleinman & Good, 1985). However, this investigation samples lower SES Hispanic mothers and children who were relatively acculturated, primarily Mexican American, and fluent in English. It may be the case that the evidence of cross-ethnic equivalence of measures in the present studies is a function of the degree to which these families are enmeshed in the Anglo-American culture. If so, then one might expect cultural specificity to become evident only in cross-ethnic comparisons of subpopulations in the United States that are more culturally distant. For example, cultural specificity may exist among Hispanic families in which Spanish is the dominant language spoken in the home. There is considerable diversity of acculturation, ethnic identity, and acceptance of culturally specific values among members of the Hispanic population (see Bernal & Knight, 1991, 1993; Hughes et al., 1993; Rogler, Cortes, & Malgady, 1991). Furthermore, there is evidence of differential rates of mental health problems for different Hispanic subgroups (Moscicki, Rae, Regier, & Locke, 1987; Salgado de Snyder, Cervantes, & Padilla, 1990). Clearly, the present findings may not be generalizable to non-English-speaking non-Mexican American Hispanic populations.

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