

Depression in Latina Mothers of Children With Mental Retardation: A Neglected Concern

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Depression among 148 Latina women who have children with mental retardation was examined. Results showed that their depressive symptomatology was elevated, with almost half reporting negative experiences in excess of a commonly used cut-off for the Center for Epidemiologic Studies Scale (CES-D). Depression scores related to variables pertaining to the child, mother's health and level of acculturation, and aspects of stress and coping. When mothers were categorized in three groups by CES-D scores, discriminant analysis correctly classified 84% of the low and high group mothers. High CES-D membership was predicted by mothers' reporting more family problems, worse health, fewer interactions with English-speaking persons in their daily lives, and more negative feelings about parenting their child with mental retardation.

The considerable research on mothers who have children with mental retardation has neglected Latina mothers. Yet Latinos constitute a large and rapidly increasing segment of American society. In California, Latinos accounted for a quarter of the state's population in 1990, and in the decade of the 1980s, Latinos accounted for half of the state's total population growth (California Statistical Abstract, 1994). The extent to which research find-

ings on families and disability that are based primarily on Anglo, middle-class samples will be applicable to Latino families is not known. Results of several studies suggest that these mothers, like their Anglo counterparts, experience increased burden of care (Heller, Markwardt, Rowitz, & Farber, 1994; Shapiro & Tittle, 1990). It is not known, however, whether the increased stress and risk of depression found among Anglo mothers exists in this popu-

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lation as well (Breslau, Staruch, & Mortimer, 1982; Bristol, Gallagher, & Schopler, 1988; Harris & McHale, 1989; Walker, Ortiz-Valdes, & Newbrough, 1989). We studied the psychological adjustment of Latina mothers raising a child with mental retardation, focusing in particular on symptoms of depression.

Depression is a major public health problem, with lifetime population rates for major depressive disorder between 4% and 8% (Karno et al., 1987). If people are included who have major depressive symptoms but do not meet psychiatric diagnostic criteria, from 9% to 20% of the general population are estimated to be affected at any given time (Boyd & Weissman, 1981). Women are more than twice as likely to be depressed as men (Nolen-Hoeksema, 1990), and these gender differences are accentuated among lower socioeconomic status (SES) groups (Robins et al., 1984). There is clear evidence that stressful life events heighten the risk of depression, although the ways that people think about or interpret such events are critical in determining whether depression ensues (Hammen, 1991).

Latina women, in particular, have been identified as at risk for physical and emotional health problems such as depression. In some studies, depression has been documented as significantly higher among Spanish-speaking Latinos (men and women) than among Anglos or African Americans (see, for example, Golding & Aneshensel, 1989; Kolody, Vega, Meinhardt, & Bensussen, 1986; Vega, Kolody, Valle, & Hough, 1986; but see Karno et al., 1987, who found similar rates among these ethnic groups). Indeed, according to recent figures reported at the 148th annual meeting of the American Psychiatric Association in 1995, about 18% of those suffering from depression in the United States are Latino (Blazer, Kessler, McGonagle, & Swartz, 1994), a rate double the percentage of Latinos in the population. The stressors of immigration, low SES, lack of societal integration, and under or unemployment have been posed as

contributory factors to depression (Root & Perez-Stable, 1987).

Acculturation, too, may play a role, although some investigators suggest that both traditional culture and the acculturation process may mediate maternal outcomes such as depression. *Acculturation* usually refers to the acquisition of values and behaviors of a host society by members of a minority or immigrant group (Garcia & Lega, 1979). The positive acculturation hypothesis states that acculturation provides individuals with the information and skills necessary to access services and integrate into the host society. The negative acculturation hypothesis emphasizes the potential loss of identity and self-esteem resulting from efforts to interact with a hostile dominant culture. In this view, less acculturation and adherence to one's own cultural values provide a buffer against stress, and presumably depression, by fostering more family solidarity and ethnic identification. Another view posits a curvilinear relation, in which optimal mental health results from a balance between retaining supportive and ego-enhancing traditional cultural elements while mastering the host society's instrumental requirements (Rogler, Cortes, & Malgady, 1991).

Findings in the few studies of Latina mothers who have children with mental retardation or other disabilities have been equivocal with regard to physical and mental health consequences. Some authors have reported negative impact and signs of familial disruption among Latina mothers. Using a sample of mothers in Mexico, Shapiro and Tittle (1990) examined maternal adjustment to their child's physical disability. On the Center for Epidemiologic Studies Depression Scale—hereafter called the Depression Scale (Radloff, 1977), these mothers were found to be more depressed than a normative sample that did not have to deal with the stressor of child disability. Other authors have reported better adjustment. Mary (1990) found less depression and more acceptance in Latina mothers of children

with disabilities compared with Anglo or African American mothers, and Heller et al. (1994) found that Latina mothers perceived less burden of care than did non-Latina mothers, when SES and age of the family member with mental retardation had been controlled. The Latina mothers used religious orientation as a coping mechanism more than the non-Latina mothers did.

In these studies, Latina mothers were compared to Anglo and/or African American mothers, and differences in depression, stress, and/or caregiving burden were attributed to ethnicity. However, from these studies, it is unclear what specific ethnic factors accounted for the ethnic group differences (Betancourt & Lopez, 1993). When Shapiro and Tittle (1990) conducted analyses within the Latina group, they found that mothers who were depressed had children with greater behavior problems and less social support for themselves. Although these authors also did not account for ethnic group differences in depression, they did eliminate ethnicity as a source of variance.

The present study was designed to determine factors that predict depression in Latina mothers who have a child with mental retardation. Our purpose in studying only Latina mothers is to advance a group-specific understanding of their adjustment, one that does not use Anglo culture as the standard. The advantage of this approach is that we are open to the possibility of finding relations unique to Latina mothers. When the adjustment of Latina mothers to having a child with mental retardation is being considered, several factors are important: (a) child characteristics (level of adaptive or maladaptive behavior); (b) social or demographic variables (e.g., family income, educational level, age); (c) family issues (e.g., how the family gets along, degree of perceived impact of the child, perceived stress); (d) method of coping (e.g., active vs. passive coping); (e) acculturation (the degree to which the mother adopts mainstream cultural patterns or maintains her

pattern of origin); and (f) mother's physical health. Given the strong emphasis that the Latino culture places on the family (Bernal, 1982; Vega, Hough, & Romero, 1983; Zuniga, 1992), disruption in family processes may be particularly predictive of mothers' depression, whereas mothers' active or passive coping style may be less predictive. Acculturation, as noted, may be related to adjustment, although the specific predictions are unclear (Rogler et al., 1991).

In this study we addressed three questions: (a) How do depression scores in a sample of Latina mothers of children with mental retardation compare to depression scores in previous studies of Latina and Anglo mothers of children without retardation? (b) Does adaptive and/or maladaptive behavior exhibited by the child with mental retardation relate to maternal depression score? (c) Do other child, mother, or family factors relate to depression score, and can these factors be combined to classify mothers as high or low on depression score?

Method

Subjects

Subjects were 148 Latina women who had a child with mental retardation currently living at home. Selection criteria were that the respondent be the primary careprovider of a child age 3 to 19 years who was identified as having moderate to severe/profound mental retardation. Retardation classifications were all made by the East Los Angeles (LA) Regional Center, one of 21 California state agencies that serve over 100,000 individuals with developmental disabilities. The area served by the East LA Center includes a large, urban population of Latino families. Public schools encourage families to register with regional centers, which at the time served individuals regardless of legal or immigrant status, a widely known fact in the community. We believe that our source of participants

included the majority of potentially eligible Latina mothers.

Interviews were conducted primarily with mothers, although 3 grandmothers who were primary careproviders were included; the generic term *mothers* is used throughout this paper. Table 1 summarizes other relevant demographics. All mothers spoke Spanish, and for three quarters of them, Spanish was their primary language. The primary country of origin, where the mother was born, was Mexico. Eighty percent had only Latinos or mostly Latinos for close friends. Although 103 reported themselves to be Catholic, only 81 of these belonged to a church, and 78 described themselves as either religious or strongly religious.

This was a low SES sample. About 42% of the mothers were single parents.

Table 1
Demographic Overview (N = 148)

Characteristic	%
Mother^a	
Spanish-speaking	75.0
Single parent	41.2
Country of birth/origin	
Mexico	66.9
United States	21.6
Central America	11.5
Reported religion	
Catholic	69.9
Protestant	24.3
Other	6.1
Annual income	
0-4,999	8.1
5,000-9,999	18.9
10,000-14,999	26.4
15,000-19,999	20.3
20,000-29,999	14.9
30,000-39,999	3.4
40,000-49,999	3.4
50,000+	4.7
Education	
8th grade or less	43.9
9th-11th grade	17.6
High school grad./community college course	34.5
College or higher (AA, BA, MA)	4.1
Children^b	
Adaptive behavior deficit ^c	
Mild	5.5
Moderate	19.6
Severe	31.8
Profound	43.2

^aMean age = 40.6 years (SD = 9.8). ^bMean age = 11.5 years (SD = 4.5). ^cAdaptive behavior levels corresponding to levels of mental retardation in Grossman (1983).

The annual family income was under \$20,000 for 74% of the sample. Educational level for 74% of these women was high school or less, and 44% had only an eighth grade education or less. The mean age of the mothers was 40.6 years (standard deviation [SD] = 9.8, median = 38.5). The mean age of the children was 11.5 years (SD = 4.5, median = 11). All parents completed the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984), which resulted in ratings of the child's adaptive and maladaptive behavior. Table 1 shows the adaptive behavior deficit classifications (from Sparrow et al., 1984) that correspond to the levels of mental retardation in Grossman (1983).

Procedure

Interviews were conducted at the subjects' homes, located mainly in the East Los Angeles area, a large, urban Latino community in Southern California. Families were invited to participate in the project through a letter from the East Los Angeles Regional Center. Interviewers contacted subjects directly upon receipt of a Parent Response Sheet, an indication of interest in the study that parents returned directly to the researchers. Subjects were paid an honorarium and were invited to participate in a drawing for a prize of \$100.00.

The interview, which lasted approximately 2 to 3 hours, was conducted in two separate visits. Interviewers were three female Latina research assistants who were bilingual (Spanish and English). They were experienced parent interviewers who all had training or backgrounds in the field of developmental disability. They understood that the general purpose of the study was to assess the experiences of Latina mothers raising a child with mental retardation. Seventy-five percent of the mothers preferred that the interview be conducted in Spanish, though many spoke some English. The child with disabilities was present whenever possible so that interviewers could informally observe mother-child

interactions. Spontaneous comments made by mothers were recorded; also, upon completion of each interview, the interviewers compiled anecdotal field notes describing in more detail what they observed in specified content areas.

Instruments

A battery of standardized instruments, questionnaires, and open-ended questions was administered. The variables of interest here were derived from seven instruments reflecting six conceptual domains: Child Functioning, Demographics, Acculturation, Health Status, Coping Strategies, and Stress and Well-Being. Depressive symptomatology was our main outcome variable of interest.

We used the Center for Epidemiologic Studies Depression Scale (Radloff, 1977) to assess depression. This instrument is a 20-item self-report scale designed to measure depressive symptoms of mood, feelings, and perceptions in the general population. The Depression Scale is a valid and reliable screening instrument frequently used in cross-cultural research (Roberts, 1980; Vega et al., 1986.) The scoring range is 0 to 60, with higher scores indicating greater symptomatology. The cut-off score for depression typically used is 16. In this study, the alpha for the total Depression Scale was .91.

We used the Vineland Adaptive Behavior Scales, Survey Form, adaptive and maladaptive behavior indices, to assess child functioning. The total adaptive behavior composite score and the maladaptive behavior raw scores were used for analyses. The maladaptive section consists of two parts. Part 1 measures less severe forms of maladaptive behavior, such as temper tantrums, thumb-sucking, and impulsiveness. Part 2 contains items describing severe maladaptive behavior, such as self-abusive, stereotypic, and destructive behavior. These maladaptive scores do not provide a comprehensive assessment of maladaptive behavior. Rather,

they can be used as "screening," to be followed by more in-depth evaluations as needed (Sparrow et al., 1984).

Mothers were also directly asked whether they had been told their child's level of mental retardation, and what level it was (e.g., mild, moderate, severe, profound). A subsample of 95 mothers reported a specific level of retardation.

Family demographics (including child's age and mother's age, level of education, income, employment status, marital status, country of origin, and language preferred for the interview) were obtained via questionnaire. For analysis, level of education and income were coded on 9-point and 8-point ordinal scales, respectively. Country of origin, employment status, and marital status were dichotomized (i.e., Mexican-born vs. other; employed full or part-time vs. unemployed or housewife; married or living together vs. single). The use of Spanish for the interview was coded 1 = *yes*, 0 = *no*.

Acculturation was assessed through use of a 12-item Acculturation Scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987), which contains three subscales: Media (use of and preference for language-specific electronic and print media); Ethnic Social Relations (ethnicity of friends for self and one's children); and Language Use (current language use, language use as a child, preference for language). Higher scores on each subscale indicate more acculturation. Given the lack of variance on the Language Use subscale (indicating that nearly all mothers used Spanish on a daily basis), this subscale was not included in our analyses.

Health status of the mother was assessed using a composite score made up of three interrelated items: whether currently sick (scored 0 = *no*, 1 = *yes*); days home sick in bed during the past year (0 = *no days*, 1 = *1 day*, 2 = *2 to 3 days* . . . 5 = *8 or more days*); and a self-health rating (1 = *excellent* to 4 = *poor*). The latter item has been used as a single item

estimate of mothers' health (Seltzer & Krauss, 1989); the criterion-related validity of this item with a physical examination is reported to be .70 (Multidimensional Functional Assessment Manual, 1978).

We used the five subscales of the Family Crisis Oriented Personal Evaluation Scales—F-COPES (McCubbin, Olson, & Larsen, 1991) to assess coping strategies. Briefly, these subscales are Acquiring Social Support (the family's ability to engage in seeking support from friends, relatives, neighbors); Seeking Spiritual Support (ability to acquire spiritual support, primarily through organized religion); Mobilization of Resources (ability to seek out community resources and accept help from others); Reframing (capability to redefine stressful events in order to make them more manageable); and Passive Appraisal (ability to minimize reactivity in accepting problematic issues).

Stress and well-being were assessed using eight subscales, derived from three different measures. These included four subscales of the Family Impact Questionnaire (Donenberg & Baker, 1993): Impact on Social Life (11 items); Negative Feelings About Parenting (9 items); Positive Feelings About Parenting (7 items); and Impact on Finances (7 items). Family Impact Questionnaire items are scored on a 4-point scale from 0 (*not at all*) to 3 (*very much*). This measure is not specifically designed for families of children with mental retardation but, rather, is typically used to assess "parents' perceptions of child impact on their families relative to the impact most children his/her age have on their parents/family" (Donenberg & Baker, 1993, p.184). The 20-item (true, false) Family Problems subscale from the Questionnaire on Resources and Stress-F (Friedrich, Greenberg, & Crnic, 1983) was included as a measure of family stress more directly related to the child with mental retardation. This scale was designed specifically for families of children with mental retardation or developmental

disability and does mix the assessment of child characteristics with the demands that those characteristics impose (Clayton, Glidden, & Kiphart, 1994). Aspects of the family social climate were assessed with the Family Environment Scale (Moos & Moos, 1986), which has nine subscales of 10 items each, all scored true or false. In order to reduce the length of this interview protocol, we administered three subscales from this measure that were of the greatest theoretical interest to us (Cohesion, Conflict, and Moral Religious). High scores on these subscales indicated more cohesion, greater conflict, and greater moral-religious emphasis in the home.

All instruments not already available in Spanish versions (e.g., the Depression Scale, the Family Environment Scale, the Vineland Adaptive Behavior Scales) were systematically translated, back-translated, and decentered from English to Spanish to ensure equivalence (Marin & Marin, 1991). (*Back-translated*, also called *double translation*, means put back into English from the newly translated Spanish to assure equivalence; *decentering* extends the length of the translation procedure because of multiple iterations required to correct grammatical structures or concepts that do not translate directly.)

Results

How did depression scores in our sample compare to depression scores in samples of Latina and Anglo mothers of children without mental retardation? The mean Depression Scale score for our sample was 18.4 ($SD = 13$). Although most investigators consider a total score of 16 or greater as indicative of depressive symptomatology, Vega et al. (1986) raised the cut-off to 24 or greater in their study of immigrant Mexican women. Therefore, we designated three groups: one that showed no elevated depressive symptomatology (scoring 0 to 15), and two that were above the suggested cut-off score of 16 (16 to 23, 24 and above); hereafter referred to as

low, moderate, and high Depression Scale groups.

Figure 1 illustrates the Depression Scale distribution across three samples: our sample, the Vega et al. (1986) sample of Hispanic mothers, and the normative sample (primarily Anglo) in the original Radloff (1977) report. We note that Radloff did not provide specific scores needed to distribute her data between moderate and high groups. Although only 17% of Radloff's sample scored 16 or above, 41.5% of the Vega et al. sample and 49% of our sample did. The distribution in the two Hispanic samples is similar, although only the current study includes mothers of children with mental retardation.

Does child behavior relate to maternal depression score? Parent-reported level of mental retardation correlated with depression score, $r = -.23$, $p < .05$. Mothers of children with more severe levels of mental retardation reported greater depression. Vineland indicators of child functioning and Depression Scale scores were not significantly correlated for adaptive behavior but were significantly related for both maladaptive scales, $r = .26$, $p < .001$ (for tantrums, impulsiveness, and the like) and for more serious aggressive behaviors, $r = .22$, $p < .01$. Mothers of children

with more maladaptive behavior reported greater depression.

To determine how the three Vineland indicators of child functioning differed across the three Depression Scale groups, we conducted a multivariate analysis of variance (PROC GLM, SAS, 1989). The first block of Table 2 summarizes these results and shows subsequent analysis of variances, as well as post-hoc t tests. The multivariate analysis of variance for Child Functioning was significant. The subsequent analysis of variance for adaptive behavior was not significant. The analyses of variance for both maladaptive behavior scores were statistically different; in both cases, the post-hoc test showed that the low versus high depression groups differed significantly.

Do other child, mother, or family factors relate to maternal depression? We conducted four additional multivariate analyses of variance to test for simultaneous differences among the three Depression Scale groups on multiple variables. We entered eight variables into the multivariate analysis of variance for Family Demographics, eight for Stress and Well-Being, five for Coping, and two variables for Acculturation. Table 2 summarizes

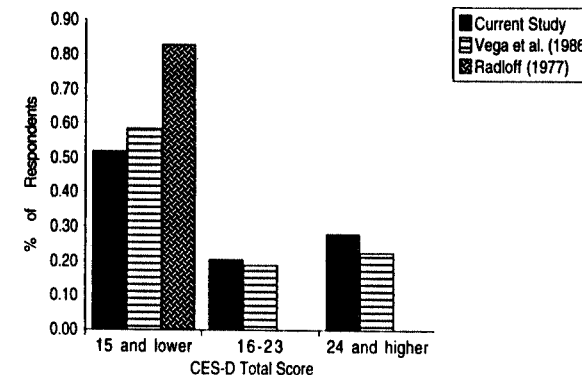


Figure 1 Comparison of Center for Epidemiologic Studies Scale (CES-D) scores across three studies.

Table 2
Results of Analyses of Depression Scores

Dependent variable	Measure	Depression score (CES-D), group means			F
		<16 (n = 76)	16-23 (n = 30)	>24 (n = 42)	
Child functioning (Manova)					2.48* (6,286)
Adaptive Behavior Composite	Vineland	31.89	28.27	31.67	.91
Maladaptive 1	Vineland	16.92*	19.63 ^{a,b}	22.12 ^a	5.12**
Maladaptive 2	Vineland	3.20*	3.50 ^{a,b}	5.09 ^a	4.57*
Family demographics (Manova)					1.60 (16,276)
Child age	FDS	11.31	11.73	11.58	.18
Mother age	FDS	39.90	38.77	43.14	2.15
Mother education	FDS	3.03	2.57	2.67	.89
Income	FDS	3.82	3.43	3.40	.99
Employment status	FDS	1.70	1.80	1.88	2.71
Marital status	FDS	.64	.67	.43	3.16
Mother's birthplace	FDS	1.38	1.27	1.29	.91
Language of interview	FDS	.73	.93	.78	2.55
Stress & well-being (Manova)					4.42**** (6,270)
Impact on social life	FIQ	8.22*	8.80*	12.98*	6.70**
Impact on finances	FIQ	7.58*	8.13 ^{a,b}	10.90*	4.89**
Negative feelings	FIQ	8.95*	11.07*	12.57*	11.48****
Positive feelings	FIQ	15.80	15.27	14.02	1.87
Conflict	FES	1.76*	2.27 ^{a,b}	3.12 ^b	7.48****
Cohesion	FES	7.57*	6.90*	5.81 ^b	12.36****
Moral religious	FES	6.53	6.43	6.48	.04
Family problems	QRS-F	4.51*	7.30*	9.55 ^c	26.11****
Coping strategies (Manova)					n.s.
Acquiring social support	F-COPES	25.33	24.33	24.24	.29
Seeking spiritual support	F-COPES	14.67	14.80	13.98	.66
Mobilization of resources	F-COPES	13.70	14.33	13.21	.53
Reframing	F-COPES	31.85	31.80	29.79	2.41
Passive appraisal	F-COPES	14.07	12.30	12.79	3.03
Acculturation (Manova)					2.59* (4,222)
Media	Acc. Scale	8.18	7.33	7.76	.46
Ethnic social relations	Acc. Scale	8.79*	8.20 ^{a,b}	7.52 ^b	4.17*
Health status	Composite	3.87*	4.03*	5.79 ^b	10.92****

Note. Means in the same row that do not share superscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. Unless otherwise indicated, *d*'s were 2.147. FDS = Family Data Sheet, FIQ = Family Impact Questionnaire, FES = Family Environment Scale, QRS-F = Questionnaire on Resources and Stress, F-COPES = Family Crisis Oriented Personal Evaluation Scales, Acc. = Acculturation.
* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

results of these multivariate analyses of variance and shows subsequent analyses of variance by depression group as well as post-hoc *t* tests.

The overall multivariate analyses of variance were significant for the domains of Stress and Well-Being and Acculturation. Even though multivariate analyses of variance were not significant for the Family Demographics or Coping domains, we conducted exploratory post-hoc analyses of variance setting a more stringent alpha level at .01; no demographic or coping variable significantly differentiated our three groups. In the Stress and Well-Being domain, six analyses of variance were significant: the three negative impact

subscales from the Family Impact Questionnaire (Impact on Social Life, Impact on Finances, Negative Feelings About Parenting); two subscales from the Family Environment Scale (Conflict and Cohesion); and the Family Problems subscale of the Questionnaire on Resources and Stress-F. In the Acculturation domain, the analysis of variance for the Ethnic Social Relations component was significant. A one-way analysis of variance on the one variable in the Health domain was also significant.

Thus, the three depression groups were significantly different on 10 variables or subscales from four conceptual domains. There was a linear relation be-

tween depression and the domains of well-being, with the high depression group reporting the most negative status and the nondepressed group reporting the best status. Mothers in the high Depression Scale group reported more negative impact of their child with mental retardation on their own social life, finances, and feelings about parenting as well as greater family problems. Their homes were marked by significantly more conflict and less cohesion. They did not differ from the other groups of mothers in the moral-religious emphasis in their homes, positive feelings about parenting, or types of coping strategies that they used. Regarding the other domains of interest, the mothers with the highest Depression Scale scores reported the poorest health, greatest number of maladaptive behaviors in their children, and least contact with English-speaking persons.

How well can these factors be combined to classify mothers as high or low on depression score? We entered the 10 variables (from the domains of Child Functioning, Stress and Well-Being, Acculturation, and Health) that significantly differentiated our Depression Scale groups into a stepwise discriminant analysis (PROC DISCRIM, SAS, 1989). Correlations between each of these variables and the Depression Scale were all significant and ranged from .16 to .54; six of these variables were in the range of .22 to .36. We were most interested in identifying mothers with markedly high depression scores; therefore, we contrasted the high depression group ($n = 42$) with the nondepressed group ($n = 76$). Our data, as well as the data presented by Vega et al. (1986), suggest that a higher cut-off point for the Depression Scale may be appropriate and eliminates ambiguity around the mid-range scores. Also, a two-group discriminant analysis is more easily interpretable from a clinical perspective (i.e., those mothers whose Depression Scale scores clearly are and are not in the range of clinical significance).

The resulting prediction formula incorporated four variables: family problems (Questionnaire on Resources and Stress-F), health status, ethnic social relations (Acculturation Scale), and negative feelings about parenting (Family Impact Questionnaire). High Depression Scale group membership was predicted by mothers' reporting more family problems, worse health, fewer interactions with English-speaking persons in their daily lives, and more negative feelings about parenting their child with mental retardation. The discriminant analysis correctly classified 69 out of 76 mothers (91%) in the nondepressed group and 30 out of 42 mothers (71%) in the highly depressed group, for a total rate of 84% correct, $\chi^2 = 45.80$, $p < .0001$.

Discussion

In contrast to the Depression Scale normative sample (Radloff, 1977), this sample of Latina mothers who had children with mental retardation had depressive symptomatology that was quite elevated. Almost half scored in excess of a commonly used cut-off for the Depression Scale. We cannot say for certain what role mental retardation played in this elevated depression, as we did not contrast these mothers with comparable mothers whose children did not have mental retardation. However Vega et al. (1986) studied a sample that was similar in many respects (e.g., Latino primarily from Mexico, of very low income) except that the mothers they studied did not have a child with mental retardation. Depression was almost as elevated in the Vega et al. sample as in this sample, suggesting that mental retardation per se would not explain elevated depression scores in Latina mothers.

However, the extent of behavioral challenge posed by the child with mental retardation may be a factor. Within this sample one aspect of behavior characteristic of individuals with mental retardation (maladaptive behavior) was significant-

related to depression scores. Maladaptive behavior did not enter significantly into the discriminant analysis, but it may have an indirect relation to depression, as child maladaptive behavior may increase mother's perceptions of family problems and negative child impact, two variables that did enter. These relations with depression can be interpreted in other ways as well. Some authors have posited that depression may be a significant factor contributing to mothers' reported incidence of behavior problems in children with chronic disorders such as diabetes, cystic fibrosis, or even mental retardation (Walker et al., 1989). Other authors have suggested maternal depression is associated with undesirable parenting practices (nonresponsiveness, inattentiveness, inappropriate discipline) that lead to difficulties in parent-child interaction (Gelfand & Teti, 1990) or even later child psychopathology (Downey & Coyne, 1990). The specific role that having a child with mental retardation plays in depression, and elucidation of the direction of effects, are issues requiring further study. It does seem important to note that mothers of children who were lower functioning (i.e., had lower adaptive behavior scores) were no more depressed than were mothers with children who were higher functioning. Rather, when the child's behaviors were more maladaptive, his or her behavior was perceived as more burdensome. This is consistent with results of Heller et al. (1994), who found that Latinos judge mental retardation *per se* to be less of a burden than do other ethnic groups.

Interestingly, personal aspects of coping (with mental retardation, among other things) were not at all related to levels of depression. The extent to which mothers engaged in activities that resulted in acquiring social support, seeking spiritual support, mobilizing resources, or reframing or appraising their experiences did not relate to depressive symptomatology. With the exception of scores on the passive appraisal subscale (which were higher), mean scores on the other F-

Copes subscales used here were also similar to those in the scoring manual (McCubbin et al., 1991). Thus, psychological resources, as assessed by the F-Copes, were available to mothers of all Depression Scale levels.

We were surprised to find that demographic variables were unrelated to depression. This may be due, in part, to the fact that there was little variance in the mothers' SES; they were all rather low in terms of educational level and household income. Nevertheless, among low SES mothers, slightly higher levels of social and economic resources (including marital status) did not seem to serve as buffers of psychological distress. Like SES, education, and the other demographic variables, there was limited variance in acculturation. However, one subscale of the acculturation measure did relate to depression (Ethnic Social Relations). Those with greater contact with English-speaking people (particularly as friends) were less depressed. Media preferences, languages preferences, and place of birth were unrelated.

Consistent with our expectations, however, was the pattern of findings suggesting that disruptions in family functioning may be most predictive of depression for these mothers. The family is of great importance for a majority of Latinos (Bernal, 1982; Zuniga, 1992). To the extent that (a) impact of the child with mental retardation negatively affects the family, (b) there are difficulties in family cohesion or conflict, and (c) the mother perceives more family problems, she will likely report more symptoms of depression.

Mother's health also discriminated highly depressed from nondepressed groups. Other studies of Hispanic populations have shown that the reporting of somatic symptoms, a proxy for overall health status, represents underlying depression (Kolody et al., 1986; Garcia & Marks, 1989; Magni, Rossi, Rigatti-Luchini, & Merskey, 1992). In our sample, many mothers scored high in both domains

(Health and Depression). There was no way to determine here whether our mothers with ill health reported more somatic complaints because they were depressed and more attentive to sensation or whether having ill health made them depressed.

We used the Depression Scale, the depression screening instrument most widely used in research with Latino populations, and utilized a cut-off score of 16. Other investigators studying Latino individuals continue to use 16 as a viable cut-off score and report mean scores below 16 (Kaplan & Marks, 1990; Zhang, Markides, & Lee, 1991). Some authors have suggested using a higher cut-off score for Latinos, varying from 17 to 20 (Magni et al., 1992). In Vega et al.'s (1986) study of immigrant Mexican women, when the cut-off was raised from 16 to 24, the percentage of high scorers dropped from 41.5% to 22.6%. Even when we analyzed the data using this higher cut-off, we found that 28% of our sample scored in the high risk range.

We note that the Depression Scale was not intended to be used by itself for clinical diagnosis of depression (Radloff, 1977). It is, however, a useful first-stage screening instrument that should be followed up with a more comprehensive diagnostic procedure. Additional comments candidly offered by mothers during the interview provided further information consistent with the high Depression Scale scores. For example, many of our highest Depression Scale scorers reported a family history of physical and/or mental health problems, cancer, or severe depression. Another theme that emerged from the spontaneous comments made by the most depressed mothers was isolation or loneliness. We observed extremes of poverty and were told of lack of interaction with friends and/or spousal abandonment—all viable reasons for feeling isolated. Indeed, other investigators have written about the particular value of "confidante" support to immigrant Latina women; they suggested that in its absence, these women may be in jeopardy of depression or other symp-

tomatology (Vega, Kolody, & Valle, 1988; Zuniga, 1991). Of course, it is possible that feelings of isolation and loneliness are outcomes of depression.

Women with the lowest Depression Scale scores also had more interactions with professionals (e.g., school or regional center teachers, case managers) who helped their child with mental retardation. These observations on isolation are consistent with our variable ethnic social relations (the extent to which mothers interact only with Spanish-speaking persons) that entered the discriminant analysis to predict depression. Perhaps we would have been able to explain even more variance if we had a broader measure of social isolation, or insularity (Wahler, 1980).

We naturally wondered whether the high depression scores in our study related to some kind of sampling bias. All of these mothers were clients of state regional centers, where children with developmental disabilities must be registered in order to receive services beyond schooling. Families who have children with moderate, severe, or profound disabilities are encouraged to register. This volunteer sample may have actually caused us to underestimate the level of depression that exists because depressed individuals are often too apathetic and withdrawn to volunteer to participate in research studies. Indeed, clinical signs of depression include withdrawal from social activities, and, in families with a child with disabilities, demonstrated lack of initiative in implementing home programming (Smith Innocenti, Boyce, & Smith, 1993; Walke et al., 1989). Thus, the heightened Depression Scale scores that we found do not appear to be an artifact of sampling.

We advocate that researchers look more carefully within ethnic samples before conducting between-group analyses. If one were to compare the findings from the present Latino sample to Anglo or African American samples, one might conclude that differences in depression (or other aspects of stress and well-being) are

related to differences in culture or ethnicity. This, in fact, has been done in the field of disability (Heller et al., 1994; Mary, 1990). However, ethnic groups typically differ on a host of variables, many of which are nearly impossible to identify and control. We may learn more about what predicts depression by looking within ethnic samples. Although our sample of Latina mothers scored high on the Depression Scale as a group, more than half (53%) scored in the nondepressed range. By looking further within this sample, we found that the depressed mothers did not differ from the nondepressed ones on forms of media used daily, coping styles, strength of religion, or positive perceptions of their child. Moreover, they did not differ on demographic variables of income, education, age, language use, employment, or country of origin. Such within-group analyses help to clarify what, apart from culture, predicts depression among Latinas.

In conclusion, we have identified a group of Latina mothers who scored high on a measure of depressive symptomatology. These women, all of whom had a child with mental retardation, were highly vulnerable to psychological challenges and did not appear to have the resources or supports to buffer depression. Beyond further inquiry about the causes of this depression, we need to be concerned about its effects. There is evidence that maternal depression heightens the child's risk for depression (Hammen, 1991). We can also reasonably assume that their depression adversely affects their utilization of services for the child with mental retardation. Thus, even if child-related services continue to be provided to these mothers, their depression can make it unlikely that they will follow through on programs or treatments (Baker, 1989).

Our correlates of depression suggest that researchers and mental health professionals should collaborate to improve our prediction of the most vulnerable mothers and to reduce depression directly in this high risk group. Also, practitioners who

work with Latino families may want to identify how the child's maladaptive behavior contributes to disruptions in family functioning and to the mother's distress, manifested here as depressive symptomatology. Access to services to meet these mothers' own physical health needs, programs to reduce stress directly or indirectly related to the child with mental retardation, and less isolation from family and personal social networks may be protective measures against depression.

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Tourette Syndrome Associated With Mental Retardation: A Single-Subject Treatment Study With Haloperidol

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A Tic Checklist and direct observation tic measurement procedure were developed for the assessment of Tourette syndrome in individuals with mental retardation. Using a single-subject reversal design, we applied this assessment method to the evaluation of haloperidol treatment for a subject with Tourette syndrome and severe mental retardation. Relative to baseline, haloperidol 10 mg/day produced decreases of 66% in simple motor tics, 46% in complex motor tics, 45% in simple vocal tics, and 50% in complex vocal tics. Improvement was also seen in careprovider ratings of tic severity, hyperactivity, and compulsive behaviors.

Tourette syndrome is a neuropsychiatric condition characterized by simple and complex motor and vocal tics (American Psychiatric Association, 1994). This disorder affects approximately 100,000 people in the United States, with lifetime prevalence estimates ranging between 0.5% and 1.6% (Shapiro, Shapiro, Young, & Feinberg, 1987). Symptoms of hyperactivity and obsessive-compulsive disorder frequently co-occur in individuals with Tourette syndrome (Knell & Comings, 1993; Pauls, Towbin, Leckman, Zahner, & Cohen, 1986). Neuroleptic medications, especially haloperidol and pimozide, are the most widely used pharmacologic interventions for Tourette syndrome in the general population. Improvement in Tourette syndrome symptoms with neuroleptic treatment has varied from 62% to 91% of patients (Shapiro & Shapiro, 1988).

Very little attention has been directed towards Tourette syndrome in individuals with mental retardation. There are no reliable estimates of the prevalence of Tourette syndrome associated with mental retardation, but a number of investigators have suggested that this syndrome may occur at all levels of intellectual functioning and in association with a wide range of etiologies (Collacot & Ismail, 1988; Golden & Greenhill, 1981; Kerbeshian, Buurd, & Marsolf, 1984; Singh Howe, Jordan, & Hara, 1982). Cognitive limitations, the high occurrence of motor disorders (e.g., stereotypy, dyskinesia) and the natural waxing and waning of Tourette syndrome symptoms all complicate the identification and measurement of Tourette syndrome symptoms in individuals with mental retardation. In the present study, we examined the efficacy

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