

Personal Resources and Depression in the Transition to Adulthood: Ethnic Comparisons*

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Based on a representative sample of 1,803 South Florida young adults, we examine the extent to which personal attributes mediate or moderate the ethnicity-depression relationship and condition the effects of social stress on depression. Our sample contains nearly equal proportions of African American, Cuban American, "other" Hispanic, and non-Hispanic white respondents. Findings suggest that there are ethnic variations in four of the five personal resources considered. Additionally, when accounting for ethnic differences in response tendencies and in the confounding of personal resources with depression, there is strong evidence for both direct and stress-buffering effects of personal resources. Although naïve comparisons of within group findings imply a number of ethnic variations in those effects, few statistically significant differences are observed. It is suggested that ethnic similarities outweigh differences, at least with respect to the mental health significance of the personal resources considered. Overall, the results highlight some of the complexities inherent in making multi-ethnic comparisons.

Efforts to understand the social origins of mental health problems have often focused on the social distribution of such problems as a mechanism for identifying relevant socially patterned differences in environmental experiences. Variation in exposure to social stress has been the most prominent explanatory hypothesis, and recent evidence suggests that differences in such exposure play a greater role than has generally been assumed (Wheaton 1994; Turner, Wheaton, and Lloyd 1995, Turner and Lloyd 1999). However, there can be little doubt that people differ importantly in their experience of, and how effectively they deal with,

both stressful and non-stressful environmental occurrences and circumstances. As Langner and Michael (1963) argued decades ago, there is residual mental health variation between social groups that cannot be accounted for by stress factors alone.

An important source of this residual variation is widely assumed to reside in social status variations in personal resources or attributes (Thoits 1995; Turner and Roszell 1994; Turner and Lloyd 1999). There are grounds, as Pearlin (1989) has suggested, for assuming that variations in the availability of coping resources, such as variations in exposure to stressors, emerge out of contemporary and developmental conditions of life. To the extent that important differences in such conditions tend to be defined by one's social statuses, it may follow that any observed relationships between these statuses and mental health arise, at least in part, from differences in the availability of coping resources.

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Turner, Lloyd, and Roszell (1999) have addressed this hypothesis with respect to observed differences in depressive symptoms across gender, age, marital status and socioeconomic status. Their findings failed to support the availability hypothesis in relation to marital status, provided very modest support with respect to age and gender, but found compelling support in relation to the socioeconomic status-depression relationship. Neither the Turner et al. (1999) study, nor any other that could be identified has yet evaluated the role and significance of personal resources or attributes for understanding racial/ethnic differences in mental health.

As Williams, Spencer, and Jackson (1999) have noted, there is "growing scientific consensus that race is a gross indicator of distinctive social and individual histories" (p. 71). The present paper examines the extent to which ethnic variations in personal histories are associated with differences in personal attributes or resources and the extent to which such resources mediate or moderate the linkages between social stress and depressive symptomatology within and across ethnic categories. In the process, we consider a wider array of personal resources than has typically been examined in stress process research. Specifically, we assess the role and significance of mattering, interpersonal dependency, mastery, and self-esteem. These objectives are pursued in the context of an effort to achieve comparable measurement of depressive symptoms across ethnic groups.

Interviews of an ethnically diverse representative cohort of young adult residents of South Florida, conducted between 1998 and 2000, provide an opportunity to effectively address these research questions. This sample was drawn such that approximately 25 percent of respondents are of Cuban origin, 25 percent are of other Hispanic backgrounds (primarily Nicaraguan, Columbian and Dominican), 25 percent are African American, and 25 percent are non-Hispanic white.

Our approach in drawing this sample is in accord with the growing consensus that race is more a social than a biological categorization, one that is akin to ethnic status (Williams 1992), and that there are important cultural variations within ethnic statuses. In an effort to reduce the effects of such variations on results, we have distinguished Cubans from other Hispanics and limited inclusion within this lat-

ter category to Hispanics from countries in the Caribbean basin plus Columbia. For the same reason, Haitians and other Caribbean blacks were excluded in forming the African American sub-sample. Because of our interest in the effects of immigration, Puerto Ricans were excluded from the "other Hispanic" category.

BACKGROUND

Race/Ethnicity and Depression

Despite some variability, research on ethnic differences in psychological distress, typically measured in terms of depressive symptoms, have generally revealed higher levels of distress among minority respondents (e.g., Warheit et al. 1973, 1975; Vernon and Roberts 1982; Roberts and Sobhan 1992). However, a number of studies comparing African American and white respondents have suggested that the observed difference may be largely or wholly an artifact of socioeconomic status differences. In counterpoint to these findings, Kessler and Neighbors (1986) have presented compelling evidence that minority status acts synergistically with low socioeconomic status to increase risk for psychological distress. They suggest that this conditional linkage between race and distress may arise from the joint effects of poverty and discrimination: "certain resources for coping may be less readily available to lower class blacks" (p. 113). This paper considers the significance of coping resources that reside within the individual and examines their role with respect to mental health *within* and *across* ethnic categories.

Personal Resources

Theoretically, the number of personal resources or attributes that may partially define an individual's capacity to cope with environmental demands may be equal to the entire range of personal characteristics so far identified and measured. However, those for which there is some evidence of a linkage with depression or well-being are more limited in number. Also limited is information on ethnic and socioeconomic status variations in the mental health significance and availability of many of these resources. There is also surpris-

ingly little evidence bearing on the buffering hypothesis, despite its theoretical centrality in the stress literature. A computer search in July 2002 for "buffering hypothesis" turned up a total of only 68 articles reporting on stress buffering findings. Of these, 60 considered only social support, and only four provided evidence on the stress buffering properties of any one of the resources considered in the present article. In what follows, relevant evidence regarding each of the personal resources to be examined is briefly summarized.

Mattering. Rosenberg and McCullough (1981) define mattering as "the feeling that others depend upon us, are interested in us, are concerned with our fate, or experience us as an ego-extension" (p. 165). Theoretically, such a feeling arises from four sources: attention, importance, dependence, and ego-extension. That is, perceptions of mattering involve the notion that one's actions are not only noticed and acknowledged by (attention), but relevant to others (importance). Mattering implies the existence of social bonds and obligations, the reliance of significant others on oneself, and the sense that the welfare of others depends upon one's actions or affection (dependence). The sense of mattering connotes a belief that others have an emotional investment in oneself—that, if absent, one would be missed. Finally, mattering suggests that one's personal successes or failures bring joy or disappointment to others (ego-extension).

Perceptions of mattering are linked to interpersonal exchanges that can promote a sense of belonging, identity, and commitment (Schieman and Taylor 2001). Correlates of social integration, like relatedness (Deci and Ryan 1991), belongingness (Baumeister and Leary 1995), intimacy (McAdams 1989), and communion (Bakan 1966) likely contribute to one's sense of mattering to others. The development and maintenance of "lasting, positive, and significant" interpersonal affiliations often represents a fundamental human necessity, and its protection and enhancement is a key human motive (Baumeister and Leary 1995). Awareness that one is needed by others may impart a sense of purpose in life, a circumstance that some have identified as a defining element of psychological well-being (Ryff and Singer 2000). Indeed, empirical evidence suggests that mattering reduces depressive symptoms cross-sectionally and over time, particularly among women (Taylor and Turner 2001).

Although no studies appear to have examined the potential stress-buffering effects of mattering, it seems reasonable to hypothesize that a sense of mattering to others may moderate some of the detrimental consequences associated with exposure to social stress. Moreover, the extent to which mattering varies by ethnic status may contribute to explanations about ethnic differences in depressive symptomatology.

Interpersonal dependency. Hirschfeld and his colleagues (1977) have defined interpersonal dependency as "a complex of thoughts, beliefs, feelings, and behaviors which revolve around the need to associate closely with, interact with, and rely upon valued other people" (p. 610). The central hypothesis associated with this construct is that individuals who rely almost exclusively on the love and attention of others for the maintenance of their self-esteem are more vulnerable to depression. Conceptually, interpersonal dependency involves an intense emotional dependence upon assistance, attention, and approval from others. In the present study, we examine two theoretically opposite dimensions of interpersonal dependency: emotional reliance and the assertion of autonomy.

Emotional reliance involves an emphasis on others' appraisals for derivation of personal worth. An elevated sense of dependence can incite keen apprehension about abandonment by others, prompting intense feelings of helplessness, hopelessness, and despair. That is, reliance can generate angst about being alone, as the absence of input from others corresponds with the loss of self-value. If personal worth is strongly linked to the approval and attention of others, then self-evaluations are heavily conditioned by unpredictable circumstances, and reliance may evoke feelings that one's situation is not stable—that one's well-being is transient and dependent upon another's whim. Thus, dependence upon others can foster an acute sense of interpersonal vulnerability that diminishes mental health.

As the counterpart to emotional reliance, *the assertion of autonomy* implies the absence of reliance upon others' opinions for maintenance of self-esteem. Characterized as "acting according to one's own values and norms independently of the social environment" (Schreurs and Buunk 1996:579), autonomy involves a low level of preoccupation with others' attitudes about oneself. This sense of indepen-

dence or separateness from potentially harmful appraisals by others is hypothesized to enhance well-being.

Previous research has reported that emotional reliance increases risk for poor health, substance use problems, and depression (Bornstein 1992, 1998; Hirschfeld et al. 1983; Turner and Turner 1999). By extension, the assertion of autonomy presumably reduces risk for those physical and mental health problems. Indeed, some research confirms that autonomy promotes identity development and mental health in adolescence and adulthood (Frank, Pirsch, and Wright 1990; Turner, Irwin, and Millstein 1991; Turner and Lloyd 1999; Van Gundy 2002). In addition, asserting autonomy may protect individuals from the detrimental effects of exposure to social stress. However, evidence of such buffering effects has not always been observed (Van Gundy 2002), and it has been argued that autonomy may *amplify* the effects of stress if autonomous persons underutilize others as resources (Ryan and Lynch 1989). Other studies find that emotional autonomy from parents buffers some of the damaging effects of stressful family transitions and situations in adolescence (Fuhrman and Holmbeck 1995; Hetherington and Anderson 1988; Hetherington, Cox, and Cox 1985; Sessa and Steinberg 1991; Springer and Wallerstein 1983). Despite mixed evidence, it appears that the effects of stress on depressive symptomatology may be moderated by the assertion of autonomy, and comparable processes can be inferred with respect to emotional reliance.

Although no studies that we could identify have examined ethnic differences in the experience or influence of interpersonal dependency, some evidence suggests that socioeconomic status, a strong correlate of ethnic minority status, is associated with that resource. For instance, research suggests that increases in socioeconomic status are associated with decreases in both emotional reliance and the assertion of autonomy (Turner and Lloyd 1999). To the extent minority status is linked to socioeconomic disadvantage, such attributes are likely to be distributed unequally across ethnic groups, and thus to differentially influence risk for depressive symptomatology.

Mastery. Of the personal resources studied, stress researchers have given greatest consideration to the significance of perceived causal relevance. A wide array of largely interchangeable assessments of that resource have been

examined, including the sense of powerlessness (Seeman 1959), effectance motivation (White 1959), locus of control (Lefcourt 1976; Rotter 1966), personal control (Bandura 1977; Gurin, Gurin, and Morrison 1978), helplessness (Seligman 1975; Seligman and Maier 1967), hopelessness (Abramson, Alloy, and Metalsky 1989), mastery (Pearlin and Schooler 1978), and fatalism (Wheaton 1983). The present paper emphasizes the latter two parallel concepts. Mastery is defined as "the extent to which one regards one's life-chances as being under one's own control in contrast to being fatalistically ruled" (Pearlin and Schooler 1978:5). Fatalism involves "a tendency to believe in the efficacy of environmental rather than personal forces in understanding the causes of life outcomes" (Wheaton 1983:211).

There are a number of grounds for hypothesizing the mental health significance of mastery. The frequency and intensity of stressful experiences may be influenced by variations in one's sense of personal control over the circumstances confronted in life. Since differences in the sense of mastery must be, at least to some extent, a product of one's history of successes and failures in social and environmental encounters, that sense also reflects at least gross differences in social and instrumental effectiveness (White 1959). Thus, high mastery levels likely enhance recognition of one's ability to alter or adapt to circumstances and to minimize the very occurrence of some stressors. Consequently, even life strains or pressures that cannot be avoided may not seem especially problematic among those with a stronger sense of personal agency.

In addition, the sense of control may promote the initiation and persistence of efforts to resolve difficult situations, thus deflecting some of the harmful effects of stress exposure. For example, mastery appears to reduce depression because it encourages active problem solving, while powerlessness is both demoralizing in itself and decreases effective coping (Mirowsky and Ross 1989; Ross and Mirowsky 1989). Similar conclusions have been drawn from studies of self-efficacy (Bandura et al. 1980) and fatalism (Wheaton 1983). Whatever the mechanisms, evidence allows the conclusion that the sense of mastery promotes mental well-being and may also buffer some of the deleterious effects of life stress (Pearlin and Schooler 1978; Pearlin et al. 1981; Turner and Noh 1983, 1988).

Despite the tendency for most individuals to report high personal control, ethnic minorities appear to tend toward lower mastery levels than non-Hispanic whites. Explanations for such differences have focused on both cultural and structural conditions. Evidence suggests that certain cultural groups embrace a sense of collectivism, which arguably encourages reverence for, and adherence to, externally imposed rules (Triandis 1995). Such an emphasis may tend to elevate an individual's sense of fatalism (Ross, Mirowsky, and Cockerham 1983). In contrast, more individually oriented cultures may foster lower levels of fatalism and thus a higher sense of personal mastery or control over environmental circumstances. However, there is evidence suggesting that lower levels of mastery among minorities, levels which are not accounted for by socioeconomic status differences alone (Ross and Mirowsky 1989; Kessler and Neighbors 1986), arise, at least in part, from exposure to prejudice and discrimination (Hughes and Demo 1989; Ross and Sastry 1999). Thus, group differences in mastery reflect socially structured differences in opportunity as well as variations in individual effectiveness. As Porter and Washington (1979) conclude, patterns of heightened fatalism among disadvantaged minorities may be indicative of "a healthy sensitivity to the real world" (p. 65). Thus, lower mastery levels among ethnic minorities may mediate ethnic variations in depressive symptomatology.

Self-esteem. Self-esteem is "the evaluation which the individual makes and customarily maintains with regard to himself or herself: it expresses an attitude of approval or disapproval toward oneself" (Rosenberg 1965:5). Processes of development or formation of self-esteem involve three elements: reflected appraisal, social comparison, and self-attribution (Rosenberg 1986). Thus, self-esteem emerges from one's interpretation of how he or she is viewed by others and from self-judgments with respect to others. That is, "in the absence of objective information about themselves people judge themselves on the basis of comparison with others" (Rosenberg, Schooler, and Schoenbach 1989:1006). Additionally, self-esteem arises from the tendency to draw conclusions about oneself from observing one's own actions, including the success or failure of one's efforts. Presumably, the stability and extent of self-esteem are determined by one's cumulative reflected

appraisals, social comparisons, and self-attributions.

Research has consistently documented a significant negative correlation between self-esteem and depressive symptomatology (Pearlin and Lieberman 1979; Rosenberg 1985; Turner and Lloyd 1999; Wylie 1979), a pattern suggesting that low self-esteem represents a vulnerability factor in the presence of stress (Brown 1987; Brown, Harris, and Bifulco 1986; Kessler, Turner, and House 1988; Shamir 1986). Despite the evidence for such linkages, the conclusion that low self-esteem represents a risk factor for depression, rather than the reverse, requires consideration. In our view, evidence from longitudinal studies and investigations of the stress-buffering effects of self-esteem makes it unlikely that the causality goes entirely from depression to self-esteem. For instance, Rosenberg et al. (1989) directly tested that hypothesis by applying linear structural equation based reciprocal effects analysis to data from a two-wave panel study that examined self-esteem and depressive symptomatology in adolescent boys. The results provided compelling evidence for reciprocal causation. Interestingly, stronger relationships were found among subjects with lower socioeconomic status than among subjects with higher socioeconomic status. Thus, it seems safe to conclude that some important part of the causation involved in the self-esteem-depression relationship goes from esteem to depression, and self-esteem may be especially significant among those in disadvantaged and high-stress contexts.

Since the principles of self-esteem formation include self-attribution, one's history of success and failure in social and environmental encounters that underlie personal control may also be crucial for self-esteem. The common view that self-esteem is based, in part, on mastery (Gecas and Schwalbe 1983; Pugliesi 1989) was emphasized by Ryan (1967), who suggested that self-esteem differences represent a significant element in the link between poverty and mental health problems and that the experience of oneself as at least minimally powerful personally is a prerequisite for self-esteem. The argument that self-esteem is contingent on some level of experienced self-efficacy is compelling, given the difficulty of imagining an attitude of self-value and approval in the context of a belief that one is causally irrelevant. Thus, positive and stable

self-esteem may have mediating functions similar to those of mastery (i.e., affecting the number and type of potentially stressful events and circumstances confronted, efforts to resolve problematic situations, and resiliency in the face of challenge). In the context of ethnicity, however, mastery and self-esteem may reflect distinct dimensions of self that "are produced by fundamentally different processes" (Hughes and Demo 1989:132).

Somewhat contradictory findings have surfaced with respect to the associations between self-esteem, ethnicity, and socioeconomic status. Rosenberg (1979) has observed that it is a forgone, yet often untested, conclusion that social status is a defining influence for self-concepts. By extension, ethnic and socioeconomic variations in self-esteem can be expected. However, research has failed to provide compelling evidence in favor of the hypothesized class-self-esteem relationship (Kaplan 1971; Wiley 1979). Some research suggests that African Americans, despite their disproportionate economic deprivation, tend to report either similar or higher levels of self-esteem compared to non-Hispanic whites (see Porter and Washington 1979; Wylie 1979). Indeed, Wylie (1979) asserts that the African American tendency towards higher self-esteem conceals an otherwise positive association between self-esteem and social class. Moreover, as Hughes and Demo (1989) observe, it appears that "black self-esteem is insulated from systems of racial inequality," (p. 132) suggesting that, despite their reduced mastery, African Americans may be fairly resilient to some environmental influences that can erode positive self evaluations. Likewise, some studies suggest that Hispanic minorities may display self-esteem levels similar to non-Hispanic whites (Jenson, White, and Galliher 1982; Calhoun et al. 1978). However, the extent to which self-esteem mediates associations between ethnicity and depressive symptomatology is unclear.

METHODS

Sample

This study builds on a previous three-wave investigation based in the Miami-Dade public school system (Vega and Gil, 1998). All 48 of the county's public middle schools and all 25

public high schools and alternative schools participated. Questionnaires were administered annually between 1990 and 1993, beginning in grades 6 and 7 and finishing when participating students were in grades 8 and 9. Consent forms were sent to parents of the total population of 9,763 male students scheduled to enter sixth and seventh grades; forms were sent to parents of 669 female students from six schools selected to approximate the ethnic composition of all county middle schools. Of these 10,432 prospective participants, completed questionnaires were obtained from 7,386 at wave 1, 6,646 at wave 2, and 5,924 at wave 3. Detailed analyses provided assurance that Time 1 participants were highly representative of the population from which they were drawn and that this was also true for the Time 3 participants, despite a nearly 20 percent attrition across the three data points (Vega and Gil 1998).

Within the confines of ethnicity criteria, all female participants in the earlier investigation and a random sample of 1,264 male participants were selected for follow-up. To supplement the sample of females, the Miami-Dade county sixth and seventh grade class roster from the year of wave 1 data collection was employed as the sampling pool. Random samples were drawn within each of the four ethnic groups such that 25 percent of the more than 900 additions fell within each ethnic category. Overall, 70.1 percent of those we searched for and attempted to recruit to the study were successfully interviewed. By far the greatest loss (41.8 percent) occurred among the new sample of females who had no previous involvement in the study. Although a significant number of the target sample had left the area for college or other reasons, we succeeded in interviewing 76.4 percent of those previously studied. Although the lowest refusal rate (5.1%) occurred among African Americans, this combined with the highest rate of "not found" (21.7%) for a slightly lower follow-up success rate of 72.3 percent. At the time of the follow-up interview, 93 percent of the sample was between 19 and 21 years of age.

Comparisons of those interviewed with the random sample drawn from the original study population revealed no statistically significant differences on a wide array of early adolescent behaviors and family characteristics that are likely to be relevant to mental health and substance use risks. Comparisons were also made

with respect to school drop out. Among those interviewed, 20.5 percent reported that they had dropped out of high school. This corresponds closely with rates reported by the school board on the same student cohort of 21.1 percent for males and 15.2 percent for females (Dade County School Board 2000). These comparisons and the 76.4 percent follow-up success rate indicate that our sample is reasonably representative of the population from which it was drawn. In contrast, the 58.2 percent success rate among the supplementary sample of new girls was found to be associated with a significant bias with respect to parental socioeconomic status. To correct for this bias, female participants have been differentially weighted in all analyses to achieve a distribution on socioeconomic status that approximates that observed for male participants. Because we sampled so as to achieve roughly equal numbers of non-Hispanic whites, Cubans, other Hispanics, and African Americans, except where results are presented by ethnicity, the data have also been weighted to population values with respect to ethnicity and gender.

Measures

Depressive symptomatology. We measured this variable using a modification of the highly reliable Center for Epidemiology Studies Depression Scale (CES-D) (Radloff 1977). The employed measure differed from the original in several ways, including the use of a one month rather than one week time frame and the use of response categories of "not at all," "occasionally," "frequently," and "almost all of the time." The use of a one-month time frame provides a larger sample of recent experience, and we believe it reduces the possible influence on responses of short-term mood variations.

In the analyses to be presented, we coded the four response categories 0, 0, 1, and 2 ("almost all the time"), thereby combining the "not at all" and the "occasionally" responses. This decision was based on two considerations. First, although the infrequent or mild experience of symptoms may involve emotional discomfort, discomfort does not meaningfully distinguish those who are and are not depressed or psychologically distressed. The argument that sub-clinical depression or dis-

tress, like psychiatric disorders, is a substantively important subject for investigation is supported by compelling evidence that high levels of persistent symptomatology importantly undermine the performance of such core social roles as parent, worker, and spouse/partner (Lyons-Ruth et al. 1986; Oliver and Berger 1992). Symptoms that are experienced only "occasionally" (or "1 or 2 days per week," where a one week reporting frame is employed) do not, we argue, materially affect such role performance.

Second, analyses of responses to CES-D items have suggested that minority adolescents do not reliably report the infrequent or mild experience of symptoms (Robert Roberts, personal communication). Based on a comparison of response patterns of non-Hispanic white and African American participants, the present data appear to confirm the presence of such a bias. These analyses revealed substantial differences, by ethnicity, in the ratio of "occasionally" to the sum of "frequently" and "almost all the time" responses. Overall, whites reported the occasional experience of a symptom three times for every symptom reported as occurring frequently or almost all of the time, compared to 1.9 times among African Americans. Moreover, this difference is observed within as well as across all levels of socioeconomic status. Thus, it is clear that the racial contrast is not an artifact of differences in socioeconomic status, and the tendency to report experiences that occur only occasionally also increases with increasing socioeconomic status, independent of race. These independent racial and socioeconomic status differences suggest that the tendency to report mild or infrequent experiences decreases with increasing exposure to negative events and experiences.

We also refined the depression measure by omitting seven of the original 20 items that were found to be problematic. We were concerned about potential confounding between depressive symptoms and personal resources, and about possible ethnic variations in patterns of such confounding. Of particular concern was confounding between self-esteem and four "positive affect" items of the CES-D, given their conceptual similarity as assessments of well-being. Factor analyses of all CES-D and personal resource items were conducted for the entire sample and separately for each ethnic group. Although analyses of the entire sample

offered little evidence of confounding, within-group analyses identified seven CES-D items that were confounded with either self-esteem or emotional reliance. The within ethnicity results for these seven items are shown in Table 1. Interestingly, the overlap identified was limited to Cuban and African Americans. Specifically, two of the positive affect items and an item that read, “you felt that everything you did was an effort,” loaded on emotional reliance for African Americans and on self-esteem for Cuban Americans. The other positive affect CES-D items loaded on emotional reliance for African Americans. For Cuban Americans, items about others “disliking” them or being “unfriendly” loaded on emotional reliance. The remaining thirteen items, which loaded only on the depression dimension, were summed to construct our measure of depression. Internal reliability of the resulting scale is .83, and it correlates with 20-item CES-D scale, conventionally scored and rescored, at .82 and .95, respectively.

Mattering. We utilized Morris Rosenberg’s five item scale to assess perceptions of mattering. Items inquire about how respondents think others feel about them. They include, for example, “How important do you feel you are to other people?” and “How much do other people depend on you?” Response categories include not at all (1), a little (2), somewhat (3), and a lot (4). Consistent with prior assessment of this scale (DeForge and Barclay 1997), all items were moderately correlated with one another. The summed measure is internally reliable, with an alpha of .72 for the entire sample, and consistent alphas were observed within ethnic groups. Higher scores on the mattering scale indicate a greater sense of mattering.

Emotional reliance and assertion of autonomy. Emotional reliance and assertion of autonomy are measured by subsets of items representing opposite dimensions of Hirshfeld et alia’s (1977) construct of interpersonal dependency. Their scales were developed to assess the relevance of over-dependence on others for psychiatric pathology. Factor analyses confirmed the distinctiveness of these two scales. Respondents were asked to indicate the extent to which they agree with each item based on a five-point scale ranging from “strongly agree” to “strongly disagree.” The four emotional reliance items demonstrate an alpha of .61, while the three-item assertion of autonomy scale was internally reliable, with an alpha of

TABLE 1. Factor Loadings of Confounded CES-D Items by Ethnic Group

	Non-Hispanic white (n = 459)			Cuban American (n = 433)			Other Hispanic (n = 446)			African American (n = 429)		
	CES-D	Esteem	Reliance	CES-D	Esteem	Reliance	CES-D	Esteem	Reliance	CES-D	Esteem	Reliance
1. You felt that you were just as good as other people ^a	.36	-.28	.09	.04	-.39	-.15	.15	-.19	.07	.11	-.13	-.57
2. You felt that everything you did was an effort	.19	.09	.19	-.03	.34	.13	.14	.28	-.04	.09	.18	.49
3. You felt hopeful about the future ^a	.46	-.11	.06	.32	-.31	-.03	.12	.05	.03	.20	-.14	-.52
4. You were happy ^a	.57	-.11	-.10	.67	-.28	.00	.52	.03	-.20	.40	-.03	-.57
5. People were unfriendly	.16	.16	.06	.13	.09	.65	.20	-.21	.16	.32	-.16	.25
6. You enjoyed life ^a	.61	-.10	-.13	.57	-.28	.23	.43	-.19	-.19	.30	-.15	-.49
7. You felt that people disliked you	.47	-.03	.18	.14	-.02	.74	.43	-.40	.28	.45	-.28	.19

Note: Presented are principle components factor loadings with varimax rotation based on factor analyses of CES-D and all personal resource items. Only confounded CES-D items and resources are presented. Confounded loadings are in bold.
^a “Positive affect” items are reversed coded.

.76. Similar alphas were observed for both variables in within ethnic group analyses. Higher scores represent greater levels of each characteristic.

Mastery. We used Pearlin and Schooler's (1978) seven-item scale to assess mastery. Respondents were asked to rate themselves on a five-point scale ranging from "strongly agree" to "strongly disagree" with respect to items such as, "I have little control over the things that happen to me" and "I can do just about anything I really set my mind to." Internal reliability was .73 and consistent across ethnic groups. Higher scores on the mastery scale indicate a greater sense of mastery.

Self-esteem. A six-item subset from Rosenberg's (1979) measure was employed to assess self-esteem. Respondents were asked to indicate the extent to which they agree with items such as, "I feel I have a number of good qualities" and "I take a positive attitude toward myself." The five-point response set ranged from "strongly agree" to "strongly disagree." Cronbach's alpha, which was generally consistent across ethnic groups, was .75 for the entire sample.

Social stress. Following Turner and his colleagues (Turner et al. 1995; Turner and Lloyd 1999), we assess social stress with a composite measure that estimates "operant burden." The measure includes two components: recent life events and chronic strains. *Recent life events* (Avison and Turner 1988; Turner and Avison 1992) are measured by asking respondents if 33 stressful events, such as "a serious accident or injury" or "an unwanted pregnancy," have happened to them. Some of these items also ask if the events happened to their partners (24 items), parents (18 items), or other relatives and friends (11 items). Events are counted if they occurred in the same month or the month preceding the interview or extended into that period, regardless of when they first occurred. Seven additional items, taken from the "major discrimination" scale of Williams et al. (1997), were added to the recent life events count if they were reported as occurring in the preceding month. *Chronic strain* is measured by a 45-item inventory developed using the logic and items of Wheaton's measure (1994) as a starting point. This measure includes 36 statements about enduring stress that is general (3 items) or related to employment (6 items), school (5 items), residence (6 items), children (3 items),

and relationships with partners (6 items) or parents (7 items). Examples include: "too much is expected of you by others" and "you often hear gunshots in your neighborhood." Nine additional items addressed to "day-to-day discrimination" (Williams et al. 1997) were also included as part of this measure. Recent life event and chronic strain scores were standardized and summed to achieve equal weighting, and they were re-standardized to form a single index of operant burden of stress with a mean of 0 and a standard deviation of 1.0. Higher scores reflect higher social stress.

Sociodemographic variables. Ethnicity is measured by four dummy coded categories: African American, Cuban American, "other" Hispanic, and non-Hispanic white (omitted). Each are coded "1" for the ethnic group and "0" for those not in the group. Female is a dichotomous variable coded "1" for females and "0" for males. Because individuals in the sample are still in the transition to adulthood, their socioeconomic status was estimated by a composite score based on parent's income level, occupational category (Hollingshead 1957), and educational attainment. These data were obtained from parent rather than young adult reports, except where parent interviews could not be obtained. Scores on these three status dimensions were standardized, summed, and divided by the number of status dimensions on which data were available.

RESULTS

A correlation matrix and descriptive statistics for all variables considered are presented in the Appendix. Ethnic variations in the personal resources to be examined, and in our outcome and control variables, are presented in Table 2. The top portion of the table allows comparison of results utilizing our modification of the CES-D with those based on the full 20 items and conventional scoring. While no statistically significant variations from the original measure are found, results utilizing the 13-item version, (rescored to adjust for ethnic differences in response tendency) yield quite different findings. African Americans reported significantly elevated levels of depressive symptoms compared with non-Hispanic whites, and other Hispanics experienced higher levels than both Cubans and non-Hispanic whites. Additional analyses (not shown)

TABLE 2. Mean Contrasts for Study Variables across Ethnic Groups (N = 1,767)

CES-D (original 20-item)					13-Item CES-D (rescored)					
	Mean	1	2	3	4	Mean	1	2	3	4
1. Non-Hispanic White	12.75	—				1. Non-Hispanic White	1.60	—		
2. Cuban American	12.46		—			2. Cuban American	1.74		—	
3. Other Hispanic	14.02			—		3. Other Hispanic	2.37	*	*	—
4. African American	13.79				—	4. African American	2.27	*		—
4-Item CES-D at 8th/9th gr (rescored) ^a					SES					
	Mean	1	2	3	4	Mean	1	2	3	4
1. Non-Hispanic White	1.06	—				1. Non-Hispanic White	.58	—		
2. Cuban American	.66		—			2. Cuban American	-.17	*	—	
3. Other Hispanic	.83			—		3. Other Hispanic	-.23	*		—
4. African American	1.16				—	4. African American	-.28	*		—
Stress (Operant Burden)					Mattering					
	Mean	1	2	3	4	Mean	1	2	3	4
1. Non-Hispanic White	-.17	—				1. Non-Hispanic White	17.21	—		
2. Cuban American	-.08		—			2. Cuban American	17.26		—	
3. Other Hispanic	.03	*		—		3. Other Hispanic	17.07			—
4. African American	.23	*	*	*	—	4. African American	17.08			—
Emotional Reliance					Assertion of Autonomy					
	Mean	1	2	3	4	Mean	1	2	3	4
1. Non-Hispanic White	15.27	—				1. Non-Hispanic White	9.52	—		
2. Cuban American	15.29		—			2. Cuban American	10.09		—	
3. Other Hispanic	15.33			—		3. Other Hispanic	10.17	*		—
4. African American	16.00	*	*	*	—	4. African American	11.72	*	*	*
Mastery					Self-Esteem					
	Mean	1	2	3	4	Mean	1	2	3	4
1. Non-Hispanic White	28.22	—				1. Non-Hispanic White	27.40	—		
2. Cuban American	28.24		—			2. Cuban American	27.90		—	
3. Other Hispanic	26.97	*	*	—		3. Other Hispanic	27.34		*	—
4. African American	26.88	*	*		—	4. African American	27.99	*	*	*

* *p* < .05 using Scheffe post hoc multiple comparisons significance test

^a N = 1,154. No ethnic differences in 8th/9th grade CES-D scores are observed using conventional scoring.

revealed that these differences are attributable to the modification in scoring and are not an artifact of employing a reduced number of items. Also, African Americans report significantly higher scores than Cuban Americans on the early adolescent depression measure, which is based on a subset of four CES-D items asked when respondents were in the eighth and ninth grades.

Consistent with expectations, each of the minority subpopulations is disadvantaged relative to non-Hispanic whites in terms of socioeconomic status. African Americans and “other” Hispanics are also significantly disadvantaged by higher exposure to social stress. Ethnic differences are also observed on all personal resources examined except mattering. Most of the significant variations involve the African American group. African Americans score significantly higher on emotional reliance and assertion of autonomy than all other groups and report the lowest levels of

mastery and the highest levels of self-esteem. Compared to non-Hispanic whites, “other” Hispanics score lower on mastery and higher on assertion of autonomy, and also differ from Cuban Americans with lower scores on both mastery and self-esteem.

Table 3 reports the results of regression analyses employed to estimate the independent and cumulative significance of personal resources for depression. Depressive symptoms were initially regressed on demographic risk factors (equation 1), followed by equations in which each personal resource is added separately (equations 2–6) and in combination (equation 7). Socioeconomic status, social stress, and prior depressive symptoms are then added, one at a time, in the final three equations. In keeping with extensive prior research, females are at significantly elevated risk for depression.

Equations 2–7 show that, when considered individually, each personal resource makes an

TABLE 3. 13-Item CES-D Regressed on Gender, Ethnicity, Personal Resources, Socioeconomic Status, and Stress (N = 1,767)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10 ^b
Female	1.33***	1.46***	1.22***	1.29***	1.21***	1.18***	1.19***	1.18***	1.11***	.74***
Cuban American ^a	.13	.12	.14	.18	.13	.30	.24	.07	.01	.24
Other Hispanic ^a	.58**	.51*	.59**	.64**	.34	.59**	.45*	.27	.16	-.14
African American ^a	.63**	.56**	.50*	.84***	.34	.86***	.56**	.39	.10	.15
Mattering		-.39***					-.20***	-.19***	-.12**	-.08*
Emotional Reliance			.17***				.08**	.07**	.06**	.05*
Assertion of Autonomy				-.09**			-.02	-.03	-.02	-.01
Mastery					-.20***		-.11***	-.10***	-.06**	-.05*
Self-Esteem						-.35***	-.19***	-.19***	-.18***	-.21***
Socioeconomic Status							-.19***	-.24**	-.19*	-.05
Stress (Operant Burden)									.94***	.85***
CES-D Wave 3	.97	7.68	-1.59	1.19	6.97	10.97	11.96	12.03	9.91	9.43
R ²	.05	.12	.07	.06	.14	.14	.20	.21	.28	.28

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed)

Note: Presented are unstandardized OLS regression coefficients. Data are weighted to reflect the gender and ethnicity population distribution and to correct for SES bias among females.

^a Contrast category is non-Hispanic White^b N = 1,154; Unweighted scores obtained in 8th/9th grade.

important contribution in the prediction of depression. Comparison of the coefficients for ethnicity shown in model 1 with those in subsequent models allows estimation of the contribution of each personal resource to observed ethnic differences in depression. Only mastery appreciably alters the observed relationships between ethnicity and depression. Controlling for mastery (equation 5) reduces the coefficients for both "other" Hispanics and African Americans (relative to whites) to non-significance. Indeed, the magnitude of the coefficient declines by just over 41 percent and more than 46 percent for "other" Hispanics and African Americans, respectively. When all personal resources are considered simultaneously (equation 7), all but assertion of autonomy make significant independent contributions. Moreover, these resources account for a substantial 15 percent increase in explained variance compared to equation 1. Interestingly, when all personal resources are considered together, their effects on ethnic differences in depression become negligible. Those of the remaining resources largely offset the effects of differences in mastery.

However, when the effects of socioeconomic status and social stress are controlled (equations 8 and 9), the magnitude of the coefficients for ethnicity decline substantially com-

pared to equation 7. Stress and socioeconomic status account for 96 percent, 65 percent, and 82 percent of the difference between white non-Hispanics and Cubans, "other" Hispanics, and African Americans, respectively. This suggests that ethnic variations in depression are substantially explained by concurrent variations in economic status and, primarily, in stress exposure.

The final equation (10) adds a control on prior depressive symptoms. Because this analysis is only possible for a reduced sample, the resulting coefficients are not directly comparable with prior models. These results indicate that all personal resources, other than the assertion of autonomy, independently predict changes in depressive symptoms over the 6 to 7 year interval between assessments.

To assess the possibility of stress buffering effects, additional regression analyses were conducted. All possible interactions between personal resources and stress were examined, the results of which are presented in Table 4. Moderating (buffering) effects are observed for each of the personal resources studied. It is noteworthy that these associations were not observed in analyses predicting scores on the 20-item CES-D. Apparently, inclusion of depression items that are confounded with per-

TABLE 4. 13-Item CES-D Regressed on Gender, Socioeconomic Status, Ethnicity, Personal Resources, Stress, and Stress \times Resource Interactions (N = 1,767)

	Model 1	Model 2	Model 3	Model 4	Model 5
Female	1.09***	1.07***	1.10***	1.08***	1.08***
Socioeconomic Status	-.21*	-.20*	-.18*	-.20*	-.20*
Cuban American ^a	-.01	.01	.00	-.00	.00
Other Hispanic ^a	.17	.17	.16	.20	.19
African American ^a	.07	.12	.10	.13	.09
Mattering ^b	-.09**	-.12**	-.12**	-.12**	-.12**
Emotional Reliance ^b	.06**	.06**	.06**	.06**	.06**
Assertion of Autonomy ^b	-.02	-.02	-.02	-.03	-.02
Mastery ^b	-.07***	-.06***	-.07***	-.06**	-.08***
Self-Esteem ^b	-.18***	-.19***	-.18***	-.19***	-.14***
Stress (Operant Burden)	.88***	.90***	.95***	.83***	.86***
Stress \times Mattering	-.14***				
Stress \times Reliance		.09**			
Stress \times Autonomy			-.06*		
Stress \times Mastery				-.08***	
Stress \times Self-Esteem					-.15***
Constant	1.31	1.33	1.37	1.26	1.30
R ²	.29	.28	.28	.29	.30

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed)

Note: Presented are unstandardized OLS regression coefficients. Data are weighted to reflect the gender and ethnicity population distribution and to correct for socioeconomic status bias among females. Stress (resource interaction terms are unchanged by adjustment for CES-D at Wave 3.

^a Contrast category is Non-Hispanic White

^b Centered around its sample mean

sonal resource measures limits the possibility of detecting conditional relationships.

The question of whether the role or significance of personal resources differs by ethnicity was initially addressed through within group analyses presented in Table 5. Comparison of results from these separate analyses suggests somewhat different conclusions with respect to different ethnic groups. Only gender and stress are significant across all groups. Additionally, mastery is significantly associated with depression for Cuban Americans, while mastery, self-esteem, and socioeconomic status are significant among "other" Hispanics. All personal resources, except for mastery, are significant in analysis of the African American sample, while only self-esteem and mattering achieve significance among non-Hispanic whites.

These differences can be taken as generally representative of contrasts that would be observed across individual studies that focus on a single ethnic group. However, additional analyses revealed that these differences are more apparent than real. Of the 16 ethnic contrasts in the significance of personal resources implied by the results in Table 5, apparent differences are statistically significant in only two instances: the assertion of autonomy difference between Cuban and African Americans and the self-esteem difference between Cuban Americans and non-Hispanic whites. Consideration of ethnic variations in the stress buffering effects of resources (second order interactions) indicated only two significant differences out of 30 possible contrasts. The stress buffering effect of both mastery and

mattering are more pronounced for white non-Hispanics than for African Americans.

There seems to be grounds for urging caution in drawing conclusions regarding ethnic differences in risk and protective factors from comparisons of the results of within group studies. Results presented in Table 5 suggest that similarities across ethnicity outweigh differences, at least with respect to the mental health significance of the personal resources considered.

CONCLUSION

The starting points for this paper were the dual assumptions that (1) coping resources matter for psychological well-being, and (2) variations in these resources, such as exposure to social stress, are importantly conditioned by one's contemporary and developmental circumstances. In conducting this research, we have considered a wider array of personal resources than is usually employed in such research efforts.¹

Our results provide strong evidence for the role of personal resources in conditioning risk for depressive symptoms. Considered both separately and collectively, each resource contributed to the prediction of depressive symptomatology. In addition, clear stress buffering effects were observed for all five dimensions, demonstrating that personal resources can importantly moderate the translation of social stress into psychological distress.

The findings also highlight some of the complexities inherent in making multi-ethnic

TABLE 5. 13-Item CES-D Regressed on Gender, Socioeconomic Status, Personal Resources, and Stress by Ethnic Group

	Cuban Americans Model 1	Other Hispanics Model 2	African Americans Model 3	Non-Hispanic whites Model 4
Female	.90***	1.57***	.98***	.83***
Socioeconomic Status	.07	-.48*	-.24	.00
Mattering	-.09	-.01	-.12	-.21*
Emotional Reliance	.06	.03	.09*	.07
Assertion of Autonomy	.02	.01	-.10*	-.04
Mastery	-.09**	-.09*	-.05	-.01
Self-Esteem	-.06	-.22**	-.19**	-.24***
Stress (Operant Burden)	.87***	1.07***	.89***	1.01***
Constant	6.32	9.85	10.32	11.65
R ²	.25	.27	.28	.35
N	433	446	429	459

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed)

Note: Presented are unstandardized OLS regression coefficients. Data are weighted to correct for socioeconomic status bias among females.

comparisons. The identification of ethnic variations in response tendencies with respect to the CES-D allowed, we believe, more culturally comparable assessment. Given the clear evidence of a reduced tendency among minority and low socioeconomic status adolescents to report mild or infrequent symptoms, we modified our outcome measure to adjust for that bias. This modification revealed significant ethnic variations in depressive symptoms that were otherwise unobservable. Additionally, we identified and attempted to eliminate group-specific confounding between the CES-D and personal resources. Failure to do so can distort ethnic differences in the influence of confounded resources on depression. Moreover, unless confounding is minimized, the stress buffering effects of personal resources can be masked. Consequently, we view both modifications in the measurement of depressive symptoms as important for multiethnic research and, within such research, as important for clarifying the role of personal resources in the stress process.

In addition to measurement issues, our results underscore the appropriateness of utilizing multi-ethnic samples in order to investigate ethnic variations in the availability and influence of personal resources. Specifically, they emphasize the need for caution in drawing conclusions about ethnic differences based on within-group studies. The findings presented here indicate that seemingly discrepant findings across separate analyses often do not represent statistically reliable and thus meaningful differences. In general, our results suggest a high degree of similarity across ethnic groups with respect to the significance of personal resources and their stress buffering effects. This latter fact should not obscure the significance of observed ethnic differences in the overlap between constructs. In fact, these find-

ings reinforce the need for increased attention to the goal of culturally competent assessment.

It should be noted that study participants were young adults in the transition to adulthood who had not yet established their personal locations in the social system. Thus, a different picture might well emerge in analyses of older populations. On the other hand, this sample represents, we believe, the largest cohort of young adults so far studied in the United States. Given the goal of contributing information of utility to prevention efforts and the fact that such efforts tend to be most effectively focused on the young, we view this sample as a highly appropriate one for addressing our research questions. However, a couple of notes of caution are in order. Although the sample is comprised of ethnically diverse and understudied populations, the fact that the ethnic composition is rather unique to South Florida raises a question of the extent to which findings can be generalized to other regions of the country. In addition, our findings may or may not generalize to other disorders and may not exhaust the ways in which personal resources condition risk for mental health and substance problems. Not considered here is the plausible hypothesis that personal resources influence level of exposure to social stress. Future research should examine the role and significance of personal resources for ethnic variations in stress exposure.

NOTE

1. Two other resources, optimism and self-derogation, were also included in preliminary analyses but we omitted them from later models because of a high degree of overlap with other variables.

APPENDIX. Correlation Matrix and Descriptive Statistics of Study Variables (N = 1,767)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) CES-D (20-item)	—														
(2) CES-D (13-item)	.95**	—													
(3) CES-D (4-item) ^a	.29**	.30**	—												
(4) Female	.22**	.25**	.23**	—											
(5) Cuban American	-.05*	-.05*	-.07**	-.00	—										
(6) Other Hispanic	.05*	.05*	.01	.06**	-.33**	—									
(7) African American	.03	.01	.03	-.02	-.32**	-.32**	—								
(8) Non-Hispanic White	-.03	-.01	-.05	-.04	-.33**	-.34**	-.33**	—							
(9) Socioeconomic Stat.	-.11**	-.08**	.01	-.10**	-.10**	-.14**	-.16**	.40**	—						
(10) Stress	.49**	.48**	.24**	.05*	-.04	.02	.13**	-.10**	-.12**	—					
(11) Mattering	-.36**	-.29**	-.09**	.06**	.02	-.02	-.01	.05	.06**	-.24**	—				
(12) Emotional Reliance	.25**	.22**	.05	.11**	-.03	-.02	.09**	-.03	-.09**	.15**	-.07**	—			
(13) Autonomy	-.13**	-.13**	-.07**	-.05*	-.04*	-.03	.24**	-.15**	-.18**	-.02	.06**	-.09**	—		
(14) Mastery	-.43**	-.37**	-.14**	-.07**	.07**	-.07**	-.08**	.08**	.15**	-.29**	.32**	.32**	.04	—	
(15) Self-Esteem	-.43**	-.35**	-.16**	-.09**	.05*	-.06**	.06**	-.05*	.04	-.17**	.40**	-.12**	.22**	.42**	—
Mean or Proportion	13.25	7.94	2.70	.46	.24	.25	.24	.25	-.02	.00	17.15	15.46	10.36	27.58	27.65
Standard Deviation	8.48	6.19	2.94	.49	.43	.43	.42	.43	.87	1.00	2.23	3.14	3.14	4.71	2.85

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

^a Obtained when respondents were in 8th/9th grades; N = 1,154.

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