Direct and Moderating Effects of Community Context on the Psychological Well-Being of African American Women

Carolyn E. Cutrona, **Daniel W. Russell**, **Robert M. Hessling**, **P. Adama Brown**, and **Velma Murry**
Carolyn E. Cutrona, Daniel W. Russell, and Robert M. Hessling, Department of Psychology and Institute for Social and Behavioral Research, Iowa State University; P. Adama Brown, Institute for Social and Behavioral Research, Iowa State University; Velma Murry, Department of Child and Family Development, University of Georgia.

Abstract

The effects of community characteristics on well-being were examined among 709 African American women. Direct and moderating effects of neighborhood characteristics on distress were tested. Aggregate-level ratings of neighborhood cohesion and disorder were significantly related to distress, although the relation between cohesion and distress became nonsignificant when individual risk factors were statistically controlled. Aggregate-level neighborhood variables interacted significantly with individual risk and resource variables in the prediction of distress, consistent with trait-situation interaction theories (D. Magnusson & N. S. Endler, 1977). Community cohesion intensified the benefits of a positive life outlook. Community disorder intensified both the benefits of personal resources and the detrimental effects of personal risk factors. Results showed evidence of resilience among African American women.

Characteristics of the neighborhoods in which people live profoundly affect their daily lives. Neighborhood contexts influence exposure to victimization, the availability of positive and negative role models, the ease with which relationships are formed, and a variety of emotions, attitudes, and behavioral responses that derive from the objective characteristics of people's surroundings (Aneshensel & Sucoff, 1996;Sampson, Raudenbush, & Earls, 1997).

Neighborhood context is believed to affect the course of development, including mental health (Bronfenbrenner, 1986;Jessor, 1992,1993). However, to date relatively little research on mental health has been conducted from a contextual or ecological perspective. Considerably more work has been done on the effects of community context on delinquency, crime, physical health, and parenting practices (e.g., Anderson, Sorlie, Backlund, Johnson, & Kaplan, 1997;Jencks & Mayer, 1990;Jessor, 1992;Jones & Duncan, 1995;Klebanov, Brooks-Gunn, & Duncan, 1994;Leclere, Rogers, & Peters, 1997;Robert, 1998;Sampson, 1992;Sampson et al., 1997).

There is a particular need to study the effects of community context on African Americans. The range of community contexts in which African Americans reside is vast, including the most severely impoverished urban and rural settings as well as middle class and affluent environments. The heterogeneity of African American experiences has been overlooked in

much prior research. A concentration on Black-White comparisons of social, educational, occupational, and psychological functioning has obscured differences within the African American population (Neighbors & Jackson, 1996). There is a pressing need to gain understanding of the wide variations in experiences among African Americans in different social contexts. There are legitimate reasons to question extrapolation from studies of exclusively European American samples to African American individuals. Differences in economic resources, employment opportunities, experiences of racial discrimination, and other factors associated with race may modify the impact of risk and protective factors, including community context, on well being (McLoyd, 1990).

Social disorganization theory is described as a perspective on the mechanisms through which neighborhoods may affect people's mental health, beyond the influence of personal and family resources.

Social Disorganization Theory

It has been argued that community characteristics are nothing more than the accumulation of individual characteristics. However, Sampson (1998) has contended that when people live together in a community, emergent properties develop: characteristics that cannot be predicted from the individual characteristics of the residents. Social disorganization theory seeks to understand the links between neighborhood characteristics and outcomes, such as the frequently observed association between neighborhood poverty and crime (Sampson et al., 1997). The key mechanism thought to underlie the impact of community characteristics is the formation or lack of formation of social ties among neighborhood residents (Sampson, 1992). When structural characteristics of the neighbor-hood make it difficult for neighbors to become acquainted and work together for common goals, a range of negative consequences result.

Sampson (1998) hypothesized three routes through which inhibited social ties lead to negative outcomes: rules, resources, and routines. Although these pathways were originally conceptualized as explaining the relation between neighborhood structural characteristics and criminal or delinquent behavior, we believe they can also be used to explain mental health outcomes. Turning first to rules, when people do not know one another in a community, they do not serve as agents of social control for one another. In such neighborhoods, norms and attitudes may arise that support or tolerate maladaptive or antisocial behavior (e.g., Anderson, 1978;Kornhauser, 1978). Without social monitoring or pressure from others to conform, high-risk behaviors may persist to a greater degree than they would in a closer knit community. High-risk behaviors may lead directly or indirectly to emotional distress via such consequences as unwanted pregnancy, automobile accidents, child injury, or job loss. Turning next to resources, social disorganization theory describes deprivation that results from the absence of bonds between individuals in a community. If a community's structural characteristics, such as high residential turnover or cultural heterogeneity, inhibit the formation of ties with others, residents will have fewer sources of social support than they would in a stable neighborhood where long-term residents from similar cultural backgrounds bond easily with one another. Low levels of social support leave people vulnerable to distress and depression in the wake of negative life events and chronic strains (G. W. Brown & Harris, 1978). When personal bonds are absent, people do not work together to garner needed resources for their community, such as adequate police protection, high quality schools, and access to needed services. The absence of such resources can lead to demoralization. Finally, neighborhood characteristics influence the daily routines of their residents. Neighborhoods that present threats to safety, inadequate public transportation, poor quality housing, high traffic density, and undesirable commercial operations (e.g., adult bookstores and bars) impose a high level of daily strain on residents. Such daily strains are consistently associated with psychological distress (e.g., DeLongis, Coyne, Daykof, Folkman, & Lazarus, 1982).

It should be noted that Leventhal and Brooks-Gunn (2000) derived a similar set of mechanisms to explain the effects of community characteristics on children and adolescents, based on an integration of multiple theories, including social disorganization. Their framework emphasized the influence of norms, institutional resources, and relationships on the behavioral outcomes of youth.

Empirical Evidence of Neighborhood Context Effects on Mental Health

In a probability sample of over 2,400 adults, Ross (2000) found that level of depressive symptoms was significantly higher among residents of economically disadvantaged neighborhoods (i.e., neighborhoods with a high percentage of households below the poverty line and mother-only households). This association retained significance when she controlled for participants' individual characteristics, such as race, age, gender, education, income, and employment status. Ross (2000) found, however, that the relation between neighborhood economic disadvantage and depressive symptoms was mediated by neighborhood social disorder (crime, dilapidation, vagrancy). The relation between neighborhood disadvantage and depressive symptoms was no longer significant when social disorder was also included in the equation. She concluded that economic disadvantage affects depression through its association with social disorder.

Aneshensel and Sucoff (1996) assessed two characteristics of neighborhoods in which adolescents resided: ambient hazards (graffiti, crime, violence, drug use, and dealing) and social cohesion (the sense that neighbors know one another, help each other out, and work together to maintain standards of behavior). When controlling for adolescents' per capita family income, family structure, and race, neighborhood ambient hazards significantly predicted symptoms of depression, anxiety, oppositional defiant disorder, and conduct disorder. Neighborhood cohesion predicted lower levels of adolescent depression. Among rural adults, depressive symptoms were higher among residents of economically depressed communities than among residents of economically secure towns of comparable size (D. J. O'Brien, Hassinger, & Dershem, 1994). Beyond the economic viability of the community, sense of community attachment was negatively correlated with depression and accounted for an additional 20% of the variance, even when controlling for individual level correlates of mental health such as health and age (D. J. O'Brien et al., 1994). Paschall and Hubbard (1998) found that census-based indicators of neighborhood poverty predicted low self-worth among adolescents. Among mothers of low birth-weight infants, the percent of neighborhood residents below the poverty line negatively predicted the use of active behavioral coping, when controlling for family socioeconomic status (SES); however, neighborhood poverty did not significantly predict level of depressive symptoms (Klebanov et al., 1994).

In sum, there is evidence that neighborhood characteristics affect people's well-being, but not all studies support a significant effect of neighborhood context on mental health. More research is needed to clarify reasons for inconsistency among findings.

Moderation of Individual Risk and Resource Factors by Community Context

Discussion has centered thus far on direct effects of community context on psychological well-being, apart from the influence of individual or family characteristics. However, neither community-level nor individual-level factors operate in isolation. Social psychologists have long urged examination of the interactions between traits and situations (e.g., Lewin, 1936). There is a need to examine how different types of risk and resource variables interrelate in a complex "web of causation" (Jessor, 1992;MacMahon, Pugh, & Ipsen, 1960). Discussion turns next to the possibility that characteristics of communities and those of individuals may interact in the prediction of well-being.

G. W. Brown and Harris (1978) articulated a theoretical framework that emphasized the importance of context in determining the impact of stressful events on psychological adjustment. In their model, ongoing life conditions that threaten people's sense of mastery, control, and self-esteem increase vulnerability to depression following negative life events. Chronically stressful conditions provide a backdrop that shapes the meaning of negative events —increasing the probability that events will trigger cognitions of hopelessness. Residence in a neighborhood characterized by widespread poverty, unemployment, and high rates of crime may lead to cognitions of helplessness that are magnified by additional stressors (e.g., arrest of a teenaged child, unemployment) into more severe hopelessness and depression.

Other mental health correlates, such as attitudes and personality, may also be moderated by community context. Steele and Sherman (1999) described the effects of "cultural divides" on personality development and on the behavioral manifestations of personality traits. A cultural divide is a "boundary in society that separates communities whose socioeconomic structures, opportunities for success, conventions, styles, and norms are so different that they have substantially different psychologies" (Steele & Sherman, 1999, p. 395). For example, among very low-income women, years of unmet needs and disappointment at the hands of impoverished parents, romantic partners, and friends often lead to a deep mistrust of others and a fierce sense of independence (e.g., the belief that "I can only count on myself"). However, this sense of self-reliance is manifested differently by those in the context of extreme poverty than by those who live in more advantaged communities. In the context of an environment that offers few economic opportunities or role models of economically successful people, individuals base decisions on short-term rather than long-term considerations. Their environment has provided little evidence that poverty can be escaped, so actions to further the goal of self-reliance (e.g., job training or educational programs) may appear futile (Steele & Sherman, 1999). Community context may moderate the effects of a range of personality traits and attitudes.

Empirical Evidence of Interactions Between Community- and Individual-Level Factors

A single study has examined interactions between community- and individual-level factors in the prediction of mental health. Ross (2000) found no statistically significant interactions between individual-level demographic characteristics and neighborhood characteristics in the prediction of depressive symptoms among adults. However, interactions between community- and individual-level variables have been found in the prediction of other kinds of outcomes. For example, in high-cohesion neighborhoods, youth did not differ in delinquency rates as a function of their parents' marital status; however, in low-cohesion neighborhoods, youth from single-parent homes engaged in significantly more delinquent behavior than those from two-parent homes (Sampson & Groves, 1989). Neighborhood economic disadvantage (e.g., percent of residents below the poverty line) interacted with family income in the prediction of parenting behaviors (Klebanov et al., 1994). Neighborhood economic disadvantage had a stronger negative effect on parenting quality for low-income compared with high-income families.

Current Investigation

The purpose of the current investigation was to investigate the effects of widely differing neighborhood contexts on the psychological well-being of a large sample of African American women. We predicted that neighborhood characteristics would significantly affect well-being, such that women who reside in highly cohesive neighborhoods would experience lower levels of distress than those who reside in neighborhoods where people neither know nor support each other. We predicted that women who reside in economically disadvantaged and disorderly

neighborhoods (characterized by dilapidation and crime) would experience more distress than women in safer and more economically advantaged neighborhoods.

We did not consider the effects of neighborhood context in isolation but in the context of a set of individual-level risk and resource variables that previous researchers have identified as important to the well-being of African American women (e.g., Dressler, 1991;Neighbors & Jackson, 1996). Risk variables included negative life events, economic strain, racial discrimination, interpersonal conflict, and negative affectivity. Resource variables included social support, religiosity, physical health, optimism, mastery, and positive affectivity. We predicted that neighborhood characteristics would explain a significant portion of the variance in African American women's level of distress, beyond this set of individual-level risk and resource variables.

We further sought to examine whether community-level and individual-level characteristics would interact in the prediction of distress. We predicted that community context would moderate the effects of the personal risk and resource variables listed above. We predicted that positive community characteristics (community cohesion) would enhance the mental health advantages of personal resource variables and buffer against personal risk factors. We predicted that negative community characteristics (economic disadvantage and social disorder) would exacerbate the negative mental health consequences of personal risk factors.

Method

Participants

Participants were 733 African American women, all of whom were the primary caregiver for a 10- to 12-year-old child. The women were participants in a large-scale study of African American children and their families, the Family and Community Health Study (FACHS). Most (90%) of the participants were the child's biological mother; 6% were the child's grandmother; 2% were foster or adoptive parents; 1% were other relatives; just under 1% were stepparents; and less than 1% fell into nonrelative categories (e.g., baby-sitter). Missing data reduced our final sample size to 709 women.

Sampling Strategy

A central goal of the larger study was to investigate the effects of neighborhood characteristics on the functioning of adults and children. Thus, we recruited families from neighborhoods that varied on demographic characteristics, specifically racial composition (percent African American) and economic level (percent of families with children living below the poverty line). In selecting neighborhoods from which to draw the sample, we examined neighborhood characteristics at the level of block group areas (BGAs). A BGA is a cluster of blocks within a census tract. The Census Bureau strives to use naturally occurring neighborhood boundaries when constructing BGAs. For the 1990 census of the population, BGAs averaged 452 housing units or 1,100 people. A typical census tract contains four or five BGAs. Using 1990 census data, block group areas (BGAs) were identified in both Iowa and Georgia in which the percent of African American families was high enough to make recruitment economically practical (10% or higher) and in which the percent of families with children living below the poverty line varied widely.

Recruitment strategies differed in Georgia and Iowa. In Georgia, sampling procedures were similar to those used in earlier investigations of African American families (Brody & Flor, 1997,1998). BGAs in northeast Georgia that excluded inner-city Atlanta and met the criteria for racial composition and extent of poverty were identified. We drew from small towns and rural areas in 12 counties. All but two of the counties had populations of 30,000 or less. To

sample affluent African American neighborhoods, we also drew some of our participants from Athens and from suburbs of Atlanta.

Within each BGA, community members who agreed to serve as liaisons between the University of Georgia researchers and the neighborhood residents were identified. These community liaisons compiled rosters of children within each BGA who met the sampling criteria. In addition to their own direct knowledge, the liaisons used information from parents, teachers, pastors, youth groups, and community organizations in compiling the rosters. Families were then randomly selected from these rosters and contacted to determine their interest in participating in the research project. Families who declined participation were removed from the rosters, and other families were randomly selected until the required number of families from each BGA had been recruited.

In Iowa, we first identified BGAs that met the criteria for percent African American residents, all of which were in two urban areas: Waterloo, with a population of 65,000, and Des Moines, with a population of 193,000. Families with African American children between the ages of 10 and 12 were identified through the public schools, who provided us with the names and addresses of all African American students in grades four through six. A very small percentage (3%) of African American students in Iowa attended nonpublic schools in 1996/97 (Iowa Department of Education, 1998), so we believe that this strategy did not significantly bias our sample.

Respondents were reimbursed $100 for participating in the study. Recruitment rates did not differ significantly across states or sites. Across sites, recruitment of eligible families whom we were able to locate ranged from 61% to 68%. Low-income and minority populations are somewhat more difficult to recruit and retain in research samples than higher income and majority populations (Krohn & Thornberry, 1999;Vernon, Roberts, & Lee, 1984). Our recruitment rate was similar to that achieved in the National Survey of Black Americans (Jackson, 1991), which recruited a national probability sample of African American adults.

Representativeness and Variability of the Neighborhood Clusters

Given the sampling strategy described above, an issue that arises concerns the extent to which the selected neighborhoods show sufficient variability on characteristics such as community economic disadvantage. A lack of variability among the neighborhoods selected for inclusion could be cited if analyses indicate that neighborhood characteristics are not significant predictors of outcome variables. To evaluate this possibility, we conducted analyses in Iowa and Georgia that compared census tracts included in the FACHS sample with census tracts in each state that were not included in the FACHS sample on average family income, on the basis of 1990 census data. For Iowa, no significant differences were found between included and excluded census tracts. For Georgia, average family incomes were found to be lower among the census tracts included in the FACHS sample than among excluded census tracts. The family income difference in Georgia was due to an underrepresentation of high-income census tracts (i.e., $45,000 or higher in 1990 income) among the FACHS neighborhoods. Thus, in Georgia the highest income census tracts are underrepresented. However, the FACHS sample includes large numbers of both lower- and middle-class census tracts from Georgia. We thus believe that our sampling strategy yielded a representative set of neighborhoods, with sufficient variability on economic status to allow the detection of significant relations between neighborhood characteristics and outcome variables.

Interview Procedure

Prior to initiating data collection, focus groups of African American women who lived in neighborhoods similar to those targeted in the study examined and critiqued sections of the

interviews. Participants offered suggestions for modification of items that they viewed as culturally insensitive, intrusive, or unclear. All interviewers for both the pretest and data collection phases were African American. Most resided in or near the communities where the study was conducted. Interviews were conducted in participants' homes or, if the family preferred, in a convenient location near their home (e.g., library, school, church).

A wide range of questionnaires was administered to participants. The current study included variables relevant to neighborhood quality, stressful life events, personal characteristics, coping, social support, participation in religious activities, and psychological well-being. Measures were administered via computer assisted personal interviews (CAPI). Interview questions appeared in sequence on the computer screen and were read aloud to the participant, who could also see the screen. Interviewers entered responses into the computer immediately following each question.

Creation of Neighborhood Clusters for Multilevel Analyses

The families in our sample were nested within 259 BGAs. Experts in hierarchical linear modeling typically recommend a minimum of 15 participants per group for multilevel data (Bryk & Raudenbush, 1992). Although seven of the BGAs represented in our sample contained 15 or more study families, the vast majority contained fewer than five families. Thus, there were not enough study families nested within most of the BGAs to allow for hierarchical linear modeling of community contextual effects. We addressed this problem by using cluster analysis to combine geographically proximal BGAs with similar socioeconomic characteristics into larger community contexts.

We used five census variables to perform the cluster analysis: average per capita income, proportion of households that were female-headed, proportion of persons on public assistance, proportion of households below the poverty level, and proportion of unemployed men. Previous studies have used some combination of these variables to assess community SES (Sampson et al., 1997;Sucoff & Upchurch, 1998), and an exploratory factor analysis indicated that these variables loaded on a single factor for the BGAs in our sample. We performed the cluster analysis using Ward's minimum-variance method, which is available within the SAS Cluster program. This method tends to join clusters with a small number of observations and is strongly biased toward producing clusters with roughly the same number of observations (*SAS/STAT User's Guide*, 1990).

The cluster analysis was performed separately for various geographic areas within Iowa and Georgia. The city of Des Moines, for example, was divided up into four sectors, and a cluster analysis was completed for the BGAs within each of these sectors. This approach was designed to identify clusters of BGAs that were close to one another geographically as well as similar in socioeconomic circumstances.

Our analysis identified 21 clusters in Iowa and 20 in Georgia, for a total of 41 clusters. Twenty-two families could not be assigned to a cluster. In our sample of African American primary caregivers, the number of study families in a cluster ranged from 4 to 56, although the vast majority of clusters (N = 31) contained between 15 and 30 families. The BGAs in a cluster were not always contiguous. Therefore, a cluster did not represent a neighborhood in the usual sense of the term. Rather, each cluster consisted of a collection of BGAs or neighborhoods of comparable SES that shared a similar location within a particular city, town, or rural area. Thus, the neighborhoods within a cluster shared a common set of socioeconomic and geographic circumstances. Given these commonalities, the study families assigned to a particular cluster were considered to be living within roughly similar community contexts.

Measures

Neighborhood-Level Variables

Census-based—An index of community economic disadvantage was computed for each cluster, on the basis of 1990 census data. We used the same five variables that were used in the cluster analysis to combine BGAs to compute this index (percent below the poverty line, percent receiving public assistance income, percent single mothers, percent male unemployment, and mean per capita income). The mean for each of the BGAs within each cluster was computed for each of the five economic variables. We then summed the standardized means to create an aggregate economic disadvantage score for each cluster.

Questionnaire-based—Two additional indices of neighborhood quality were computed, on the basis of respondents' answers to questions about their neighborhood. These indices were community disorder and community cohesion. Community disorder combined responses from two scales developed for this project: Community Dilapidation and Community Deviance. The Community Dilapidation scale consisted of five items, including whether children in the neighborhood have nowhere to play but the street, whether the closest playground is well-maintained, and the extent to which each of the following presents a problem in the respondent's neighborhood: trash or broken glass on the streets, graffiti on buildings and walls, and vacant or deserted buildings. The Community Deviance scale consisted of four items regarding deviant or antisocial behavior in the neighborhood. Items asked the extent to which each of the following is a problem in the respondent's neighborhood: drinking in public, people selling or using drugs, groups of people hanging out and causing trouble, and gang violence. Community Dilapidation and Community Deviance correlated .65. Therefore, they were standardized and added together to form an index of community disorder. Using R. M. O'Brien's (1990) method for computing the reliability of aggregate-level variables on the basis of individual-level ratings (i.e., inter-rater agreement), we found that reliability was .79 for community disorder.

Community cohesion was measured with the Social Ties scale. Five of the 15 items were taken from the Social Cohesion and Trust Scale developed by Sampson et al. (1997). An additional 10 items were written for this project. Items asked the respondent whether or not (a) neighbors get together to deal with local problems; (b) their neighborhood is close knit; (c) there are adults in the neighborhood children can look up to; (d) people are willing to help their neighbors; (e) people do not get along (reverse scored); (f) people provide social support to each other (three items); (g) people share the same values; (h) people can be trusted; (i) people do favors for each other; (j) people watch over each others' property when they are away; (k) and the number of friends the respondent has in the neighborhood. Using R. M. O'Brien's (1990) method for computing the reliability of aggregate-level variables on the basis of individual-level ratings (i.e., inter-rater agreement), we found that reliability was .69 for community cohesion.

Both community disorder and community cohesion scales were aggregated at the level of neighborhood clusters. The mean for each variable was computed for all respondents within each cluster. These aggregate-level values were used in all analyses rather than participants' individual assessments of their neighborhood.

Individual-Level Variables

Psychological distress—The outcome variable in this study was level of psychological distress. Psychological distress was assessed with two subscales from the Mini-Mood and Anxiety Symptom Questionnaire (Mini-MASQ; Casillas & Clark, 2000). The subscales analyzed for this study were General Distress, an eight-item scale designed to assess nonspecific symptoms of depression and anxiety, and Anxious Arousal, a 10-item scale

designed to assess somatic symptoms that are relatively specific to anxiety, such as shakiness, dizziness, or sensations of being short of breath. All items asked about the intensity of each symptom in the past week. The subscales were combined into a single psychological distress scale. Using Nunnally's (1978) formula for calculating the reliability of a linear combination of measures, we found that reliability of this composite measure was .95.

For purposes unrelated to the current study, participants were administered a structured psychiatric diagnostic interview, the University of Michigan Composite International Diagnostic Instrument (UM-CIDI; Kessler, 1991). The psychological distress score was much higher among those who met criteria for a current psychiatric diagnosis than among those who did not, $t(708) = 8.54$, $p < .001$, providing evidence of the scale's validity.

Demographics—Demographic variables included participant age, education, and marital status. Although it would have been desirable to include income as a demographic variable, a large number of participants refused to answer some or all of the income questions. Rather than imputing missing values, we chose to rely on education as an index of SES.

Factor Analysis of Individual-Level Psychosocial Predictor Variables

Individual-level predictor variables included measures of various types of life events and chronic stressors, relationship quality, perceived physical health, attitudes toward the future, religiosity, and personality characteristics. Initial analyses indicated that a number of the individual-level psychosocial predictor variables were highly correlated with one another. To lessen the effects of multicolinearity on the results, we conducted an exploratory factor analysis to form a smaller number of less highly correlated variables. We used principal axis factor extraction followed by a varimax rotation of the extracted factors. Prior to rotation, four factors were extracted that had eigenvalues greater than 1.0. Factor 1, which was labeled *Outlook*, involved the measures of optimism and sense of control; this factor accounted for 11% of the variation in the measures after rotation. Factor 2, which was labeled *Resources*, involved the measures of health, positive affectivity, and religiosity; this factor accounted for 10% of the variation in the measures. Factor 3, which was labeled *Negative Events*, included the measures of negative life events, financial strain, and discrimination; this factor accounted for 7% of the variation in the measures. The final factor, which was labeled *Relationships*, included the measures of social support and relationship conflict (which loaded negatively); this factor accounted for 5% of the variation in the measures. All of the individual-level measures except negative affectivity showed evidence of simple structure, by loading highly on only one of the factors. By contrast, negative affectivity loaded moderately (from .31 to .33 in magnitude) on three of the factors (Outlook, Resources, and Relationships). As a consequence, negative affectivity was kept in the analyses as an individual predictor variable. Scores representing the other factors were computed by first standardizing the variables that loaded highly on each factor and summing them together. Reliability of the resulting factor scores ranged from .75 to .94. As expected, the correlations among the factors were generally low to moderate, ranging from .11 to .30 in absolute value. Negative affectivity correlated from .20 to .40 in absolute value with the four factor scores.

Description of Factors

Personal outlook—Two variables loaded on the Personal Outlook factor, perceived control and optimism. Perceived control was assessed with the 7-item Mastery scale developed by Pearlin, Menaghan, Lieberman, and Mullan (1981). We assessed optimism about the future with the Life Orientation Test (LOT; Scheier & Carver, 1985). Using Nunnally's (1978) formula for the reliability of a linear combination of measures, we found that reliability for the composite Personal Outlook measure was .81. Regarding validity, these two measures correlated positively with positive affectivity and negatively with distress (*ps* < .01).

Resources—A rather diverse set of constructs loaded on the Resources factor, including positive affectivity, religiosity, and self-rated physical health. We assessed positive affectivity with the Positive Temperament subscale of Clark and Watson's (1995) Brief Temperament Survey. A sample item is: "People think I am a pretty enthusiastic person." Regarding validity, the scale correlated negatively with negative affectivity and positively with optimism and mastery (all $ps < .01$). Religious beliefs and participation in church activities are an important aspect of coping among African American women (Dressler, 1991). Our religiosity measure tapped both the importance of religious beliefs in daily life (2 items) and frequency of participation in church-related events (5 items). The measure was created for this project. Turning next to physical health, we administered two items from the Rand SF 36 Health Survey (Hays, Sherbourne, & Mazel, 1993). The first item asked the respondent to rate her current health, and the second item asked the respondent to compare her current health to that of 1 year ago. Regarding validity, both religiosity and physical health correlated negatively with distress and positively with positive affectivity (all $ps < .01$). Using Nunnally's (1978) computational procedure, we found that the reliability of the composite Resources measure was .91.

Negative events—Three variables loaded on the Negative Events factor: severe life events, financial problems, and experiences of racial discrimination. We assessed number of relatively severe negative life events in the past 12 months with a 29-item checklist that included events such as criminal victimization or serious illness or injury to self or an immediate family member. We assessed chronic and acute financial problems with a set of 32 items developed by Conger and Elder (1994). These items tap specific needs that cannot be met because of financial hardship (e.g., not enough money to buy the food we need), the general perception that financial resources are insufficient, specific ways the family has tried to economize to lessen their financial problems (e.g., reduced or eliminated medical insurance because of financial need), and specific negative financial events in the previous 12 months (e.g., cut in wages, layoff from work). Regarding validity, the sum of the financial strain measures correlated negatively with gross household income among participants who provided income information ($p < .01$).

We assessed negative experiences based on racial discrimination, an important source of stress among African Americans (Jackson et al., 1996), with a scale developed for this study, the Experiences of Discrimination Scale. Respondents were asked to indicate how often they experienced 13 different types of racially based discrimination (e.g., "How often has someone suspected you of doing something wrong just because you are African American?") Regarding validity, the scale correlated significantly with distress and severe life events ($ps < .01$). Using Nunnally's (1978) computational procedure, we found that the reliability of the composite Negative Events measure was .89.

Relationships—Two scales loaded on the Relationships factor: perceived social support from network members and perceived conflict and burden imposed by network members. We assessed perceived social support from key members of the social network with a scale adapted from Cohen and Hoberman (1983). Two items tapped perceived emotional support, and one item tapped perceived tangible support. These three items were asked regarding each of three persons: spouse/romantic partner, closest friend, and closest relative. We assessed perceived burden and conflict with each key network member with two items. Using Nunnally's (1978) computational procedure, we found that the reliability of the composite Relationships measure was .78.

Negative Affectivity

We administered the Negative Temperament subscale of Clark and Watson's (1995) Brief Temperament Survey to tap negative affectivity. A sample item is, "Little things upset me too

much." Coefficient alpha was .85 for this scale. The scale's validity is evidenced by significant negative correlations with optimism, mastery, and positive affectivity (all *ps* < .01).

Data Analyses

Each participant was nested within a neighborhood or cluster. One problem this creates for standard data analysis procedures, such as ordinary least squares regression, is that the sample violates the assumption that each participant is independent of all other participants. That is, to the extent that persons within neighborhood clusters resemble one another and differ from persons in other clusters, the sample cannot be viewed as representing a simple random sample from the population. Such nonindependence of members of the sample tends to reduce the error terms that are used in testing the significance of predictor variables, which in turn leads to a bias in the tests of significance that are conducted for the individual-level variables (see discussion by Kreft & de Leeuw, 1998;Snijders & Bosker, 1999).

One goal of the analyses was to correct the tests of significance for the individual-level variables for the bias that was created by this lack of independence. A second goal of the analyses was to simultaneously examine the relationship between the individual-level and community-level variables as predictors of distress. A final goal was to test whether or not the individual-level and community-level variables interacted in the prediction of distress.

To address these issues, we analyzed the data using a multilevel approach to the data, as operationalized by the Proc Mixed procedure provided by the SAS statistical package (Littell, Milliken, Stroup, & Wolfinger, 1996). In addition to permitting the simultaneous examination of both individual-level and community-level predictors of the dependent variable, this procedure also corrects for nonindependence of the observations in testing the effects of the individual-level variables on the dependent variable. As noted by Singer (1998), results derived from the Proc Mixed procedure are very similar to those derived from the Hierarchical Linear Modeling program developed by Bryk, Raudenbush, and Congdon (1996).[1]

Results

Descriptive Statistics

Descriptive statistics were computed for the census-based characteristics of the neighborhood clusters (see Table 1). The clusters differed significantly on all of the census-derived variables. For example, the clusters ranged from 2% to 70% of families with incomes below the poverty line. Most striking were the high rates of male unemployment across clusters, which ranged from 30% to 75%, with a mean and median of 52%.

The mean age of study participants was 36.8 years (*SD* = 8.25), and the modal education level was a high school diploma (44%). Education level ranged from less than high school (20%) to graduate training (3%). Although income information was requested, only 532 respondents (73%) provided the information. Among those who responded to the income questions, mean per capita income (gross household income divided by number of household members) averaged $7,315 in Iowa (*SD* = $6,102) and $7,673 in Georgia (*SD* = $7,928). To judge the representativeness of our sample, we compared these means to 1990 census figures for mean per capita income data among African Americans in Iowa and Georgia, respectively. After adjusting the census means for inflation, we found that in both Iowa and Georgia, our sample means were approximately $1,500 less than those for the general population of African Americans in the two states. Thus, in both states, our sample's mean income was somewhat lower than that of the average African American resident. Our analysis indicated that the most

---

[1]Analyses of the data using the HLM program revealed very similar results.

disadvantaged participants in our sample were the most likely not to respond to the income questions. Thus, the actual difference between the average income of African Americans in Iowa and Georgia and our sample may be greater than $1,500. Our sample therefore appears to be biased toward lower income families.

Means and other summary statistics for the individual-level risk and resource variables are shown in Table 2. Mean level of distress was quite low. The mean for our sample was significantly lower ($p < .001$) than that for a sample of college undergraduates (Casillas & Clark, 2000).[2] On average, women in our sample scored about two points lower on the LOT optimism scale than did female college undergraduates (Scheier & Carver, 1985) and non-depressed community and student women (McDermut, Haaga, & Bilek, 1997), but they scored several points higher than dysphoric and depressed women (McDermut et al., 1997).[3] Turning to stressful life events, women had experienced few severe life events but scored moderately high on financial strain and experiences of racial discrimination. Mean positive affectivity level was comparable to that for community dwelling adults with no diagnosable psychiatric disorder and was higher than that for low-back-pain patients and individuals who suffered from recurrent episodes of depression (Clark & Watson, 1999). Similarly, mean negative affectivity level was comparable to that for community dwelling adults with no diagnosable psychiatric disorder and was lower than that for patients suffering from low back pain and recurrent depression (Clark & Watson, 1999).

Correlations were computed among the community-level variables. The most highly correlated were economic disadvantage and disorder, r(39) = 0.66, $p < .001$. Economic disadvantage did not correlate significantly with community cohesion, $r(39) = -.25$, $p > .10$. Community cohesion and disorder correlated -.55 ($p < .001$).

Correlations were also computed between the community-level and individual-level variables (see Table 3). The individual-level variables were first aggregated into a mean score for each cluster. Correlations were thus computed among community-level aggregated scores. Significant correlations were found between a number of community and individual characteristics. In communities high on census-based indices of economic disadvantage, positive outlook was low. In communities perceived by their residents as disorderly, positive outlook and relationship quality were low and negative affectivity was high. Most notably, community cohesion correlated significantly with all five of the individual characteris-tics. In communities perceived by their residents as cohesive, positive outlook, relationship quality, and personal resources were high and levels of negative life events and negative affectivity were low.

Effects of the Demographic Variables and State of Residence

An initial set of analyses examined the relations between distress and the demographic variables of age, education, and marital status. Education ($\beta = -.14$) and marital status ($\beta = -.07$) were found to be statistically significant ($p < .05$) predictors of distress.[4] However, subsequent analyses indicated that these variables were no longer significant predictors in the context of the other individual-level and community-level predictors. Furthermore, the results

---

[2]For consistency with other measures in our assessment battery, a 3-point response scale (1-3) was used for the items of the Mini-MASQ, rather than the 5-point response scale (1-5) used by the scale's authors. For comparability across studies, we calculated the summary statistics in Table 2 for the Mini-MASQ as though we had administered the usual 5-point response options. The following formula works for any scale where the lowest value is 1: Rescaled item = x + (n - 1)× (z/y); x = bottom point of the scales; n = point on "shorter" scale; y = # of intervals on shorter scale; z = # of intervals on longer scale.

[3]For consistency with other measures in our assessment battery, a 4-point response scale (1-4) was used for the items of the LOT, rather than the 5-point response scale (0-4) used by the scale's authors. For comparability across studies, we calculated the summary statistics in Table 2 for the LOT as though we had administered the usual 5-point response options. The formula is shown above in footnote 2.

[4]These standardized beta weights were computed using the procedure described by Hox (1995).

for these latter variables were not affected by controlling for these demographic variables. Therefore, demographic variables were not included in the subsequent analyses.

A second set of preliminary analyses examined whether results differed for participants who resided in Iowa versus Georgia. State of residence was not a significant predictor of distress, nor did it interact with any of the other predictor variables in the prediction of distress. Therefore, state was not included in the subsequent analyses.

Linear Effects of the Individual- and Community-Level Variables

The next set of analyses was designed to examine the relation between distress and the set of individual-level (i.e., outlook, relationship quality, negative events, resources, and negative affectivity) and community-level (i.e., economic disadvantage, community cohesion, and community disorder) variables. Correlations between each of these variables and distress are presented in the first column of Table 4. It should be noted that the nonindependence in the data has been taken into account in evaluating the statistical significance of the correlations involving the individuallevel variables.

Turning first to the community-level variables, lower levels of cohesion and higher levels of community disorder were associated with higher individual levels of distress. The census-based index of economic disadvantage did not correlate significantly with distress. All of the individual-level variables were significantly related to distress. As expected, having an optimistic outlook, more positive social relationships, and greater personal resources predicted lower distress. By contrast, experiencing more negative life events and higher levels of negative affectivity predicted higher levels of distress.

To evaluate the independent effects of the individual-level and community-level variables, we conducted a multilevel regression analysis using both sets of variables to simultaneously predict feelings of distress. Because of the small number of participants in two of the neighborhoods (i.e., 4 and 5 participants) relative to the number of predictor variables, these neighborhoods were not included in the analyses, resulting in a sample of 700 participants across 39 neighborhoods. Overall, the variables were found to be highly significant predictors of feelings of distress,; $\chi^2(19, N - 700) = 353.51, p < .001$. The procedure for computing modeled variance in multilevel models described by Snijders and Bosker (1994,1999) was used in calculating the variance in distress that was explained by the neighborhood-level and individual-level predictors. One component of the variance in distress, corresponding to between-group variation, reflects differences between the neighborhoods in the average distress reported by the study participants who resided in each neighborhood. Neighborhood characteristics that were included in the multilevel model accounted for 54% of this between-neighborhood variation. The second component of the variance in distress, corresponding to within-group variation, reflects differences between study participants who resided in a given neighborhood from the average distress reported in that neighborhood. Individual characteristics that were included in the multilevel model accounted for 43% of this within-neighborhood variation.

As shown in Table 4, when controlling for all the individuallevel variables, only one of the community-level variables, community disorder, was found to be a significant predictor of differences between the neighborhoods in the level of distress. As expected, higher levels of distress were found in neighborhoods where residents reported higher levels of community disorder.[5]

Results for the individual predictor variables are also presented in Table 4. It should be noted that we calculated the standardized beta weights for the individual predictor variables using the procedure for multilevel models described by Hox (1995). All of the individual-level

variables were found to be statistically significant predictors of distress, after controlling for associations among the variables. The results therefore suggest that having an optimistic outlook, higher quality relationships with others, and greater personal resources are negatively associated with feelings of distress, whereas experiencing more negative events and having higher levels of negative affectivity are positively associated with feelings of distress. In addition, community-level social disorder was significantly related to feelings of distress, net of the individual-level variables.[6]

Interactions Between Individual-Level and Community-Level Predictors

We conducted the next analyses to evaluate whether or not the individual- and community-level variables interacted in the prediction of distress. This is what is often termed a *slopes as outcomes* analysis, in which the question being examined concerns whether or not the relationship between the individual-level variables and the dependent variable varies as a function of each community characteristic. One problem that arises in such a multilevel analysis concerns colinearity among the interaction terms that are formed between the individual-level and community-level variables. As discussed by Kreft and de Leeuw (1998), such high levels of colinearity can negatively affect the stability of the results. They recommend examining each interaction term in isolation, in order to minimize the effects of multicolinearity on the results of the analyses.

On the basis of their suggestions, we examined each of the 15 interaction terms (i.e., five individual-level variables by three community-level variables) individually, conducting a series of analyses in which each interaction term was tested separately, controlling for all of the predictor variables shown in Table 4. In conducting the analyses in this way, we were examining whether or not each interaction was statistically significant, net of the main effects or linear terms associated with the five individual-level and three community-level variables.

None of the interaction terms involving the community-level variable of economic disadvantage was found to be statistically significant. For the community-level variable of cohesion, the interaction with the individual-level variable of outlook was found to be statistically significant, $t(655) = -2.62$, $p < .01$. As can be seen in Figure 1, the effect of a positive outlook on distress was minimal in low-cohesion neighborhoods. The effect of a positive outlook was stronger in high-cohesion neighborhoods. High neighborhood cohesion appears to play a facilitation role, intensifying the benefits of a positive outlook on psychological well-being. Community disorder also interacted with individual-level outlook in predicting distress, $t(655) = -3.45$, $p < .001$. These results are plotted in Figure 2. In low-disorder neighborhoods, the effect of a positive outlook on distress was minimal. By contrast, the effect of a positive outlook on distress was relatively strong in high-disorder neighborhoods. In high disorder neighborhoods, a positive outlook appeared to play a protective or buffering role against distress. The interaction between community disorder and quality of relationships was also statistically significant, $t(655) = -2.36$, $p < .05$. Figure 3 presents these results. In low-disorder neighborhoods, relationship quality was virtually unrelated to distress. However, in high-disorder neighborhoods, relationship quality had a strong negative association with

distress. High-quality relationships appeared to play a protective or buffering role in disorderly neighborhoods. Finally, a highly significant interaction was found between community disorder and negative affectivity, $t(655) = 4.64$, $p < .001$. As can be seen in Figure 4, negative affectivity was strongly positively related to distress in both high- and low-disorder neighborhoods. However, negative affectivity was more strongly related to distress in high disorder neighborhoods.[7]

To summarize the pattern of results, a cohesive neighborhood appeared to intensify the positive effects of a positive personal outlook on mental health. A disorderly neighborhood also intensified the effects of personal attributes on mental health. This intensification occurred for both positive and negative personal attributes. The protective effects of a positive outlook and high quality relationships were stronger in high-than low-disorder neighborhoods. The deleterious effects of negative affectivity on mental health were also stronger in high-compared with low-disorder neighborhoods.

Discussion

Results revealed a complex set of interrelations among community characteristics, individual characteristics, and distress among African American women. It must be emphasized that cause and effect relations cannot be determined on the basis of the cross-sectional data we have analyzed. Additional longitudinal data are needed, in which changes in the environment and concomitant changes in personal characteristics and well-being are tracked. It will undoubtedly be revealed that personal and community factors relate in a reciprocal pattern, which can only be understood by following the lives of individuals and communities over time. Furthermore, it must be emphasized that the associations between community-level variables and distress were consistently weaker than the associations between individual-level variables and distress. This result is consistent with the findings of Leventhal and Brooks-Gunn (2000), who summarized research on the effects of community context on the outcomes of children and adolescents. They concluded that in most instances the neighborhood effects reported are small to moderate and account for only 5% to 10% of the variance in child and adolescent outcomes. No comprehensive review has been published of neighborhood effects on adult outcomes; however, our findings and those of Ross (2000) suggest that neighborhood effects account for a relatively small proportion of the variance in adult mental health.

Contrary to prediction, neighborhood economic disadvantage was not significantly correlated with distress. Economic disadvantage was the only community context variable that was derived from census data rather than from aggregated neighborhood ratings made by study participants. The economic disadvantage variables were drawn from the 1990 census, which was 7 to 8 years out of date at the time of our data collection in 1997-98. Neighborhoods may have changed in degree of disadvantage over that time period. Second, the census data referenced specific block group areas, which may or may not have coincided with people's own definitions of their neighborhood. Nevertheless, our findings are consistent with previous studies that examined adult depression as a function of community-level economic disadvantage, while controlling for individual-level characteristics. Klebanov and colleagues (1994) did not find a significant relation between community-level poverty and depression among mothers of low birth-weight infants after controlling for individual-level demographic

---

[7]Following the procedure described by Snijders and Bosker (1994,1999), we computed the additional variance accounted for in the measure of distress at both the individual and the neighborhood level associated with the inclusion of each of the statistically significant interaction terms in the model. At the individual level, the explained variance increased from 1% to 2% with the inclusion of these interaction terms. At the neighborhood level, the increase in the explained variance ranged from 1 % (Outlook by Neighborhood Disorder) to 6% (Negative Affect by Neighborhood Disorder) relative to the model that included only the main effects of the predictor variables. Therefore, as discussed by Snijders and Bosker (1999), such interaction terms do not necessarily lead to a substantial increase in the explained variation, at either level of the model.

characteristics. Ross (2000) did find a significant relation between community economic disadvantage and depression in a representative sample of midwestern adults when they controlled for individual demographic characteristics. However, economic disadvantage was no longer statistically significant when community disorder was added to the regression equation predicting depression. Ross concluded that economic disadvantage influenced depression through its association with community disorder. Thus, it may be that economic disadvantage per se is not associated with depression among adults. Poor neighborhoods may lead to widespread depression only when they are also characterized by signs of deteriorating order, such as dilapidation, vandalism, and crime (Ross, 2000).

Also contrary to prediction, community cohesion showed a statistically significant zero-order correlation with distress, but this relation was no longer significant when we controlled for community-level disorder and the set of individual risk and resource variables. Two previous studies have examined the relation between community-level cohesion and depression. Neighborhood social cohesion was associated with lower levels of depression among adolescents when the researchers controlled for familylevel characteristics (Aneshensel & Sucoff, 1996). Similarly, among rural adults, sense of community attachment was negatively related to depression when the researchers controlled for individual-level correlates of mental health, including health and age (D. J. O'Brien et al., 1994). Although individual-level demographic characteristics were controlled in these prior studies, neither study controlled for psychosocial variables. In our study, the ability of psychosocial variables to eliminate the association between community-level cohesion and depression suggests that individuals with certain kinds of personal characteristics are instrumental in the formation of cohesive neighborhoods. All of our risk and resource variables correlated significantly with community-level cohesion. For example, persons with high levels of optimism, personal resources, and supportive relationships resided in cohesive neighborhoods. We did not find evidence that neighborhood cohesion was related to depression net of these personal characteristics. Community cohesion appears to reflect the characteristics of individual residents but not to confer benefits on residents' mental health beyond the effects of these characteristics. The one exception to this pattern occurred among women with high levels of Positive Outlook. Among these women, residence in a cohesive neighborhood conferred additional mental health benefits, beyond those conferred by their personal characteristics. This appears to be an example of a good trait-situation fit, in which persons with a specific personal characteristic thrive in a specific environment (Magnusson & Endler, 1977).

Turning next to community social disorder, we controlled for a wide range of individual-level demographic and psychosocial characteristics, social disorder was significantly related to depression. The two previous studies that tested this association also found a significant relation between social disorder and depression when researchers controlled for individual-level characteristics. One of these prior studies was conducted with an adult sample (Ross, 2000), and the other was conducted with adolescents (Aneshensel & Sucoff, 1996). Thus, a consistent but small relation between community disorder and depression is emerging in the literature. We turn to social disorganization theory to explain this association.

Social disorganization theory is based on the premise that when people live together in a community, emergent properties develop, characteristics that cannot be predicted from the individual characteristics of the residents. According to Sampson (1998), these emergent properties involve the rules, resources, and routines that shape people's daily experiences in the neighborhood. Our results suggest that experiences in the neighborhood affect residents' well-being beyond their individual socioeconomic circumstances, personality characteristics, and the kinds of financial and interpersonal negative life events that are indexed by traditional life-stress measures. Although the contribution of neighborhood disorder to mental health is small, its consistency across studies is notable. The current study was not designed to isolate

the specific components of neighborhood disorder that cause demoralization and distress. However, Sampson's (1998) framework suggests several possibilities. Turning first to rules, in the absence of active social control, rules or norms may evolve that permit high-risk behaviors (Anderson, 1978;Kornhauser, 1978). The consequences of these behaviors may add considerable strain to people's lives. We use adolescent childbearing as an example. Consistent evidence supports a link between community characteristics and rates of unprotected sex and childbirth among adolescents, net of individuallevel demographic characteristics (Leventhal & Brooks-Gunn, 2000). Early childbearing sets in motion a cascade of life events and circumstances that impose a high level of strain on women's lives. This strain is manifested many years after adolescence in higher levels of depressive symptoms, compared with women who delay childbearing (Brown, Adams, & Kellam, 1981). Turning next to resources, evidence also suggests significant variation across neighborhoods in access to services. We use child care as an example. The quantity and quality of child care in poor neighborhoods is highly problematic (Fuller, Coonerty, Kipnis, & Choong, 1997). Stressors related to locating high quality affordable child care contribute to demoralization and distress among women. However, this kind of strain is not typically included on traditional life-events measures and thus would not be captured in measures of individual-level stress. Finally, the daily routines of residents are affected by their neighborhood environment. Daily exposure to graffiti, vandalism, crime, noise, trash, and other signs of disorder may lead directly to distress (Ross, 2000). Once again, such strains are not likely to be included in individual-level measures of negative life events.

Moderation of Individual-Level Variables by Context

Perhaps most intriguing were the interactions that emerged between the individual-level and the community-level variables in the prediction of distress. Consistent with Steele and Sherman's (1999) theoretical framework, some traits were manifested differentially as a function of community context. It must be noted that of the 15 interactions tested, only 4 attained statistical significance. The relations of three of the five individual-level characteristics to distress were moderated by community context. Neither the stressful life-events variable nor the personal resources variable interacted with community characteristics. Regardless of neighborhood context, these variables were significantly associated with distress. How can differences among variables in the effect of neighborhood context on their association with distress be explained? It may be that the dimensions of community cohesion and disorder have greater relevance to the variables they moderated than to those they did not moderate. Snyder and Ickes (1985) described the characteristics of "precipitating situations," situations that make salient the influence of a specific trait. Traits are maximally influential when the situation is relevant to the trait, the trait is relevant as a guide to behavior, and the situation permits a choice of responses that people may select on the basis of their location on the trait dimension (Snyder & Ickes, 1985). It may be useful to construe neighborhood contexts as "precipitating situations" for some traits. For example, the negative relation of positive outlook to disorder was stronger in high-disorder than in low-disorder neighborhoods. In high-disorder neighborhoods, outlook for the future may be especially relevant to well-being because the present appears bleak. One's beliefs about the future may be closely linked to distress because hope is tied to a belief that the future will be better than the present. An undesirable neighborhood allows a wide range of beliefs about the future because the information contained in current surroundings is ambiguous with respect to the future. Therefore, in high-disorder neighborhoods, people's dispositional optimism may play a key role in their beliefs about their future and their morale. By contrast, religious beliefs may be equally relevant across neighborhood contexts because beliefs are independent of current circumstances.

Limitations

A number of limitations of the current study should be mentioned. As noted above, the census data, on which the assessment of economic disadvantage was based, were dated, posing a threat to their accuracy. The BGAs that were combined into neighborhood clusters were not all contiguous, so emergent properties of actual neighborhoods may have been distorted by the combination of nonadjacent areas. The sample was composed of only women with a 10- to 12-year-old child, so findings may not be generalizable to a broader spectrum of African American women. Furthermore, women were recruited from neighborhoods with prespecified characteristics that resulted in a sample that was relatively low in SES, again potentially limiting the generalizability of results. Although our neighborhoods did span a wide range of socioeconomic levels, if an even broader range of neighborhoods had been sampled, it is possible that economic disadvantage would have shown stronger effects. Restriction of range may have prevented some relations from attaining significance (see Stoolmiller, 1999). Finally, the relatively low mean level of distress in the sample raises concerns that our sample does not include those women whose distress levels were especially high. Because the time commitment required for participation was considerable, it is possible that the most distressed women felt overwhelmed by the task and thus refused to participate.[8]

The most serious liability is the cross-sectional design of the study. As a consequence, the direction of all bivariate relations is ambiguous. Models in which distress predicts both community perceptions and reports of individual characteristics and experiences are plausible. Community characteristics were always analyzed at the aggregate level, however, so the distress of individual participants should not have biased community evaluations excessively.

It is difficult to dismiss the interactions between individual- and community-level variables in the prediction of distress as artifactual. These interactions were significant when controlling for all of the community and individual linear effects. Thus, mean differences across communities on the individual-level traits cannot explain our findings. It should be remembered, however, that interactions are relatively unreliable and difficult to replicate. Replication in independent samples is needed before much significance is attached to the specific pattern of interactions that we report.

Above all, longitudinal research is needed that follows individuals as they move from one community context to another. Even then, it will be difficult to assign causality because changes in individual circumstances are the most likely causes for moving to a new neighborhood. It will be difficult to disentangle the effects of individual change from change in community environment. Individuals choose and influence their environments and in turn are modified by the environments that they have chosen. Understanding the complexity of such reciprocal relations will provide considerable challenge.

What have we learned about the lives of African American women? Our findings provide empirical evidence that despite poor social conditions, African American women display signs of considerable adaptability and resilience. Certain personal characteristics enable African American women to overcome the deleterious effects of the impoverished and crime-ridden neighborhoods in which they must frequently live. The positive effects of an optimistic outlook, personal resources (religious beliefs, positive affectivity, and physical health) and good interpersonal relationships were stronger in high-disorder neighborhoods, indicating a clear pattern of protection or buffering. African American women also play an active role in

---

[8]Although mean level of distress was low in our sample compared with college student samples, the overall rate of diagnosable mental illness, using the UM-CEDI diagnostic interview (Kessler, 1991), was not significantly different from the overall rate of diagnosable illness found among African American women in the National Comorbidity Study (Kessler et al., 1994). This diminishes the concern over sample bias to some degree.

constructing cohesive neighborhoods, which confer additional mental health benefits on women with a positive outlook.

Although the mental health effects of individual-level variables are stronger than those of neighborhood-level variables, neighborhood factors should not be ignored. Interventions at the community level have the potential to affect many people's lives. Although such interventions may lead to relatively modest improvements in the well-being of individual residents, the overall benefits of improving communities may be highly significant.

References

Anderson, E. A place on the corner. University of Chicago Press; Chicago, IL: 1978.

Anderson RT, Sorlie P, Backlund E, Johnson N, Kaplan GA. Mortality effects of community socioeconomic status. Epidemiology 1997;8:42–47. [PubMed: 9116094]

Aneshensel CS, Sucoff CA. The neighborhood context of adolescent mental health. Journal of Health and Social Behavior 1996;37:293–310. [PubMed: 8997886]

Brody GH, Flor DL. Maternal psychological functioning, family processes, and child adjustment in rural, single-parent African American families. Developmental Psychology 1997;33:1000–1011. [PubMed: 9383622]

Brody GH, Flor DL. Maternal resources, parenting practices, and child competence in rural, single-parent African American families. Child Development 1998;69:803–816. [PubMed: 9680686]

Bronfenbrenner U. Ecology of the family as a context for human development: Research perspectives. Developmental Psychology 1986;22:723–742.

Brown, GW.; Harris, T. Social origins of depression. The Free Press; New York: 1978.

Brown H, Adams R, Kellam S. A longitudinal study of teenage motherhood and symptoms of distress: The Woodlawn Community Epidemiological Project. Research in Community and Mental Health 1981;2:183–213.

Bryk, AS.; Raudenbush, SW. Hierarchical linear models: Applications and data analysis methods. Sage; Newbury Park, CA: 1992.

Bryk, AS.; Raudenbush, SW.; Congdon, RT. HLM: Hierarchical linear and nonlinear modeling with the HLM/2L and HLM/3L programs. Scientific Software International, Inc.; Chicago, IL: 1996.

Casillas, A.; Clark, LA. The Mini-Mood and Anxiety Symptom Questionnaire (Mini-MASQ); Poster presented at the 72nd Annual Meeting of the Midwestern Psychological Association; Chicago, IL. 2000; May.

Clark, LA.; Watson, D. The Brief Temperament Survey (BTS). Department of Psychology, University of Iowa; Iowa City, IA 52252: 1995. Unpublished manuscript

Clark, LA.; Watson, D. The Brief Temperament Survey (BTS): A short form of the General Temperament Survey. Department of Psychology, University of Iowa; Iowa City, IA 52242: 1999. Unpublished data

Cohen S, Hoberman HM. Positive events and social supports as buffers of life change stress. Journal of Applied Psychology 1983;13:99–125.

Conger, RD.; Elder, GH. Families in troubled times. Aldine De Gruyter; New York: 1994.

DeLongis A, Coyne JC, Dakof G, Folkman S, Lazarus RS. Relationship of daily hassles, uplifts, and major life events to health status. Health Psychology 1982;1:119–136.

Dressler, WW. Stress and adaptation in the context of culture: Depression in a Southern Black community. State University of New York Press; Albany: 1991.

Fuller, B.; Coonerty, C.; Kipnis, F.; Choong, Y. An unfair head start: California families face gaps in preschool and child care availability. Berkeley-Stanford PACE Center, Yale University, and the California Child Care Resource and Referral Network: Growing Up in Poverty Project; Berkeley, CA: 1997.

Hays RD, Sherbourne CD, Mazel RM. The Rand 36-item Health Survey 1.0. Health Economics 1993;2:217–227. [PubMed: 8275167]

Hox, JJ. Applied multilevel analysis. TT-Publikaties; Amsterdam: 1995.

Iowa Department of Education. Annual condition of education report: Enrollment. 1998. (on-line) Available: http://www.state.ia.us/educate/publications/coe.html

Jackson, JS. Life in black america. Sage; Thousand Oaks, CA: 1991.

Jackson JS, Brown T, Williams DW, Torres M, Sellers S, Brown K. Perceptions and experiences of racism and the physical and mental health status of African Americans: A thirteen-year national panel study. Ethnicity and Disease 1996;6:132–147. [PubMed: 8882842]

Jencks, C.; Mayer, SE. The social consequences of growing up in a poor neighborhood. In: Lynn, LE.; McGeary, MGH., editors. Inner-city poverty in the United States. National Academy Press; Washington, DC: 1990. p. 111-181.

Jessor, R. Risk behavior in adolescence: A psychosocial framework for understanding and action. In: Rogers, DE.; Ginzburg, E., editors. Adolescents at risk: Medical and social perspectives. Westview Press; Boulder, CO: 1992. p. 19-34.

Jessor R. Successful adolescent development among youth in high-risk settings. American Psychologist 1993;48:117–126. [PubMed: 8442567]

Jones K, Duncan C. Individuals and their ecologies: Analysing the geography of chronic illness within a multilevel modeling framework. Health and Place 1995;1:21–40.

Kessler, RC. UM-CIDI Training Guide for the National Survey of Health and Stress, 1991-1992. University of Michigan, Institute for Social Research; Ann Arbor, MI: 1991.

Kessler RC, McGonagle K, Zhao S, Nelson C, Hughes M, Eshleman S, Wittchen H, Kendler K. Lifetime and 12-month prevalence of DSM-III.-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. Archives of General Psychiatry 1994;51(1):8–19. [PubMed: 8279933]

Klebanov PK, Brooks-Gunn J, Duncan GJ. Does neighborhood and family poverty affect mother's parenting, mental health, and social support. Journal of Marriage and the Family 1994;56:441–455.

Kornhauser, R. Social sources of delinquency. University of Chicago Press; Chicago, IL: 1978.

Kreft, I.; de Leeuw, J. Introducing multilevel modeling. Sage; Thousand Oaks, CA: 1998.

Krohn MD, Thornberry TP. Retention of minority populations in panel studies of drug use. Drugs and Society 1999;14:185–207.

LeClere FB, Rogers RG, Peters KD. Ethnicity and morality in the United States: Individual and community correlates. Social Forces 1997;76:169–198.

Leventhal T, Brooks-Gunn J. The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. Psychological Bulletin 2000;126:309–337. [PubMed: 10748645]

Lewin, K. A dynamic theory of personality. McGraw-Hill; New York: 1936.

Littell, RC.; Milliken, GA.; Stroup, WW.; Wolfinger, RD. SAS system for mixed models. SAS Institute, Inc.; Cary, NC: 1996.

MacMahon, B.; Pugh, TF.; Ipsen, J. Epidemiological methods. Little, Brown; Boston: 1960.

Magnusson, D.; Endler, NS. Personality at the crossroads: Current issues in interactional psychology. Erlbaum; Hillsdale, NJ: 1977.

McDermut, JF.; Haaga, DAF.; Bilek, LA. Cognitive Therapy and Research. 21. 1997. Cognitive bias and irrational beliefs in major depression and dysphoria; p. 459-476.

McLoyd VC. The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. Child Development 1990;61:311–346. [PubMed: 2188806]

Neighbors, HW.; Jackson, JS. Mental health in Black America: Psychosocial problems and help-seeking behavior. In: Neighbors, HW.; Jackson, JS., editors. Mental health in Black America. Sage; Thousand Oaks, CA: 1996. p. 1-13.

Nunnally, JC. Psychometric theory. 2nd ed.. McGraw-Hill; New York: 1978.

O'Brien DJ, Hassinger EW, Dershem L. Community attachment and depression among residents in two rural Midwestern communities. Rural Sociology 1994;59:255–265.

O'Brien RM. Estimating the reliability of aggregate-level variables based on individual-level characteristics. Sociological Methods and Research 1990;18:473–504.

Paschall MJ, Hubbard ML. Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. Journal of Consulting and Clinical Psychology 1998;66:825–831. [PubMed: 9803701]

Pearlin LI, Menagham EG, Lieberman MA, Mullam JT. The stress process. Journal of Health and Social Behavior 1981;22:337–356. [PubMed: 7320473]

Robert SA. Community-level socioeconomic status effects on adult health. Journal of Health and Social Behavior 1998;39:18–37. [PubMed: 9575702]

Ross CE. Neighborhood disadvantage and adult depression. Journal of Health and Social Behavior 2000;41:177–187.

Sampson, RJ. Family management and child development: Insights from social disorganization theory. In: McCord, J., editor. Facts, frameworks and forecasts: Advances in criminological theory. 3. Transaction; New Brunswick, NJ: 1992. p. 63-93.

Sampson, RJ. How do communities undergird or undermine human development? Relevant contexts and social mechanisms; Paper presented at the symposium, Does it take a village? Community effects on children, adolescents, and families; Pennsylvania State University. 1998; Nov.

Sampson RJ, Groves WB. Community structure and crime: Testing social disorganization theory. American Journal of Sociology 1989;94:774–802.

Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. Science 1997;277:918–924. [PubMed: 9252316]

SAS/STAT Users Guide, Version 6. Fourth Edition. 1. SAS Institute; Cary, NC: 1990.

Scheier MF, Carver CS. Optimism, coping and health: Assessment and implications of generalized outcome expectancies. Health Psychology 1985;4:219–247. [PubMed: 4029106]

Singer JD. Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. Journal of Educational and Behavioral Statistics 1998;23:323–355.

Snijders TA, Bosker RJ. Modeled variance in two-level models. Sociological Methods and Research 1994;22:342–363.

Snijders, TA.; Bosker, RJ. Multilevel analysis: An introduction to basic and advanced multilevel modeling. Sage; London: 1999.

Snyder, M.; Ickes, W. Personality and social behavior. In: Lindzey, G.; Aronson, E., editors. Handbook of social psychology. 3rd ed.. Random House; New York: 1985. p. 883-948.

Steele, LM.; Sherman, DA. The psychological predicament of women on welfare. In: Prentice, D.; Miller, D., editors. Cultural divides. Russell Sage; New York: 1999. p. 393-427.

Stoolmiller M. Implications of restricted range of family environments for estimates of heritability and nonshared environment in behavior genetic adoption studies. Psychological Bulletin 1999;125:392–409. [PubMed: 10414224]

Sucoff CA, Upchurch DM. Neighborhood context and the risk of childbearing among metropolitan-area black adolescents. American Sociological Review 1998;63:571–585.

Vernon SW, Roberts RE, Lee ES. Ethnic status and participation in longitudinal health surveys. American Journal of Epidemiology 1984;119:99–113. [PubMed: 6691340]
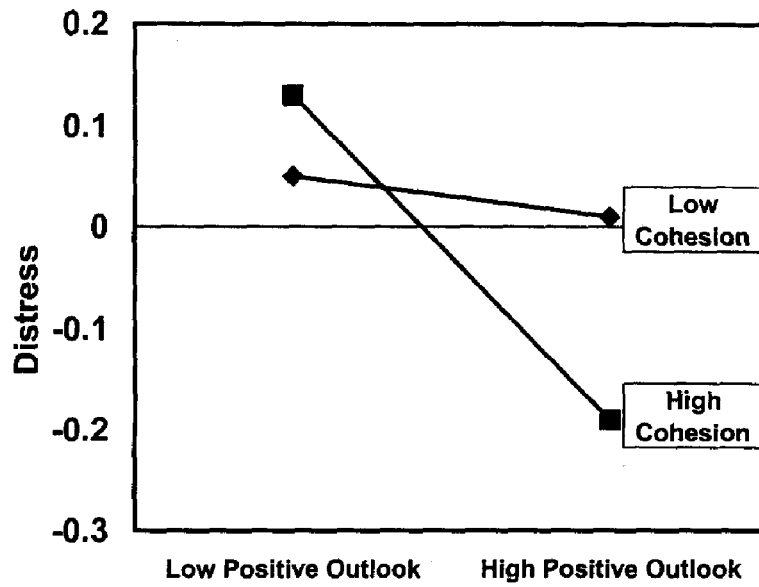
Figure 1.
Moderation of positive outlook by community cohesion in the prediction of distress. Lines are plotted for 1 standard deviation above and 1 standard deviation below the sample mean on community cohesion. The *y* axis is labeled in standard deviation units.
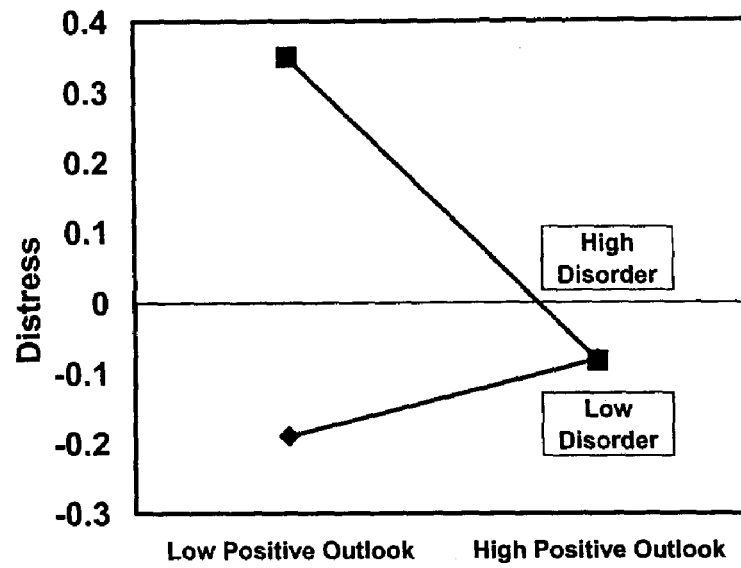
Figure 2.
Moderation of positive outlook by community social disorder in the prediction of distress. Lines are plotted for 1 standard deviation above and 1 standard deviation below the sample mean on community disorder. The *y* axis is labeled in standard deviation units.
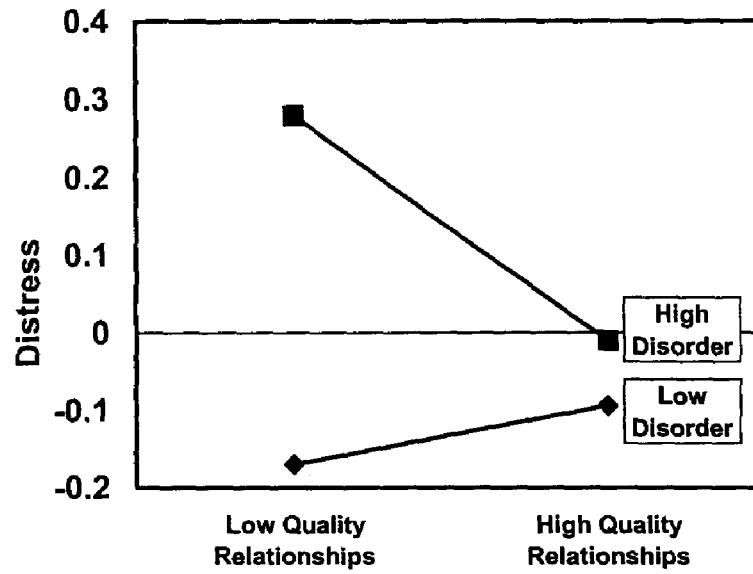
Figure 3.
Moderation of relationship quality by community social disorder in the prediction of distress. Lines are plotted for 1 standard deviation above and 1 standard deviation below the sample mean on community disorder. The *y* axis is labeled in standard deviation units.
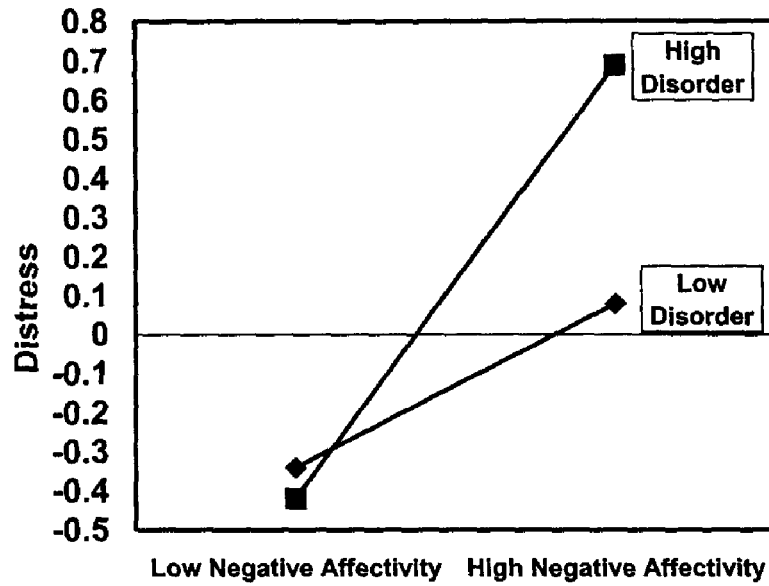
Figure 4.
Moderation of negative affectivity by community social disorder in the prediction of distress. Lines are plotted for 1 standard deviation above and 1 standard deviation below the sample mean on community disorder. The *y* axis is labeled in standard deviation units.

Table 1

Characteristics of Neighborhood Clusters

Characteristic	M	Mdn	SD	Minimum	Maximum
Below poverty line	25	23	15	2	70
Receiving government assistance	19	16	14	3	69
Unemployed men	52	52	11	30	75
Single-mother-headed households	19	15	12	3	60
Mean per capita income	$13,262	$12,184	$5,230	$7,332	$30,856

Note. $N = 41$ clusters. All data are from the 1990 U.S. Census. Unless specified, all values are percentages.

Table 2

Participants' Scores on Study Variables

Variable	M	Mdn	SD	Possible range
Distress				
General distress	13.65	12.0	5.98	8-40
Anxious arousal	12.70	10.0	5.19	10-50
Outlook				
Control	21.5	21.0	3.1	7-28
Optimism	19.1	18.8	3.8	0-32
Stressful life events and ongoing strains				
Negative life events	2.5	2.0	2.5	0-29
Financial strain	35.4	34.0	6.3	12-135
Experiences of racial discrimination	27.0	26.0	9.6	13-52
Resources				
Health	6.8	7.0	1.5	2-10
Positive affectivity	9.8	10.0	2.5	0-13
Religion	11.0	10.0	2.8	7-32
Social relationships				
Network support	24.1	25.0	3.1	9-27
Network conflict and burden	8.7	8.0	2.4	6-18
Negative affectivity	4.2	4.0	3.3	0-13

Note. Raw scores are presented for all measures. Whenever variables were combined into aggregate scores, they were first standardized.

Table 3

Correlations Between Community-Level and Individual-Level Variables

Variables	Economic disadvantage	Community disorder	Community cohesion
Outlook	-.31[*]	-.54[*]	.53[*]
Relationship quality	-.09	-.36[*]	.42[*]
Negative events	.08	.01	-.36[*]
Resources	-.01	-.11	.39[*]
Negative affect	.11	.37[*]	-.34[*]

Note. $df = 39$.

[*] $p < .05$.

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Table 4

Individual-Level and Community-Level Variables as Predictors of Distress

Variables	r^a	b	SE	β	t^b
Individual level					
Outlook	-.36***	-.04	.02	-.09	-2.81**
Relationship quality	-.29***	-.04	.02	-.07	-2.36*
Negative events	.35***	.09	.01	.23	7.51***
Resources	-.28***	-.03	.01	-.08	-2.63**
Negative affect	.60***	.39	.03	.47	14.37***
Community level					
Economic disadvantage	.06	-.04	.04	-.18	-1.23
Cohesion	-.10*	-.04	.03	-.14	-1.12
Disorder	.14*	.09	.02	.38	2.28*

$^a df = 660$ for the individual-level variables; $df = 37$ for the community variables.

$^b df = 655$ for the individual-level variables; $df = 35$ for the community variables.

*
 $p < .05$.

**
 $p < .01$.

***
 $p < .001$.