

# Emotional support, negative interaction and major depressive disorder among African Americans and Caribbean Blacks: findings from the National Survey of American Life

Karen D. Lincoln · David H. Chae

Received: 12 February 2010 / Accepted: 13 January 2011  
© Springer-Verlag 2011

## Abstract

**Objectives** Few studies have examined the association between social support, negative interaction, and major depressive disorder among representative samples of racial and ethnic minority groups. This study investigates the relationship between emotional support and negative interaction with family members on lifetime major depressive disorder among African Americans and Caribbean Blacks.

**Method** Cross-sectional epidemiologic data from the National Survey of American Life and multivariable logistic regression analyses were used to predict lifetime history of major depressive disorder and to examine the effect of perceived emotional support and negative interaction on major depressive disorder among 3,570 African Americans and 1,621 Caribbean Blacks aged 18 and older. **Results** Multivariate analyses found that perceived emotional support was associated with lower odds of MDD for African Americans and Caribbean Blacks. Negative interaction with family was associated with greater odds of MDD for African Americans and Caribbean Blacks. Emotional support moderated the impact of negative interaction on MDD for Caribbean Blacks, but not for African Americans.

**Discussion** This is the first study to investigate the relationships between emotional support, negative interaction with family members and depressive disorder among African Americans and Caribbean Blacks. Negative interaction was a risk factor for depression and emotional support was a protective factor.

**Keywords** Social support · Negative interaction · Depression · African Americans · Black Caribbeans

## Introduction

Studies have consistently shown that social support from family members is linked to lower prevalence of acute depressive episodes [1–3]. Ongoing family problems, however, particularly if manifested by excessive criticism of the depressed person and an unsupportive family environment, are associated with a prolonged course of depression, a greater tendency to relapse, and possible higher risk for suicide [4]. Research on the influence of social support on major depressive disorder has provided strong evidence in support of family interventions. Despite recognition of the important role of family in the treatment and recovery process, few studies have examined the association between social support and major depressive disorder among representative samples of racial and ethnic minority groups. Fewer still, are studies that consider the impact of negative interaction with family members on depression among diverse populations.

Previous research identifies negative interaction as a risk factor for poor psychological functioning [5], psychological distress [6], and mood and anxiety disorders [3, 7, 8]. However, the extent to which social support can moderate the deleterious impact of negative family interaction on

---

K. D. Lincoln (✉)  
University of Southern California, School of Social Work,  
669 W. 34th Street, Montgomery Ross Fisher Building 214,  
Los Angeles, CA, 90089-0411, USA  
e-mail: klincoln@usc.edu

D. H. Chae  
Emory University, Rollins School of Public Health,  
1518 Clifton Road NE, Room 512, Atlanta, GA, 30322, USA  
e-mail: david.chae@emory.edu

depression among Black Americans is unknown. Accordingly, the present study investigates the relationship between perceived emotional support and negative interaction with family members on lifetime major depressive disorder (MDD) among African Americans and Caribbean Blacks. We also examine the extent to which perceived emotional support moderates the relationship between negative interaction and depression. This study builds on recent findings that 10.4% of African Americans and 12.9% of Caribbean Blacks met criteria for MDD [9]. This analysis also supports recent commentaries calling for greater understanding of the protective role of social support networks in the development of mental disorders among racial and ethnic minorities [9].

Depression is the leading cause of disability and premature mortality in the United States, costing more than \$83 billion to the nation's economy in 2000 [10]. Recent studies have suggested that persons with depression have increased risk for cancer [11], diabetes mellitus [12], coronary heart disease [13], stroke [14], and mortality [15]. Extant studies of depression typically report lower prevalence rates among African Americans compared to non-Hispanic whites [16]. However, some studies report similar 12-month MDD estimates [17]. Studies also report a higher persistence rate [9, 16, 17] and impairment associated with depression [9] for African Americans compared to non-Hispanic whites.

A variety of psychosocial influences interact to shape the risk for depression, in addition to genetic, biochemical, environmental, and psychological factors. Of the psychosocial influences, social support has a particularly strong impact on depression. Individuals who receive social support in the form of instrumental and tangible aid, advice, information, and affirmation, are significantly less likely to develop depression than those who do not receive these types of support [18–20]. Moreover, research findings suggest that subjective evaluations (e.g., perceived support) of supportive encounters may be more strongly related to mental health than are objective markers of social support [21, 22]. Miller et al. [23] identified perceived low levels of social support as the most important risk factor for depression among African Americans even after adjusting for such covariates as medications, environmental factors (e.g., home and neighborhood conditions), functional status (e.g., physical disability), biomedical factors (e.g., blood pressure, weight, chronic conditions), and health service utilization characteristics.

Among African Americans and Caribbean Blacks in the United States, family and kinship relationships are highly valued and have traditional and cultural significance. Among Black Caribbeans, these networks are instrumental for ethnic identity formation [24] and exchanging resources [25]. However, one might anticipate that the nature of involvement and function of social networks may differ by

cultural group. In fact, ethnic differences in social relations are well documented (e.g., [26, 27]). The majority of research on ethnic differences in social relations in the United States has focused on African Americans and non-Hispanic whites. Racial group comparisons and the lack of attention to the heterogeneity within racial groups obscure important cultural variations in patterns and function of social relations and their effects on well-being. For example, African Americans' involvement in social networks is a reflection of social, political, and economic circumstances and barriers they have faced, both historically and presently [28]. For Caribbean Blacks, however, migration is an important distinguishing factor from the experience of African Americans. Migration decisions for Caribbean Blacks often depend on their connections to existing social networks in the United States [29]. These social networks are vital for preventing social isolation and exclusion, buffering economic hardships associated with immigration, and reaffirming a transnational Caribbean ethnic identity. Unfortunately, there is extremely little research on the support networks of Caribbean Blacks, especially research on specific aspects of support networks such as emotional support and negative interaction. The vast majority of research that does exist is based on ethnographic studies of distinct migrant communities in the United States [24, 25, 30]. Very little research in this area is based on survey data from a broad cross-section of Caribbean respondents.

In addition to the noted beneficial effects of social support for health and well-being, there is a negative side to participation in social networks. Studies of negative interaction provide important insight into the complex nature of informal support networks, and of how social relationships can be both a source of support and stress. Negative interaction is a natural consequence of participation in informal support networks and is fairly common among family members. Negative interactions (conflict, excessive demands, and criticism) are perceived by the recipient as transgressions or offences that arouse emotional distress. In fact, most researchers classify negative interaction as an acute source of stress or as a chronic strain that is among the most upsetting stressors that individuals experience with family members (e.g., [31]). Although negative interactions typically occur with less frequency compared to positive exchanges with network members [32], they have the potential to considerably detract from health and well-being. Negative interactions are reportedly associated with negative affect [33], depression [34], declines in physical functioning [35] and mortality [36].

Empirical studies of the simultaneous impact of negative interaction and social support provide evidence that these types of social exchanges are distinct, frequently co-occur and have opposing effects on mental health outcomes. Uchino et al. [37] found that a higher number of supportive

ties was associated with lower levels of depression, whereas a higher number of aversive ties was associated with higher levels of depression. Using data from the National Survey of American Life, Lincoln et al. [7] found that a combination of high levels of negative interaction and low levels of emotional social support is especially problematic for African Americans and Caribbean Blacks most at risk for depression. Specifically, two risk profiles were identified, a subpopulation of individuals with a relatively low level of depressive symptoms, and a subpopulation with a high level of symptoms. The low symptoms' class was associated with low levels of negative interaction with family members. The high symptoms' class was associated with high levels of negative interaction and low levels of emotional support received from family members.

Studies of negative interaction have much to offer with respect to revealing additional linkages between social relationships and mental health. Psychoimmunological research in the area of negative interaction and mental health is more limited as compared to the research on physical health. However, studies in the behavior and social sciences, in particular those that conceptualize negative interaction as a chronic stressor, provide strong evidence linking negative interaction to mental health and psychiatric disorders [38, 39]. However, few studies empirically examine the pathways whereby negative interactions influence depression.

The current study examines the association between perceptions of the frequency of emotional support and negative interaction with family on lifetime major depressive disorder among a nationally representative sample of African Americans and Caribbean Blacks. We also examine the extent to which perceived emotional support moderates the impact of negative interaction on depression. This study contributes to existing knowledge in several important ways. First, despite the importance of mental health and well-being for Black Americans, there is surprisingly little research on depression using representative samples of Black Americans, and this is particularly the case for Caribbean Blacks. Second, the association between negative interaction with family members and depression is rarely studied. Third, this is the first study that examines whether emotional support moderates the effect of negative interaction on depression among a national sample of African Americans and Caribbean Blacks.

## Methods

### Sample and procedures

This study uses data from the National Survey of American Life (NSAL), which included a national household

probability sample of 3,570 African Americans and 1,621 Caribbean Blacks recruited between February 2001 and June 2003 [40]. The NSAL is one of three nationally representative studies included in the Collaborative Psychiatric Epidemiology Surveys (CPES). In the core sampling component of the NSAL, there were 64 primary sampling units (PSUs), including 21 self-representing metropolitan statistical areas (MSAs) based on overall size and the size of the African American population in those areas; and 43 MSA and non-MSA PSUs from strata which were sampled using a modified probability sampling method. Four hundred fifty-six secondary sampling units defined as area segments were selected using probabilities proportionate to the number of 1990 census African American households. The NSAL Caribbean Supplement was based on an over-sampling of housing units in geographic areas with high densities of people of Caribbean origin. In this component of the sampling procedure, there were eight PSUs, including five PSUs, which were already included in the core sample, from which 86 area segments were selected from Census block groups with at least 10% Caribbean Black density. Households were enumerated and screened, and one eligible participant was selected. Weighting corrections were constructed to take into account the complex sampling design characteristics of the NSAL. Final weighted response rates were 70.7% and 77.7% for African American and Caribbean Black respondents, respectively (See [40, 41] for a more detailed discussion of the NSAL sample). Demographic characteristics of African American and Caribbean Black participants are presented in Table 1.

All interviews were conducted in English. Participants were interviewed face-to-face (mean duration: 2 h 20 min for African Americans; 2 h 43 min for Caribbean Blacks) and were compensated \$50.00. The Institutional Review Board of the University of Michigan approved all study procedures.

### Measures

Lifetime history of major depressive disorder was assessed using a modified version of the Major Depressive Disorder section of the World Mental Health Survey Initiative version of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI) [42]. The WMH-CIDI is a fully structured interview that may be administered by trained lay interviewers, and is designed to detect mental disorders using Diagnostic and Statistical Manual, Version 4 (DSM-IV) criteria, including affective, behavioral, and somatic symptoms of depression that result in severe distress or impaired functioning. A sample of 644 NSAL respondents completed a clinical reappraisal interview to evaluate 12-month diagnoses. The sample was selected to ensure representation of respondents across

**Table 1** Descriptive characteristics of African Americans and Caribbean Blacks in the National Survey of American Life

	African American ( <i>n</i> = 3,570)		Caribbean Black ( <i>n</i> = 1,621)	
	<i>N</i> or Mean	% or SE	<i>N</i> or Mean	% or SE
Negative interaction, <i>n</i> , %				
None	1,941	54.4	842	49.9
Low	1,138	33.1	549	35.7
Moderate	364	9.9	177	12.0
High	95	2.5	39	2.5
Perceived social support, <i>n</i> , %				
None	189	5.0	67	3.6
Low	695	20.4	382	20.0
Moderate	1,551	44.6	708	44.7
High	1,102	29.9	450	31.8
Gender, <i>n</i> , %				
Men	1,271	44.0	643	50.9
Women	2,299	56.0	978	49.1
Marital status, <i>n</i> , %				
Married	962	32.9	560	37.6
Partnered	260	8.7	133	12.6
Separated, widowed, divorced	1,164	26.8	385	18.9
Never married	1,176	31.6	543	30.9
Poverty level, <i>n</i> , %				
Poor (<1.00)	929	23.7	253	16.2
Near poor (1.00–1.99)	927	24.1	378	20.3
Near poor (2.00–3.99)	1,082	32.1	562	35.5
Non-poor (4.00+)	632	20.1	428	27.9
Education, <i>n</i> , %				
<12 years	920	24.2	306	21.2
12 years	1,362	37.9	481	29.7
13–15 years	809	23.8	443	26.1
16+ years	479	14.1	391	23.1
Work status, <i>n</i> , %				
Employed	2,334	66.8	1,183	75.2
Unemployed	366	10.1	158	8.8
Out of labor force	861	23.1	279	16.0
Health insurance, <i>n</i> , %				
No	631	18.1	359	20.5
Yes	2,806	81.9	1,228	79.5
Region, <i>n</i> , %				
Northeast	411	15.7	1,135	55.7
Midwest	595	18.8	12	4.1
South	2,330	56.2	456	29.1
West	234	9.3	18	11.1
Age, <i>n</i> , %				
<30 years	806	24.4	436	31.1
30–44 years	1,276	35.4	605	34.5
45–59 years	855	23.8	356	19.4
60+ years	633	16.4	224	15.1
Social desirability, <i>M</i> , SE	0.20	0.00	0.19	0.01

**Table 1** continued

	African American ( <i>n</i> = 3,570)		Caribbean Black ( <i>n</i> = 1,621)	
	<i>N</i> or Mean	% or SE	<i>N</i> or Mean	% or SE
Nativity, <i>n</i> , %				
US born			440	34.9
Foreign born			1,166	65.1
Ethnicity, <i>n</i> , %				
Spanish Caribbean			180	14.1
Haiti			298	12.6
Jamaica			510	31.7
Trinidad and Tobago			170	10.0
Other			440	31.6

Column sum may not equal total sample size due to missing data

each of the racial/ethnic categories who had and had not met the diagnostic criteria for specific disorders. Validation studies of the WMH-CIDI found high levels of concordance with the blind clinical appraisals. Moreover, in the modified version of the WMH-CIDI used in the NSAL, stem questions assessing psychiatric disorders were asked in the beginning of the interview in order to minimize false negative and non-responses. The algorithm for MDD is the same as that for major depressive episode (MDE): criteria C, the presence or absence of a manic episode, is not considered [9].

Perceived frequency of emotional support was assessed using three items asking how often family members (other than a spouse or partner): made the participant feel loved and cared for; listened to their problems; and expressed concern for their well-being. Response values for each item ranged from 1 (“never”) to 4 (“very often”) and were averaged such that higher scores reflected greater levels of emotional support. Cronbach’s alpha for this 3-item index is 0.76 for African Americans and 0.75 for Caribbean Blacks. Perceived frequency of negative interaction with family members was assessed using three additional items asking participants how often family members (other than a spouse or partner): made demands; criticized them; and took advantage of them. Response values also ranged from 1 (“never”) to 4 (“very often”), and higher scores reflected greater levels of negative interaction. Cronbach’s alpha for this 3-item index is 0.76 for African Americans and 0.73 for Caribbean Blacks.

Demographic characteristics included self-reported measures of: ethnicity (African American or Caribbean Black); gender (men or women); age; marital status (married; partnered; never married; or separated, widowed, or divorced); poverty level (poor, <100%; near poor, 100–199%; non-poor with percentage of the poverty line of 200–399%; and non-poor with percentage of the

poverty line of  $\geq 400\%$ ); years of education (less than 12 years; 12 years; 13–15 years; and 16 years or more); employment status (employed; unemployed; or out of labor force); health insurance (yes or no); and region of residence (Northeast; North Central; South; or West). There is some evidence that African Americans and Caribbean Blacks tend to report lower rates of negative affect (e.g., [43]). Accordingly, we included a measure of social desirability to control for these effects. The 33-item Marlowe–Crowne Social Desirability scale [44] is widely used to detect personality bias in responding to sensitive questions. Validity studies show that the 10-item short version of this scale is a significant improvement in fit over the full scale (e.g., [45]); this short version has been used in other studies using the CPES data [46–48]. Accordingly, social desirability was measured as the mean of 10 items endorsed as true (1) or false (0). This scale included items such as “I never get annoyed when people cut ahead of me in line,” “I never get lost, even in unfamiliar places,” “I have always told the truth,” “I have never lost anything,” and “It doesn’t bother me if someone takes advantage of me.” Additional demographic characteristics that were available for the Caribbean subsample only included measures of: nativity (US born or foreign born); and Caribbean country of origin (Jamaica, Haiti, Trinidad and Tobago, Spanish Caribbean country, and other English-speaking Caribbean country).

#### Data analysis

Multivariable logistic regression analyses predicting lifetime history of MDD were specified separately for African Americans and Caribbean Blacks examining the main effects of perceived emotional support and negative interaction. This was done so that the variables that were specific to the experience of Caribbean Blacks (i.e., country of

origin, immigration status) could be utilized in the regression analysis. Due to small cell sizes for some of the marital status categories, separated, divorced, and widowed were combined in the analysis. Additional analyses examining the combined effect of perceived emotional support and negative interaction were conducted by including the corresponding interaction term. Participants with missing data on any variables entered in models represented less than 5% of total participants and were excluded from multivariable analyses using listwise deletion. All analyses were weighted and took into account complex survey design characteristics using SAS-callable SUDAAN [49].

## Results

### Logistic regressions predicting lifetime MDD

Results from weighted multivariate logistic regression analyses predicting lifetime MDD are presented in Table 2. Analyses revealed that perceived frequency of negative interaction was independently associated with greater odds of meeting criteria for lifetime MDD among both African Americans (OR = 1.48, 95% CI = 1.30, 1.68) and among Caribbean Blacks (OR = 1.67, 95% CI = 1.21, 2.31). In addition, self-reports of the frequency of emotional support were associated with lower odds of meeting criteria for

**Table 2** Weighted multivariate logistic regressions predicting lifetime history of major depression among African Americans and Caribbean Blacks in the National Survey of American Life

	African Americans ( <i>n</i> = 3,399) OR (95% CI)	Caribbean Blacks ( <i>n</i> = 1,550) OR (95% CI)
Negative interaction	1.48 (1.30, 1.68)	1.74 (1.28, 2.37)
Perceived emotional support	0.80 (0.67, 0.96)	0.71 (0.41, 1.24)
Gender: women vs. men	1.81 (1.40, 2.33)	1.38 (0.60, 3.17)
Age	0.99 (0.97, 1.00)	0.99 (0.96, 1.03)
Marital status (Ref: Married)		
Partnered	1.06 (0.59, 1.91)	2.01 (0.72, 5.57)
Separated, widowed, divorced	1.75 (1.13, 2.70)	2.93 (0.71, 12.19)
Never married	1.14 (0.79, 1.64)	3.63 (1.90, 6.94)
Poverty level (Ref: Poor, <1.00)		
Near poor (1.00–1.99)	0.83 (0.57, 1.20)	1.19 (0.49, 2.93)
Near poor (2.00–3.99)	1.23 (0.86, 1.76)	0.93 (0.44, 1.97)
Non-poor (4.00+)	0.99 (0.66, 1.48)	0.61 (0.22, 1.66)
Education (Ref: <12 years)		
12 years	0.79 (0.55, 1.13)	1.38 (0.51, 3.71)
13–15 years	0.82 (0.51, 1.31)	1.93 (0.62, 5.96)
16+ years	1.04 (0.61, 1.78)	3.22 (1.15, 9.02)
Work status (Ref: Employed)		
Unemployed	1.14 (0.76, 1.71)	0.51 (0.27, 0.94)
Not in labor force	0.89 (0.62, 1.28)	0.39 (0.20, 0.77)
Health insurance: no vs. yes	1.15 (0.75, 1.76)	1.24 (0.47, 3.29)
African American Region (Ref: South)		
Northeast	1.80 (1.43, 2.27)	
Midwest	1.97 (1.49, 2.60)	
West	0.94 (0.58, 1.50)	
Caribbean region: other vs. northeast		2.28 (1.18, 4.40)
Social desirability	0.21 (0.11, 0.41)	0.44 (0.05, 4.10)
Nativity: foreign born vs. US born		0.58 (0.26, 1.28)
Ethnicity (Ref: Jamaica)		
Spanish Caribbean		1.88 (0.76, 4.67)
Haiti		1.23 (0.45, 3.42)
Trinidad and Tobago		1.78 (0.77, 4.14)
Other		2.59 (1.28, 5.24)

An odds ratio of 1.00 corresponds to no effect

MDD among African Americans (OR = 0.80, 95% CI = 0.67, 0.96) and Caribbean Blacks (OR = 0.72, 95% CI = 0.40, 1.29). Although the coefficient representing this relationship showed a greater protective effect for Caribbean Blacks, it was only statistically significant for African Americans.

Among African Americans, women have greater odds of having a lifetime history of MDD compared to men. Those of advanced age have lower odds of lifetime MDD than their younger counterparts. African Americans who reside in the Northeast and the North Central regions have greater odds of lifetime MDD compared to those in the South. Finally, those with higher levels of social desirability bias have lower odds of lifetime MDD than their counterparts.

Among Caribbean Blacks, those who were never married have higher odds of lifetime MDD compared to those who were married. Those who were unemployed have significantly lower odds of lifetime MDD compared to those who were employed. Those Caribbean Blacks who reside in the Northeast have lower odds of lifetime MDD compared to those in other regions. Finally, those of other English Caribbean ethnicity have greater odds of lifetime MDD compared to Jamaicans.

#### Interaction between negative interaction and perceived emotional support

Results from analyses including the interaction between perceived frequency of negative interaction and emotional support are presented in Table 3. Among African American participants, the interaction between perceived negative interaction and emotional support was not significant,  $F(1, 3,376) = 0.05, p = 0.83$ ), and results for the demographic covariates were substantively equivalent to the model without the interaction term. However, the associations between negative interaction and MDD and between social support and MDD were no longer statistically significant for African Americans in the presence of the interaction; suggesting that the direct effects model is more appropriate for describing the relationship between social relationships and lifetime MDD for this group.

Analyses conducted among Caribbean Blacks, however, revealed a significant interaction between perceived frequency of negative interaction and emotional support,  $F(1, 1,523) = 7.66, p < 0.001$ ). Results revealed that among Caribbean Blacks who reported low levels of emotional support, the negative influence of negative interaction on lifetime MDD was considerably greater, and that high levels of perceived emotional support was a buffer against high levels of negative interaction. Significant covariates in this model were the same as those reported in the model without the interaction term.

Predicted probabilities of lifetime MDD among African American and Caribbean Black participants with high and low levels of emotional support by reports of negative interaction are illustrated in Figs. 1 and 2, respectively, setting all other covariates to their mean values [49]. Values of 1, 2, 3, and 4, are equivalent to average values of “never”, “not too often”, “fairly often”, and “very often”, respectively. Values of 1 for “low” and 4 for “high” were chosen to plot predicted probabilities.

## Discussion

The current study is the first to examine the association between perceived emotional support and negative interaction with family members and major depressive disorder among a representative sample of African Americans and Caribbean Blacks. Findings indicated that perceived frequency of emotional support was associated with lower odds of MDD for African Americans and for Caribbean Blacks. However, this relationship was only statistically significant for African Americans. The lack of a significant association between emotional support and depression for Caribbean Blacks is consistent with previous work. For example, Magai et al. [50] found no association between social support and depressive symptoms among a sample of Caribbean Black older adults. Given the dearth of research in this area, we can only speculate as to the meaning of this finding. One potential explanation is the transnational and unbalanced nature of social exchange among Caribbean immigrants. Specifically, because of their immigrant status, Caribbean immigrants are obliged to operate transnationally. That is, social exchange among Caribbean Blacks might be unbalanced because family members residing in the US are obliged to send remittances home or provide support to more recent immigrants and to those who might immigrate later. Fiori et al. [51] reported higher percentages of immigrant Caribbeans than African Americans who perceived their social exchanges as non-reciprocal (i.e., respondents reported giving more to their friends and family than they received), suggesting that immigrant Caribbeans engage in exchanges with network members in their home country (which tend to be unbalanced) or help more recent immigrants in their networks. Under these conditions, social networks may not necessarily yield positive consequences.

The protective role of perceived emotional support from family for African Americans, however, is consistent with previous research on social support and mental disorders. For example, Kiecolt et al. used data from the National Comorbidity Survey and found that African Americans who perceived that their family members were supportive had lower prevalence of mood and anxiety disorders

**Table 3** Weighted multivariate logistic regressions predicting lifetime history of major depression including interaction between negative interaction and social support among African Americans and Caribbean Blacks in the National Survey of American Life

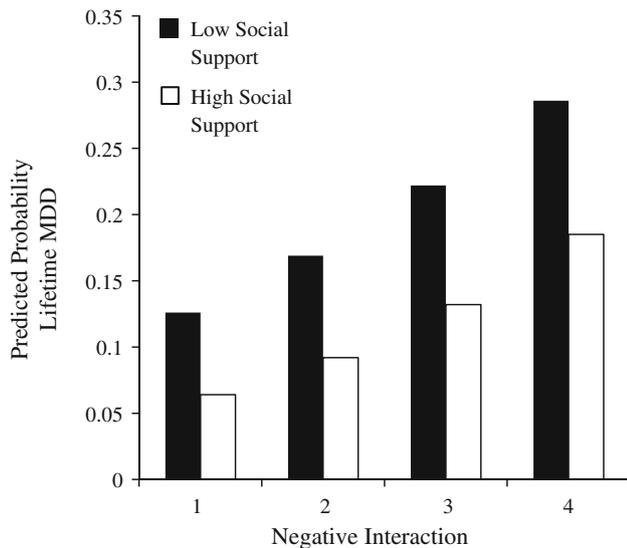
	African American ( <i>n</i> = 3,399) OR (95% CI)	Caribbean Black ( <i>n</i> = 1,550) OR (95% CI)
Negative interaction	1.38 (0.73, 2.61)	9.92 (2.69, 36.52)
Perceived emotional support	0.76 (0.47, 1.23)	2.64 (0.85, 8.22)
Negative interaction × emotional support	1.02 (0.83, 1.26)	0.56 (0.37, 0.85)
Gender: women vs. men	1.81 (1.40, 2.33)	1.23 (0.56, 2.69)
Age	0.99 (0.97, 1.00)	1.00 (0.96, 1.03)
Marital status (Ref: Married)		
Partnered	1.06 (0.59, 1.92)	1.73 (0.60, 5.00)
Separated, widowed, divorced	1.75 (1.13, 2.69)	2.69 (0.66, 10.96)
Never married	1.14 (0.79, 1.65)	3.46 (1.82, 6.56)
Poverty level (Ref: Poor, <1.00)		
Near poor (1.00–1.99)	0.82 (0.57, 1.20)	1.16 (0.47, 2.85)
Near poor (2.00–3.99)	1.23 (0.86, 1.76)	0.95 (0.47, 1.91)
Non-poor (4.00+)	0.99 (0.66, 1.48)	0.57 (0.21, 1.54)
Education (Ref: <12 years)		
12 years	0.79 (0.55, 1.13)	1.47 (0.53, 4.07)
13–15 years	0.82 (0.51, 1.31)	1.96 (0.62, 6.24)
16+ years	1.04 (0.61, 1.78)	3.22 (1.17, 8.80)
Work status (Ref: Employed)		
Unemployed	1.14 (0.76, 1.71)	0.51 (0.27, 0.97)
Not in labor force	0.90 (0.63, 1.28)	0.31 (0.14, 0.67)
Health insurance: no vs. yes	1.15 (0.76, 1.75)	1.32 (0.50, 3.43)
African American region (Ref: South)		
Northeast	1.80 (1.41, 2.29)	
Midwest	1.97 (1.49, 2.59)	
West	0.94 (0.59, 1.50)	
Caribbean Region: other vs. northeast		2.27 (1.16, 4.44)
Social desirability	0.21 (0.11, 0.41)	0.39 (0.04, 3.51)
Nativity: foreign born vs. US born		0.55 (0.24, 1.22)
Ethnicity (Ref: Jamaica)		
Spanish Caribbean		1.69 (0.63, 4.49)
Haiti		1.36 (0.48, 3.85)
Trinidad and Tobago		1.84 (0.78, 4.33)
Other		2.59 (1.29, 5.22)

compared to their white counterparts [52]. Using this same data, Bertera [8] reported that positive support from relatives was associated with a lower number of episodes of anxiety and mood disorders among all respondents regardless of race or ethnicity.

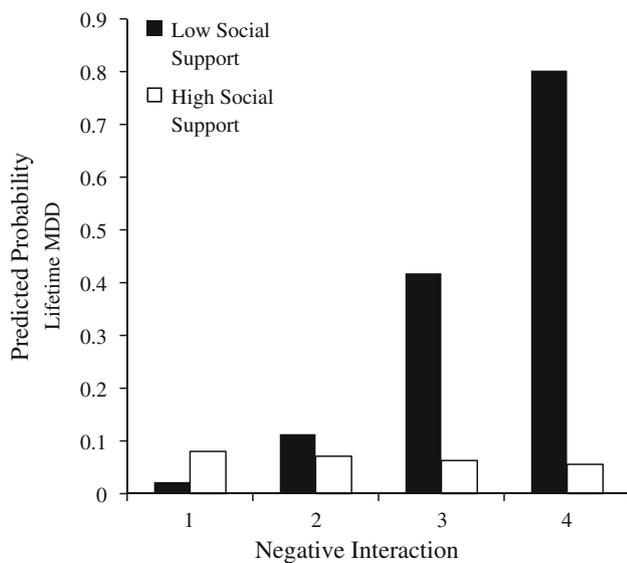
Our findings revealed that perceived frequency of negative interaction was associated with greater odds of MDD for both African Americans and Caribbean Blacks. These results identify negative interaction with family members as a risk factor for depression among Black Americans. This finding is consistent with previous studies of negative interaction and diagnosable mental disorders. For example, Kiecolt et al. found that negative interaction with family

members was related to psychological distress, any mental disorder, and any substance use disorder in a sample of African Americans and whites [52]. Bertera [8] reported the same positive relationship between negative interaction with relatives and mood and anxiety disorders. Finally, in a recent study by Lincoln et al., negative interaction was associated with greater odds of having mood disorders, anxiety disorders and the number of mood and anxiety disorders among older African Americans [1].

This finding is also consistent with those from studies on expressed emotion and perceived criticism among patients with schizophrenia and mood and anxiety disorders. Expressed emotion (EE) is a measure of the family



**Fig. 1** Predicted probabilities of lifetime major depressive disorder by perceived social support and negative interaction with family among African American Participants in the National Survey of American Life



**Fig. 2** Predicted probabilities of lifetime major depressive disorder by perceived social support and negative interaction with family among Caribbean Black Participants in the National Survey of American Life

environment and refers to the extent to which family members express critical, hostile, and emotionally over-involved attitudes and remarks toward a specific person. Studies indicate that expressed emotion is a concurrent marker of risk for psychiatric disorder [53]. Study findings also indicate that poor outcomes (e.g., relapse and rehospitalization) increase for schizophrenia patients who return to families characterized by high levels of criticism, hostility, or emotional over involvement, compared to patients

who return to families characterized by low levels of the same negative interactions [54]. Expressed emotion has also been identified as a predictor of depression among children [53] and of relapse in adult patients with depression [55].

Our findings also reveal the important role of emotional support from family for moderating the deleterious impact of negative interaction on depression, but only for Caribbean Blacks. Specifically, findings indicated that negative interaction is a particularly strong risk factor for depression among those Caribbean Blacks who perceive low levels of emotional support from their family members. However, for those who perceive receiving more frequent emotional support, their risk is significantly reduced. This finding is consistent with the stress-buffering hypothesis, which posits that social support is beneficial for those experiencing high levels of stress but does not play a role in mental health for those who are experiencing low levels of stress [56]. There is additional evidence among the general population that social support buffers the effects of negative interaction on depression [57] and psychological distress [58]. Whalen and Lachman [2] used data from the Midlife in the United States Survey and found that social support from family buffered the effect of negative interaction when predicting negative mood among a sample of primarily white respondents.

Another explanation involves the cultural values and relational styles of some Caribbean Blacks. Caribbean Blacks tend to place a cultural value on independence, self-reliance, and achievement (vs. dependency and neediness). This cultural value is sometimes reflected in the dismissive relational style that reportedly characterizes the interactions of some English-speaking Caribbean Blacks [59]. Dismissive attachment is associated with less social support exchange, more distant social relations, and ineffective support seeking in times of stress [60]. Empirical evidence indicates that relational characteristics, such as secure and dismissive attachment styles, influence how social support is experienced and, thus, how well-being is affected [61]. Within this cultural context, negative interactions can have especially deleterious effects on mental health when social support is perceived to be low or if network members are perceived to be unsupportive, unreliable, or unavailable.

Perceived emotional support did not moderate the relationship between negative interaction and MDD among African Americans, however. Other studies that report no buffering effects of social support [62] provide support for this finding. It is possible that, among African Americans, the normative behavior of supportive exchange within a context of less frequent negative interaction relative to more positive exchanges can limit the buffering potential of social support. Other research indicates that the benefits of buffering may be obtained via other sources of support [63]. That is, the effect of negative interaction from family

members on depression may be buffered by social support from another source, such as friends or a spouse. Research that investigates the cross-domain buffering effects among African Americans is needed to adequately address this question.

The results of this study have important clinical implications. Low levels or otherwise inadequate social support is associated with impairments in both physical and mental health. This poses a major barrier to well-being relevant to the practice of psychiatry and medicine, because it is associated with adverse health behaviors, impaired health-related quality of life, dissatisfaction with life, and disability [64]. Availability and quality of social support from family members should be assessed when treating a person with depression because this appears to be an important component of psychiatric and medical care. Moreover, the reduction of negative family interactions is a potentially valuable intervention target that should be commonly included in empirically supported psychosocial treatment manuals for depressive disorders (e.g., [65]). Studies of schizophrenia indicate that expressed emotion is a modifiable risk factor and that when family-based treatments are associated with reductions in family expressed emotion levels, there is an associated reduction in relapse rates [53]. Interventions that target high levels of negative expressed emotion among families with a schizophrenic member have been shown to be effective in reducing both positive and negative symptoms of this disorder [66]. Preliminary evidence also suggests that similar interventions can be modified to address depressive disorder [67] with beneficial effects. Future research examining the value of interventions aimed at reducing negative interaction among African Americans and Caribbean Blacks with depressive disorders and their family members is clearly needed.

This study has several limitations. First, because several segments of the population such as homeless and institutionalized individuals were not represented, our findings are not generalizable to these subgroups. Second, the Black Caribbean sample excludes individuals who do not speak English (i.e., persons who only speak Spanish, Haitian-French, or Creole dialects) and, as a consequence, the study findings are not generalizable to these groups of Caribbean Blacks. There are reasons to anticipate that the issues investigated here—depression and family relations—are of equal, if not greater significance for non-English-speaking Caribbean Blacks for whom the challenges of the immigration experience (e.g., cultural displacement, negotiating medical, and educational institutions) are exacerbated by difficulties in language and communication. Third, the lack of a moderating effect for social support among African Americans may be a reflection of the particular measure available in the NSAL data set. This study focused on emotional transactions between network members. Social

support researchers recognize that different stressful events require different forms of social support. Research findings show that well-intentioned support from family members, friends, and professionals can have unintended results and even cause distress to the recipient because of the lack of congruence with the individual's need (e.g., [68, 69]). It is possible that another type of social support from a different network source (e.g., friends) would have produced different results. Empirical evidence, however, suggests that emotional support is an appropriate dimension of social support for this investigation. Stressors that lead to internal attributions of failure or feelings of inadequacy are best buffered by social support that restores or maintains feelings of belonging and being loved and cared for [70]. However, it is important that future studies not only consider other types of support (e.g., material or financial support) but also use representative samples to gain a better understanding of the role of social support in the stress-mental health process. Fourth, symptoms of depressive disorder and behaviors may be underreported (potentially resulting in lower prevalence rates) due to item non-response to sensitive questions which is a common issue in survey interviewing. However, the inclusion of our measure of social desirability potentially limits the effect of underreporting on results. Fifth, it would have been preferable to examine 12-month as opposed to lifetime major depressive disorder to lessen the temporal differences between depressive disorder, emotional support, and negative interaction. However, the number of cases of 12-month depressive disorder was too few to conduct reliable analysis. Finally, causal inferences are problematic with cross-sectional data and longitudinal data are preferred. It is difficult to ascertain whether negative interaction with family members predispose or facilitate the onset of major depressive disorder or whether the impact of depression on a person's interpersonal styles creates family difficulties in coping. There is evidence to support both points of view (e.g., [71]). Personal disposition does influence one's perception of their relationships and interactions with others. However, there is evidence that social support and negative interaction are associated with mental health outcomes above and beyond measures of personality (e.g., [72]). Nonetheless, the significant advantages of the sample provided the first opportunity to examine the association between emotional support, negative interaction, and major depressive disorder among African Americans and Caribbean Blacks, as well as the buffering role of emotional support.

The present findings are important for understanding the relationship between family interactions and depressive disorders. Prior literature indicates that emotional support is beneficial for health and well-being. However, relatively few studies have examined the adverse effects of negative

interactions with family on major depressive disorder. While questions as to the precise etiology of depressive disorder can only be addressed with prospective data, information on negative family interactions may be important for understanding contemporaneous aspects of the family environment. Study findings alert clinicians to the potential negative impacts of family involvement and their implications for depressive disorder. Importantly, this study explored the relationship between negative interaction with family members on depressive disorder in a population for which there was very little prior information. Our findings, along with those of previous studies, indicate that the family system should be understood and included when treating a person with major depressive disorder. Studies assessing the usefulness of adding family therapy to psychoeducation, pharmacological and individual psychotherapeutic treatments of major depressive disorder are needed.

**Acknowledgment** Data collection on which this study is based was supported by the National Institute of Mental Health (NIMH; U01-MH57716), the Office of Behavioral and Social Science Research at the National Institutes of Health (NIH), and the University of Michigan. Preparation of this manuscript was supported by a grant from the National Institute of Mental Health to Dr. Lincoln (R01-MH084963) and a Robert Wood Johnson Health and Society Scholars Post-doctoral Fellowship to Dr. Chae.

## References

- Lincoln KD, Taylor RJ, Bullard KM, Chatters LM, Himle JA, Woodward AT, Jackson JS (2010) Emotional support, negative interaction and DSM IV lifetime disorders among older African Americans: findings from the National Survey of American Life (NSAL). *Int J Geriatr Psychiatry* 25:612–621
- Walen HR, Lachman ME (2000) Social support and strain from partner, family, and friends: costs and benefits for men and women in adulthood. *J Soc Pers Relat* 17:5–30
- Zlotnick C, Kohn R, Keitner G, Grotta SA (2000) The relationship between quality of interpersonal relationships and major depressive disorder: findings from the National Comorbidity Survey. *J Affect Disord* 59:205–215
- Compton MT, Thompson NJ, Kaslow NJ (2005) Social environment factors associated with suicide attempt among low-income African Americans: the protective role of family relationships and social support. *Social Psychiatry Psychiatr Epidemiol* 40:175–185
- Krause N (2005) Negative interaction and heart disease in late life: exploring variations by socioeconomic status. *J Aging Health* 17:28–55
- Okun M, Keith VM (1998) Effects of positive and negative social exchanges with various sources on depressive symptoms. *J Gerontol B Psychol Sci* 53B:P4–P20
- Lincoln KD, Chatters LM, Taylor RJ, Jackson JS (2007) Profiles of depressive symptoms among African Americans and Caribbean Blacks. *Social Sci Med* 65:200–213
- Bertera EM (2005) Mental health in U.S. adults: the role of positive social support and social negativity in personal relationships. *J Soc Pers Relat* 22:33–48
- Williams DR, Gonzalez HM, Neighbors H, Nesse R, Abelson JM, Sweetman J, Jackson JS (2007) Prevalence and distribution of major depressive disorder in African Americans, Caribbean Blacks, and non-Hispanic Whites. *Arch Gen Psych* 64:305–315
- Greenberg PE, Kessler RC, Birnbaum HG, Leong SA, Lowe SW, Berglund PA, Corey-Lisle PK (2003) The economic burden of depression in the United States: how did it change between 1990 and 2000? *J Clin Psychiatry* 64:1465–1475
- Penninx BW, Guralnik JM, Pahor M, Ferrucci L, Cerhan JR, Wallace RB, Havlik RJ (1998) Chronically depressed mood and cancer risk in older persons. *J Natl Cancer Inst* 90:1888–1893
- Eaton WW, Armenian H, Gallo J, Ford DE (1996) Depression risk for onset of type II diabetes. A prospective population-based study. *Diabetes Care* 19:1097–1102
- Ferketich AK, Schwartzbaum JA, Frid DJ, Moeschberger ML (2000) Depression as an antecedent to heart disease among women and men in the NHANES I study. *National Health and Nutrition Examination Survey. Arch Intern Med* 160:1261–1268
- Jonas BS, Mussolino ME (2000) Symptoms of depression as a prospective risk factor for stroke. *Psychosom Med* 62:463–471
- Ariyo AA, Haan M, Tangen CM, Rutledge JC, Cushman M, Dobs A, Furberg CD (2000) Depressive symptoms and risks of coronary heart disease and mortality in elderly Americans. *Cardiovascular Health Study Collaborative Research Group. Circulation* 102:1773–1779
- Breslau J, Su M, Kendler K, Aguilar-Gaxiola S, Kessler RC (2005) Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychol Med* 35:317–327
- Dunlop DD, Song J, Lyons JS, Manheim LM, Chang RW (2003) Racial/ethnic differences in rates of depression among preretirement adults. *Am Public Health* 93:1945–1952
- Brown GW, Andrews B, Harris T, Adler Z, Bridge L (1986) Social support, self-esteem and depression. *Psychol Med* 16:813–831
- Kendler KS, Myers J, Prescott CA (2005) Sex differences in the relationship between social support and risk for major depression: a longitudinal study of opposite-sex twin pairs. *Am J Psychiatry* 162:250–256
- Beckner V, Howard I, Vella L, Mohr DC (2010) Telephone-administered psychotherapy for depression in MS patients: moderating role of social support. *J Behav Med* 33:47–59
- Jang Y, Haley WE, Small BJ, Mortimer JA (2002) The role of mastery and social resources in the associations between disability and depression in later life. *Gerontologist* 42:807–813
- Krause N (1995) Negative interaction and satisfaction with social support among older adults. *J Gerontol B Psychol Sci* 50:P59–P73
- Miller DK, Malmstrom TK, Joshi S, Andresen EM, Morley JE, Wolinsky FD (2004) Clinically relevant levels of depressive symptoms in community-dwelling middle-aged African Americans. *J Am Geriatr Soc* 52:741–748
- Waters M (1999) *Black identities: West Indian immigrant dreams and American realities*. Russell Sage Foundation, New York
- Bashi VF (2007) *Survival of the knitted: immigrant social networks in a stratified world*. Stanford University Press, Stanford
- Ajrouch KJ, Antonucci TC, Janevic MR (2001) Social networks among Blacks and whites: the interaction between race and age. *J Gerontol* 56:S112–S118
- Peek MK, O'Neill GS (2001) Networks in later life: an examination of race differences in social support networks. *Int J Aging Human Dev* 52:207–229
- Billingsley A (1992) *Climbing Jacob's ladder: enduring legacy of African American families*. Simon & Schuster, New York
- Curran SR, Saguy AC (2001) Migration and cultural change: a role for gender and social networks? *J Int Women's Stud* 2:54–77
- Foner N (1998) West Indians in New York City and London: a comparative analysis. *Int Mig Rev* 13:284–287

31. Bolger N, DeLongis A, Kessler RC, Schilling EA (1989) Effects of daily stress on negative mood. *J Pers Social Psychol* 57:808–818
32. Lincoln KD, Taylor RJ, Chatters LM (2003) Correlates of emotional support and negative interaction among Black Americans. *J Gerontol Ser B Psychol Sci Social Sci* 58B:S225–S233
33. Newsom JT, Nishishiba M, Morgan DL, Rook KS (2003) The relative importance of three domains of positive and negative social exchanges: a longitudinal model with comparable measures. *Psychol Aging* 18:746–754
34. Rook KS (1984) The negative side of social interaction: impact on psychological well-being. *J Pers Social Psychol* 46:1097–1108
35. Seeman T, Chen X (2002) Risk and protective factors for physical functioning in older adults with and without chronic conditions. *J Gerontol B Soc Sci* 57:S135–S144
36. Tanne D, Goldbourt U, Medalie JH (2004) Perceived family difficulties and prediction of 23-year stroke mortality among middle-aged men. *Cerebrovasc Dis* 18:277–282
37. Uchino BN, Holt-Lunstad J, Uno D, Flinders JB (2001) Heterogeneity in the social networks of young and older adults: prediction of mental health and cardiovascular reactivity during acute stress. *J Behav Med* 24:361–382
38. Fiore J, Becker J, Coppel DB (1983) Social network interactions: a buffer or a stress. *Am J Commun Psychol* 11:423–439
39. Krause N, Rook KS (2003) Negative interaction in late life: issues in the stability and generalizability of conflict across relationships. *J Gerontol B Psychol Sci* 58:P88–P99
40. Jackson JS, Torres M, Caldwell CH, Neighbors HW, Nesse RM, Taylor RJ, Trierweiler SJ, Williams DR (2004) The National Survey of American Life: a study of racial, ethnic and cultural influences on mental disorders and mental health. *Int J Methods Psychiatr Res* 13:196–207
41. Heeringa SG, Wagner J, Torres M, Duan N, Adams T, Berglund P (2004) Sample designs and sampling methods for the Collaborative Psychiatric Epidemiology Studies (CPES). *Int J Methods Psychiatr Res* 13:221–240
42. Kessler RC, Üstün TB (2004) The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *Int J Methods Psychiatr Res* 13:93–121
43. Consedine N, Magai C (2002) The uncharted waters of emotion: ethnicity, trait emotion and emotion expression in older adults. *J Cross Cult Gerontol* 17:71–100
44. Marlowe D, Crowne DP (1961) Social desirability and response to perceived situational demands. *J Consul Psychol* 25:109–115
45. Loo R, Loewen P (2006) Confirmatory factor analyses of scores from full and short versions of the Marlowe–Crowne Social Desirability Scale. *J App Soc Psychol* 34:2343–2352
46. Chae DH, Lincoln KD, Adler NE, Syme SL (2010) Do experiences of racial discrimination predict cardiovascular disease among African American men? The moderating role of internalized negative racial group attitudes. *Social Sci Med* 71:1182–1188
47. Gee GC, Spencer MS, Chen J, Takeuchi D (2007) A nationwide study of discrimination and chronic health conditions among Asian Americans. *Am J Public Health* 97:1275–1282
48. Alegría M, Mulvaney-Day N, Woo M, Torres M, Gao S, Odio V (2006) Correlates of past-year mental health service use among Latinos: results from the National Latino and Asian American Study. *Am J Public Health* 97:76–83
49. RTI International (2004) SUDAAN: version 9.0.0. RTI, Research Triangle Park
50. Magai C, Kerns MD, Consedine NS, Fyffe D (2003) Depression in older ethnic groups: a test of the generality of the social precursors model. *Res Aging* 25:144–171
51. Fiori KL, Consedine NS, Magai C (2008) Ethnic differences in patterns of social exchange among older adults: the role of resource context. *Ageing Soc* 28:495–524
52. Keicolt KJ, Hughes M, Keith VM (2008) Race, social relationships, and mental health. *Pers Relat* 15:229–254
53. Asarnow JR, Tompson M, Hamilton EB, Goldstein MJ, Guthrie D (1994) Family expressed emotion, childhood-onset depression, and childhood-onset schizophrenia spectrum disorders: is expressed emotion a nonspecific correlate of child psychopathology or a specific risk factor for depression? *J Abnorm Child Psychol* 129–146
54. Butzlaff RL, Hooley JM (1998) Expressed emotion and psychiatric relapse: a meta-analysis. *Arch Gen Psychiatry* 55:547–552
55. Hooley JM, Orley J, Teasdale JD (1986) Levels of expressed emotion and relapse in depressed patients. *Br J Psychiatry* 148:642–647
56. Cohen S, Wills TA (1985) Stress, social support, and the buffering hypothesis. *Psychol Bull* 98:310–357
57. Schuster TL, Kessler RC, Aseltine RH (1990) Supportive interactions, negative interactions and depressed mood. *Am J Commun Psychol* 18:423–438
58. Lepore SJ (1992) Social conflict, social support, and psychological distress: evidence of cross-domain buffering effects. *J Pers Social Psychol* 63:857–867
59. Fiori KL, Consedine NS, Magai C (2009) Late life attachment in context: patterns of relating among men and women from seven ethnic groups. *J Cross Cult Gerontol* 24:121–141
60. Collins NL, Feeney BC (2000) A safe haven: an attachment theory perspective on support seeking caregiving in intimate relationships. *J Pers Social Psychol* 78:1053–1073
61. Merz E-M, Consedine NS (2009) The association of family support and wellbeing in later life depends on adult attachment style. *Attach Hum Dev* 11:203–221
62. Davis RC, Brickman E, Baker T (1991) Supportive and unsupportive responses of others to rape victims: effects on concurrent victim adjustment. *Am J Commun Psychol* 19:443–451
63. Julien D, Markman HJ (1991) Social support and social networks as determinants of individual and marital outcomes. *J Soc Pers Relat* 8:549–568
64. Strine TW, Chapman DP, Balluz L, Mokdad AH (2008) Health-related quality of life and health behaviors by social and emotional support: their relevance to psychiatry and medicine. *Social Psychiatry Psychiatr Epidemiol* 43:151–159
65. Gilson M, Freeman A (2009) *Overcoming depression: a cognitive-therapy approach*. Oxford University Press, New York
66. McFarlane WR, Dixon L, Lukens E, Lucksted A (2003) Family psychoeducation and schizophrenia: a review of the literature. *J Marital Fam Ther* 29:223–245
67. Sanford M, Boyle M, McCleary L, Miller J, Steele M, Duku E, Offord D (2006) A pilot study of adjunctive family psychoeducation in adolescent major depression: feasibility and treatment effect. *J Am Acad Child Adolesc Psychiatry* 45:386–395
68. Neuling SJ, Winefield HR (1988) Social support and recovery after surgery from breast cancer: frequency and correlates of supportive behaviors by family, friends, and surgeon. *Social Sci Med* 27:385–392
69. Rose JH (1990) Social support and cancer: adult patients' desire for support from family, friends, and health professionals. *Am J Commun Psychol* 18:439–464
70. Cohen S, McKay G (1984) Social support, stress, and the buffering hypothesis: a theoretical analysis. In: Baum A, Taylor SE, Singer JE (eds) *Handbook of psychology and health*. Lawrence Erlbaum, Hillsdale, pp 253–267
71. Waldinger RJ, Vaillant G, Orav EJ (2007) Childhood sibling relationships as a predictor of major depression in adulthood: a 30-year prospective study. *Am J Psychiatry* 164:949–954
72. Lincoln KD (2008) Personality, negative interactions and mental health. *Soc Serv Rev* 82:223–252