



HHS Public Access

Author manuscript

J Gerontol B Psychol Sci Soc Sci. Author manuscript; available in PMC 2016 June 15.

Published in final edited form as:

J Gerontol B Psychol Sci Soc Sci. 1995 March ; 50(2): S119–S127.

The Relationship Between Chronic Illness and Depression in a Community of Urban Black Elderly Persons

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Abstract

The relationship between depression and chronic illness among the elderly population has often been investigated. However, the impact of individual chronic illnesses while controlling for the impact of various psychosocial factors is still not well understood. This is particularly true among Black elderly persons. In a cross-sectional study, the impact of selected chronic illnesses and psychosocial variables on depression was investigated among 1,022 Black urban elderly persons who reside in New Orleans, Louisiana. Depression was greatest among those with more financial difficulties, more stressful life events, lower self-perceptions, less support from friends, and less instrumental support. Multiple regression analysis determined that depression was greatest among elderly persons who reported kidney, vision, and/or circulation problems. These findings suggest that elderly persons may perceive these three illnesses as more debilitating than other chronic illnesses.

Physical health status has been demonstrated to be highly predictive of emotional distress and depressive symptomatology both among aged Whites (Aneshensel, Frerichs, and Huba, 1984; Blazer, 1989; Murrell, Himmelfarb, and Wright, 1983; Revicki and Mitchell, 1990) and aged Blacks (Husaini, 1983; Husaini et al., 1991; Mui, 1993). Yet, health and mortality statistics indicate that older Blacks are more likely than older Whites to be infirm and to have chronic diseases (Johnson, Gibson, and Luckey, 1990). Black elderly persons have more than twice the morbidity for hypertension and diabetes and are 50 percent more likely to have circulatory and arthritic diseases (Willis, 1989). Blacks are more likely to get these diseases at earlier ages than their White counterparts, and these chronic illnesses also limit the activities of Blacks to a greater extent (Johnson, Gibson, and Luckey, 1990). Black elderly men and women have 60 percent and 33 percent more restricted activity days than their White counterparts, respectively (Reed, 1990).

Although older Blacks are at greater risk than older Whites for acute as well as chronic diseases, they do not have equity of access to medical care services for their health conditions and, relative to their needs, they are identified as underutilizers of medical care (Reed, 1990). Cohen (1992) argues that underdelivery of health services, higher disability,

and greater frequency of medical illness such as hypertension and diabetes among Black elderly persons add to their multiple jeopardies from a mental health perspective.

Reviewing the literature, Stanford and DuBois (1992) noted that after controlling for economic effects, Blacks are no more likely to experience depression than are Whites, although a higher proportion of Blacks were severely depressed, than Whites. Yet, in comparison with the overall population, Black elderly persons have been the most underserved by the mental health system (Butler, Lewis, and Sunderland, 1991; Mui and Burnette, 1992). The adjusted prevalence of depression in the Black population has been reported at 23 percent (Eaton and Kessler, 1981), whereas this rate among Black elderly persons was 15.6 percent (Stanford and DuBois, 1992). The higher rate of depression among young and middle-aged Black persons compared to older Blacks is an indication that future generations of Black elderly persons might be much more depressed than the current Black aged population.

Depression among elderly persons has been associated with certain medical illnesses including arthritis disability (Husaini and Moore, 1990), diabetes (Von Dras and Lichty, 1990), self-reported kidney disease, lung trouble (Murrell, Himmelfarb, and Wright, 1983), heart trouble (Murrell, Himmelfarb, and Wright, 1983; Wishnie, Hackett, and Cassem, 1971), and the effects of stroke (Murrell, Himmelfarb, and Wright, 1983; Parikh et al., 1990). However, no studies systematically isolate specific chronic conditions while taking into account other relevant psychosocial and demographic variables. Rather, many studies employ bivariate analyses or use the total number of chronic illnesses a person has as the measure of illness. Evidence of a specific linkage with depression is absent for most of these diseases (Hall, 1980), and little is known about the independent impact of specific chronic illnesses on depression among Black elderly persons.

The purpose of this study was to expand our understanding of depressive symptomatology among Black elderly persons by examining the independent impact of individual chronic illnesses on depression. This is important, particularly in light of the fact that by the time Blacks reach age 65 they have experienced a disproportionate prevalence of chronic disease, illness, and disability (Jaynes and Williams, 1989). The major objective of the study was to evaluate the effect of selected chronic illnesses on depression while holding constant other relevant variables that have emerged in previous studies as predictors of depression.

Method

Sample

Independently living Black elderly persons aged 62 years and older who resided in New Orleans, Louisiana participated in the study. A random sample of households' was obtained from housing complexes and senior citizen centers in the city. Potential participants were notified by letter about the study. The refusal rate was 17 percent. A sample of 1,040 older Black adults agreed to be interviewed. Due to missing data, only 1,022 participants were used in the analysis. All participants received remuneration.

The mean age of the sample was 73 years with a range of 62–96 years, and the majority of the sample was female (75%). Only 13 percent of our sample were currently married, 55 percent were widowed, and 32 percent were divorced, separated, or never married. Seventy-four percent of the sample lived alone. The mean education was 8 years, and only 18 percent of the sample had completed high school or had post-high school education. Eighty-eight percent of the sample had a monthly income of \$750 or less (\$9,000 per year).

Recent census information indicates that 61 percent of the total population of older Black adults 62 years and older in New Orleans are female and, similar to our sample, 11 percent of the total population of older Blacks 65 years and older are married and live with a spouse. Also among the older Black population, 51 percent completed less than a 9th grade education and only 24 percent completed high school or had post-high school education. Sixty-one percent of the older Black population of New-Orleans had a yearly income of \$9,999 or less (U S Bureau of the Census, 1990).

Measurement

Interviews were conducted in the homes of the respondents between November 1989 and October 1991. Interview questions assessed demographic information including age, sex, marital status, and educational level. The Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) was used to measure depression. Higher scores on the scale represent higher levels of depressive symptomatology. Questions also assessed sociomedical factors previously found to be related to depression. A brief review of these variables and the measures used in this study is provided below.

Selection of Predictor Variables

Social support—Reviewing the literature, Brown and colleagues (1992) noted that several researchers suggested that social support in general and networks of family ties have historically facilitated the survival, health, and well-being of Blacks. However, recent research on the relationship between social support and mental health among the Black elderly population is contradictory and fragmented with regard to type of support and the circumstances under which that support is most likely to be ameliorative (Brown et al., 1992). Examining gender differences with regard to the effect of social density and stressors upon depression symptomatology among a sample of 600 Black elderly community residents, Husaini and colleagues (1991) reported that lower levels of social attachment, guidance, and reliability were related to higher levels of depression among elderly women. However, they found that none of these social support dimensions was related to depression among Black elderly men. In another study, Mui (1993) detected no significant relationship between social contact and number of informal helpers and depression among a sample of 1,272 Black elderly subjects. Yet, Dressler's (1991) study indicates that ties with extended kin provided help associated with a decreased risk of depression which particularly mitigated the impact of social role stressors.

Cohen and Syme (1985) argued that if certain types of stressors predispose to mental health outcomes, then social support can influence mental health. Whether the stress-coping paradigm for explaining depression is applicable to the racial/ethnic older population has yet

to be seen (Mui, 1993). Kobata, Lockery, and Moriwaki (1980) emphasized the commonalities across ethnic groups regarding the function of social support systems. However, differences in the type, structure, quality, and availability of social support cannot be overemphasized (Stanford and DuBois, 1992).

Given the importance of evaluating social support in terms of the source of support (Dean, Kolody, and Wood, 1990; Seeman and Berkman, 1988; Wood and Robertson, 1978), and to examine the role of kin and non-kin in the lives of this sample of Black urban elderly persons (Petchers and Milligan, 1987), social support was assessed here by 13 questions. These questions measured (1) the number of, frequency of contact, and relational satisfaction with children, grandchildren, siblings, and friends; (2) perceived availability of instrumental support at the time of sickness or disability; and (3) presence of a confidant. Instrumental support, or tangible support, covers a wide range of activities such as providing assistance with household chores, lending or donating money, running errands, providing transportation, and helping with practical tasks, to name a few. This type of help in times of injury illness is particularly important because the recipient is often unable to perform necessary instrumental tasks (Wills, 1985). Principal components analysis of these 13 variables indicated that five factors explained 74.4 percent of the variance of these 13 items. A varimax rotation of the five factors produced five interpretable and discernible factors.

The first factor measures “support from children and grandchildren” and is highly correlated with number of children, number of grandchildren, frequency of contact with children and grandchildren, and satisfaction with the relationship existing with them. The second factor measures “support from friends” and is highly correlated with number of, frequency of contact, and relational satisfaction with friends. The third factor measures “support from siblings” and is highly correlated with the number of, frequency of contact, and relational satisfaction with siblings. The fourth factor measures “instrumental support at the time of sickness.” This factor is highly correlated with perceived availability of support as well as frequency of receiving support at the time of sickness and disability. The fifth factor measures the “presence of a confidant” and is correlated with the perceived availability of someone with whom to talk about things.

Stressful life events—While several studies have demonstrated significant relationships between stressful life events and depressive symptoms among Black elderly persons (Brown, Milburn, and Gary, 1992; Husaini, 1983; Linn, Linn, and Harris, 1981), Others have not found this relationship (Husaini et al., 1990, 1991; Smallegan, 1989). Ensel (1991) suggests the necessity of separating health-related life events from non-health-related events, particularly with regard to elderly persons who tend to suffer greater amounts of physical illness. Other researchers have noted a theoretical overlap between the life-events score and measures of illness (Dohrenwend and Dohrenwend, 1978; Thoits, 1981). The measure of stressful life events used in this study is a revised version of the scale developed by Holmes and Rahe (1967) and consists of 16 items. To avoid the theoretical overlap discussed above, items which measured previous hospitalization and mental and physical illness were eliminated. The items retained for the stressful life events scale are (1) death of your spouse, (2) death of your child, (3) serious illness, injury, or operation of your children, (4) serious illness, injury, or operation of your spouse, (5) marital separation or divorce, (6) other

problems related to your marriage, (7) being unable to get medical treatment when it was seriously needed for yourself, spouse, or child, (8) death of a close friend, (9) death of a close family member other than spouse or child, (10) retirement from work, (11) being fired from work, (12) son or daughter leaving home, (13) change in residence, (14) major change in church activities, (15) argument with family, friend, or neighbor, and (16) being the victim of a crime. A higher score on the scale indicates more stressful life events. An assessment of financial difficulties was not included in the stressful life events scale but, rather, was assessed by a single question that asked respondents to indicate whether “not having enough money to live on is (1) a very serious problem, (2) a somewhat serious problem, or (3) hardly a problem for them personally.” A higher value indicates less financial difficulties.

Self-perception—Self-perception and sense of personal competence have been found to be relevant to the outcome of depression (Dean, 1986). In view of the likelihood of an intercorrelation between these two factors (La Gory, Ritchey, and Mullis, 1990), we included only one measure of self-perception. Six self-descriptive adjectives, similar to those used elsewhere (e.g., Mutran and Reitzes, 1981), were used in this study. The adjectives tapped feelings of being friendly and warm, open-minded and adaptable, wise from experience, bright and alert, physically active, and good at getting things done. To each item respondents stated whether they (1) very, (2) somewhat, or (3) hardly at all possessed each quality. The reliability of this unweighted summated scale, in terms of internal consistency, was tested and found acceptable ($\alpha = .84$).

Chronic illness—As previously mentioned, evidence consistently points to a relationship between depression and chronic illness in general (Blazer et al., 1991; Husaini, 1983; Husaini et al., 1991; Mui, 1993) and specific illnesses such as arthritis, kidney disease, lung trouble, and heart trouble in particular (Murrell, Himmelfarb, and Wright, 1983). Chronic illness was assessed in the present study by subjects responding “yes” or “no” to the question, “Do you have the following health problems?”: heart trouble, high blood pressure, diabetes, arthritis, respiratory disease, kidney problems, stomach trouble, problems with teeth or gums, eye problems, hearing problems, or circulation trouble in arms or legs.

Analysis Plan

In the next section, we first examine the bivariate relationships between CES-D depression scores and each of the 11 selected chronic illnesses. Since 11 different bivariate analyses will be performed, a significance level of $p < .004$ ($.05/11 = .004$) will be employed to reduce the possibility that significant differences will be obtained by chance (Elston and Johnson, 1987). Next, using multiple regression analysis, the impact of total number of chronic illnesses experienced will be tested while all other variables are controlled. Next, the independent impact of each chronic illness on depression will be assessed by using 11 separate multiple regression equations. In each equation, CES-D depression will be regressed on demographic variables, life events, self-perception, social support indices, one chronic illness at a time, and total number of other chronic illnesses except for the one that is already included in the equation. Once we detect which, if any, chronic illnesses remain statistically significant in the regression equations, then the combined impact of these illnesses on depression will be examined. In order to do so, two new variables will be

formed: (1) the total number of chronic illnesses that are significant, and (2) the total number of chronic illnesses that are not significant in the previous 11 regression equations.

Results

The results of a series of analyses indicated a statistically significant relationship at a p -value of .004 between CES-D depression scores and each of the selected chronic illnesses except for blood pressure, diabetes, and problems with teeth or gums (Table 1). Depression scores were higher for elderly adults who reported any of the chronic illnesses.

The independent impact of total number of chronic illnesses and the independent impact of each chronic illness on depression, once all other variables were controlled, were assessed by 12 separate multiple regression equations as presented in Table 2. In the first equation (Column 1), total number of chronic illnesses was included in the regression as the measure of illness. For the second equation, total number of chronic illnesses was replaced by two other variables, heart problems and total number of other chronic illnesses excluding heart problems. Similarly, equations 3–12 each examined the impact of one chronic illness at a time while total number of other chronic illnesses (not including the corresponding illness) was controlled. For example, the third equation examined high blood pressure and total number of other chronic illnesses excluding high blood pressure. This pattern was followed for all 11 chronic illnesses in the order in which they are presented in the variables column.

The data presented in Table 2, Column 1, indicate that depression is related to total number of chronic illnesses, financial strain, stressful life events, self-perception, instrumental support, and support from friends. A weak independent impact of sex and education was also detected. However, equations 2–12 (when each illness was included in the equations separately) demonstrate that only three of the selected chronic illnesses, kidney problems (Column 7), vision problems (Column 10), and problems with circulation in the arms and/or legs (Column 12), are related to depression when all other variables are held constant. Also, total number of other illnesses remained a significant factor in each equation (2–12).

To separate the impact of kidney, vision, and circulation problems from all other illnesses, two new variables were formed: KVC (the sum of yes responses to the presence of kidney problems, vision problems, and circulation problems) and total number of other illnesses excluding KVC. Depression was then regressed on demographic, social support, psychological factors, KVC, and total number of other illnesses. As noted in Table 3, while KVC is significantly related to depression, the impact of other chronic illnesses (excluding KVC) is no longer significant. Furthermore, the same demographic and psychosocial variables which were significant in Table 2 remained significant and, along with KVC, these variables account for 31.6 percent of the variance.

Finally, testing for the presence of interaction effects between the five social support indices and financial strain, stressful life events, self-perception, and KVC was done by employing four different models. Each model included five product terms and in order to avoid multicollinearity between the predictor variables (first order terms) and the products terms, the predictor variables were centered (i.e., put in deviation score form so their means were

zero) and product terms were formed by multiplying the centered predictors of interest (Aiken and West, 1991). Interaction effects were detected only between KVC and instrumental support, indicating that the strength of relationship between KVC and depression slightly weakens as the level of instrumental social support increases.

Discussion

The goal of this study was to investigate the relationship between chronic illnesses and depression while considering the impact of psychosocial factors. Consistently, across all of the statistical analyses performed, the same psychosocial variables were significant. We detected a significant association between gender and depression, even after all other related variables were held constant. Given that Black elderly women are more likely to live alone, to be unmarried, and to have more financial strain than their male counterparts (Brown, 1988), it was expected that elderly women would have higher levels of depression symptoms than men. However, reviewing the gerontological literature, Feinson (1987) noted inconsistent findings regarding the impact of gender on psychological distress. Although most studies on gender differences in psychiatric symptoms among Blacks indicate that women have higher rates of depression than men, the recent investigations revealed no gender differences in overall level of depressive symptomatology among older Black persons (Brown, Milburn, and Gary, 1992; Smallegan, 1989). Examining a sample of 148 older Black persons, Brown and colleagues (1992) reported no gender differences in overall levels of depressive symptomatology. They suggested that the lack of gender difference in depressive symptoms in their sample was attributed to similarities in risk factors related to stressful life events and the social roles associated with employment and childbearing. In another study, Smallegan (1989) studied a sample of 87 older Whites and 94 older Blacks. Her analyses also detected no gender differences in level of depression symptoms. Both of these abovementioned studies were cross-sectional and employed small samples. However, the present study did not control for the impact of social roles associated with employment and childbearing. As many researchers have recognized, longitudinal data are required to portray a clearer picture of the impact of gender and changes in social roles and stressful life events on depression among Black elderly persons.

The results of this study in the area of social support are similar to those reported elsewhere (e.g., Dean, Kolody, and Wood, 1990; Dressier, 1991; Husaini et al., 1990). Our findings, similar to those of Taylor and Chatters (1986), suggest that support from friends was more important than support from family members in reducing the likelihood of developing depressive symptomatology. Taylor and Chatters (1986) found that a higher percentage of Black elderly persons received help from friends, a relationship which has previously been reported as more frequent and satisfying (Chappell, 1983). This relationship has also been implicated in risk of mortality among Black elderly persons; Black elderly women who visit and talk with friends had a lower risk of death than Black men who did not visit and talk with friends (Bryant and Rakowski, 1992). In another study, analyzing data from the National Survey of Black Americans, Taylor, Keith, and Tucker (1993) noted that older Black respondents were more likely to visit friends and less likely to count primarily on relatives than younger counterparts.

The results of multivariate regression analyses with various interaction terms between social support, stressful life events, and chronic illnesses indicated only a weak interaction effect between chronic illnesses and instrumental support. This finding corroborates two recent studies by Dressier (1991) and Brown et al. (1992). Brown and colleagues examined patterns of social affiliation as predictors of depression symptoms among a sample of Black persons. The data from their analysis did not indicate that family ties are able to minimize the impact of persistent economic difficulties on depression. Overall, these results are in agreement with the cumulative evidence which indicates that interaction effects, if significant, become relatively small or insignificant when the main effects of social support and undesirable life events are controlled (Lin, 1986).

There is substantial evidence regarding the critical role that adult Black children assume in providing assistance to their elderly parents (Chatters and Taylor, 1993; Petchers and Milligan, 1987). However, we detected no independent relationship between family ties and depression among our sample. The present finding may in part be explained based on the characteristics of the sample; the majority are women (75%) and the majority live alone (74%) Magaziner and Cadigan (1989) found that among elderly women who live alone or with people other than a spouse, those with a greater number of friends had more feelings of happiness. The researchers concluded that friends are beneficial for the psychological well-being of elderly women.

We also found that more positive self-perceptions and greater availability of instrumental support at the time of sickness or disability are associated with lower levels of depressive symptomatology. As Magaziner and Cadigan (1989) suggest, feelings of confidence that someone will be available to help may lead to feelings of control over short- or long-term care should the need arise. This in turn could lead to lower feelings of psychological distress. It is possible that our significant finding for instrumental support may in fact be due to assistance received from children or other family members. This may explain our apparent incongruent findings about familial social support with other studies that note the significant role family members play in the lives of older adults.

Our findings also support previous research in the areas of financial strain and stressful life events; the greater the amount of financial strain or stressful life events these elderly persons experience, the more likely they are to develop depression.

When the relationship between each of the chronic illnesses and depression was examined in bivariate analyses, significant relationships for nine illnesses were uncovered. Similar relationships have been reported by other researchers (e.g., Murrell, Himmelfarb, and Wright, 1983). Also, when total number of chronic illnesses was included in a regression analysis, the number of chronic illnesses was related to depression. This too has been demonstrated in previous research (Husaini et al., 1990, 1991; Mui, 1983). Although these results are useful, they are nonetheless limited in supplying detailed information about any specific illness.

When we isolated each chronic illness through a series of multiple regressions, while holding constant all other variables, we were able to determine those illnesses responsible

for the significant relationship between total number of chronic illnesses and depression. Interestingly, we found that only three illnesses — kidney problems, vision problems, and circulation problems – retained their significance. That is, although bivariate analyses determined that several chronic illnesses were related to depression, when other relevant variables were held constant in the regression equations only these three illnesses maintained their significant status. In fact, the mean depression score (16.68) for subjects with kidney problems was above the cutoff point of 16 on the CES-D scale for severe depression proposed by Radloff (1977).

When we separated the impact of these three illnesses to form one variable (KVC) and included it in a separate analysis with total number of other illnesses (excluding kidney, vision, and circulation problems), we found that total number of other illnesses was no longer significant. Therefore, it is safe to conclude that none of the other chronic illnesses (heart problems, hypertension, diabetes, arthritis, respiratory disease, stomach problems, tooth/gum problems, and hearing problems), when other variables are held constant, is related to depression in this sample of Black elderly persons.

These results are quite interesting but nonetheless surprising in some respects. First, it is surprising that hypertension and heart problems, two diseases responsible for high rates of morbidity and mortality among Blacks, did not prove to be significantly related to depression given the potential for their devastating impact on health status, although the silent nature of hypertension may explain the lack of a significant relationship for that disease. Secondly, the three significant illnesses do not involve any single organ system nor, on first glance, do they appear to be related to each other. However, some explanations can be postulated.

Although our data do not provide information on the severity of these illnesses, it is possible that they are actually or perceived to be more debilitating. Kidney problems may involve pain and/or the need for dialysis. These possible consequences may lead to a diminution of social activities and social involvement. Vision problems also can lead to a limitation of social interaction by possibly restricting mobility and limiting elderly persons to regions close to home. Also, they may be unable to participate in some activities of daily living such as household chores (e.g., cooking) to the extent they did prior to the development of the illness. Their enjoyment of some activities such as watching television and reading may also be reduced. Circulation problems in hands and feet also may cause some degree of discomfort which may result in lowered mobility and possibly lead to a decrease in social interaction. In addition, as supported by our results, in the absence of strong social support, particularly instrumental support, physical problems such as vision and kidney problems (which are more debilitating) may result in more symptoms of depression.

Of course, any one of the selected illnesses investigated here has the potential for restricting mobility or causing pain. Clearly, illnesses such as arthritis have the potential for disrupting daily activities. One possibility is that, for many elderly persons, their expectations of aging are such that discomfort from certain diseases commonly associated with the aging process, such as arthritis, is accepted and therefore is not viewed as harshly as otherwise would be

expected. However, there appears to be a unique aspect to kidney, vision, and circulation problems, in particular, which is more directly related to depression.

Another interesting observation is that kidney, vision, and circulation problems are all recognized complications of diabetes (Liebermann, 1988). Although diabetes itself was not directly related to depression in this study, these three illnesses were related to depression. It is possible that a number of elderly persons with vision, circulation, and/or kidney problems may be experiencing problems associated with diabetes. Three distinct possibilities exist within our sample. First, not all diabetic elderly persons have developed one of these illnesses (e.g., only 10% report kidney problems). Second, those who report one or more of these three illnesses may not understand that these problems could be the consequence of diabetes. Indeed, of those elderly persons who reported diabetes, 65 percent and 58 percent also reported vision and circulation problems, respectively. Whether these elderly persons perceived that their vision and circulation problems were associated with diabetes is not clear. Third, a number of those who reported one of the illnesses, particularly vision and circulation problems, may in fact suffer from diabetes but have not yet been diagnosed.

While addressing important issues in the area of chronic illness and depression, a major limitation of the present research is the self-report nature of the study. Self-report measures rely on the recall of the respondents and are therefore subject to error. This may be particularly true in the reporting of chronic illnesses. Unfortunately, with self-report measures, much is left open to interpretation and, in the present study, the elderly persons' view or understanding of their chronic illnesses may differ from that anticipated from the question. Therefore, future research should include a more detailed or objective measure of chronic illnesses and also measure perceptions of severity of illness. A second limitation is due to the cross-sectional survey design used. A longitudinal study which tracks the development of chronic illnesses in relation to the onset of depressive symptoms is in order. Third, an additional consideration which must be addressed is the possible confounding of somatic symptoms in the CES-D scale since the CES-D scale includes some factors which may be attributed to somatic/physiologic symptoms (Craig and Van Natta, 1976). The extent of such confounding is difficult to determine in the present study. Finally, we recognize that our data come from a nonprobability sample which limits the generalizability of the findings. The majority of this Black elderly sample are female, live alone, and have low educational and income levels. Future research efforts should extend this study to include a more heterogeneous sample. While generalizations beyond populations similar to that investigated here must be done cautiously, the results are at least a first step toward a better understanding of the impact of individual chronic illnesses on depression. This study in no way detracts from other investigations that suggest a relationship between other illnesses such as cancer, cardiac disease, or any of the many illnesses implicated in the development of depressive symptomatology. Rather, it provides additional information about the influence of individual illnesses and the possible consequences of individual illnesses, in the presence of certain psychosocial factors, on depression.

Acknowledgments

The research reported in this article was supported by National Institutes of Health, Research Centers in Minority Institutions (RCMI) Grant G12 RR03026-06A1 and G12 RR050750.

The authors thank Peggy Ragas, Frederick White, and Stanley Dixon for their assistance in interviewing, data collection, and data management.

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Table 1

Percentage of Elderly Persons Who Reported Each Chronic Illness and Their Associated Depression Scores and *t*-values (*N* = 1022)

Chronic Illness		%	Mean CES-D Score	<i>t</i> -value
Heart problems	Yes	35.3	13.48	-5.98**
	No	64.7	9.53	
High blood pressure	Yes	60.3	11.47	-2.10*
	No	39.7	10.10	
Diabetes	Yes	27.8	12.05	-2.17*
	No	72.2	10.50	
Arthritis	Yes	68.4	12.07	-5.28**
	No	31.6	8.47	
Respiratory disease	Yes	15.9	13.98	-4.18**
	No	84.1	10.35	
Kidney problems	Yes	7.0	16.68	-5.00**
	No	93.0	10.49	
Stomach problems	Yes	17.9	14.27	-4.93**
	No	82.1	10.20	
Problem with teeth/gums	Yes	16.8	12.42	-2.10*
	No	83.2	10.63	
Eye problems	Yes	58.2	12.51	-5.90**
	No	41.8	8.73	
Hearing problems	Yes	20.6	13.53	-4.16**
	No	79.4	10.25	
Circulation trouble in arms/legs	Yes	43.9	14.14	-9.22**
	No	56.1	8.41	

* $p < .05$;

** $p < .004$.

Table 2
Unstandardized Multiple Regression Coefficients for Selected Chronic Illnesses and Other Related Factors as Predictors of Depression Among Black Elders (N= 1022)

Variables	Regression Equations					
	1	2	3	4	5	6
Age	.02	.02	.02	.02	.02	.02
Sex (male)	-1.78*	-1.80*	-1.80*	-1.80*	-1.83*	-1.77*
Marital status (married)	.62	.63	.69	.60	.60	.60
Education (actual years)	-.16*	-.16*	-.15*	-.16*	-.16*	-.16*
Financial strain ^a	-1.12**	-1.21**	-1.21**	-1.22**	-1.22**	-1.21**
Life events ^b	1.13**	1.13**	1.13**	1.13**	1.13**	1.14**
Self-perception ^c	1.03**	1.03**	1.02**	1.03**	1.03**	1.04**
Social support/Children	-.50	-.50	-.50	-.50	-.51	-.51
Social support/Friends ^d	-1.55**	-1.47**	-1.54**	-1.56**	-1.55**	-1.55**
Social support/Siblings	-.53	-.52	-.53	-.52	-.52	-.53
Instrumental support ^d	-1.47**	-1.47**	-1.46**	-1.46**	-1.47**	-1.47**
Social support/Confidants	-.47	-.47	-.47	-.47	-.48	-.47
Total number of illnesses	.83**	—	—	—	—	—
Total illnesses except ^e	—	.87**	.91**	.91**	.89**	.85**
Isolated illnesses ^f :						
(2) Heart	—	.54	—	—	—	—
(3) High blood pressure	—	—	.22	—	—	—
(4) Diabetes	—	—	—	.03	—	—
(5) Arthritis	—	—	—	—	.38	—
(6) Respiratory disease	—	—	—	—	—	.55
(7) Kidney	—	—	—	—	—	—
(8) Stomach	—	—	—	—	—	—
(9) Teeth/Gums	—	—	—	—	—	—
(10) Vision	—	—	—	—	—	—
(11) Hearing	—	—	—	—	—	—

Variables	Regression Equations					
	1	2	3	4	5	6
(12) Circulation trouble in arms or legs	—	—	—	—	—	—
Adjusted R^2	.308	.308	.308	.308	.308	.307
Regression Equations						
Variables	7	8	9	10	11	12
Age	.02	.02	.02	.02	.02	.02
Sex (male)	-1.86*	-1.82*	-1.78*	-1.78*	-1.90*	-1.78*
Marital status (married)	.60	.63	.63	.61	.63	.50
Education (actual years)	-.16*	-.16*	-.16*	-.16*	-.16*	-.15*
Financial strain ^a	-1.20**	-1.20**	-1.20**	-1.20**	-1.26**	-1.23**
Life events ^b	1.15**	1.14**	1.14**	1.13**	1.16**	1.11**
Self-perception ^c	1.03**	1.03**	1.03**	1.04**	1.06**	1.03**
Social support/Children	-.47	-.51	-.49	-.50	-.51	-.48
Social support/Friends ^d	-1.54**	-1.56**	-1.53**	-1.55**	-1.55**	-1.57**
Social support/Siblings	-.51	-.52	-.53	-.53	-.55	-.49
Instrumental support ^d	-1.48**	-1.46**	-1.46**	-1.47**	-1.50**	-1.53**
Social support/Confidants	-.48	-.49	-.49	-.46	-.48	-.51
Total number of illnesses	—	—	—	—	—	—
Total illnesses except ^e	.72**	.80**	.91**	.80**	.78**	.54**
Isolated illnesses ^f :						
(2) Heart	—	—	—	—	—	—
(3) High blood pressure	—	—	—	—	—	—
(4) Diabetes	—	—	—	—	—	—
(5) Arthritis	—	—	—	—	—	—
(6) Respiratory disease	—	—	—	—	—	—
(7) Kidney	3.12**	—	—	—	—	—
(8) Stomach	—	1.19	—	—	—	—
(9) Teeth/Gums	—	—	.27	—	—	—

Variables	Regression Equations					
	1	2	3	4	5	6
(10) Vision	—	—	—	1.40*	—	—
(11) Hearing	—	—	—	—	.40	—
(12) Circulation trouble in arms and legs	—	—	—	—	—	2.11*
Adjusted <i>R</i> ²	.311	.308	.309	.311	.301	.312

Note. A dash indicates that the variable was not included in the regression equation.

^a A negative regression coefficient indicates that those with more financial problems (low score on scale) are more likely to be depressed.

^b A positive regression coefficient indicates that those with a higher number of stressful life events are more likely to be depressed.

^c A positive regression coefficient indicates that those with a positive self-perception (a low score on the scale) are less likely to be depressed.

^d A negative regression coefficient indicates that those with less of the specified type of support are more likely to suffer from depression.

^e "Total Illnesses Except" refers to the inclusion of all illnesses except for one specific illness in the order in which they are listed under Isolated Illnesses.

^f Each illness under Isolated Illnesses was investigated in separate regression analyses (2–12) in the order in which they are listed.

* $p < .01$;

** $p < .001$.

Table 3

Standardized Multiple Regression Coefficients and *t*-value for Depression Regressed on Demographic, Social Support, Psychological Factors, and Chronic Illness (*N*= 1022)

Variable	β	<i>t</i> -value
Age (actual years)	.01	.04
Sex (male)	-.08	-2.80**
Marital status (married)	.01	.53
Education (actual years)	-.06	-2.13*
Financial strain ^a	-.10	-3.71***
Stressful life events	.20	7.31***
Self-perception ^b	.24	8.79***
Social support/Children	-.05	-1.69
Social support/Friends ^c	-.15	-5.75**
Social support/Siblings	-.05	-1.84
Instrumental support ^c	-.14	-5.23**
Social support/Confidants	-.05	-1.75
Number of KVC problems ^d	.17	5.49***
Number of other illnesses ^e	.05	1.85
Adjusted <i>R</i> ²	.316	

^a A negative regression coefficient indicates that those with more financial problems (low score on scale) are more likely to be depressed.

^b A positive regression coefficient indicates that those with a positive self-perception (a low score on the scale) are less likely to be depressed.

^c A negative regression coefficient indicates that those with less of the specified type of support are more likely to suffer from depression.

^d KVC refers to the combination of the total number of kidney problems, vision problems, and problems with circulation in arms and/or legs.

^e Number of other chronic illnesses excluding kidney, vision, and circulation problems.

* $p < .05$;

** $p < .01$;

*** $p < .001$.