

# NIH Public Access

**Author Manuscript** 

Soc Serv Rev. Author manuscript; available in PMC 2012 March 5.

# Published in final edited form as:

Soc Serv Rev. 2011 June ; 85(2): 246–265. doi:10.1086/660068.

# The Relationship of Social Support to African American Caregivers' Help-Seeking for Emotional Problems

### Joseph G. Pickard,

University of Missouri–St. Louis

### **Megumi Inoue**, Boston College

Letha A. Chadiha, and University of Michigan

## Sharon Johnson

University of Missouri-St. Louis

# Abstract

This study analyzes whether social support serves as a link to or substitute for formal services among African American female caregivers seeking help with emotional problems. It also analyzes other determinants of help-seeking. It relies on data from the Black Rural and Urban Caregivers Mental Health and Functioning Study and is guided by a modified version of the behavioral model of health services use. Using hierarchical binary logistic regression, analyses reveal that only age, stress, and support from fellow church members are statistically significantly associated with the likelihood of help-seeking. These results support the linking hypothesis, suggesting that the social support received by African American women caregivers in the context of their religious organizations helps to link them to services.

Estimates indicate that, by 2030, the proportion of Americans aged 65 or older will reach 20 percent, or one of every five people (U.S. Administration on Aging n.d.*a*). Reflecting an aging baby boomer generation, the number of elders who need institutional or home-based long-term care is estimated to increase from 8 million in 2000 to 19 million in 2050 (U.S. Department of Health and Human Services and U.S. Department of Labor 2003). The increasing size and longevity of the elderly American population implies an increase in informal care-givers.

Like other racial and ethnic groups in the United States, African Americans are living longer than their predecessors did; however, the population of elder African Americans is estimated to increase in the next half century, and the size of the increase is striking compared to that estimated for non-Hispanic whites (U.S. Administration on Aging n.d.*b*). Among people aged 65 and older, the proportion of African Americans was 8 percent in 2004 and is projected to be 12 percent in 2050. In contrast, projections indicate that the proportion of non-Hispanic white Americans will decrease from 82 percent to 61 percent during the same period (Federal Interagency Forum on Aging-Related Statistics 2006).

The growing number of elderly African Americans heightens the importance of conducting research on mental health service use by their caregivers. This is particularly so for female African American caregivers, who are known to provide the bulk of unpaid care to African

<sup>© 2011</sup> by The University of Chicago. All rights reserved.

American elders (Thompson 2004). The purpose of this study is to examine factors associated with African American female caregivers' mental health service use as well as the relationship between that service use and the informal support they provide.

# Caregivers' Mental Health Service Needs

Although a substantial number of elders need some support for activities of daily living (ADLs) and instrumental activities of daily living (IADLs), approximately 78 percent of those adults do not receive support through paid programs. Rather, their support is provided exclusively by informal sources, such as family members and friends (Thompson 2004). Many studies report the negative consequences of the burden and stress borne by these informal caregivers (Schulz and Beach 1999; Butler et al. 2005; De Frias, Tuokko, and Rosenberg 2005). The prevalence of depression is identified as higher among caregivers than among noncaregivers (Butler et al. 2005). Caregivers' depression often reaches critical stages by the time mental health services are finally provided to them (Butler et al. 2005). Receiving mental health services at the right time is essential for caregivers who are vulnerable to psychological distress.

Many studies report that levels of depression, burden, and stress are lower among African American caregivers than among their white counterparts (Lawton et al. 1992; Haley et al. 1995; Connell and Gibson 1997; Pinquart and Sörensen 2005), but findings are not consistent. A study by T. J. McCallum, Crystal Flynn Longmire, and Bob Knight (2007) finds that these two groups do not differ in depressive symptoms or burden but that African American caregivers' perceived physical health is worse than that of white caregivers.

# Informal Support and Formal Service Use

Numerous studies document racial and ethnic disparities in mental health service use (Kales et al. 2000; Wells et al. 2001), suggesting that African Americans are less likely to use professional mental health services than are non-Hispanic whites (Kales et al. 2000; Wells et al. 2001). The lack of health insurance appears to be one reason for the lower levels of use of mental health services among African Americans (Wells et al. 2001). About 19.6 percent of African Americans are uninsured; the rate is 11.3 percent among non-Hispanic whites (DeNavas-Walt, Proctor, and Lee 2006). The lack of insurance clearly impedes access to mental health services. However, some studies report that African Americans who share similar socioeconomic situations with whites still do not use mental health services as much as their white counterparts do (Scheffler and Miller 1989; Padgett et al. 1994a, 1994b; Barrio et al. 2003; Wang et al. 2005).

A report by the U.S. Surgeon General notes that stigma attached to mental illness and the lack of sufficient numbers of African American mental health professionals are additional barriers to service use by African Americans (U.S. Department of Health and Human Services 2001). For historical reasons, the number of African Americans who express fear of mental health treatment is greater than the number of non-Hispanic whites who do so (Sussman, Robins, and Earls 1987; Choi and Gonzalez 2005). However, African Americans tend to have stronger and broader networks of informal social support (Martin and Martin 1978; Mindel and Wright 1982; Logan 2001). Although some studies find that there is a linking function between informal support and formal services, such that informal support helps to link people to services (Stoller 1989; Chappell and Blandford 1991; Tennstedt, Crawford, and McKinlay 1993; Clark et al. 2001; Choi and Gonzalez 2005). Little is known about the relationship between informal support and formal service use.

# African Americans' Help-Seeking from Clergy

Religion and religious institutions play important roles in African Americans' lives (Taylor et al. 2000). Studies report that African Americans' levels of involvement in religious activities are greater than those among non-Hispanic whites. For example, Robert Taylor and colleagues (1996) find that 52.3 percent of African Americans participate in religious services two or three times in a month. By contrast, 43.2 percent of non-Hispanic whites participate that often. Often, African American religious institutions offer services (e.g., to meet basic needs by providing food, clothes, and shelter) and educational programs (e.g., life skills, disease prevention; Taylor, Chatters, and Levin 2004).

In the general population, about 25 percent of people who seek help turn first to clergy, and research suggests that nearly 25 percent of these people might be considered to have serious mental disorders; of those individuals, almost 25 percent seek help exclusively from clergy (Wang, Berglund, and Kessler 2003). Counseling provided by clergy is a common element within African American religious communities. John Young, Ezra Griffith, and David Williams (2003) interview 99 African American pastors, finding that, on average, these clergy offer more than 6 hours of counseling work per week. Young and associates observe that this counseling functions as an important mental health service among African Americans who lack access to other mental health professionals. However, little is known about the help-seeking behavior of female African American caregivers who turn to clergy for assistance. The high levels of religious involvement among African Americans, the substantial amount of services provided by clergy in African American religious communities (Dupree, Watson, and Schneider 2005; Mattis et al. 2007; Chatters et al. 2011), and the general African American population's difficulties in accessing mental health services all suggest that considering clergy as a formal mental health service is not only appropriate but important.

# **Conceptual Framework and Competing Hypotheses**

As mentioned previously, African Americans tend to have greater informal support and to use professional mental health services less than their white counterparts do (Martin and Martin 1978; Mindel and Wright 1982; Logan 2001; Hines-Martin et al. 2003). However, no comprehensive research examines the relationship between informal social support and mental health service use, especially among African American female caregivers. In order to elucidate that relationship, this exploratory study tests two competing hypotheses: the substitution model and the linking model. If the relationship between social support and mental health service use exists, the finding would offer support for a substitute for formal services. Conversely, if informal support and level of mental health service use are found to be positively related, the finding would support the linking (or complementary) model, which argues that the more social support one has, the more likely one is to obtain services (Greene 1983; Litwak 1985; Stoller 1989; Chappell and Blandford 1991; Tennstedt et al. 1993; Clark et al. 2001; Choi and Gonzalez 2005).

This study is organized using a modified version of the behavioral model of health service use (Andersen 1995). The behavioral model divides predictive variables into three categories: need variables, predisposing factors, and enabling factors. The analysis then examines the relation of each of these categories to help-seeking. The behavioral model is the most widely used model for health services research. Because this study explores the unique effects of types of social support on service use, the model contains a fourth category: social support variables. These variables ordinarily would be considered part of the enabling variables category.

The sample is composed wholly of African American women who provide unpaid care to elders. The authors are aware of no studies that use such a sample to examine factors related to help-seeking by African American female caregivers for emotional problems.

### Methods

#### Sampling, Screening, and Data Collection

Data come from the Black Rural and Urban Caregivers Mental Health and Functioning Study (Chadiha et al. 2004), which was conducted between July 1999 and August 2002. This cross-sectional study includes data on 521 Midwestern urban (n = 256) and rural (n = 265) African American female caregivers of dependent African American elders (age 65 years or older). The Black Rural and Urban Caregivers Study examines the mental health and social functioning of African American female caregivers. It adapts a form of the sampling and screening methodology used by Sandra Picot and colleagues (2001). That methodology is employed here to obtain information from representative samples of rural and urban African American elders. Information from those elders is then used to recruit their caregivers for the current study. The Institutional Review Board of Washington University in St. Louis approved the current study.

Investigators acquired the names, addresses, birth dates, and genders of African American Medicare enrollees who were aged 65 or over from the Health Care Financing Administration, now the Centers for Medicare and Medicaid Services. During the study period, enrollees resided in seven historically rural, southeast Missouri counties, or in metropolitan St. Louis. Rural counties meet U.S. Census Bureau criteria for a nonstandard metropolitan statistical area (i.e., the population size ranges from 2,500 to 20,000, and the area is not adjacent to a metropolitan area). Metropolitan St. Louis meets U.S. Census Bureau criteria for a standard metropolitan statistical area (Cromartie and Bucholtz 2008). Sampling consultants from the University of Michigan Survey Research Center selected a stratified urban random sample of 9,419 metropolitan St. Louis enrollees. Before attempting to contact enrollees, researchers sent each individual a letter that explained the study. Subsequent telephone and in-person contacts with enrollees were designed to determine study eligibility and to identify sampled elders' primary caregivers (Chadiha et al. 2004).

To be eligible for this study, African American elders had to self-identify as African American, black, Negro, or colored; be 65 years of age or older; reside within targeted areas; and receive unpaid help from an African American female to deal with at least one ADL, with at least one IADL, or with decision making.<sup>1</sup> Eligible elders and their proxies identified up to two unpaid African American females who provided help: one who is reported to help the most and another who is also reported to help. Ninety-five percent of those in the final caregiver samples are identified as caregivers who help the most. Researchers contacted identified caregivers to verify their eligibility. To be eligible for inclusion in the sample, a caregiver had to self-identify as an African American female; be 18 years old or older; provide the elder with unpaid help for ADLs, IADLs, or decision making; and give oral consent to an in-person interview.

Interviews were conducted by African American women who reside in the same locality as the interviewees. Investigators trained these women to conduct computer-assisted, personal

<sup>&</sup>lt;sup>1</sup>Activities of daily living include bathing, grooming, dressing, walking, bed transfer, feeding, and toileting. Instrumental activities of daily living include shopping, house-keeping, preparing meals, managing money or bills, taking medication, doing yard work, and traveling outside.

Soc Serv Rev. Author manuscript; available in PMC 2012 March 5.

interviews in the respondents' homes. On average, interviews lasted approximately 2.5 hours. Interviews were conducted with 521 primary caregivers. The over-all response rate is 88 percent (84 percent urban, 93 percent rural) among contacted eligible caregivers. Caregivers received \$15 for their participation. Due to missing data on the dependent variable (whether the respondent used or did not use mental health service in the 6 months prior to the interview), the final sample size for the present study is composed of 516 study participants.

#### Measures

**Mental health service use**—The dependent measure of mental health service use is assessed by combining three dichotomous items to create one dichotomous variable that indicates whether the caregiver used or did not use a mental health service. The questions are adapted from the National Survey of Black Americans (Jackson and Gurin 1999) and focus on events within the 6 months prior to the interview. For each variable, possible responses were either "yes" (coded as 1) or "no" (coded as 2). The combined variable is coded as 1 if a respondent reports using any of the listed services and as 0 if she reports that she did not use any of the services. Respondents were informed that questions are about the places or people they may go to for help for themselves, not for help for the elder, during a difficult time. The first question is: "Have you used any services for yourself such as seeing a mental health specialist, like a counselor, psychologist, clinical social worker, family therapist, or psychiatrist?" The second asks: "Besides the mental health specialist that I have already asked about, have you attended any support groups?" The third asks whether the caregiver has "seen a religious leader like clergy or a pastor?" Twenty-four caregivers (4.6 percent) responded affirmatively to the first question, and 16 (3.1 percent) say that they attended a support group. Ninety-five of the respondents (18.3 percent) say that they met with a religious leader. Fourteen respondents report using more than one service, and a total of 115 respondents (22.1 percent) say that they used at least one type of formal service in the 6 months prior to the interview.

**Need variables**—The need variables analyzed here include measures of self-reported stress, perceived health, limitations in social participation, and caregiver strain. The self-reported level of stress is assessed through the use of a 10-item version ( $\alpha = .67$ ) of the Perceived Stress Scale. This scale captures respondents' assessments of the extent to which they feel their lives are uncontrollable, unpredictable, and overloaded (Cohen, Kamarck, and Mermelstein 1983; Cohen and Williamson 1988). Sample items include such questions as: "How often in the past month have you been able to control how you spend your time?" and "How often in the past month have you felt that you were coping well with important changes that were occurring in your life?" Possible responses on individual items are "never" (coded as 0), "almost never" (coded as 1), "sometimes" (coded as 2), "fairly often" (coded as 3), and "very often" (coded as 4). Responses are scored across the items for a possible range of 0–40; higher scores indicate greater stress.

Perceived health is measured using a single item taken from the 12-item Short Form Health Survey, or SF-12 (Ware, Kosinski, and Keller 1996). The stem states: "We would like to know how your overall health is at the present time. In general, would you say your health today is?" Possible responses include "poor" (coded as 1), "fair" (coded as 2), "good" (coded as 3), "very good" (coded as 4), and "excellent" (coded as 5).

Limitation in social participation (see Seltzer and Greenberg 1999; Rozario et al. 2008) is measured by asking: "Compared to others your age, are your social activities more or less limited because of your physical health or emotional problems?" Possible responses include "much more limited" (coded as 1), "somewhat more limited" (coded as 2), "about the same

as others your age" (coded as 3), "somewhat less limited than others" (coded as 4), and "much less limited than others" (coded as 5).

The impact subscale of the Caregiver Appraisal Scale is used to measure caregiver strain (Lawton et al. 1989). This subscale employs nine of the 28 total items in the scale ( $\alpha$  = .79). Sample items include such questions as: "How often do you feel that (ELDER) asks for more help than she/he needs?" and, "How often do you feel that because of the time you spend with (ELDER) you don't have enough time for yourself?" Possible responses on individual items include "never" (coded as 1), "rarely" (coded as 2), "sometimes" (coded as 3), "quite frequently" (coded as 4), and "nearly always" (coded as 5). Responses are additively scored for a possible range of 9–45; higher scores indicate greater care-giver strain.

**Predisposing variables**—Analyzed predisposing variables include measures of age, health locus of control, and help-seeking for physical health. Health locus of control is assessed using the six-item internal health locus of control subscale, which is a component of the Multidimensional Health Locus of Control Scale (n = .75) developed by Kenneth Wallston, Barbara Wallston, and Robert DeVellis (1978). Respondents were asked to rate the extent to which they agree or disagree with such statements as: "If I get sick, I have the power to make myself well again," and, "I am directly responsible for my health." Possible responses on individual items include "strongly disagree" (coded as 1), "disagree" (coded as 2), "agree" (coded as 3), and "strongly agree" (coded as 4). Scores across the items are summed for a possible range of 6–24; higher values indicate greater levels of belief that respondents have control over their health status. In the original scale (Wallston et al. 1978), possible responses on individual items range from 1 to 6.

Health behavior is assessed by posing the following to respondents: "Turning next to some questions about your health behavior. Some people visit a doctor for a routine checkup, even though they are feeling well and have not been sick. About how long has it been since you last visited a doctor for a routine checkup?" Because 88 percent of respondents report that they saw a doctor for a checkup within the year prior to the interview, this variable is dichotomized. Those who report that they saw a doctor are coded as 1, and those who report that they did not were coded as 0.

**Enabling variables**—Analyzed enabling variables include measures of education, marital status, income, number of people residing in the home, insurance coverage, and geographical characteristics (whether she lives in a rural or an urban area). Education is assessed by asking, "How many years of schooling did you finish?" Possible responses range from 1 to 17. Marital status is a dichotomous variable; respondents are coded as 1 if they report that they are married and as 0 if they report that they are divorced, separated, widowed, or never married.

The annual income level is assessed by asking about total annual household income from all sources. The 22 response categories range from "none or less than \$2,999" to "\$75,000 and over." Here the mid-range of each response category's value is assigned to its corresponding category. The total household income is divided by the number of people residing in the home to yield per capita values. These values are used to assess income of respondents in a relative manner.

The presence of insurance coverage is assessed by asking respondents if they have any of several types of health insurance. The series includes such coverage as from Medicare, Medicaid, medical assistance, a plan that the caregiver or someone else buys, and some

other source. This variable is coded as 1 to indicate any health insurance coverage and as 0 to indicate no health insurance coverage.

The geographic characteristics (rural or urban) of the area where the respondent lives are assessed as a dichotomous variable. Respondents are coded as 1 if they live in a rural area and as 0 if they live in an urban area.

**Social support**—Three types of social support are measured through questions asking: "In the past 6 months, have you gotten help from family members?" "Friends and/or neighbors?" "Church members, not including help from clergy or your pastor?" The possible response for each of these is either "yes" (coded as 1) or "no" (coded as 0).

#### Analysis Procedures

Central tendencies and distributions of all study variables are examined, and variables are transformed as needed. The household income variable has a skew of 2.52. A log transformation is used to yield a skew of — .44. Both variables' results are presented below, but the transformed variable is used in the logistic regression analysis.

Descriptive statistics are used to provide a representative portrait of the sample. Bivariate analyses are used to compare help-seeking respondents with those who do not seek help.

Hierarchical regression is used to examine the unique effects of social support on helpseeking as other blocks of variables are entered (need variables, predisposing variables, and enabling variables). In the processes, multicollinearity between independent variables is assessed. The results reveal that the tolerance values are at acceptable levels; the lowest is . 60. Correlations of all study variables also are at acceptable levels. The highest is the correlation of support from friends and neighbors with support from church members (.58). Need variables are entered in the model 1 regressions; predisposing variables are entered in model 2, enabling variables are entered in model 3, and social support variables are entered in model 4. Given that 22.1 percent of the sample reports seeking help, there is adequate distribution for analyses that use dichotomous logistic regressions (Morrow-Howell and Proctor 1992). Statistical significance for the analysis is defined as  $p \le .05$ .

# Results

#### Sample Characteristics

Though being African American, being female, and being a caregiver to an elder are criteria for inclusion in the study, univariate results (table 1) suggest that the sample is fairly heterogeneous within those criteria. Slightly over half of respondents live in a rural area (262, 50.8 percent). The reported ages of respondents range from 19 to 92; the mean age is 54 (SD = 15.1). Of the 516 sample members, 200 (38.8 percent) tell interviewers that they are married. The number of people residing in respondents' households is reported to range from 1 to 11, and the mean is 3.0 (SD = 1.6). Reported annual household income ranges from \$187.50 per person in the home to over \$75,000 per person in the home. The mean is \$10,244 (SD = \$10,277) per person in the home. Reported years of education range from 1 year to more than 17 years; the median and mode are 12 years (SD p 2.7 years). A total of 437 (84.7 percent) respondents say that they have some form of health insurance, and most respondents indicate that they had a medical checkup in the year prior to the interview (463, 89.7 percent). Respondents report that they receive the social support from family members (252, 48.8 percent) most often. They report progressively less support from friends and neighbors (142, 27.5 percent) and church members (116, 22.5 percent).

#### **Bivariate Differences Based on Help-Seeking**

Table 2 presents results of bivariate analyses, which suggest that stress, caregiver strain, perceived health, and age are respectively and statistically significantly associated with seeking help for an emotional problem. Specifically, caregivers' use of mental health services in help-seeking is positively associated with levels of stress (t = -2.49, p = .01), strain from caregiving (t = -3.02, p = .00), and age (t = -2.02, p = .04), but negatively associated with levels of perceived health (t = 2.24, p = .03). Between those who sought help and those who did not seek help, no statistically significant differences are found on the measures of limitations in social participation, internal health locus of control, education, annual income, and number of people in the household.

In addition, table 1 shows that use of mental health services in help-seeking is found to be positively related to support from family members ( $\chi^2 = 16.83$ , p < .001), support from friends or neighbors ( $\chi^2 = 28.90$ , p < .001), and support from church members ( $\chi^2 = 44.94$ , p < .001). A correlation matrix for all the study variables is available in table 3.

#### Logistic Regression Results

Results of the bivariate logistic regression analyses appear in table 4. In model 4, the omnibus test of the coefficient is statistically significant ( $\chi^2 = 58.70$ , p < .001, -2LL = 476.41). Model 4 includes the social support variables. In results for that model, only three variables are estimated to account for a statistically significant portion of the variance in the dependent variable. Specifically, seeking help is positively predicted by caregiver stress (b = .06, OR = 1.06, p < .05), age (b = .02, OR = 1.02, p < .05), and social support from church members (b = 1.17, OR = 3.21, p < .001).

# Discussion

This study uses data from a regional sample of African American females who provide unpaid care for an elder. It examines which variables are associated with caregivers' efforts to seek help from formal sources for their emotional problems. Specifically, analyses examine the ways in which three types of social support (that from family members, friends or neighbors, and church members) relate to caregivers' efforts to seek help for emotional problems by accessing a formal source of assistance. Results suggest that all three types of social support are positively related to help-seeking for emotional problems at the bivariate level. At the least, bivariate relations suggest that social support does not appear to serve a substitution function; that is, African American women caregivers do not use social support as a substitute for formal services. Consistent with other findings (Chatters et al. 2011), results from multivariate analyses suggest that social support from church members serves a linking (or complementary) function in helping these women to access formal care.

In these results, caregivers who seek help from a formal service for an emotional problem do not differ in various characteristics from those who do not seek such help. These characteristics include social participation, internal health locus of control, education, income, number of people in the household, heath behavior, insurance, and marital status. In fact, the results of this study differ from those of previous studies, which indicate that low income and lack of insurance are barriers to help-seeking (Snowden and Thomas 2000; U.S. Department of Health and Human Services 2001). Examination of these two variables reveals no difference between the two groups of caregivers. This suggests that African American female caregivers find their way to formal care regardless of financial concerns, though these rates might still be lower than those among their white counterparts. To be sure, few sample members are uninsured, and few report very high incomes. The specific type of social support that is offered is unclear, but several forms and possible combinations of social support might influence access to services. For example, the specific type of support might be advice and information; family members, friends, neighbors, and church members might provide information on where and how to access services. These people might also encourage the caregiver to seek help for herself as the effects of the caregiving experience mount. Social support might also serve to reduce the amount of stigma that is involved with having emotional problems and seeking help for them.

However, the support could be instrumental in nature. Fellow church members might offer the caregiver a ride to an appointment. They might be able to watch the caregiver's children or provide some respite in care-giving so that the caregiver will have the time she needs to take care of herself. In the logistic regression, support from family members, friends, or neighbors is not positively or negatively related to help-seeking. Thus, the study cannot draw a conclusion regarding whether these two types of support have either a linking or substitution effect on African American women caregivers' help-seeking patterns for emotional problems.

#### Limitations

A unique strength of this study is its focus on African American women who provide unpaid care to elders, but it is a regional, cross-sectional examination of only women and thus is limited in the extent to which the findings can be generalized to other populations. Further, the survey data contain limited variables. To gain a fuller picture of how social support affects help-seeking, it is particularly important to further explore the manner in which the support is given.

The study includes clergy as service providers because treating them as such accurately reflects the African American experience. However, including clergy as service providers still might have implications for the study's results. Results might differ if the study only examined providers of services commonly considered to be formal, a strategy that is not possible to follow here due to the limited distribution of services. Indeed, the finding that social support from church members is related to help-seeking might be driven by the inclusion of clergy as service providers. However, the importance of the findings is enhanced by the diverse and systematic samples that stem from data on Medicare enrollees and that capture information on African American female primary caregivers in both rural and urban contexts.

#### **Practice Implications**

Those who work with African American women caregivers must be aware of the important role that social support may play in helping these women to obtain services. The brief model of intervention commonly involves helping people to realize their strengths and to marshal their resources (Gingerich and Eisengart 2000; Iveson 2002). In this case, social support can be one of those resources. By expanding assessments to consider the availability of social support, social service workers can help to guide caregivers toward a source of natural help that, in turn, might encourage them to access even more formal help. Evidence from the current study suggests that this will be particularly true for African American women caregivers and the support they receive from fellow church members. Although this seems circular, the model has the potential to help reduce the stigma associated with further (or continued) help-seeking.

#### **Research Implications**

This study should also inform future research. Future examinations of mental health service use by African American women caregivers might routinely include social support. This

could be the case whether the research relies on a behavioral model (Andersen 1995) or other models. For example, the ecological systems model (Germain 1973), which looks at the reciprocal nature of the relationships between people and their environments, is widely used in social work and can be employed to help determine the effects of the various types of social support on help-seeking.

Future research is needed to identify the specific types of social support that are received from various sources. Examining the nature of the support (e.g., emotional and instrumental) may tease out the true nature of the effect of social support on help-seeking, and that effect might be unique to this population. Further, research using longitudinal data is needed to establish temporal order and provide certainty about the mechanisms that affect help-seeking.

#### Conclusion

This study finds that social support from church members is positively related to African American women caregivers' help-seeking. The finding supports the linking model of service use specific to social support provided from fellow congregants, though it is possible that this result is a function of including of clergy as service providers. In any case, the realities of social service work (e.g., time and financial restraints) demand that workers be aware of the important role that social support, particularly that from a religious body, has in helping people to access assistance. Workers must use their skills to help caregivers to increase the ability to call upon natural sources of assistance.

# Acknowledgments

This research was supported by grant R01 AG15962 from the National Institute on Aging and the Office of Research for Women's Health.

#### References

- Andersen, Ronald M. Revisiting the Behavioral Model and Access to Medical Care: Does It Matter? Journal of Health and Social Behavior. 1995; 36(1):1–10. [PubMed: 7738325]
- Barrio, Concepcion; Yamada, Ann Marie; Hough, Richard L.; Hawthorne, William; Garcia, Piedad; Jeste, Dilip. Ethnic Disparities in Use of Public Mental Health Case Management Services among Patients with Schizophrenia. Psychiatric Services. 2003; 54(9):1264–70. [PubMed: 12954944]
- Butler, Sandra S.; Turner, Winston; Kaye, Leonard W.; Ruffin, Leah; Downey, Roberta. Depression and Caregiver Burden among Rural Elder Caregivers. Journal of Gerontological Social Work. 2005; 46(1):47–63. [PubMed: 16338884]
- Chadiha, Letha A.; Morrow-Howell, Nancy; Proctor, Enola K.; Fulton Picot, Sandra J.; Gillespie, Danette C.; Pandey, Pramod; Dey, Alicia. Involving Rural, Older African Americans and Their Female Informal Caregivers in Research. Journal of Aging and Health. 2004; 16(no. 5 (suppl)):18S– 38S. [PubMed: 15448285]
- Chappell, Neena L.; Blandford, Audrey. Informal and Formal Care: Exploring the Complementarity. Aging and Society. 1991; 11(3):299–317.
- Chatters, Linda M.; Mattis, Jacqueline S.; Woodward, Amanda Toler; Taylor, Robert Joseph; Neighbors, Harold W.; Grayman, Nyasha A. Use of Ministers for a Serious Personal Problem among African Americans: Findings from the National Survey of American Life. American Journal of Orthopsychiatry. 2011; 81(1):118–27. [PubMed: 21219283]
- Choi, Namkee; Gonzalez, John. Barriers and Contributors to Minority Older Adults' Access to Mental Health Treatment: Perceptions of Geriatric Mental Health Clinicians. Journal of Gerontological Social Work. 2005; 44(3–4):115–35.
- Clark, Robin E.; Xie, Haiyi; Adachi-Mejia, Anna M.; Sangupta, Anjana. Substitution between Formal and Informal Care for Persons with Severe Mental Illness and Substance Use Disorders. Journal of Mental Health Policy and Economics. 2001; 4(3):123–32. [PubMed: 11967472]

- Cohen, Sheldon; Kamarck, Tom; Mermelstein, Robin. A Global Measure of Perceived Stress. Journal of Health and Social Behavior. 1983; 24(4):385–96. [PubMed: 6668417]
- Cohen, Sheldon; Williamson, Gail M. Perceived Stress in a Probability Sample of the United States. In: Spacapan, Shirlynn; Oskamp, Stuart, editors. The Social Psychology of Health. Newbury Park, CA: Sage; 1988. p. 31-67.
- Connell, Cathleen M.; Gibson, Gloria D. Racial, Ethnic, and Cultural Differences in Dementia Caregiving: Review and Analysis. Gerontologist. 1997; 37(3):355–64. [PubMed: 9203759]
- Cromartie, John; Bucholtz, Shawn. Defining the 'Rural' in Rural America: The Use of Different Definitions of Rural by Federal Agencies Reflects the Multidimensional Qualities of Rural America. Amber Waves. 2008; 6(3):28–34.
- De Frias CM, Tuokko H, Rosenberg T. Caregiver Physical and Mental Health Predicts Reactions to Caregiving. Aging and Mental Health. 2005; 9(4):331–36. [PubMed: 16019289]
- DeNavas-Walt, Carmen; Proctor, Bernadette D.; Lee, Cheryl Hill. Current Population Reports: Consumer Income. Washington, DC: U.S. Census Bureau; 2006 August. Income, Poverty, and Health Insurance Coverage in the United States: 2005; p. 60-231.http://www.census.gov/prod/2006pubs/p60-231.pdf
- Dupree, Larry W.; Watson, Mary Ann; Schneider, Myra G. Preferences for Mental Health Care: A Comparison of Older African Americans and Older Caucasians. Journal of Applied Gerontology. 2005; 24(3):196–210.
- Federal Interagency Forum on Aging-Related Statistics. Older Americans Update 2006: Key Indicators of Well-Being Report. Washington, DC: U.S. Government Printing Office; 2006 May. http://www.agingstats.gov/agingstatsdotnet/Main\_Site/Data/2006\_Documents/OA\_2006.pdf
- Germain, Carel B. An Ecological Perspective in Casework Practice. Social Casework. 1973; 54(6): 323–30.
- Gingerich, Wallace J.; Eisengart, Sheri. Solution-Focused Brief Therapy: A Review of the Outcome Research. Family Process. 2000; 39(4):477–98. [PubMed: 11143600]
- Greene, Vernon L. Substitution between Formally and Informally Provided Care for the Impaired Elderly in the Community. Medical Care. 1983; 21(6):609–19. [PubMed: 6865520]
- Haley, William E.; West, Constance A.; Wadley, Virginia G.; Ford, Greg R.; White, Faye A.; Barrett, John J.; Harrel, Lindy E.; Roth, David L. Psychological, Social, and Health Impact of Caregiving: A Comparison of Black and White Dementia Family Caregivers and Noncaregivers. Psychology and Aging. 1995; 10(4):540–52. [PubMed: 8749581]
- Hines-Martin, Vicki; Malone, Mary; Kim, Sanggil; Brown-Piper, Ada. Barriers to Mental Health Care Access in an African American Population. Issues in Mental Health Nursing. 2003; 24(3):237–56. [PubMed: 12623684]
- Iveson, Chris. Solution-Focused Brief Therapy. Advances in Psychiatric Treatment. 2002; 8(2):149–56.
- Jackson, James S.; Gurin, Gerald. National Survey of Black Americans, 1979–1980. Ann Arbor, MI: Inter-University Consortium for Political and Social Research, Institute for Social Research; 1999. Computer file ICPSR08512-v1
- Kales, Helen C.; Blow, Frederic C.; Bingham, C Raymond; Roberts, Jeffrey Scott; Copeland, Laurel A.; Mellow, Alan M. Race, Psychiatric Diagnosis, and Mental Health Care Utilization in Older Patients. American Journal of Geriatric Psychiatry. 2000; 8(4):301–9. [PubMed: 11069270]
- Lawton, M Powell; Kleban, Morton H.; Moss, Miriam; Rovine, Michael; Glicksman, Allen. Measuring Caregiving Appraisal. Journals of Gerontology, Series B: Psychological Sciences and Social Sciences. 1989; 44(3):61–71.
- Lawton, M Powell; Rajagopal, Doris; Brody, Elaine; Kleban, Morton H. The Dynamics of Caregiving for a Demented Elder among Black and White Families. Journals of Gerontology, Series B: Psychological Sciences and Social Sciences. 1992; 47(4):S156–S164.
- Litwak, Eugene. Helping the Elderly: The Complementary Roles of Informal Networks and Formal Systems. New York: Guilford; 1985.
- Logan, Sadye LM. The Black Family: Strengths, Self-Help, and Positive Change. 2nd. Boulder, CO: Westview; 2001.

- Martin, Elmer P.; Martin, Joanne Mitchel. The Black Extended Family. Chicago: University of Chicago Press; 1978.
- Mattis, Jacqueline S.; Mitchell, N'jeri; Zapatta, Alix; Grayman, Nyasha A.; Taylor, Robert Joseph; Chatters, Linda M.; Neighbors, Harold W. Uses of Ministerial Support by African Americans: A Focus Group Study. American Journal of Orthopsychiatry. 2007; 77(2):249–58. [PubMed: 17535123]
- McCallum TJ, Longmire Crystal Flynn, Knight Bob G. African American and White Female Caregivers and the Sociocultural Stress and Coping Model. Clinical Gerontologist. 2007; 30(4): 25–37.
- Mindel, Charles H.; Wright, Roosevelt, Jr. The Use of Social Participation of Black and White Elderly. Aging and Human Development. 1982; 2:172–88.
- Morrow-Howell, Nancy; Proctor, Enola K. The Use of Logistic Regression in Social Work Research. Journal of Social Services Research. 1992; 16(1–2):87–104.
- Padgett, Deborah K.; Patrick, Cathleen; Burns, Barbara J.; Schlesinger, Herbert J. Ethnicity and the Use of Outpatient Mental Health Services in a National Insured Population. American Journal of Public Health. 1994a; 84(2):222–26. [PubMed: 8296944]
- Padgett, Deborah K.; Patrick, Cathleen; Burns, Barbara J.; Schlesinger, Herbert J. Women and Outpatient Mental Health Services: Use by Black, Hispanic, and White Women in a National Insured Population. Journal of Mental Health Administration. 1994b; 21(4):347–60. [PubMed: 10138009]
- Picot, Sandra J Fulton; Samonte, Judy; Tierney, June A.; Connor, Judith; Powel, Lorrie L. Effective Sampling of Race Population Elements. Research on Aging. 2001; 23(6):694–712.
- Pinquart, Martin; Sörensen, Silvia. Ethnic Differences in Stressors, Resources, and Psychological Outcomes of Family Caregiving: A Meta-Analysis. Gerontologist. 2005; 45(1):90–106. [PubMed: 15695420]
- Rozario, Philip A.; Chadiha, Letha A.; Proctor, Enola K.; Morrow-Howell, Nancy. Predicting the Influence of Social Resources on African American Wife and Daughter Caregivers' Depressive Symptoms. Journal of Family Issues. 2008; 29(3):317–33.
- Scheffler, Richard M.; Miller, Angela Browne. Demand Analysis of Mental Health Service Use among Ethnic Subpopulations. Inquiry. 1989; 26(2):202–15. [PubMed: 2526089]
- Schulz, Richard; Beach, Scott R. Caregiving as a Risk Factor for Mortality. Journal of the American Medical Association. 1999; 282(23):2215–19. [PubMed: 10605972]
- Seltzer, Marsha Mailick; Greenberg, Jan S. The Caregiving Context: The Intersection of Social and Individual Influences in the Experience of Family Caregiving. In: Ryff, Carol D.; Marshall, Victor W., editors. The Self and Society in Aging Processes. New York: Springer; 1999. p. 362-97.
- Snowden, Lonnie R.; Thomas, Kathleen. Medicaid and African American Outpatient Mental Health Treatment. Mental Health Services Research. 2000; 2(2):115–20. [PubMed: 11256718]
- Stoller, Eleanor P. Formal Services and Informal Helping: The Myth of Service Substitution. Journal of Applied Gerontology. 1989; 8(1):37–52. [PubMed: 10293792]
- Sussman, Linda K.; Robins, Lee N.; Earls, Felton. Treatment-Seeking for Depression by Black and White Americans. Social Science and Medicine. 1987; 24(3):187–96. [PubMed: 3824001]
- Taylor, Robert Joseph; Chatters, Linda M.; Jayakody, Rukmalie; Levin, Jeffrey S. Journal for the Scientific Study of Religion. Vol. 35. 1996. Black and White Differences in Religious Participation: A Multisample Comparison; p. 403-10.
- Taylor, Robert Joseph; Chatters, Linda M.; Levin, Jeffrey S. Religion in the Lives of African Americans: Social, Psychological, and Health Perspectives. Thousand Oaks, CA: Sage; 2004.
- Taylor, Robert Joseph; Ellison, Christopher G.; Chatters, Linda M.; Levin, Jeffrey S.; Lincoln, Karen D. Mental Health Services in Faith Communities: The Role of Clergy in Black Churches. Social Work. 2000; 45(1):73–87. [PubMed: 10634088]
- Tennstedt, Sharon L.; Crawford, Sybil L.; McKinlay, John B. Is Family Care on the Decline? A Longitudinal Investigation of the Substitution of Formal Long-Term Care Services for Informal Care. Milbank Quarterly. 1993; 71(4):601–24. [PubMed: 8246850]

- Thompson, Lee. Long-Term Care Financing Project, Issue Brief. Georgetown University, Long-Term Care Financing Project; Washington, DC: 2004 March. Long-Term Care: Support for Family Caregivers. http://ltc.georgetown.edu/pdfs/caregivers.pdf
- U.S. Administration on Aging. n.d.*a*. [accessed February 14, 2011] Aging Statistics. Web page, updated January 30, 2010. http://www.aoa.gov/aoaroot/aging\_statistics/index.aspx
- U.S. Administration on Aging. n.d.b. [accessed February 14, 2011] A Statistical Profile of Black Older Americans Aged 65+. Web page, updated January 2009. http://www.aoa.gov/AoARoot/Aging\_Statistics/minority\_aging/Facts-on-Black-Elderly2009plain\_format.aspx
- U.S. Department of Health and Human Services, Center for Mental Health Services. Mental Health: Culture, Race, and Ethnicity; A Supplement to "Mental Health: A Report of the Surgeon General" Report. Washington, DC: U.S. Department of Health and Human Services; 2001. http://www.surgeongeneral.gov/library/mentalhealth/cre/
- U.S. Department of Health and Human Services and U.S. Department of Labor. The Future Supply of Long-Term Care Workers in Relation to the Aging Baby Boom Generation Report to Congress. 2003 May 14. http://aspe.hhs.gov/daltcp/reports/ltcwork.pdf
- Wallston, Kenneth A.; Barbara, Strudler Wallston; DeVellis, Robert. Development of the Multidimensional Health Locus of Control (MHLC) Scale. In: Wallston, Kenneth A.; Wallston, Barbara Strudler, editors. Health Locus of Control Health Education Monographs. San Francisco: Society for Public Health Education; 1978. p. 160-70.
- Wang, Philip S.; Berglund, Patricia A.; Kessler, Ronald C. Patterns and Correlates of Contacting Clergy for Mental Disorders in the United States. Health Services Research. 2003; 38(2):647–73. [PubMed: 12785566]
- Wang, Philip S.; Lane, Michael; Olfson, Mark; Pincus, Harold A.; Wells, Kenneth B.; Kessler, Ronald C. Twelve-Month Use of Mental Health Services in the United States: Results from the National Comorbidity Survey Replication. Archives of General Psychiatry. 2005; 62(6):629–40. [PubMed: 15939840]
- Ware, John E., Jr; Kosinski, Mark; Keller, Susan D. A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. Medical Care. 1996; 34(3):220–33. [PubMed: 8628042]
- Kenneth, Wells B.; Klap, Ruth; Koike, Alan; Sherbourne, Cathy. Ethnic Disparities in Unmet Need for Alcoholism, Drug Abuse, and Mental Health Care. American Journal of Psychiatry. 2001; 158(12):2027–32. [PubMed: 11729020]
- Young, John L.; Griffith, Ezra H.; Williams, David R. The Integral Role of Pastoral Counseling by African-American Clergy in Community Mental Health. Psychiatric Services. 2003; 54(5):688–92. [PubMed: 12719499]

Pickard et al.

Table 1

Chi Square Tests of Service Use By Categorical Variables

	Full $S$ $(n = $	Sample 516)	Used (n =	MHS 114)	Did Not U $(n = 4)$	se MHS 02)		
	u	%	u	%	u	%	$\chi^2$	d
Medical checkup:							2.71	.10
More than year prior to interview	53	10.27	٢	1.36	46	8.91		
Within a year	463	89.73	107	20.74	356	68.99		
Insurance:							1.72	.19
Uninsured	79	15.31	13	2.52	99	12.79		
Insured	437	84.69	101	19.57	336	65.12		
Marital status:							00.	76.
Single, divorced, or widowed	316	61.24	70	13.57	246	47.67		
Married	200	38.76	4	8.53	156	30.23		
Residing area:							5.34	.02
Urban	254	49.22	67	12.98	187	36.24		
Rural	262	50.78	47	9.11	215	41.67		
Support from family members:							16.83	<.001
No	264	51.16	39	7.56	225	43.60		
Yes	252	48.84	75	14.53	177	34.30		
Support from friends or neighbors:							28.90	<.001
No	374	72.48	60	11.63	314	60.85		
Yes	142	27.52	54	10.47	88	17.05		
Support from church members:							44.94	<.001
No	400	77.52	62	12.02	338	65.50		
Yes	116	22.48	52	10.08	64	12.40		

Soc Serv Rev. Author manuscript; available in PMC 2012 March 5.

Note.—MHS = mental health service.

Table 2	Services
•	I Health
	of Menta
	onusers
	rs and N
	veen Use
	ence betv
	p Differe
	Grou

Continuous VariablesMSDMSDMSDStress $15.13$ $5.21$ $16.20$ $5.05$ $14.83$ $5.23$ $^2$ Perceived health $3.19$ $1.00$ $3.01$ $97$ $3.24$ $1.00$ $2$ Limitation in social participation $3.05$ $1.00$ $3.04$ $1.01$ $3.06$ $1.00$ $2$ Caregiver strain $17.36$ $6.36$ $18.94$ $6.38$ $16.92$ $6.28$ $^3$ Age $53.82$ $15.05$ $56.32$ $14.21$ $53.11$ $15.23$ $^2$ HLC $17.12$ $2.71$ $17.21$ $2.76$ $^2$ HLC $17.12$ $2.71$ $17.21$ $2.76$ $^2$ Income $10.244$ $10.277$ $10.911$ $11.015$ $10.065$ $^2$ Income (natural log) $8.83$ $.95$ $8.81$ $.95$ $^2$ $^2$ No. in household $2.96$ $1.61$ $2.90$ $1.65$ $2.97$ $1.62$ $^2$		Full Sa	ample	Used	SHM	Did Not I	Jse MHS		
Stress     15.13     5.21     16.20     5.05     14.83     5.23     -2       Perceived health     3.19     1.00     3.01     .97     3.24     1.00     2       Limitation in social participation     3.05     1.00     3.01     .97     3.24     1.00     2       Caregiver strain     3.05     1.00     3.04     1.01     3.06     1.00     2       Age     53.82     15.05     56.32     14.21     53.11     15.23     -2       Age     53.82     15.05     56.32     14.21     53.11     15.23     -2       HLC     17.12     2.71     17.21     2.76     -     -       HLC     12.27     2.74     12.45     2.77     12.21     2.73     -       Income     10.244     10,277     10,911     11,015     10,055     -     -       Income     8.83     .95     8.81     .95     8.81     .95     -       No. in household     2.96	<b>Continuous Variables</b>	М	SD	Μ	SD	W	SD	t	d
Perceived health   3.19   1.00   3.01   .97   3.24   1.00   2     Limitation in social participation   3.05   1.00   3.04   1.01   3.06   1.00   2     Caregiver strain   17.36   6.36   18.94   6.38   16.92   6.28   -3     Age   77.10   17.35   56.32   14.21   53.11   15.23   -2     HLC   17.12   2.71   17.21   2.51   17.09   2.76   -     HLC   17.12   2.71   17.21   2.51   17.09   2.76   -     IHLC   12.27   2.71   17.21   2.71   17.09   2.76   -     IHLC   12.27   2.71   10.911   11,015   10,055   -   -     Income   10.244   10.277   10,911   11,015   10,055   -   -     Income (natural log)   8.83   .95   8.81   .95   -   .95   -     No. in household   2.96   1.61   2.97   1.62   1.62   -   - </td <td>Stress</td> <td>15.13</td> <td>5.21</td> <td>16.20</td> <td>5.05</td> <td>14.83</td> <td>5.23</td> <td>-2.49</td> <td>10.</td>	Stress	15.13	5.21	16.20	5.05	14.83	5.23	-2.49	10.
Limitation in social participation   3.05   1.00   3.04   1.01   3.06   1.00     Caregiver strain   17.36   6.36   18.94   6.38   16.92   6.28   -3     Age   53.82   15.05   56.32   14.21   53.11   15.23   -2     HLC   17.12   2.71   17.21   2.51   17.09   2.76   -     HLC   17.12   2.71   17.21   2.73   12.21   2.73   -     IHLC   12.27   2.74   12.45   2.77   12.21   2.73   -     Income   10,244   10,277   10,911   11,015   10,055   10,065   -     Income (natural log)   8.83   .95   8.81   .95   8.81   .95   -     No. in household   2.96   1.61   2.90   1.65   1.65   -   -	Perceived health	3.19	1.00	3.01	.97	3.24	1.00	2.24	.03
Carregiver strain     17.36     6.36     18.94     6.38     16.92     6.28     -3       Age     53.82     15.05     56.32     14.21     53.11     15.23     -2       IHLC     17.12     2.71     17.21     2.51     17.09     2.76     -       Education     12.27     2.74     12.45     2.77     12.21     2.73     -       Income     10.244     10.277     10.911     11,015     10,055     10,065     -       Income (natural log)     8.83     .95     8.81     .95     8.81     .95     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	Limitation in social participation	3.05	1.00	3.04	1.01	3.06	1.00	.21	.84
Age     53.82     15.05     56.32     14.21     53.11     15.23     -2       IHLC     17.12     2.71     17.21     2.51     17.09     2.76     -       Education     12.27     2.71     17.21     2.51     17.09     2.76     -       Income     12.27     2.74     12.45     2.77     12.21     2.73     -       Income     10,244     10,277     10,911     11,015     10,055     10,065     -       Income (natural log)     8.83     .95     8.81     .95     8.81     .95     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	Caregiver strain	17.36	6.36	18.94	6.38	16.92	6.28	-3.02	00.
IHLC     17.12     2.71     17.21     2.51     17.09     2.76     -       Education     12.27     2.74     12.45     2.77     12.21     2.73     -       Income     10.244     10,277     10,911     11,015     10,055     10,065     -       Income (natural log)     8.83     .95     8.81     .95     -     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	Age	53.82	15.05	56.32	14.21	53.11	15.23	-2.02	.04
Education     12.27     2.74     12.45     2.77     12.21     2.73     -       Income     10,244     10,277     10,911     11,015     10,055     -       Income (natural log)     8.83     .95     8.81     .95     -     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	IHLC	17.12	2.71	17.21	2.51	17.09	2.76	42	.67
Income     10,244     10,277     10,911     11,015     10,055     10,065     -       Income (natural log)     8.83     .95     8.88     .95     8.81     .95     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	Education	12.27	2.74	12.45	2.77	12.21	2.73	80	.42
Income (natural log)     8.83     .95     8.81     .95     -       No. in household     2.96     1.61     2.90     1.56     2.97     1.62	Income	10,244	10,277	10,911	11,015	10,055	10,065	78	.43
No. in household 2.96 1.61 2.90 1.56 2.97 1.62	Income (natural log)	8.83	.95	8.88	.95	8.81	.95	67	.50
	No. in household	2.96	1.61	2.90	1.56	2.97	1.62	.39	.70

Note.—MHS = mental health service; IHLC = internal health locus of of control. Mean income results for Full Sample, Used MHS, and Did Not Use MHS are presented in dollars.

_
~
_
_
~
-
-
-
-
$\mathbf{O}$
_
•
_
~
$\geq$
5
<u>u</u>
_
-
<u> </u>
10
0,
0
~
-
0

~
~
- <b>T</b>
- 1
. 0
~
~
<u> </u>
+
5
5
0
_
2
$\geq$
0)
~
<u> </u>
-
-
S
0
<u> </u>
<u> </u>
<u> </u>

Pickard et al.

е 3
Tabl

# **Correlation Matrix of Study Variables**

	1	7	3	4	S.	9	7	8	6	10	11	12	13	14	15	16	17
1. Service use	1.00	÷	:	:	:	:	:	:	÷	÷	:	:	:	:	:	:	:
2. Stress	.11*	1.00	:	:	:	:	:	:	:	:	:	:	÷	:	÷	÷	:
3. Perceived health	10*	29 ***	1.00	:	:	÷	:	:	÷	:	÷	÷	÷	:	÷	÷	:
4. Social participation	01	13**	.03	1.00	:	÷	:	:	÷	:	÷	÷	÷	:	÷	÷	:
5. Caregiver strain	.13**	.26***	.17***	11 *	1.00	÷	:	:	÷	:	÷	÷	÷	:	÷	÷	:
6. Age	*60.	08	23 ***	.03	*60.	1.00	:	:	÷	:	÷	÷	÷	:	÷	÷	:
7. IHLC	.02	02	.23***	.07	.07	11 *	1.00	:	:	:	÷	:	÷	÷	÷	÷	:
8. Medical checkup	.07	01	08	.04	00.	.11*	06	1.00	÷	:	÷	:	÷	÷	÷	÷	:
9. Education	.04	17 ***	.19***	.04	.03	29 ***	.14**	03	1.00	:	÷	:	÷	:	÷	÷	:
10. Income (natural log	.03	26 ***	17 ***	.04	08	.07	.01	.08	38 ***	1.00	÷	:	÷	:	÷	÷	÷
11. No. in household	02	.07	.07	.02	03	33	.05	10*	.06	38**	1.00	÷	÷	÷	÷	÷	:
12. Insurance	.06	.03	12**	.08	.06	.16***	04	.12**	.03	.06	.02	1.00	÷	:	÷	÷	:
13. Marital status	00	02	07	.04	01	.28***	05	.03	13 **	.02	* <sup>60.</sup>	.08	1.00	:	÷	÷	:
14. Residing area	10*	.04	03	$.10^*$	20***	11 **	04	* <sup>60:</sup>	32 ***	21 ***	07	10*	.04	1.00	÷	÷	:
15. Family members	.18***	.04	08	.06	.15***	* 60'–	.04	.02	.20***	04	*60 <sup>.</sup>	.05	07	11*	1.00	:	:
16. Friends or neighbors	.24**	.01	07	.02	.08	10 *	.02	.08	.20***	.04	04	.03	06	10*	.37***	1.00	÷
17. Church members	.30***	04	07	.08	.05	01	01	.08	.13**	.02	.04	90.	.05	05	.36***	.58***	1.00
Note.—IHLC = internal he:	alth locus	of control.															
$p \leq .05.$																	
$^{**}_{p \leq .01.}$																	
$p \leq .001.$																	

**NIH-PA** Author Manuscript

Pickard et al.

	16
	2 
	S
	ces
	rvi
	Se
	alth
4	He
<u>ole</u>	tal
a	Ien
	υĮ
	se (
	onu
	Ž
	anc
	Jse
	hel
	ığ t
	arii
	шb
	S
	ılts
	kesı
	n F
	ssic
	gre
	C R
	istic
	.0g
	I

		Mo	del 1			Mod	lel 2			Moe	lel 3			Mod	el 4	
	q	SE	$\chi^2$	OR	q	SE	$\chi^2$	OR	q	SE	$\chi^2$	OR	q	SE	$\chi^2$	OR
Need variables:																
Stress	.03	.02	1.89	1.03	.04	.02	2.59	1.04	.05*	.02	3.80	1.05	.06*	.02	5.50	1.06
Perceived health	16	Π.	1.85	.86	12	.12	.95	89.	15	.12	1.35	.87	08	.13	.33	.93
Social participation	.03	.11	.08	1.03	.01	H.	.01	1.01	.03	Н.	.07	1.03	03	.12	.08	76.
Caregiver strain	.04*	.02	5.15	1.04	.04*	.02	4.07	1.04	.03	.02	2.24	1.03	.02	.02	1.03	1.02
Predisposing variables:																
Age					.01	.01	2.30	1.01	.01	.01	2.34	1.01	.02*	.01	3.74	1.02
IHLC					.03	.04	.60	1.03	.03	.04	.40	1.03	.04	.05	.68	1.04
Medical checkup					.62	.43	2.06	1.85	99.	4	2.27	1.93	.46	.45	1.04	1.59
Enabling variables:																
Education									.04	.05	.76	1.04	01	.05	90.	66.
Income (natural log)									60.	.15	.39	1.10	.12	.16	.58	1.13
No. in household									.03	60.	.14	1.04	.03	.10	.10	1.03
Insurance									.14	.34	.16	1.15	60.	.36	90.	1.10
Marital status									15	.25	.39	.86	23	.26	LT.	.80
Residing area									32	.25	1.61	.73	29	.27	1.17	.75
Social support:																
Family members													.37	.26	2.05	1.45
Friends or neighbors													.41	.30	1.87	1.51
Church members													$1.17^{***}$	.31	14.54	3.21
Model fit:																
Wald $\chi^2$		13.52;	p = .01			18.32;	p = .01			23.61;	p = .03		58	.70; p -	<.0001	
-2LL		53	1.19			525	.64			519	.52			476.	41	
Note.—OR = odds ratios: ]	IHLC =	intern	al health	locus o	f control	: TT =	log like	lihood.								
***							0									

Soc Serv Rev. Author manuscript; available in PMC 2012 March 5.

 $p \leq .001.$ 

 $_{p\leq.05.}^{*}$