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Grandmothers and Self-Management of Depressive Symptoms

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Depressive symptoms are among the most commonly measured outcomes in gerontology research and one of the most frequently used indicators of mental health for women who are caregivers to grandchildren. Identification and treatment of depressive symptoms are particularly important for grandmother caregivers as their well-being and daily functioning impacts the health of their families. Grandmothers raising grandchildren are more likely to have elevated depressive symptoms when compared with grandmothers who live apart from grandchildren or grandmothers living in multigenerational homes (Blustein, Chan, & Guanais, 2004; Fuller-Thomson & Minkler, 2001; Musil, Jeanblanc, Burant, Zauszniewski, & Warner, 2013; Musil, Warner, Zauszniewski, Wykle, & Standing, 2009). Similarly, custodial grandmothers exhibit depressive symptoms at a higher rate than the general population of women (Whitley, Kelley, & Lamis, 2016). Grandparents with elevated depressive symptoms are more likely than their non-depressed counterparts to report stressful experiences in their caregiving situations (Izquierdo et al., 2015), which may further affect their experience of symptoms.

While the screening assessment data, primarily from the Center for Epidemiologic Study-Depression (CES-D) Scale, suggests that custodial caregiver grandmothers experience depressive symptomatology at a relatively higher rate than other women of the same age (Blustein, et al., 2004; Musil et al., 2013; Radloff, 1997), there is little data validating their CES-D symptom appraisals with other mental health indicators, including provider diagnoses of depression or self-report of depression as a health problem. Further, despite the current emphasis on self-management of health problems, few, if any, reports exist examining 1) whether grandmothers who have elevated CES-D scores perceive their depressive symptoms to be indicative of an illness, receive any treatment, engage in self-management for their depressive symptoms, or report that depressive symptoms affect caregiving, and 2) whether those outcomes differ by their caregiving responsibilities for grandchildren. Therefore, this secondary analysis examined the mental health of grandmothers by caregiver status to grandchildren (custodial grandmothers raising a grandchild, grandmothers living in a multigenerational home or grandmothers living apart

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from a grandchild under age 16), and compares CES-D scores (Radloff) with provider diagnoses of depression, the grandmothers' self-report of depression, and their perceptions, management and caregiving consequences of their depressive symptoms.

Background

Depressive symptoms are often reported as a problem for custodial grandmothers compared to other women their age (Blustein et al., 2004; Kelley, Whitley, Sipe, & Crofts Yorker, 2000; Minkler, Fuller, Thomson, Miller, & Driver, 1997; Moorman & Stokes, 2014; Musil et al., 2013; Strawbridge, Wallhagen, Shema, & Kaplan, 1997; Whitley et al., 2016). The stress associated with day to day efforts of raising grandchildren coupled with the extended family situations that necessitate assuming primary care to grandchildren place custodial caregiver grandmothers at elevated depression risk compared to non-caregivers to grandchildren (Blustein et al., 2004; Whitley et al.). Further, many custodial grandmothers report poor self-rated health, which often co-exists with depression (Callahan, Hui, Nienaber, Musick, & Tierney, 1994; Hughes, Waite, et al, 2007; Marken & Howard, 2014; Whitley, Kelley, & Sipe, 2001). By contrast, grandmothers who co-reside in a multigenerational home with a grandchild and the grandchildren's parents typically live in the grandmother's home (Choi, 2003) due to the parents' personal situation (job loss, divorce, financial problems, single parent, teen parent). Grandmothers in multigenerational homes report different stresses than non-caregivers or those raising grandchildren, have more instrumental support, and may be less prone to depressive symptoms (Musil, Jeanblanc, Burant, Zauszniewski, & Warner, 2011).

Women aged 40–59 years have a depressive symptom prevalence of 12.3%, while women aged sixty and above have a prevalence of 7.1% (Pratt & Brody, 2014), however, 25% of depressive symptoms may be under-reported to health care providers (Bell et al., 2011). Among grandmothers raising grandchildren, the prevalence is estimated to be about 25% (Minkler et al., 1997), but there is limited information about depression treatment. The under-identification and under-treatment of health problems, both physical and emotional, may be especially problematic for individuals who have limited access to health care, a common challenge for caregivers who face competing demands on their time (Carr, 2009; Washington, Bean-Mayberry, Riopelle, & Yano, 2011; Whitley, 2015). For example, grandmothers who had recently begun raising grandchildren were less likely to get cholesterol and cervical cancer screening or influenza vaccines, especially in the first year of caregiving. (Baker & Silverstein, 2007). Whether this extends to other self-management behaviors related to depressive symptoms or whether there are differences in self-management by grandmothers based on their caregiving status to grandchildren has not been examined. Further, depression affects the emotional and physical functioning in caregiving and the ability to perform activities of daily living (ADLs) (Young, Parsons, Stein, & Kringelbach, 2015), functions that are especially relevant to grandmothers with caregiving responsibilities to grandchildren.

Identifying and evaluating depressive symptoms: Self-report and clinical diagnosis

The Center for Epidemiologic Studies Depression Scale (CES-D) is a well-used depression screening tool with psychometric properties that are not significantly influenced by age, cognitive or physical impairment, disease, or gender when used with community-dwelling older adults (Dmitrieva et al., 2015; Lewinsohn, Seeley, Roberts, & Allen, 1997). It provides ranges of scores that correspond with degrees of likelihood of clinical depression (Courtin, Knapp, Grundy, & Avendano-Pabon, 2015; Haringsma, Engels, Beekman, & Spinhoven, 2004; Lewinsohn et al., 1997; Radloff, 1977). A number of studies examining depressive symptoms in community dwelling adults have used the 20-item CES-D score ranges to classify individuals as low risk (<16), at risk, (16–22) and high risk (> 23) for clinical depression (Husaini, Neff, Harrington, Hughes, & Stone, 1980; Radloff, 1977). While CES-D ranges and cutoffs provide some general guidelines for evaluating depression risk and the need for mental health referral for community dwelling adults, their value is in the sensitivity and specificity of their assessment. The CES-D is considered sensitive to screening for major depression, but loses its sensitivity in detecting minor depression (Lyness et al., 1997). For example, using an at-risk cut off score of 17, rather than 16, may be more sensitive for rural samples (Husaini et al., 1980). Others suggest that a score of 23 may over-identify individuals as high-risk for depression, and thus Haringsma (2004) reported that a score of 25 has better sensitivity and positive predictive value for major clinical depression rather than a score of 23 or greater (Haringsma et al., 2004).

Evaluating the validity of self-report with the cut-offs of screening tools, Sanchez-Villegas and colleagues (Sanchez-Villegas et al., 2008) compared self-report and provider diagnosed depression. They found that only 74% of those who self-reported depression had provider-confirmed depression upon clinical interview with a psychiatrist (time frame not reported), and that 81% of those who reported they did not have depression were true negatives (thus 19% of those who said they were not depressed were diagnosed as depressed). These findings add some credibility to the validity of self-report, but the 19–26% discrepancies between self-report and provider diagnosis require investigation given their implications for treatment and self-management.

Conceptual Framework

The Self-Regulation Model (SRM) or Common Sense Model of Illness (Leventhal, Diefenbach, & Leventhal, 1992) provides a general framework for understanding how individuals might evaluate and manage their symptoms. This model captures the layperson's understanding of their bodily changes, or symptoms (Hale, Treharne, & Kitas, 2007; Leventhal et al., 1992; Haug, Musil, Warner, & Morris, 1997, 1998; Moss-Morris et al., 2002; Weinman, Petrie, Moss-Morris, & Horne, 1996) and focuses on five domains of a symptom: identification of a symptom as an illness, causes of the symptoms, time line of how long disease will last (seriousness), consequences of the symptom or condition, and curability/controllability (what they do about it). These domains are relevant since older adults' perceptions of their illness are associated with their health outcomes (Petrie, Jago, &

Devcich, 2007). Although originally developed to describe physical illness, the SRM model and domains have been found to be applicable to measure illness perceptions in mental health as well (Baines & Wittkowski, 2013; Fortune, Barrowclough, & Lobban, 2004).

Given the applicability of the Self-Regulation Model to mental health, we evaluated grandmothers' report and management of depression and depressive symptoms, perception of depression as an illness, perceptions of seriousness and controllability, and consequences of depression. We further evaluated whether there were differences in these based on their CES-D risk group categorizations and their caregiving status to grandchildren (grandmothers raising grandchildren, grandmothers in multigenerational homes, or non-caregivers to grandchildren). Based on the existing literature, we expected to find differences in the rates of depressive symptoms between groups (Blustein et al., 2004; Fuller-Thomson & Minkler, 2001; Musil et al., 2013) and we expected that there would be differences in symptom management between grandmothers in the caregiving groups (Baker & Silverstein, 2007; Carr, 2009).

Method

Design

This was a secondary analysis of data from the fifth wave of an IRB approved longitudinal study that examined the health and well-being of Ohio grandmothers based on their caregiving status to grandchildren. At this time wave, we added questions compatible with the Self-Regulation Model (Leventhal et al., 1992) in order to capture participant's perceptions about their depressive symptoms and their self-management efforts. These findings have not been reported elsewhere.

Sampling

Grandmothers in the baseline sample were recruited in 2001–2002 using random digit dialing (RDD) conducted by a university-affiliated survey research center, with supplemental convenience sampling of grandmothers living with grandchildren (Musil et al., 2011). We contacted by phone those grandmothers who had been screened and were considered to be eligible based on the RDD process and who indicated an interest in learning more about the study; grandmothers recruited by convenience methods contacted us by phone or postcard if they were interested in learning more.

Here, we present data from the 335 women who participated at Time 5, when we incorporated questions derived from the Self-Regulation Model. At each time point (yearly for 3 years and 2–2.5 years for Times 4 and 5), grandmothers were categorized by their current caregiving status to grandchildren; at baseline, all participants had grandchildren who were 16 years of age or younger. At Time 5, 335 grandmothers participated: 100 custodial caregivers raising one or more grandchildren without the children's parent(s) in the home; 45 grandmothers living in multigenerational homes with at least one parent of a co-resident grandchild; 190 grandmothers who did not live with grandchildren but lived within one hour of their home. Of the original sample of 485 grandmothers, 75% were recruited through RDD and 25% by convenience methods; 100% of non-caregiver grandmothers, 93%

of multigenerational and 39% of primary, custodial caregivers were recruited through RDD, with a baseline response rate of 73% (Dillman, Smith, & Christian, 2000). Further description of the sample at prior time points can be found elsewhere (Musil et al., 2013).

Measures

All participants provided written informed consent, and data were collected using mailed questionnaires (Musil et al., 2011) formatted for self-administration (Dillman et al., 2000).

CES-D rated depressive symptoms were measured with the CES-D scale (Radloff, 1977). Individuals rated themselves on 20 items that ask how often they felt a certain way over the past week (on a scale from rarely to most or all of the time). Scores for individual items were summed into a composite score. Scores between 0 and 15 were considered to indicate low risk of depression, 16–24 are considered at risk, and scores 25 and above are considered to indicate probable clinical depression (Haringsma et al., 2004). Individuals who scored above 30 were contacted by phone and notified of elevated scores and to advise that they consult with their primary care providers. Additional resources such as referrals to local mental health agencies and *United Way's First Call for Help* phone number were provided if needed; most such grandmothers were receiving treatment. The CES-D measure has excellent reliability, with study alphas ranging from .91 and .92 over time waves.

Provider diagnosis of depression was evaluated by a single dichotomous item located on a list of health conditions, in response to the prompt, "Has a physician ever told you that you have depression?"

Self-reported depression was obtained by a positive response to a question asking if in the past year they experienced any depression or other mood disorders, located in a list of 12 specific health conditions, such as high blood pressure, diabetes, and arthritis. If respondents answered yes to a question, they were asked to report on four of the five criteria suggested by Leventhal and others (Leventhal et al., 1992). Given the mailed response format, we abbreviated the number of domains to reduce respondent burden. Thus, they reported whether they considered depression an illness (yes/no); whether they thought the condition was serious (serious, maybe serious, not serious); what, if anything, they did anything about it (open ended); and how their symptoms affect them on a day to day basis (open ended). We did not ask them the presumed cause of the health condition.

Current caregiving status to grandchildren was confirmed at each time point via pre-questionnaire phone call, validated with a matrix of questions about who lives in the household, how family came to live together, who has responsibility for raising grandchildren, whether parents live in the home, and open ended questions.

Data Management and Analysis

All questionnaires were reviewed upon their return for completeness. Demographic and CES-D data were then entered into a database using double data entry, cleaned and assessed for normality. CES-D reliability was calculated and scores were categorized as falling in the low risk, at risk and high risk groups (Radloff, 1977; Haringma et al., 2004). Text data about what participants did to self-manage and how the symptoms affected them were entered as

string variables. Self-management of symptoms was thematically coded for 9 different types of self-management interventions, such as “take medications,” “engage in activity,” “pray” or “call or see doctor,” and then confirmed by another project staff. The effects of depression on caregiving were coded by project staff as having no effect (ex.: “does not affect”), emotional effects (ex.: “I am overly sensitive at times”), or instrumental effects (ex.: “I don’t do as much or get in my family’s problems as much”), based on the work of Young and colleagues (2015). Inter-rater reliability for these reached 90%. Analysis included descriptive statistics, chi-square, and analysis of variance (ANOVA).

Results

Demographics. Race was dichotomized into “white” and “non-white,” education was dichotomized into less than high school (HS) or high school or greater, and employment was split into unemployed or working full or part-time. Over 50% of the sample was married. Grandchild ages ranged from 4 months to 22 years. Primary custodial and multigenerational home grandmothers lived with up to 8 grandchildren. Primary, custodial caregiver grandmothers were likely to be significantly younger than grandmothers in the other groups. Women who were unemployed, had not completed high school and were younger were more likely to be in the higher depression risk group (Table 1).

CES-D data. The mean CES-D score for the entire sample was 13.3 (Table 2). Analysis of Variance (ANOVA) tests revealed significant differences between grandmother caregiver groups, with non-caregivers having significantly lower scores ($F(2,105) = 14.84, p < .001$). When categorized by depression risk, 225 grandmothers were in the low risk group, 53 in the at-risk group, and 57 were in the range of probable major depressive disorder/clinical depression. A comparison of caregiver risk status by caregiver groups was not significant.

Provider diagnosis of depression. Roughly one third ($n=109$) had been diagnosed with depression at some time. There were no significant differences between caregiver groups in the likelihood of being diagnosed with depression. There was an association between provider diagnosis and CES-D risk group: 20% of low risk, 41.5% of medium risk, and 74% of those at high risk had been diagnosed with depression ($F(2, 335) = 62.02, p < .001$).

Self-report of depression. Over one third of grandmothers ($n=116$) self-reported problems with depression or other mood disorders. There was a trend toward, but were no significant differences, between caregiver groups in the likelihood of self-reported depression ($X^2(2, 335) = 5.20, p = .07$); 42% of grandmothers raising grandchildren, 40% of those in intergenerational homes, and 29.5% of non-caregivers self-reported depression.

Correspondence between CES-D scores with provider and self-reported depression

Those who self-reported depression ($n=116$) had higher CES-D mean scores: 21.6 (11.8) compared to mean scores of 8.9 (8.0) for those who did not ($t=11.6, p < .001$) (not shown).

As shown in Table 3, more grandmothers reported they had depression than were diagnosed with it: 82% of those who self-reported ($n=116$) depression had been diagnosed with it ($n=95$). Importantly, 46 grandmothers had at-risk ($n=31$) or high risk ($n=15$) CES-D scores

but had not been diagnosed (Table 2), and of those, 15 self-reported being depressed (not shown).

Self-Management

Of the 116 grandmothers who self-reported as having depression, 115 answered all questions about their perceptions of their depression and caregiving consequences (Table 4).

Illness label. Two thirds of those who self-reported depression (66%, $n=76$) considered their depression to be an illness. There were differences in illness perception by provider diagnosis ($X^2(1,115)=12.3, p<.001$), but not by caregiver or depression risk group. Those who had been diagnosed with depression were more likely to consider their depressive symptoms an illness.

Self-perceived seriousness of depression. Of the grandmothers who self-identified as having depression, there were significant differences between CES-D risk groups in the perceptions of seriousness ($X^2(4, 115) = 13.34, p < .05$), but there were no differences in perceptions of seriousness by grandmother group ($X^2(2, 115) = 3.90, p = 0.42$). Those who had been diagnosed with depression were **not** more likely to consider it to be serious ($X^2(2,115) = 2.79, p = 0.25$). Nearly half (46%) of those who self-reported depression were in the medium/high risk CES-D group and considered their depression maybe serious/serious ($n=53$).

Self-management of depression. Most women (99/115, 86%) who self-identified as having depression did something about it. There were differences in self-management of depression/symptoms by provider diagnosis ($X^2(1,115)=17.97, p<.001$), but not grandmother caregiver group or by risk group ($X^2(2,115)=4.89, p=.09$). Those who had been diagnosed with depression were more likely to do something about it.

Self-management strategies are reported in Table 5. Medication (unspecified as to whether prescription or over-the-counter) was the most prevalent intervention women took to manage their depression, followed by calling or seeing a doctor, prayer, and counseling. Of those who identified they did something for their depression, 28% reported they did more than one thing to manage their depression; of those, the majority reported they did something in addition to taking medication. They reported they took medication and saw a doctor, talked with a healthcare provider, or prayed/sought help from a higher power. Over 70% of the grandmothers took medication, and about 16% reported they called or saw a doctor to manage their depression. Non-medical interventions utilized included prayer, counseling, doing an activity, alternative therapies, and positive thinking, with prayer being the most prevalent at 13%.

For example, several grandmothers shared more information about their depression and their strategies for coping with it. One said “[I] tell myself to get on with life. I don’t have time for this.” Another, “[I] fight it, force myself to continue to go on – be active”. Some of them saw their depression as a transient condition. “This is a temporary condition due to the death of my mother in June and my husband in December. I take medication when I need it.” (Table 5).

Effect of depression on caregiving

Grandmothers with the highest CES-D scores reported more effects on instrumental aspects of caregiving and perceived their symptoms as more serious (see Table 4). There were no differences in effects on caregiving by grandmother caregiver group. Examples of instrumental effects include: “At times [my depression] makes me so tired I have less energy than I would like to have to do activities/have grandchildren over.” Another shared she is affected by her depression “not a daily basis. But, sometimes very much affected.” “Cannot do anything.” Examples of emotional effects include: “I may get grumpy.” Another shared “As long as I take [my] meds, I’m ok. If I try to stop it I become moody, agitated, emotional.”

Discussion

This paper draws from the Self-Regulation Model (Leventhal et al., 1992; Hale et al., 2007) to describe the perceptions of grandmothers about their depressive symptoms, whether they have received a diagnosis from a healthcare provider, and what they do to self-manage it. The self-regulation model is useful for both mental health practitioners and primary care providers because it offers insights into how individuals view their symptoms, which may not reflect symptom severity as appraised by clinicians (Baines & Wittkowski, 2013; Fortune, et al., 2004). Further, given the number of primary care providers who are the only point of mental health treatment for individuals experiencing depressive symptoms, the model offers additional yet concise questions for exploring the nature of depressive symptoms and approaches for supporting self-management. For researchers, the model is useful for predicting how individuals may respond to their symptoms and, potentially, for tailoring mental health interventions.

About one third of the grandmothers in our study have been diagnosed with depression. A majority (82%) of the women in our study who reported they were depressed were taking medication. This is consistent with the literature, which indicates that of the patients who want treatment for their depression, most have knowledge about antidepressant medications, and many prefer counseling (Dwight-Johnson, Sherbourne, Liao, & Wells, 2000). Other promising research in this area suggests that older adults with depression or anxiety may prefer to have their religious beliefs or practices incorporated within evidence-based therapeutic counseling sessions (Stanley et al., 2011). Rapp, LaCroix & Shumaker (2016) advocate that regardless of the severity of late life depression, efforts to identify and treat it should be made due to the negative impact on older women.

We expected that grandmothers who were primary, custodial caregivers would be more likely to consider depression as an illness and be more apt to engage in self-management of their depressive symptoms. In general a person’s understanding and experience of depression is highly subjective and individualized (Cornford, Hill & Reilly, 2007) and believed to be context dependent (Varvatsoulas, 2014). We thought it possible that recognition of the importance of their role as primary caregiver for their grandchild would motivate primary caregiver custodial grandmothers to interpret their depressive symptoms more seriously, and to engage in self-management to keep themselves mentally healthy so that they could continue to provide care for the grandchild, despite some evidence that

caregiving could interfere with self-management (Baker & Silverstein, 2008). Instead, we found no differences in self-management across groups: all grandmothers were equally engaged in self-management of their symptoms. Thus, although research shows that the presence of depression may prevent the activation that is critical for self-management (Chen, Mortenson, & Bloodworth, 2014; Hibbard, Mahoney, Stock, & Tusler, 2007), these grandmothers appear to be motivated to perform self-management activities aimed to reduce their depressive symptoms. Indeed, patient activation that is integral to self-management refers to the degree to which one possesses the knowledge, motivation, skills, and confidence to engage in self-management (Hibbard, Mahoney, Stockard, & Tusler, 2005).

The fact that prescribed medication use was the most commonly endorsed form of self-management in the sample is both reassuring and telling. Our findings suggest that there is not always concordance between grandmothers' perception of their own state of mental health (e.g., depression) and a provider-diagnosis of depression. This may have important implications for the use of self-management strategies that do not involve the use of prescribed medications. Additionally, the use of non-pharmacological interventions such as prayer (reported by 13% of our sample) offers self-management options for women with perceived as well as diagnosed depression. It is also noteworthy that participants identified medication use, seeking counseling and contacting a doctor or physician as discrete strategies for handling depressive symptoms. These self-management strategies most frequently used by the grandmothers are skills that reflect both self-help and help-seeking behaviors, which constitute their personal and social resourcefulness (Zauszniewski, 2012). Resourcefulness is a collection of personal and social skills that are believed to be learned formally (i.e. through intervention) or informally (e.g. through personal experiences) as was the case for these grandmothers (Rosenbaum, 1990; Zauszniewski, 2012). In addition, some grandmothers used skills that support a newly conceptualized third dimension of resourcefulness, spiritual resourcefulness (Zauszniewski, in press).

This study provides insights for healthcare providers as to which women are more likely to consider their depression an illness and to self-manage their depression. While there were no differences by caregiver group in likelihood to report depression, illness perception, diagnosis, or self-management of depressive symptoms, women in the low and high CES-D risk groups were most likely to take action to self-manage their depression. Longitudinal analyses could shed light on whether self-management efforts reduce the effects of depression, and whether some in the low-risk group are in fact effectively managing symptoms.

Most reports rely on CES-D data, which is very useful, but there may be more sensitive measures (Rush et al., 2005). Additional respondent detail also would expand our understanding of the extent to which depressive symptoms interfere with daily life and help to plan interventions to support grandmothers in their caregiving roles. From the data we do have, we know that grandmothers with higher levels of risk for depression and self-reported depression were also more likely to report problems with daily life activities as well as their caregiving responsibilities.

Further research is needed to determine how and when decisions to seek care for self-perceived depression are made, why some individuals who score in the high risk category do not view themselves as depressed, and how best to support these women in identifying the need for intervention. There may be personal or structural barriers for access to treatment. Reluctance to seek treatment may be compounded by perceived stigma of having mental health problems. Some research suggests that older adults are less likely than younger adults to report depression due to stigma associated with the diagnosis and therefore, may have undiagnosed and untreated clinical depression (Conner et al, 2010). Furthermore, it raises possible concerns that a mental health diagnosis would result in removing the grandchild from the grandmother's care.

This study reinforces the importance of identifying and addressing the mental health needs of grandmothers who are caring for their grandchildren. Health providers should pay attention to the grandmothers' perceptions and expressions of depression even if mental health assessments or diagnostic tools are not indicative of depression. Providers can help to empower grandmother caregivers and their families by encouraging self-management techniques to combat feelings of depression and help grandmothers to identify strategies to care both for themselves and those in their care.

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References

- Baines T, Wittkowski A. A systematic review of the literature exploring illness perceptions in mental health utilising the self-regulation model. *Journal of Clinical Psychology in Medical Settings*. 2013; 20(3):263–274. [PubMed: 23108509]
- Baker LA, Silverstein M. Preventive Health Behaviors Among Grandmothers Raising Grandchildren. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*. 2008; 63(5):S304–S311.
- Blustein J, Chan S, Guanais FC. Elevated Depressive Symptoms among Caregiving Grandparents. *Health Services Research*. 2004a; 39(6p1):1671–1690. <http://doi.org/10.1111/j.1475-6773.2004.00312.x>. [PubMed: 15533181]
- Blustein J, Chan S, Guanais FC. Elevated Depressive Symptoms among Caregiving Grandparents. *Health Services Research*. 2004b; 39(6p1):1671–1690. [PubMed: 15533181]
- Carr G. Information Need, Service Need, and Service Use: What are their Relationships in African American Grandmothers. *Southern Online Journal of Nursing Research*. 2009; 9(2)
- Courtin E, Knapp M, Grundy E, Avendano-Pabon M. Are different measures of depressive symptoms in old age comparable? An analysis of the CES-D and Euro-D scales in 13 countries. *International Journal of Methods in Psychiatric Research*. 2015; 24(4):287–304. <http://doi.org/10.1002/mpr.1489>. [PubMed: 26314384]
- Dillman, DA., Smith, JD., Chistian, LM. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. 3rd. New York, NY: Wiley & Sons, Inc; 2000.
- Dmitrieva NO, Fyffe D, Mukherjee S, Fieo R, Zahodne LB, Hamilton J, Gibbons LE. Demographic characteristics do not decrease the utility of depressive symptoms assessments: examining the practical impact of item bias in four heterogeneous samples of older adults. *International Journal of Geriatric Psychiatry*. 2015; 30(1):88–96. <http://doi.org/10.1002/gps.4121>. [PubMed: 24737612]

- Dwight-Johnson M, Sherbourne CD, Liao D, Wells KB. Treatment Preferences Among Depressed Primary Care Patients. *Journal of General Internal Medicine*. 2000; 15(8):527–534. <http://doi.org/10.1046/j.1525-1497.2000.08035.x>. [PubMed: 10940143]
- Fortune G, Barrowclough C, Lobban F. Illness representations in depression. *British Journal of Clinical Psychology*. 2004; 43(4):347–364. <http://doi.org/10.1348/0144665042388955>. [PubMed: 15530206]
- Fuller-Thomson E, Minkler M. American grandparents providing extensive child care to their grandchildren: prevalence and profile. *The Gerontologist*. 2001; 41(2):201–209. [PubMed: 11327486]
- Hale ED, Treharne GJ, Kitas GD. The Common-Sense Model of self-regulation of health and illness: how can we use it to understand and respond to our patients' needs? *Rheumatology*. 2007; 46(6): 904–906. <http://doi.org/10.1093/rheumatology/kem060>. [PubMed: 17449488]
- Haringsma R, Engels GI, Beekman ATF, Spinhoven P. The criterion validity of the Center for Epidemiological Studies Depression Scale (CES-D) in a sample of self-referred elders with depressive symptomatology. *International Journal of Geriatric Psychiatry*. 2004; 19(6):558–563. <http://doi.org/10.1002/gps.1130>. [PubMed: 15211536]
- Haug MR, Musil CM, Warner CD, Morris DL. Elderly Persons' Interpretation of a Bodily Change as an Illness Symptom. *Journal of Aging and Health*. 1997; 9(4):529–552. <http://doi.org/10.1177/089826439700900406>. [PubMed: 10182392]
- Haug MR, Musil CM, Warner CD, Morris DL. Interpreting bodily changes as illness: a longitudinal study of older adults. *Social Science & Medicine*. 1998; 46(12):1553–1567. [http://doi.org/10.1016/S0277-9536\(98\)00010-0](http://doi.org/10.1016/S0277-9536(98)00010-0). [PubMed: 9672395]
- Husaini BA, Neff JA, Harrington JB, Hughes MD, Stone RH. Depression in rural communities: Validating the CES-D scale. *Journal of Community Psychology*. 1980; 8(1):20–27. [http://doi.org/10.1002/1520-6629\(198001\)8:1<20::AID-JCOP2290080105>3.0.CO;2-Y](http://doi.org/10.1002/1520-6629(198001)8:1<20::AID-JCOP2290080105>3.0.CO;2-Y).
- Izquierdo A, Miranda J, Bromley E, Sherbourne C, Ryan G, Kennedy D, Wells K. Grandparenting experiences among adults with a history of depression: a mixed-methods study. *General Hospital Psychiatry*. 2015; 37(2):185–191. <http://doi.org/10.1016/j.genhosppsych.2014.11.009>. [PubMed: 25680755]
- Kelley SJ, Whitley D, Sipe TA, Crofts Yorker B. Psychological distress in grandmother kinship care providers: the role of resources, social support, and physical health. *Child Abuse & Neglect*. 2000; 24(3):311–321. [http://doi.org/10.1016/S0145-2134\(99\)00146-5](http://doi.org/10.1016/S0145-2134(99)00146-5). [PubMed: 10739075]
- Levanthal, H., Benyamini, Y., Brownlee, S. Illness representations: theoretical foundations. In: Petrie, KJ., Weinman, JA., editors. *Perceptions of Health and Illness*. Amsterdam: Harwood Academic; 1997. p. 19-45.
- Leventhal, H., Brissette, I., Leventhal, EA. The common-sense model of self-regulation of health and illness. In: Cameron, LD., Levanthal, H., editors. *The Self-Regulation of Health and Illness Behaviour*. London: Routledge; 2003. p. 42-65.
- Leventhal H, Diefenbach M, Leventhal EA. Illness cognition: Using common sense to understand treatment adherence and affect cognition interactions. *Cognitive Therapy and Research*. 1992; 16(2):143–163. <http://doi.org/10.1007/BF01173486>.
- Lewinsohn PM, Seeley JR, Roberts RE, Allen NB. Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychology and Aging*. 1997; 12(2):277–287. <http://doi.org/10.1037/0882-7974.12.2.277>. [PubMed: 9189988]
- Lyness J, Noel T, Cox C, King D, Conwell Y, Caine E. Screening for depression in elderly primary care patients. A comparison of the Center for Epidemiologic Studies-Depression Scale and the Geriatric Depression Scale. *Arch Intern Med*. 1997; 157(4):449–454. [PubMed: 9046897]
- Minkler M, Fuller-Thomson E, Miller D, Driver D. Depression in grandparents raising grandchildren - Results of a national longitudinal study. *ARCHIVES OF FAMILY MEDICINE*. 1997; 6(5):445–452. <http://doi.org/10.1001/archfami.6.5.445>. [PubMed: 9305687]
- Moorman SM, Stokes JE. Solidarity in the Grandparent-Adult Grandchild Relationship and Trajectories of Depressive Symptoms. *The Gerontologist*. 2014; gnu056. <http://doi.org/10.1093/geront/gnu056>.

- Musil C, Gordon N, Warner C, Zauszniewski J, Standing T, Wykle M. Grandmothers and Caregiving to Grandchildren: Continuity, Change, and Outcomes Over 24 Months. *GERONTOLOGIST*. 2011; 51(1):86–100. <http://doi.org/10.1093/geront/gnq061>. [PubMed: 20724656]
- Musil CM, Ahmad M. Health of Grandmothers: A Comparison by Caregiver Status. *Journal of Aging and Health*. 2002; 14(1):96–121. <http://doi.org/10.1177/089826430201400106>. [PubMed: 11892763]
- Musil CM, Jeanblanc AB, Burant CJ, Zauszniewski JA, Warner CB. Longitudinal analysis of resourcefulness, family strain, and depressive symptoms in grandmother caregivers. *Nursing Outlook*. 2013; 61(4):225–234. <http://doi.org/10.1016/j.outlook.2013.04.009>. [PubMed: 23756496]
- Musil C, Warner C, Zauszniewski J, Wykle M, Standing T. Grandmother Caregiving, Family Stress and Strain, and Depressive Symptoms. *Western Journal of Nursing Research*. 2009; 31(3):389–408. <http://doi.org/10.1177/0193945908328262>. [PubMed: 19261805]
- Petrie KJ, Jago LA, Devcich DA. The role of illness perceptions in patients with medical conditions. *Current Opinion in Psychiatry*. 2007; 20(2):163–167. <http://doi.org/10.1097/YCO.0b013e328014a871>. [PubMed: 17278916]
- Pratt L, Brody D. Depression in the U.S. Household Population, 2009–2012. CDC NCHS Data Brief. 2014; (172) Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db172.pdf>.
- Radloff LS. The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement*. 1977; 1(3):385–401. <http://doi.org/10.1177/014662167700100306>.
- Sanchez-Villegas A, Schlatter J, Ortuno F, Lahortiga F, Pla J, Benito S, Martinez-Gonzalez M. Validity of a self-reported diagnosis of depression among participants in a cohort study using the Structured Clinical Interview for DSM-IV. *BMC Psychiatry*. 2008; 8(43) Retrieved from <http://bmcpsy psychiatry.biomedcentral.com/articles/10.1186/1471-244X-8-43>.
- Strawbridge WJ, Wallhagen MI, Shema SJ, Kaplan GA. New burdens or more of the same? Comparing grandparent, spouse, and adult-child caregivers. *The Gerontologist*. 1997; 37(4):505–510. [PubMed: 9279039]
- Washington DL, Bean-Mayberry B, Riopelle D, Yano EM. Access to Care for Women Veterans: Delayed Healthcare and Unmet Need. *Journal of General Internal Medicine*. 2011; 26(2):655–661. <http://doi.org/10.1007/s11606-011-1772-z>. [PubMed: 21989618]
- Whitley DM. Health characteristics of solo GP Caregivers - Current Gerontology and Geriatrics Research. 2015 Retrieved from https://works.bepress.com/deborah_whitley/13/.
- Whitley DM, Kelley SJ, Lamis DA. Depression, Social Support, and Mental Health A Longitudinal Mediation Analysis in African American Custodial Grandmothers. *The International Journal of Aging and Human Development*. 2016:0091415015626550. <http://doi.org/10.1177/0091415015626550>.
- Young KS, Parsons CE, Stein A, Kringelbach ML. Motion and emotion: depression reduces psychomotor performance and alters affective movements in caregiving interactions. *Frontiers in Behavioral Neuroscience*. 2015; 9 <http://doi.org/10.3389/fnbeh.2015.00026>.
- Zauszniewski, JA. Resourcefulness. In: Fitzpatrick, JJ., Kazer, M., editors. *Encyclopedia of Nursing Research*. New York: Springer Publishing Co; in press
- Zauszniewski, JA. Resourcefulness. In: Fitzpatrick, JJ., Kazer, M., editors. *Encyclopedia of Nursing Research*. New York: Springer Publishing Co; 2012. p. 448-449.
- Young KS, Parsons CE, Stein A, Kringelbach ML. Motion and emotion: depression reduces psychomotor performance and alters affective movements in caregiving interactions. *Frontiers in Behavioral Neuroscience*. 2015; 9(26):1–10. [PubMed: 25653603]

Highlights

Grandmothers differed in their perception of depressive symptoms as an illness, in self-management of symptoms, and in the consequences of symptoms relative to provider diagnosis, but not by caregiver group.

Grandmothers differed in their perception of symptom seriousness by CES-D risk group, but not by caregiver group.

Grandmothers who employed strategies to self-manage their depression utilized a variety of methods.

Table 1

Distribution of Demographics by Caregiver Group

Demographics	Caregiver group				χ^2	CES-D risk group			χ^2
	Total (N=335)	Primary (n=100)	Multigenerational (n=45)	Non- caregiver (n=190)		Low-risk (n=225)	At-risk (n=53)	High- risk (n=57)	
Married/partnered									
No	162	45	29	88		105	28	29	0.76
Yes	172	54	16	102	5.31	119	25	28	
Missing	1								
Work status									
Unemployed	206	59	28	119		129	34	43	6.29*
Employed	128	40	17	71	0.26	95	19	14	
Missing	1								
Education									
HS	287	85	37	165		200	40	47	7.50*
<HS	47	15	8	24	0.88	24	13	10	
Missing	1								
Race									
Non-White	108	33	17	58		69	19	20	0.78
White	227	67	28	132	0.91	156	34	37	
Age									
<65	213	74	27	112		129	36	48	14.70*
65	122	26	18	78	6.70*	96	17	9	

*
p<0.05

Table 2

Indicators of Depression by Caregiver and Risk Group

	Caregiver group				CES-D risk group				
	Total (n=335)	Primary (n=100)	Multigen- erational (n=45)	Non- caregiver (n=190)	F or χ^2	Low-risk (n=225)	At-risk (n=53)	High-risk (n=57)	F or χ^2
CES-D score	M (SD) 13.3(11.2)	M (SD) 15.5(11.8)	M(SD) 15.6(11.4)	M (SD) 11.6 (10.6)	$\bar{F}$ 14.84 ^{***}	M (SD) 6.8 (4.5)	M (SD) 19.9 (2.7)	M (SD) 33.1 (7.4)	$\bar{F}$ 712.20 ^{***}
CES-D risk group									
χ^2									χ^2
Low-risk	225 (67.2%)	58	29	138					
At-risk	53 (15.8%)	21	6	26	7.50				
High-risk	57 (17.0%)	21	10	26					
Provider diagnosis									
Yes	109 (32.5%)	40	12	57	3.80	45	22	42	62.02 ^{***}
No	226 (67.5%)	60	33	133		180	31	15	
Self-report									
Yes	116 (34.6%)	42	18	56	5.20 [#]	43	27	46	83.62 ^{***}
No	219 (65.4%)	58	27	134		182	26	11	

p<0.10,

* p<0.05,

*** p<0.001

Table 3

CES-D Scores, Provider Diagnosis, and Self-Report of Depression

<u>Self-report and provider diagnosis (N=335)</u>	<u>CES-D score M (SD)</u>
Yes Self-report depression (n=116)	21.6 (11.8)
Yes provider diagnosis (n=95)	21.9 (12.4)
No provider diagnosis (n=21)	20.1 (8.9)
No Self-report depression (n=219)	8.9 (8.0)
Yes provider diagnosis (n=14)	13.9 (8.9)
No provider diagnosis (n=205)	8.6 (7.9)

Table 4

Depression Self-Management by Caregiver, Provider Diagnosis, and Risk Group

	Caregiver group				χ^2	Provider diagnosis		χ^2	CES-D risk group			χ^2	
	Total (n=116)	Primary (n=42)	Multigen- erational (n=18)	Non- caregiver (n=56)		Yes (n=94)	No (n=21)		Low-risk (n=43)	At-risk (n=27)	High-risk (n=46)		
Illness Perception													
Yes	76 (65.5%)	26	11	39		69	7		12.30***	26	16	34	2.15
No	39 (33.6%)	15	7	17		25	14			16	11	12	
Missing	1 (0.1%)												
Seriousness													
Serious	23 (19.8%)	11	2	10		21	2			28	12	14	
Maybe serious	38 (32.8%)	10	6	22		32	6		2.79	11	9	18	13.34*
Not serious	54 (46.6%)	20	10	24		41	13			3	6	14	
Missing	1 (0.1%)												
Self-management													
Yes	99 (85.3%)	34	15	50		87	12		17.97***	39	20	40	4.89#
No	16 (13.8%)	7	3	6		7	9			3	7	6	
Missing	1 (0.1%)												
Consequences - Effects													
None	48 (41.4%)	19	5	24		40	8			27	11	10	
Emotional	28 (24.1%)	10	6	12		21	7		1.23	11	7	10	22.24***
Instrumental	40 (34.5%)	13	7	20		34	6			5	9	26	

p<0.10,

* p<0.05,

*** p<0.001

Table 5

Grandmothers' Self-management of Depressive Symptoms

Participants (n=115 ^a)	n	%
What did you do about your depression?		
Take medications	81	70.4
Call or see doctor	18	15.7
Pray	15	13.0
Talk therapy/counseling	11	9.6
Engage in activity – exercise, spend time with family, stay busy	9	7.8
Other	6	5.2
Relax, rest	6	5.2
Use alternative therapies – herbs, meditation, biofeedback	4	3.5
Redirect thoughts/positive thinking	4	3.5

^a may have used more than one strategy