

Burden, Interdependence, Ethnicity, and Mental Health in Caregivers of Patients with Schizophrenia

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Caring for a patient with schizophrenia often results in high levels of perceived burden and poorer overall mental health. Using a sample of 176 caregivers of patients with schizophrenia, the present study examined how two components of burden (objective and subjective) interacted with interdependence and ethnicity to influence relatives' overall mental health. In line with study hypotheses, and with the stress-appraisal-coping model developed by Lazarus and Folkman (1984), we found that subjective burden mediated the relationship between objective burden and mental health. In other words, subjective appraisals of caregiving appeared to partially underlie the association between the concrete costs of caregiving and psychological outcomes in schizophrenia caregivers. Also as hypothesized, we found that interdependence, or the perceived interconnectedness of individuals within a group, moderated the relationship between objective burden and subjective burden. In other words, when levels of interdependence were high, the objective components of burden appeared to have a weaker relationship with subjective burden. When interdependence was low, on the other hand, objective burden was more likely to be associated with subjective burden. This finding suggests that helping caregivers to value harmony and connection with others over individual self-interests may reduce the likelihood that objective stressors (which are often inevitable in schizophrenia) will result in subjective distress. On the basis of prior research, we also tested several hypotheses regarding the role of ethnicity and its association with burden, interdependence, and mental health. However, contrary to expectations, no ethnic patterns were observed.

Keywords: Schizophrenia; Caregiver Burden; Interdependence; Mental Illness; Collectivism; General Emotional Distress

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INTRODUCTION

Schizophrenia is a severe and chronic psychiatric disorder that occurs in approximately 1% of the population (Mueser & Jeste, 2008). The disorder poses multiple challenges in its management for both patients with the illness and their caregivers. In the past 50 years, de-institutionalization has resulted in as many as 50–90% of patients in the United States residing with family (Foldemo, Gullberg, & Ek, 2005; Honkonen, Sarinen, & Salokangas, 1999; World Health Organization, 2001). As the burden of care has shifted from hospitals to homes, a field of research known as caregiver burden has developed to investigate the consequences of this experience for family members. The adverse effects of caregiving have been found across a spectrum of settings including family, work, recreation, and mental health (Clausen & Yarrow, 1955; Dinos et al., 2004). Common psychological

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consequences include feelings of uncertainty, shame, guilt, and anger, as well as stigma and social isolation associated with the psychiatric illness (Awad & Voruganti, 2008; Gutierrez-Maldonado & Caqueo-Urizar, 2006; Jungbaur, Wittmund, & Dietrich, 2003; Madianos, Economou, & Dafni, 2004; Magana, Ramirez, & Hernandez, 2007; Magliano, Fiorillo, & Malangona, 1998). Furthermore, the prevalence of depression for caregivers of individuals with a psychiatric illness has been estimated to range from 38% to 70% (Møller, Gudde, Folden, & Linaker, 2009; Winefield & Harvey, 1993).

Objective and Subjective Burden

Hoening and Hamilton (1966) conceptualized caregiver burden as comprising two distinct components, objective and subjective. The authors define objective burden (OB) as stress stemming from the visible, concrete costs to a caregiver that are the direct result of the mental illness of their family member. They define subjective burden (SB) as the caregiver's appraisals of these costs and the extent to which they perceive their situation to be burdensome. The stress-appraisal-coping theory of Lazarus and Folkman (1984) provides a theoretical framework that might assist in better understanding the associations between OB, SB, and mental health. According to a stress-appraisal model, the symptoms and behaviors associated with a patient's illness are considered to be objective stressors that may result in strain or distress for the caregiver. However, the extent to which these stressors are related to a caregiver's negative mental health is dependent on the caregiver's appraisal, or subjective evaluation, of the stressor. More simply, although the objective components of burden do impact the caregiver, it is subjective burden that is thought to determine the severity of potentially negative psychological outcomes. This suggests that further understanding the appraisal processes and belief systems involved in how caregivers perceive their relative's schizophrenia, or SB is important for understanding their response to the illness and in helping to reduce negative psychological outcomes.

Some studies have found ethnic differences in the ways that caregivers appraise and evaluate the caregiving experience. Evidence indicates that Caucasian caregivers demonstrate more negative outcomes related to caregiving including increased levels of burden, depression (e.g., Skarupski, McCann, Bienias, & Evans, 2009), and global role strain (Farran et al., 2007), as well as decreased well-being and physical health (Haley et al., 2004). Furthermore, there is a strong body of work suggesting that African-American and Hispanic caregivers appraise the act of caregiving as more normative and less burdensome than do Caucasian caregivers and, consequently, exhibit lower levels of poor mental health as a result of caregiving (e.g., Haley et al., 2004; Lawton, Rajagopal, Brody, & Kleban, 1992; Magana et al., 2007; Valle, 1989). These findings are especially noteworthy given that African-American caregivers are more likely to have lower incomes and educational attainment. Pinpointing potential variables that influence the relationship between OB and SB may be useful in identifying subsamples of caregivers who are more vulnerable to experiencing negative psychological outcomes when faced with burdensome caregiving experiences.

Interdependence and Burden

Some evidence suggests that interdependence may influence perceptions of burden and partially account for the ethnic differences previously observed in outcomes for schizophrenia caregivers. Individuals who strongly endorse interdependent values tend to view themselves as part of an all-encompassing social group. Consequently, their behavior is often guided based on the feelings, actions, or standards established by the larger whole (Markus & Kitayama, 1991; Singelis, 1994). Interdependence does not appear to be as

strongly valued by European-Americans. In fact, in many Western societies, there is a strong emphasis on remaining autonomous and deriving one's sense of self-esteem from achievements based on internal attributes, such as one's personality traits, abilities, and intelligence (Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997). In the United States, African-Americans and Hispanics have been found to generally endorse higher levels of interdependence when compared to Caucasians (Connell & Gibson, 1997; Farran et al., 2007; Haley, Roth, & Coletton, 1996; Stueve, Vine, & Struening, 1997). As noted, Caucasians have been shown to endorse higher levels of burden in response to caregiving when compared to other ethnic groups. Perhaps one reason for this pattern is that there is a clearly established norm for minorities that one should care for a disabled or ill family member, whereas this expectation is less clearly delineated for Caucasians (e.g., Lawton et al., 1992; Magana et al., 2007; Valle, 1989).

Prior studies suggest that endorsing higher levels of interdependence may promote a positive caregiving experience and consequently have implications for the mental well-being of both caregivers and patients with a severe mental illness. Dilworth-Anderson et al. (2005) found that dementia caregivers of African-American descent were more likely than those of Caucasian descent to hold interdependent perceptions of family and community and to have an implicit understanding of reciprocity between individuals in one's community. Similarly, Freeberg and Stein (1996) found that for Mexican Americans, levels of obligation to an ill relative were associated with collectivistic attitudes, or their perceived membership in a group. For Caucasians, perceived obligation was related to the individual relationship, or the closeness one had with their relative. The results of these studies suggest that the act of caregiving may be more normative or in psychodynamic terms, ego-syntonic, within interdependent cultures and ethnic groups.

In summary, attention to the processes underlying the experience of caregiver burden and the sociocultural variables that may influence these processes have been fairly limited, although the topic has gained some attention in recent years (e.g., Janevic & Connell, 2001; Magana et al., 2007). Stress-appraisal-coping theories such as Lazarus and Folkman's (1984) have been applied to the construct of caregiver burden to conceptualize the specific mechanisms that may lead to the poor psychological profile observed for caregivers. However, few studies have applied these theories empirically in caregiver samples. In addition, although previous studies have tested for ethnic differences in caregiver burden, the mechanisms underlying these differences are not fully understood. The current study sought to not only confirm prior theoretical explanations for the relationship between OB and SB but also to address gaps in the literature by shedding light on the ways in which the experience of burden is associated with sociocultural variables to explain ethnic discrepancies in mental health for schizophrenia caregivers. Specifically, the current study investigated the relationship between interdependence, caregiver burden, and the appraisal of caregiving in particular. Although prior research has provided evidence that interdependence shapes perceptions and appraisals for caregivers, its relationship with OB and SB has yet to be tested.

HYPOTHESES

Drawing from the research reviewed above, the current study tested three sets of hypotheses.

First, it was hypothesized that greater OB would be associated with poorer mental health outcomes. Furthermore, in line with the work of Lazarus and Folkman (1984), this link was expected to be mediated by SB. Second, interdependence was hypothesized to moderate the relationship between objective burden and subjective burden. In other words, higher levels of interdependence were expected to provide a protective force and

weaken the detrimental effect of OB on SB. Therefore, the link between OB and SB was expected to be stronger for caregivers, who endorsed lower levels of interdependence than for those who reported higher levels of this value. The third set of hypotheses tested in this study pertained to ethnic factors associated with burden and mental health. Specifically, it was hypothesized that African-American and Hispanic caregivers would demonstrate better mental health outcomes, lower levels of caregiver burden, and higher levels of interdependence than their Caucasian counterparts. Furthermore, the relationship between ethnicity and caregiver burden, comprised of OB and SB, was expected to be moderated by interdependence.

METHOD

Sample

The sample of the current study included 176 (68 men and 108 women) caregivers of a patient with schizophrenia or schizoaffective disorder with a mean age of 51.05 years ($SD = 15.13$). Twenty-nine percent of the family member sample identified as Caucasian, 10.3% as African-American, and 59.8% identified as Hispanic. Forty-five percent of the sample identified as the mother of the patient, 15.3% identified as the father of the patient, 11.3% identified as the significant other of the patient, 10.1% identified as the sister of the patient, 6.8% identified as a long-term, family equivalent, friend of the patient, 5% identified as the brother of the patient, 3.8% as the daughter of the patient, and 2.5% as the son of the patient.

Procedure

Our sample was obtained through referrals from hospitals and community mental health centers as well as through recruitment of patients and their family member(s) from Miami and neighboring cities through newspaper advertisements and advertisements on Miami's above-ground rail system. Advertisements included the following questions and information:

"Have you or one of your relatives been diagnosed with schizophrenia or schizoaffective disorder? If so, you may be eligible to participate in a research study. During the study you will take part in an interview (regarding symptoms, how you cope with the illness, and cultural information) and, if interested, you may also be eligible for free family therapy for schizophrenia/schizoaffective disorder. Interviews are available in English and Spanish. You will be compensated \$25 for your interview time".

Participants were given contact information. Those who contacted our lab and appeared to meet eligibility criteria based on a brief phone screen were then scheduled to complete a baseline assessment where they were interviewed using the Structured Clinical Interview for the DSM-IV Axis I Disorders, Version 2.0, patient edition (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1996) to confirm patient diagnosis, the Brief Psychiatric Rating Scale (BPRS), and an assessment packet intended to gather data across a variety of domains including, but not limited to, cultural identity, family dynamics, and coping strategies. Caregivers participated in the study either with or without a patient. If the patient was present, diagnostic confirmation was obtained directly. In some cases, the patient was unable or unwilling to participate in the study. In these situations, primary caregivers were interviewed to confirm patient diagnosis.

Translation of Measures

All assessments in this study were offered in English or Spanish. Measures were translated from English to Spanish using the editorial board approach. This is considered to be

more effective than the translation-back translation approach because it takes into account the within group language variations that are often an issue (Geisinger, 1994). Measures were first translated by a native Spanish speaker of Cuban descent, who then convened with an editorial board comprised of native Spanish speakers of Cuban, Nicaraguan, Costa Rican, Columbian, Mexican, and Puerto Rican descent, as well as the Primary Investigator of the larger previously mentioned project, who is a nonnative Spanish speaker with personal and professional experience in Spanish speaking countries (e.g., Mexico, Cuba, and Spain) and U.S. cities where Spanish is frequently spoken (Los Angeles, Miami). The members of the board independently reviewed the translations and carefully compared them to the original English versions. Concerns or discrepancies in the Spanish translation were then discussed to create the most language-generic version of the measures. Measures were then reviewed for a second time. All remaining discrepancies were then discussed in a final meeting and board members modified necessary items until they arrived at consensus that the language of all measures and instructions was clear and targeted the intended constructs. In this sample, 58 of the baseline assessments were conducted in Spanish.

Measures

Ethnicity

Ethnicity was obtained using a self-report questionnaire. Specifically, participants were asked to select the primary category that best captures their perception of their ethnic background from the following options: Caucasian, Hispanic, African-American, Asian American, Native American, and Other. For the purposes of the current study, data were analyzed only for participants who identified as African-American, Hispanic, or Caucasian. Sample sizes in the other groups were far too small to yield meaningful analyses. Furthermore, as reviewed above, African-Americans, Hispanics, and Caucasians are the primary populations examined in prior cultural studies investigating caregiver burden and would therefore facilitate comparisons among studies.

Burden

Family member burden was assessed using The Modified Burden Assessment Scale for Families of the Seriously Mentally Ill (BAS, Reinhard & Horwitz, 1994). The BAS contains 19 items and two distinct subscales that assess the objective and subjective consequences of caregiving. Ten objective burden items measure potentially observable behavioral effects of caregiving in four areas: financial problems, limitations on personal activity, household disruption, and social interactions. Nine subjective burden items measure the feelings, attitudes, and emotions specifically related to caregiving in six domains: shame, stigma, guilt, resentment, grief, and worry. Descriptive information for these subscales may be found in Table 1.

Overall the BAS demonstrated good reliability with a total Cronbach's alpha of .864 (.882 for English and .847 for Spanish). The OB subscale demonstrated good reliability with an alpha value of .836 (.857 for English and .816 for Spanish). Similarly, the SB subscale demonstrated good reliability with an alpha value of .856 (.849 for English and .866 for Spanish).

Interdependence

A measure of interdependence was rated using Singelis' (1994) "Measurement of Independent and Interdependent self-construal Scale (SCS)". For this study we used the 12-item Interdependent subscale only. A sample item from this subscale includes "It is

TABLE 1
Means of Objective and Subjective Burden

	<i>M</i>	<i>SD</i>
Objective burden	22.77	1.82
Financial distress	2.43	1.51
Household disruptions	2.23	1.20
Social interactions	8.57	2.48
Personal limitations	9.54	1.58
Subjective burden	20.43	1.71
Shame	1.84	0.58
Stigma	2.58	1.22
Guilt	1.85	0.98
Resentment	4.39	1.83
Grief	2.72	1.22
Worry	7.05	2.84

important for me to maintain harmony within my group". In the current study, the Interdependent subscale of the SCS demonstrated adequate internal reliability with a Cronbach's alpha value of .712 (.723 for English and .745 for Spanish).

Mental health outcomes

Mental health outcomes were measured as a latent variable, specified by three different indicators. First, patient and family members' level of depression were assessed using the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). In this sample, the BDI demonstrated good reliability with a Cronbach's alpha value of .886 (.836 for English and .905 for Spanish). The Beck Anxiety Inventory (BAI; Beck & Steer, 1990) was used to assess patient and relative anxiety. In the entire sample, the BAI demonstrated superior reliability with a Cronbach's alpha value of .946 (.915 for English and .955 for Spanish). Finally, depression, anxiety, and stress were rated by the Depression and Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995). The DASS is a 42-item self-report questionnaire, comprised of three factors: depression, anxiety, and stress. For the entire sample, the DASS demonstrated adequate reliability with a Cronbach's alpha value of .629 (.816 for English and .448 for Spanish).

Covariates

The following covariates were also examined and controlled for when they related to any primary outcome variable:

Gender, age, and type of relationship between patient and caregiver (spousal, parental etc.)

These items were obtained through a self-report, demographics questionnaire.

Education

Education was measured using a single item asking "How much formal education do you have?" Responses were coded on a 7 point scale from 7 = *advanced degree* to 1 = *below grade 8*. Sixty-two percent of the sample endorsed having completed high school and at least some additional college coursework, 24% endorsed having graduated from high school only, and 14% reported having less than a high school degree.

Hours of contact

Weekly number of hours of contact between the caregiver and patient was measured with a single item, "On average, how many hours per week do you have contact with the patient?"

Participants in this sample reported a mean of 72 hours of contact per week with the patient. In addition, approximately 80% of the sample reported residing with the patient.

Participation in support groups

Participation in support groups was assessed with the following questions: "Are you involved in any support groups?" If the participant responded "yes", they were then asked "If yes, how many?", "What kinds of groups?", and "How long have you been involved in each?" Seventy-six percent of participants endorsed not being involved in any formal support groups or any other organized mental health care. Of the family members who did endorse attending other support groups, approximately 85% stated that they had attended for 1 year or less.

Participation with or without a patient

Sixty one percent of caregivers in this sample entered the study without a patient.

Psychiatric symptoms

Patients' psychiatric symptoms were rated using the BPRS. The BPRS is a 24-item semi-structured interview, which assesses the following eight areas: unusual thought content, hallucinations, conceptual disorganization, depression, suicidality, self-neglect, bizarre behavior, and hostility. Scores were rated based on a 7-point scale ranging from 1 = *not present* to 7 = *extremely severe*. In previous research examining a schizophrenia sample, Subotnik and Nuechterlein (1988) demonstrated good reliability (intraclass coefficients scores ranged from .77 to .93 across scales with a mean of .85). To establish interrater reliability, study interviewers were trained by the P.I. (Dr. Amy Weisman de Mamani), who was trained by and established reliability with Dr. Joseph Ventura, a BPRS trainer and expert. Intraclass correlation coefficients between the study interviewers and Dr. Ventura's consensus ratings ranged from .85 to .98 for total scale scores.

RESULTS

Preliminary Analyses

Initial analyses were performed to assess the relationships between demographic and other potential covariates and the primary variables in this study. Pearson r correlations were conducted when main study variables (Interdependence, OB, SB, Depression, Anxiety, General Emotional Distress) and demographic variables (age, symptom severity, education, and hours of contact) were both continuous. Older caregiver age was significantly associated with lower depression ($r = -.243, p < .01$) as well as lower anxiety ($r = -.405, p < .01$). Older caregiver age was also associated with lower levels of subjective burden ($r = -.327, p < .01$). Higher levels of patient symptom severity were associated with higher levels of depression ($r = .303, p < .01$). Patient symptom severity was also positively associated with both greater objective burden ($r = .262, p < .01$) and greater subjective burden ($r = .578, p < .01$). Lower levels of education were found to be related to greater general emotional distress as measured by the DASS ($r = -.265, p < .01$). Hours of contact were weakly negatively associated with SB ($r = -.175, p < .05$). As a result, age, symptom severity, education, and hours of contact were controlled for in all primary hypotheses.

Independent-samples t -tests were performed to assess for differences in primary study variables for participants who engaged in support groups versus those who did not, as well as for participants who entered the study with a patient versus those who did not. However, neither support group participation nor patient participation was associated

with any other study variable. Thus, these factors were not examined further in this study.

Finally, one-way ANOVAs were conducted to examine the relationship between main study variables and the type of relationship between the patient and caregiver. Ratings of SB, OB, and interdependence were not found to be significantly different for any category of relative. Thus, this variable was not included in any subsequent analyses.

Primary Analyses

The first set of hypotheses examined the direct association between OB and mental health outcomes and also evaluated the indirect effect of objective burden on mental health outcomes via subjective burden. In other words, we tested whether SB mediated the relationship between OB and mental health outcomes.

Confirmatory Factor Analyses

A confirmatory factor analysis (CFA) was first conducted on the mental health outcomes variable cluster using the indicators of depression, anxiety, and general emotional distress. The CFA of mental health outcomes specified by the BDI, BAI, and DASS produced adequate fit to the data, indicating that all three observed variables were good indicators of the latent variable, $\chi^2(7) = 5.776$, $p = .075$, CFI = .987, RMSEA = .079, SRMR = .022. Furthermore, all of the standardized regression coefficients of the indicators were larger than .5, indicating strong paths. Therefore, this latent variable was retained for all subsequent analyses. Table 2 provides factor-loading information for the CFA.

SB as a Mediator of OB and Mental Health Outcomes

The direct path between objective burden and mental health outcomes was found to be significant, $\beta = .579$, $p < .05$. Objective burden was also found to be significantly related to subjective burden, $\beta = .295$, $p < .05$. Next, the relationship between SB and mental health outcomes was examined. Subjective burden was found to be significantly related to mental health outcomes as well, $\beta = .355$, $p < .05$. Finally, a significant indirect effect was found from objective burden to mental health outcomes via subjective burden, $\beta = .635$, $p < .05$. With SB included in the model as a mediator, OB was found to be significantly associated with mental health outcomes, $\beta = .323$, $p < .05$. A test of chi-square change indicated that the direct effect from OB to mental health outcomes was significantly diminished with the inclusion of SB as a mediator, $\chi^2(2) = 6.94$, $p < .05$, indicating a significant mediation

TABLE 2
Standardized Loadings for Confirmatory Factor Analysis of Mental Health Outcomes

	Coefficient	SE	Z
Mental health outcomes			
BAI	.677	.045	15.144*
BDI	.821	.036	23.036*
DASS	.895	.032	28.169**

BAI = Beck anxiety inventory; BDI = Beck depression inventory; DASS = Depression and anxiety stress scale; SE = Standard error.

* $p < .05$.

** $p < .001$.

effect. This model fit the data as indicated by the overall test of model fit $\chi^2(13) = 9.26$, $p = .173$, CFI = .989, RMSEA = .056, SRMR = .031.

Interdependence as a Moderator of OB–SB Link

Next, we tested whether interdependence moderated the relationship between OB and SB. Supporting study hypotheses, interdependence was found to significantly moderate this relationship. Results indicated that the interaction between mean-centered values of OB and interdependence was significantly related to subjective burden, $\beta = -.519$, $p < .05$. In other words, OB was less likely to be associated with SB in caregivers, who endorsed interdependence more strongly. Furthermore, this model adequately fit the data as indicated by fit indices, $\chi^2(17) = 25.711$, $p = .0602$, CFI = .984, RMSEA = .049, SRMR = .029. Table 3 provides the standardized path coefficients, standard errors, and z -values for direct effects, and the indirect effect.

Ethnicity, Mental Health, Caregiver Burden, and Interdependence

The third set of analyses examined ethnicity's association with mental health, caregiver burden, and interdependence. Because ethnicity is a categorical variable it was dummy coded into two variables with Caucasians remaining as the reference group. The latent variable of mental health was regressed on two dummy coded variables of ethnicity. Results indicated that ethnic groups were not significantly associated with mental health outcomes, as indicated by the overall test of model fit $\chi^2(9) = 19.42$, $p = .033$, CFI = .0006, RMSEA = .160, SRMR = .054. In addition, no ethnic differences were found in OB ($F = 0.847$, $p = .431$), SB ($F = 1.14$, $p = .216$) or interdependence ($F = 1.68$, $p = .113$). Because ethnicity was not found to be related to any of the variables of interest, it was not examined further in this study.

DISCUSSION

Caring for a family member with schizophrenia has been associated with numerous negative mental health outcomes. In this study, we investigated whether SB mediated the relationship between OB and mental health. In other words, we examined whether the subjective appraisals of caregiving underlie the previously found associations between the concrete costs of caregiving and the poor psychological profiles observed in schizophrenia caregivers. In addition, we studied whether interdependence plays a moderating role in this appraisal process, such that the relationship between OB and SB will be weaker for caregivers, who endorsed higher levels of interdependence, than for those who endorsed

TABLE 3
Standardized Path Coefficients, SE and z -Values for Direct Effects and Indirect Effect

	Coefficient	SE	z
Direct path			
OB to SB	.295	.192	19.06**
OB to mental health outcomes	.323	.082	4.26**
SB to mental health outcomes	.355	.073	3.77*
Interdependence_c*OB_c to SB	-.519	.04	-4.82**
Indirect path			
OB to mental health outcomes via SB	.635	.146	6.70**

OB = Objective burden; SB = Subjective burden; SE = Standard error.

* $p < .05$.

** $p < .001$.

lower levels. On the basis of prior research, we also tested for ethnic differences in each of these variables of interest.

The primary aim of this study was to examine the relationship among OB, SB, and mental health outcomes. As hypothesized, OB was found to be significantly related to SB in our sample. Also in line with expectations, greater levels of both the objective and subjective components of burden were associated with poorer mental health outcomes. This confirms a large body of work demonstrating the psychological toll that burden places on family members and other loved ones who look after a mentally ill person with schizophrenia (e.g., Barrowclough, Johnston, & TARRIER, 1994; Fredman, Daly, & Lazur, 1995; Oldridge & Hughes, 1992; Winefield & Harvey, 1993). These findings suggest that it is critical to reduce caregiver burden to alleviate the negative mental health implications often observed in this population. Also in line with hypotheses, OB was found to be significantly related to mental health outcomes not only directly but also indirectly, via SB. This significant indirect effect indicates that SB partially mediated the relationship between OB and mental health outcomes in this sample, demonstrating the underlying influence of appraisal on psychological well-being. This finding is supported by previous work in the area of stress and coping. However, this research has been much less developed in the realms of severe mental illness and caregiving.

In line with Lazarus and Folkman's (1984) stress-appraisal-coping model, our results indicate that objective stressors may arouse an appraisal process in schizophrenia caregivers whereby external stressors are deemed to be either threatening or nonthreatening. These appraisals, then, will manifest themselves differently in terms of consequent psychopathology. Our finding of SB's influence on mental health demonstrates the potential for negative psychological outcomes to be improved by addressing caregivers' appraisals of the caregiving experience. This entails examining contextual factors and their potential to influence a caregiver's subjective perception of managing a relative's mental illness. This finding is important, as SB may be more malleable to therapeutic intervention than OB. Therapists may be limited in how much they can assist caregivers in overcoming the financial, social, or time constraints associated with caregiving. On the other hand, the way one appraises a stressor seems to be much less constrained.

The second aim of the current study was to examine interdependence, and the role it may play in moderating the OB-SB link. In line with hypotheses, interdependence was found to be a significant moderator of the OB-SB relationship. That is, OB was related to greater levels of SB for schizophrenia caregivers who reported lower levels of interdependent beliefs and values. Caregivers who reported higher levels of interdependence, however, demonstrated a weaker OB-SB relationship. Therefore, interdependence appears to play a protective role for caregivers such that OB is less detrimental to SB appraisals when interdependence levels are high. Having a sense of oneself as connected with a larger community may serve to alleviate the stressor-appraisal process and provide a resource to caregivers who are managing the burdens frequently associated with caring for a mentally ill individual. It seems that individuals who are more likely to strongly endorse interdependent values may feel less subjectively imposed upon when they encounter objective caregiving stressors that limit their own leisure activities and financial well-being. This may occur because caregivers who endorse higher levels of interdependence perceive themselves as receiving more support than caregivers who endorse lower levels of interdependence. Alternatively, it is possible that these family members may view caregiving as less of an imposition than caregivers who endorse higher levels of independence. In short, our findings suggest that a strong perception of being interdependent with a larger community may serve to mitigate the stressor-appraisal process and may provide a resource to caregivers managing a frequently distressing situation. However, further research is needed to clarify more precisely the manner in which interdependence serves

this function. Finally, contrary to hypotheses, ethnicity was not found to be associated with psychological health when measured as a latent variable, nor was ethnicity associated with levels of caregiver burden or interdependence. We are not sure why our results differ from the majority of other studies, but the heterogeneity of both African-American and Hispanic subgroups (in other words, including participants from a variety of countries all grouped under the same ethnic umbrella) may have clouded results of the present study.

Limitations

There were a number of limitations in the current study. First, many participants may have enrolled in this study because of the potential for also enrolling in a subsequent treatment intervention arm of the project. Caregiving demands of participants who are seeking treatment may be systematically different from caregivers who are not seeking intervention. Thus, our findings may not generalize outside a help-seeking context. The cross-sectional nature of the data is another limitation. Without longitudinal data, the current study does not warrant causal inferences to be made. Future studies are needed to examine objective and subjective burden over time. Another study limitation is that the reliability of the Spanish version of the DASS was low. We are unsure why this is the case. Further attention to this issue is necessary. Finally, we did not address the pre-morbid adjustment of caregivers in our sample. An important step for future research would be to pinpoint characteristics of caregivers that may predispose them to experience high levels of burden and psychological distress.

CONCLUSION

In conclusion, we found that subjective burden mediated the relationship between objective burden and mental health outcomes in schizophrenia caregivers. This finding has implications for the treatment of caregivers. As noted above, many objective determinants of burden are not easily modifiable and therefore may be of more limited use in developing interventions aimed at the caregiver population. However, the subjective appraisals of burden seem likely to be amenable to adaptation and change (Jones, 1996). Results of our study indicate that clinicians may help to assuage psychological distress in schizophrenia family members by targeting the more malleable subjective burdens associated with caregiving. Specifically, clinicians may assist family members in developing awareness of their subjective interpretations of caregiving and the ways that these perceptions may influence their well-being. For example, a clinician working with a caregiver who reports feeling trapped by their caregiving role may help the caregiver to view their situation in a different way that entails an adaptive interpretation of caregiving (e.g., I have the opportunity to support and care for someone I love). Similarly, a caregiver who endorses feeling stigmatized by their relative's schizophrenia may be encouraged by a clinician to deepen their understanding of the illness through psychoeducation and increased communication with their loved one. Study findings also suggest that the stressor-appraisal process may be mitigated for caregivers with higher levels of interdependence. This suggests that working to foster collaborative and interdependent value systems in caregivers may help to lessen the impact of objective stressors when they do occur. Weisman de Mamani, Dunham, Aldebot, Tuchman, and Wasserman (2009; Weisman, Duarte, Koneru, & Wasserman, 2006) offer a variety of directed suggestions for increasing perceptions of collectivism in patients and families coping with schizophrenia. For example, they suggest that during initial sessions family members should be praised for attending treatment and this should be framed as indicative of a commitment to the patient and to the family unit. The authors report that clarifying each member's

expectations and goals for treatment also offers opportunities to point out commonalities, as most members of a family will report that getting along better and helping the patient remain in remission are shared priorities.¹ These recommendations are consistent with collaborative approaches suggested by well-established, evidence-based family therapies for schizophrenia (Lucksted, McFarlane, Downing, Dixon, & Adams, 2012; Pilling et al., 2002). In future, research should examine other variables that may influence the relationship between appraisals and mental health outcomes.

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¹Contact Amy Weisman de Mamani (aweisman@miami.edu) for a series of handouts specifically aimed at fostering perceptions of family unity and interdependence. These handouts were developed to accompany the collectivism module of Culturally Informed Therapy for Schizophrenia (Weisman de Mamani et al., 2009).

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