Psychometric Properties of the Coping Inventory for Task Stressors: Evaluation among African American and Caucasian, Alzheimer's Disease Caregivers

By

Scott E. Wilks, PhD, LMSW
swilks@lsu.edu
John A. Hartford Foundation Faculty Scholar and Associate Professor,
Louisiana State University School of Social Work, Baton Rouge, Louisiana
(correspondence regarding this article should be submitted to Dr. Wilks)

Jennifer R. Geiger, MSW
PhD student, Louisiana State University School of Social Work,
Baton Rouge, Louisiana

P. August Boyd, BA
MSW student, Louisiana State University School of Social Work,
Baton Rouge, Louisiana

Cassandra Chaney, PhD
cchaney@lsu.edu
Associate Professor of Child and Family Studies,
Louisiana State University School of Social Work,
Baton Rouge, Louisiana

Acknowledgement: This study was funded in part by The John A. Hartford Foundation Faculty Scholars Program.

Abstract

Purpose: The Coping Inventory for Task Stressors (CITS) is a measure with three subscales to assess empirically *task-focused*, *emotion-focused*, and *avoidance* coping strategies. The purpose of this study was twofold: to re-examine the properties of the CITS; and to examine property differences between African American and Caucasian Alzheimer's disease (AD) caregivers, a population who notably copes with chronic adversity.

Methods: The study used self-reported data from AD caregivers (N = 691) in the southern United States, recruited from an AD service organization, and community and health organizations in African American communities.

Results: African American and Caucasian caregivers were equally likely to use both task-focused and emotion-focused coping, while African American caregivers were more likely to use avoidance coping. No significant differences were observed between ethnic groups on levels of burden or resilience. Factor analysis results were mixed between ethnic groups. Reliability of task- and emotion-focused CITS subscales, but not the avoidance subscale, was acceptable across all samples. Validity analyses in the broader sample revealed a significant positive relationship between task-focused coping and resilience, while emotion-focused and avoidance coping had negative relationships with coping, as expected. Results were mixed across all samples for the CITS subscales and the two burden measures.

Implications: Although no clear choice of coping strategy emerged as effective in lowering caregiver burden, the results suggest that task-focused coping may best serve caregivers in strengthening resilience, irrespective of ethnicity. The results also point to the trend of increasing age among AD caregivers, a factor which indirectly affects health and quality of life of care recipients. Thus, it is important for the healthcare community to understand and effectively intervene in this dynamic.

Introduction

The Coping Inventory for Task Stressors (CITS) is an empirical, quantitative measure developed and evaluated by Gerald Matthews and Sian E. Campbell in 1998 (Matthews & Campbell, 1998). The purpose of the scale was designed to measure three coping strategies identified by stress theory, a social theory that examines the emotional and physiological responses to stress (Rice, 2012). The specified strategies are *task-focused*, *emotion-focused*, and *avoidance*. The psychometric properties of the CITS were initially reported in 1998 (Matthews & Campbell). Given the 16-year absence of a published, psychometric reevaluation of its major properties (factor structure, reliability, and validity), the purpose of the current study was to redress this literature gap and examine the properties of the CITS. The study utilized a sample of Alzheimer's disease (AD) caregivers, a population noted for seeking health and well-being via an array of coping strategies in response to caregiver burden.

Literature Review

Strategies of Coping

Task-focused coping is problem-focused, and refers to the planning and implementation of an action that will directly modify the stressor, with expectation to avoid or minimize its negative health impact (Auerback, 1992; Endler & Parker, 1990). *Emotion-focused* coping describes the psychological attempt to manipulate one's perspective of a stressor through constructive thinking or critical self-analysis (Matthews & Campbell, 1998). *Avoidance* is a coping strategy, mental or behavioral, expressed through evasion or circumvention of a confronting problem, or simply, turning away from the stressor (Carver, Scheier, & Weintraub, 1989; Endler & Parker, 1990; Matthews & Campbell, 1998). The former two strategies can be viewed as analogous to problem management and emotional regulation, respectively, which were reflected as coping mechanisms within Lazarus and Folkman's (1984) transactional model of stress and coping.

Among the three coping strategies, task-focused is the strategy considered most likely associated with positive health outcomes, while the latter two strategies are considered "less effective because they do not produce change in the triggering circumstances and can be draining over time" (Myers, Fleming, Lancman, Perrine, & Lancman, 2013, p. 635). Examples of each coping strategy are as follows (Hatchett & Park, 2004; Myers et al., 2013):

- *task-focused coping* – planning, direct problem solving, seeking social support;
- *emotion-focused coping* – emotional ventilation (e.g., crying, yelling), fantasizing, self-preoccupation; and
- *avoidance coping* – behavioral disengagement, denial, distracting oneself.

Original Psychometrics of the CITS

With a sample of British university students, the original CITS study by Matthews and Campbell (1998) reported that three factors were extracted, as expected, and labeled them *task-focused*, *emotion-focused*, and *avoidance*. These factors became subscales for the CITS scale. Their factor analysis loaded seven items per subscale, creating a 21-item measure in total. During their initial study in developing the CITS scale, Matthews and Campbell (1998) reported strong reliability coefficients ranging from .84 to .86. Researchers examined the scale's validity by correlating each of the three subscales with a number of theoretically similar constructs. The task-focused subscale significantly correlated with theoretical concepts such as energetic arousal and motivation. The emotion-focused subscale correlated significantly with anxiety and task-related interference. The avoidance subscale correlated significantly with motivation (negatively) and anxiety (positively; Matthews & Campbell, 1998).

Some recent studies (past decade) have utilized the CITS. Matthews et al. (2006) used the CITS in their study of emotional intelligence, personality, and stress. Gough, Wilks, and Prattini (2010) employed the CITS as a validity tool in their study of intrinsic spirituality. Little and Wilks (2011) utilized the CITS subscales in evaluating an AD aggressive behavior measure. In the latter two studies, the subscales of this coping measure correlated as expected: negatively with AD aggressive behavior, and positively with intrinsic spirituality. Similar to the two aforementioned studies, the population of interest for current study is AD caregivers. The relevance of a sample from a caregiver population is discussed below.

Coping Strategies and Ethnicity of Caregivers

As stated earlier, task-focused coping refers to the thought processes and execution of a plan that will remove a specified source of stress. Caregivers of those diagnosed with dementia, including AD, use task-focused coping by strategizing and implementing actions to provide emotional and psychological relief (Lovelace, 2012). Male caregivers, compared to their female counterparts, are more likely to use task-focused coping strategies (Navaie-Waliser, Spriggs, & Feldman, 2002), while Caucasian and African American caregivers are equally likely to utilize task-focused coping (Pinquart & Sörensen, 2005).

Emotion-focused strategies involve perspective taking and attempting to alter one's point-of-view to a preferred state of mind. Caregivers may practice emotion-focused coping through confiding in a friend, or applying spiritual beliefs to a situation in attempt to desensitize caregiving burden (Lovelace, 2012). Women, including female caregivers, are more likely to utilize emotion-focused coping strategies (Endler & Parker, 1990; Navaie-Waliser et al., 2002). Unlike task-focused coping, African American caregivers are more likely than Caucasian caregivers to use emotion-focused coping strategies (Pinquart & Sörensen, 2005). Furthermore, other researchers (Haley et al., 2004; Kosberg, Kaufman, Burgio, Leeper, & Sun, 2007) have found that African American caregivers are more likely than Caucasian caregivers to utilize the specific emotion-focused strategy of religious coping. The literature on caregivers regarding emotion-focused coping and outcomes (healthy versus unhealthy) is mixed. In a study of dementia caregivers, popular emotion-focused coping techniques included spiritual coping, acceptance, and positive emotional growth (Sun, Kosberg, Kaufman, & Leeper, 2010). Yet, Wartella, Aurbach, and Ward (2009) reported a proportional association between emotion-focused coping and emotional distress.

Lastly, avoidance coping is characterized by sidestepping or dodging activities that could potentially cause stress. In attempting to coping with caregiving burden, caregivers may exhibit avoidant behavior through daydreaming or distracting oneself with television (Lovelace, 2012). While Pinquart and Sörensen (2005) found that, as a whole, caregivers in ethnic minority groups are more likely to use avoidance coping than their Caucasian counterparts, this difference was not found between Caucasian and African American caregivers. AD caregivers who use avoidance coping are more likely to report negative mental health symptoms, e.g., depression (Ashley & Kleinpeter, 2002).

Given the literature regarding caregivers and their use of the three coping strategies, the relevance of a caregiver sample in the current study appears evident. Iterating the purpose, this study aimed to conduct a psychometric reevaluation of the CITS– its factor structure, reliability, and validity – with a sample of AD caregivers.

Method

Design and Sampling

The current study used a cross-sectional survey design with analyses of self-reported data from AD caregivers. Permission to conduct the study was granted by a university institutional review board. Cover letters attached to each questionnaire provided information necessary for informed consent, including the voluntary nature of participation and assurance of anonymity.

The study recruited AD caregivers in two phases. The first phase utilized a mailing list and caregiver support groups from a non-profit, AD service organization in the southern United States. In order to maintain the confidentiality of the caregivers, only staff members from the AD service organization were privy to identities on the list and in support groups. Because the researchers did not have access to the mailing list, there were no follow-up attempts with the caregivers. The second method of recruitment attempted to ensure adequate representation with the second largest group of caregivers in the United States, African American caregivers (National Alliance for Caregiving [NAC] & AARP, 2009). As a group, African American caregivers under-utilize formal organizational services due to a number of reasons, including cultural barriers, lack of service availability (perceived or otherwise), and stronger networks of informal supports (Scharlach et al., 2006). Thus, we found it necessary to recruit this population directly within African American communities. With the assistance of an external consultant with research experience with this population, African American AD caregivers were directly recruited from several community organizations and agencies within the study's region, including churches and older adult community centers.

The total sample size consisted of 691 AD caregivers. Each participant was offered $10 compensation for her/his time and input.

Measures

The questionnaire solicited demographic information for sample characteristics, including gender, ethnicity, marital status, relation to care recipient, care recipient's stage of AD, and age. In addition to the CITS, other standardized, empirical measures included in the data instrument are described below and were utilized for validity purposes.

Coping

The focus of this study, the *Coping Inventory for Task Stressors* (CITS; Matthews & Campbell, 1998), reflects Endler and Parker's (1990) interpretation of coping, chiefly its three strategies: task-focused, emotion-focused, and avoidance. The CITS contains three, 7-items subscales to measure the respondent's likelihood of utilizing the three strategies in stressful situations. Its 5-point Likert response format ranges from 0-*not at all* to 4-*extremely*. Subscale global scores range from 0 – 28, with higher scores indicating a higher likelihood of utilizing the specific coping strategy. As previously discussed, Matthew and Campbell's (1998) original study on the CITS reported strong psychometrics on the measure.

Burden

The current study used two measures of caregiving burden. One measure was the 4-item, screening version of the *Zarit Burden Interview* (s-ZBI; Bedard et al., 2001). Like its original ZBI predecessor (Zarit, Reever & Bach-Peterson, 1980), the s-ZBI assesses the extent of distress experienced by caregivers of individuals diagnosed with dementia. Its 5-point Likert response format ranges from 0-*never* to 4-*nearly always*. Global scores range from 0 – 16, with higher scores indicating greater, perceived levels of caregiving burden. Bedard et al. (2001) reported stout internal consistency on the s-ZBI and strong correlations with the highly popular, 22-item full version of the ZBI (Zarit, Orr, & Zarit, 1985).

The other burden measure in the current study was the 24-item reaction subscale of the *Revised Memory and Behavior Problems Checklist* (RMBPC; Teri et al., 1992). The reaction portion of the RMBPC measures caregiver reactions to problem behaviors associated with dementia. Its 5-point Likert response format rates how bothered or upset the respondent is by each behavior, ranging from 0-*not at all* to 4-*extremely*. Global scores range from 0 – 96, with higher scores indicating a stronger reaction to dementia problem behaviors. Teri et al. (1992) reported sound psychometrics on this measure.

Resilience

The 14-item *Resilience Scale* (RS-14) measures the extent to which the respondent perceives the psychological health characteristic of self-resilience (Wagnild, 2009). Its 7-point Likert response format ranges from 1-*disagree* to 7-*agree*. Responses for each participant were averaged to create global scores ranging from 1 to 7, with higher global scores indicating a higher level of perceived resilience. Wagnild and Young (see Wagnild, 2009) reported strong internal consistency on this measure.

Analytic Strategy

Data from the entire sample (N = 691) was used to report descriptive statistics on the sample; namely, its demographic characteristics and central tendency on the primary variables: coping, burden, and resilience. Central tendency on these primary variables was subsequently observed and reported between the two most prominent ethnic groups in the caregiver sample, African American and Caucasian.

Then, similar to procedures in previous psychometric studies with dementia caregivers (Gitlin Winter, Dennis, & Hauk, 2007; Wilks, 2008), the sample was randomly split to form subsample 1 (N_1 = 346) and subsample 2 (N_2 = 345). N_1 data were submitted to factor and reliability analyses with the CITS. Principal component analysis (PCA) identified underlying factors of the overall coping measure, with no *a priori* assumptions on factor relationships. The factor model was rotated to a varimax solution with no factor limitation. Identification of factors was based on Kaiser's (1960) traditional eigenvalue of 1.0. Items on the CITS were retained via minimum loadings according to the following formula (Norman & Streiner, 1994): $5.152/\sqrt{(N-2)}$. For reliability of the three CITS subscales, Cronbach's alpha and Guttman split-half coefficients were examined per subscale to determine internal consistency.

N_2 data were submitted for convergent validity purposes. Aggregate global scores on the CITS subscales (three coping strategies) were correlated with measures of theoretically related constructs with this caregiver population. Task-focused coping, previously mentioned as associated with positive health outcomes, was expected to correlate negatively with global scores on each burden measure (s-ZBI and RMBPC). Avoidance coping, as previously mentioned associated with negative health outcomes, was expected to correlate with each burden measure, unidirectionally. Though literature is somewhat mixed regarding emotion-focused coping and health outcomes, the expectation of this coping strategy (based on Myers et al., 2013; Wartella et al., 2009) was similar to avoidance coping – correlating unidirectionally with the burden measures. As health risk, such as caregiver burden (Schulz & Beach, 1999), is on the opposite spectrum to resilience, resilience (RS-14) global scores were correlated with each coping strategy, with results expected contrary to aforementioned burden correlations; i.e., positively with task-coping, and negatively with emotion-focused and avoidance coping.

Differences on these psychometric properties – factor structure, reliability, and validity – were also examined between the two prominent ethnic groups: African American AD caregivers (n = 246) and Caucasian AD caregivers (n = 424). Significance threshold (p) for the study was observed at .05.

Results: Descriptive Statistics, Sample Characteristics

Female caregivers constituted the sample majority (79.8%). Almost one-third (61.9%) reported as *married*. In terms of ethnicity, approximately 61.8% identified themselves as *Caucasian,* while more than one-third (35.9%) reported as *African-American*. Regarding relationship to the care recipient, a slight majority (51.3%) reported as *child*. The average age in the caregiver sample was 61. The plurality of those who responded to the AD stage of care recipient reported *late stage* (41.3%). Table 1 presents details of the sample characteristics.

Table 1.

Sample Demographic Characteristics

Variable	Attribute*	n	Valid %	*M*
Gender	Female	546	79.8	
	Male	138	20.2	
Marital status	Married	426	61.9	
	Divorced	100	14.5	
	Single	94	13.7	
	Widowed	68	9.9	
Ethnicity	Caucasian	424	61.8	
	African-American	246	35.9	
	Other	9	1.3	
	Hispanic/Latino	6	0.9	
Relation to care recipient	Child	350	51.3	
	Other	115	16.9	
	Spouse/partner	114	16.7	
	Grandchild	45	6.6	
	Sibling	30	4.4	
	Friend	26	3.8	
Care recipient's AD stage	Late	260	41.5	
	Middle	226	36.1	
	Early	140	22.3	
Age**				61

* Attributes for each variable are listed in order of percentage, from highest to lowest.
** Age data was collected at a separate period from the remaining measures.
M = mean

Primary variables

Table 2 details the descriptive statistics for the primary variables among the entire sample and the ethnic groups. Regarding task-focused coping, the entire AD caregiver sample reported a mean score of 20.1. Task-focused coping mean scores among African American caregivers and Caucasian were nearly identical; thus, no statistical difference was observed on this measure between the ethnic groups.

Regarding emotion-focused coping, the AD caregiver sample as a whole reported a mean score of 12.4. The mean score of emotion-focused coping was notably lower among African American caregivers compared to their Caucasian counterparts, though not statistically significant. Regarding avoidance coping, the entire sample reported a mean score of 8.0. On average, African American caregivers reported a higher level of avoidance coping than Caucasian caregivers, yielding a statistically significant difference.

Two measures of caregiver burden were used in the study. Regarding the s-ZBI measure, the entire sample reported a mean score of 12.6. The mean scores on the s-ZBI among African American and Caucasian caregivers were similar; thus, no significant difference between the ethnic groups was observed. Regarding the RMBPC burden measure, the aggregate sample mean score was 41.1. African American caregivers reported a noticeably lower mean score on this burden measure compared to Caucasian caregivers, yet the difference was not statistically significantly different.

The aggregate mean among the entire sample on the RS-14 measure (resilience) was 5.8. African American caregivers reported a higher mean resilience score compared to Caucasian caregivers. Again, the difference in resilience means between the ethnic groups was notable but not quite statistically significant. To iterate, table 2 details the descriptive statistics on the primary variables among the entire sample and ethnic groups.

Table 2.

Descriptive Statistics on Primary Variables

Variable	Group/Subgroup	*M*	Statistical Difference*
Task-focused coping	Entire sample	20.1	
	African Americans	20.3	
	Caucasians	20.5	$t = .230$, $p = .99$
Emotion-focused coping	Entire sample	12.4	
	African Americans	11.6	
	Caucasians	12.9	$t = 1.276$, $p = .11$
Avoidance coping	Entire sample	8.0	
	African Americans	8.8	
	Caucasians	7.5	$t = 1.299$, $p = .03$**
Caregiver burden (s-ZBI)	Entire sample	12.6	
	African Americans	12.6	
	Caucasians	12.7	$t = 0.052$, $p = .99$
Caregiver burden (RMBPC)	Entire sample	41.1	
	African Americans	36.3	
	Caucasians	42.5	$t = 6.176$, $p = .30$
Resilience	Entire sample	5.8	
	African Americans	6.0	
	Caucasians	5.8	$t = 0.185$, $p = .10$

*Difference between the two ethnic groups
**Significant at the .05 level

Acronyms
s-ZBI = shortened *Zarit Burden Interview*
RMBPC = reaction subscale of the *Revised Memory and Behavior Problems Checklist*
M = mean
SD = standard deviation

Factor Analyses on the CITS

Restating from the Methods section, data from the entire sample was randomly split: to observe factor structure and reliability (N_1 = 346); and to observe validity (N_2 = 345) of the CITS. Results of CITS factor analysis among the broader sample (N_1) extracted four components exceeding the 1.0 eigenvalue threshold. All 21 items loaded among the four components. These four components combined to account for almost 57% of the variance. Note that the CITS has three coping strategy subscales. Thus, the four-component extraction in this analysis indicates greater variation in item scores among this AD caregiver sample and the potential for a fourth, coping strategy subscale. Table 3 details results from factor analysis among this broader caregiver sample.

Table 3.
CITS Factor Analysis Findings among the Broader, Randomly Split Sample (N_1)

	Item Loadings			
CITS item	Factor 1	Factor 2	Factor 3	Factor 4
1	-.054	**.601**	.046	-.075
2	**.656**	.162	.064	-.068
3	.209	.071	**.743**	-.125
4	.131	.094	**.792**	-.112
5	**.751**	.003	.207	-.079
6	**.714**	.038	.220	-.074
7	.225	**.743**	.031	-.068
8	-.008	**.799**	.052	.037
9	.238	-.030	**.679**	.259
10	.130	.085	**.592***	**.319**
11	**.453***	.218	-.098	**.353**
12	**.793**	-.008	.200	.167
13	**.820**	-.067	.162	.143
14	-.018	**.784**	-.011	-.051
15	**.705**	-.024	.230	.034
16	-.011	**.571**	.176	.093
17	**.361**	-.202	**.481***	**.412**
18	-.092	.146	.236	**.697**[+]
19	.100	**.614***	-.109	**.370**
20	.034	**.767**	-.150	.182
21	**.346**	-.097	**.550***	**.321**
Eigenvalues:	5.336	3.622	1.804	1.051
Variation explained:	18.9%	17.3%	13.7%	6.4%

Bold = Item loading surpassed Norman & Streiner's (1994) formulaic threshold of $5.152/\sqrt{(N-2)}$. *Designated to its respective factor due to higher(-est) loading. [+]Lone item loading designated to factor 4.

Factor analysis on the CITS among the African American caregiver subsample yielded results similar to the analysis from the broader caregiver sample (N_1). Four components emerged with eigenvalues above 1.0. All items loaded among these four components which, when combined, accounted for approximately 64% of the variation in CITS scores. Table 4 details the factor results from African American AD caregivers in the study.

Table 4.
CITS Factor Analysis Findings among African American AD Caregivers

	Item Loadings			
CITS item	Factor 1	Factor 2	Factor 3	Factor 4
1	-.032	**.608**	-.015	.067
2	**.717**	.179	-.059	-.057
3	**.431**	.181	**.388**	**.565***
4	.276	.168	**.428**	**.646***
5	**.750**	.060	.127	.193
6	**.798**	.042	.197	.040
7	.255	**.723**	-.058	.195
8	.067	.860	.010	.113
9	**.424**	.001	**.702***	.241
10	.330	.153	**.638**	.120
11	**.420**	**.348**	.274	**-.491***
12	**.806**	.031	.245	.092
13	**.822**	-.040	.227	-.030
14	-.054	**.820**	.025	.012
15	**.733**	.039	.254	.107
16	.125	**.572**	.252	.013
17	**.547**	-.110	**.580***	.090
18	.007	.157	**.789**	-.070
19	.077	**.597**	.262	-.247
20	-.057	**.850**	.023	-.131
21	**.520**	-.021	**.543***	.281
Eigenvalue	7.051	3.694	1.474	1.019
Variation explained	23.7%	19.0%	14.0%	6.4%

Bold = Item loading surpassed Norman & Streiner's (1994) formulaic threshold of $5.152/\sqrt{(N-2)}$.
*Designated to its respective factor due to higher(-est) loading.

Factor analysis on the CITS among the Caucasian caregiver subsample yielded greater disparity in results. An additional component emerged, yielding five components with eigenvalues above 1.0. Again, all items loaded on the five components. The five components combined to account for 63% of the variation. Table 5 details the factor results from Caucasian AD caregivers in the study.

Table 5.
CITS Factor Analysis Findings among Caucasian AD Caregivers

	Item Loadings				
CITS item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	-.029	**.628**	.021	.033	-.124
2	**.610**	.138	.024	-.008	.058
3	.223	-.033	**.644**[*]	-.017	**-.364**
4	.200	.029	**.714**	.014	-.268
5	**.793**	-.020	.091	-.004	-.101
6	**.700**	.046	.115	-.041	-.243
7	.190	**.754**	-.072	-.048	-.011
8	-.101	**.722**	.036	-.011	.149
9	.150	-.050	**.698**	.132	.166
10	-.012	.028	**.704**[*]	.105	**.360**
11	**.317**	.102	.005	.036	**.650**[*]
12	**.766**	-.022	.143	.130	.287
13	**.815**	-.085	.125	.115	.175
14	-.011	**.735**	-.005	-.261	.179
15	**.673**	-.091	.159	-.079	.175
16	-.088	**.546**	.148	-.091	.121
17	.296	-.277	**.305**	**.537**[*]	-.135
18	-.178	.183	.052	**.661**	.083
19	.068	**.665**	-.186	.357	-.102
20	.043	**.698**	-.241	.293	-.099
21	.284	-.201	**.355**	**.409**[*]	.150
Eigenvalue	4.394	3.440	1.808	1.128	1.097
Variation explained	17.5%	16.5%	11.1%	6.0%	5.5%

Bold = Item loading surpassed Norman & Streiner's (1994) formulaic threshold of $5.152/\sqrt{(N-2)}$.
[*]Designated to its respective factor due to higher(-est) loading.

Table 5.
CITS Factor Analysis Findings among Caucasian AD Caregivers

	Item Loadings				
CITS item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	-.029	**.628**	.021	.033	-.124
2	**.610**	.138	.024	-.008	.058
3	.223	-.033	**.644**[*]	-.017	**-.364**
4	.200	.029	**.714**	.014	-.268
5	**.793**	-.020	.091	-.004	-.101
6	**.700**	.046	.115	-.041	-.243
7	.190	**.754**	-.072	-.048	-.011
8	-.101	**.722**	.036	-.011	.149
9	.150	-.050	**.698**	.132	.166
10	-.012	.028	**.704**[*]	.105	**.360**
11	**.317**	.102	.005	.036	**.650**[*]
12	**.766**	-.022	.143	.130	.287
13	**.815**	-.085	.125	.115	.175
14	-.011	**.735**	-.005	-.261	.179
15	**.673**	-.091	.159	-.079	.175
16	-.088	**.546**	.148	-.091	.121
17	.296	-.277	**.305**	**.537**[*]	-.135
18	-.178	.183	.052	**.661**	.083
19	.068	**.665**	-.186	.357	-.102
20	.043	**.698**	-.241	.293	-.099
21	.284	-.201	**.355**	**.409**[*]	.150
Eigenvalue	4.394	3.440	1.808	1.128	1.097
Variation explained	17.5%	16.5%	11.1%	6.0%	5.5%

Bold = Item loading surpassed Norman & Streiner's (1994) formulaic threshold of $5.152/\sqrt{(N-2)}$.
[*]Designated to its respective factor due to higher(-est) loading.

Reliability of the CITS

Cronbach's alpha and split-half reliability coefficients were examined among the CITS strategy subscales and among the sample and ethnic groups. The current study followed a traditional, minimum level of acceptability at .70 for internal consistency of an empirical, psychological measure (Kline, 2000). The task-focused and emotion-focused coping subscales demonstrated adequate-to-moderately-strong levels of reliability among the broader sample and ethnic groups.

Reliability analyses on the avoidance coping subscale showed mixed results. Avoidance coping reliability was suitable among the African American AD caregiver scores, aggregately. Yet, among the broader sample and among Caucasian caregivers, reliability coefficients on the avoidance coping subscale were mostly unacceptable. Table 6 shows details results from the complete reliability analyses.

Table 6.

CITS Reliability Analyses Findings

AD Caregiver Group	Coping Subscale	Cronbach's α	Split-Half
Broader sample (N_1)	task-focused	.827	.775
	emotion-focused	.849	.821
	avoidance	.770	.668*
African Americans	task-focused	.806	.779
	emotion-focused	.877	.862
	avoidance	.858	.805
Caucasians	task-focused	.806	.750
	emotion-focused	.820	.787
	avoidance	.661*	.459*

*Unacceptable level of reliability according to Kline's (2000) psychological testing threshold

Validity Findings

To examine evidence of convergent validity, each of the CITS subscales were correlated with theoretically linked constructs: caregiver burden (s-ZBI and RMBPC measures) and resilience (RS-14 measure). Like the previous analyses, validity analyses were conducted among the broader, randomly split sample (N_2) and the two ethnic groups. With the broader sample, all three coping measures showed significant relationships, in expected directions, with caregiver resilience. However, correlational results between the coping measures and the caregiver burden were greatly mixed, both directionally and whether significance was observed. Table 7 details these correlational results among the primary measures with the broader sample.

Table 7.

CITS Validity Analyses Findings among the Broader Sample (N_2)

Measure	*Task*	*Emotion*	*Avoidance*	*s-ZBI*	*RMBPC*	*RS-14*
Task	---					
Emotion	.115**	---				
Avoidance	.091*	.466**	---			
s-ZBI	-.054	-.102*	.031	---		
RMBPC	.029	.141*	.014	.370**	---	
RS-14	.422**	-.292**	-.128**	-.015	-.062	---

*$p < .05$
**$p < .01$

Acronyms

Avoidance:	CITS avoidance subscale
Emotion:	CITS emotion-focused subscale
RS-14:	Resilience Scale (14-item)
RMBPC:	Revised Memory & Behavior Problems Checklist (burden measure)
s-ZBI:	shortened Zarit Burden Interview (burden measure)

Table 7.

CITS Validity Analyses Findings among the Broader Sample (N_2)

Measure	*Task*	*Emotion*	*Avoidance*	*s-ZBI*	*RMBPC*	*RS-14*
Task	---					
Emotion	.115**	---				
Avoidance	.091*	.466**	---			
s-ZBI	-.054	-.102*	.031	---		
RMBPC	.029	.141*	.014	.370**	---	
RS-14	.422**	-.292**	-.128**	-.015	-.062	---

*$p < .05$
**$p < .01$

Acronyms

Avoidance:	CITS avoidance subscale
Emotion:	CITS emotion-focused subscale
RS-14:	Resilience Scale (14-item)
RMBPC:	Revised Memory & Behavior Problems Checklist (burden measure)
s-ZBI:	shortened Zarit Burden Interview (burden measure)

Bivariate correlational results with the coping measures among African American caregivers were similar to the aforementioned results from the broader sample, except that avoidance coping did not significantly, negatively link with caregiver resilience. Correlational results among Caucasian results reflected those from the broader sample. Tables 8 and 9 detail the correlational results between the CITS subscales and their theoretically linked constructs with African American and Caucasian AD caregivers, respectively.

Table 8.

CITS Validity Analyses Findings among African American Caregivers

Measure	*Task*	*Emotion*	*Avoidance*	*s-ZBI*	*RMBPC*	*RS-14*
Task	---					
Emotion	.226**	---				
Avoidance	.227**	.635**	---			
s-ZBI	-.093	-.061	.001	---		
RMBPC	.192	.297*	.087	.336**	---	
RS-14	.340**	-.224**	-.066	-.054	-.073	---

*$p < .05$
**$p < .01$

Acronyms

Avoidance:	CITS avoidance subscale
Emotion:	CITS emotion-focused subscale
RS-14:	Resilience Scale (14-item)
RMBPC:	Revised Memory & Behavior Problems Checklist (burden measure)
s-ZBI:	shortened Zarit Burden Interview (burden measure)

Table 9.

CITS Validity Analyses Findings among Caucasian Caregivers

Measure	*Task*	*Emotion*	*Avoidance*	*s-ZBI*	*RMBPC*	*RS-14*
Task	---					
Emotion	.002	---				
Avoidance	-.070	.343**	---			
s-ZBI	-.023	-.152**	.016	---		
RMBPC	-.002	.076	-.013	.394**	---	
RS-14	.507**	-.322**	-.173**	.015	-.041	---

**$p < .01$

Acronyms

Avoidance:	CITS avoidance subscale
Emotion:	CITS emotion-focused subscale
RS-14:	Resilience Scale (14-item)
RMBPC:	Revised Memory & Behavior Problems Checklist (burden measure)
s-ZBI:	shortened Zarit Burden Interview (burden measure)

Discussion

Interpretation of Findings

The average age of AD caregivers in the current study was 61, considerably older than the national average of 51 (NAC & AARP, 2009). Eight out of 10 in the current sample were female, 20% higher than the national average (Alzheimer's Association, 2010). The remaining sample characteristics in the current study – ethnic diversity, marital status, relation to care recipient, and care recipient's stage of AD – were comparable to national averages among AD caregivers (Alzheimer's Association, 2010; 2013).

Results from the current study revealed that task-focused coping was the most highly utilized form of coping, followed by emotion-focused and avoidance coping for both the overall sample and between ethnic groups. African American and Caucasian caregivers were equally likely to utilize task- and emotion-focused coping strategies, while African American caregivers were more likely to use avoidance coping than Caucasian caregivers. The results for task-focused coping were in line with those of the meta-analysis conducted by Pinquart and Sörensen (2005). However, the current results for emotion-focused and avoidance coping contradicted the previous meta-analysis, which found that African American caregivers were no more likely to use avoidance coping and more likely to use emotion-focused coping compared to their Caucasian counterparts. The discordant results between this study and the previous study by Pinquart and Sörensen (2005) for emotion-focused coping may be explained by differences in conceptual definitions. For example, their study defined emotion-focused coping (termed cognitive coping) as strategies such as positive reframing while the current study explored emotion-focused strategies such as worry and self-blame. This study also did not assess religious coping, which has been shown to be more frequently utilized by African American caregivers (Bennett, Sheridan, & Richardson, 2014; Haley et al., 2004; Kosberg et al., 2007; Rathier, Davis, Papandonatos, Grover, & Tremont, 2013; Sterba, Burris, Heiney, Ruppel, Ford, & Zapka, 2014). The results for avoidance coping, however, cannot be explained by differing definitions, and should be a focus of future caregiver coping research, as avoidance coping is associated with negative mental health outcomes (Ashley & Kleinpeter, 2002).

Results from both caregiver burden scales showed that African American and Caucasian caregivers experience similar levels of burden. Like the results for coping strategy, the current burden findings also contradict current literature which has typically found significantly less burden among African American caregivers (Kosberg et al., 2007; Pinquart & Sörensen, 2005). However, the difference in levels of burden shown by Pinquart and Sörensen (2005), while statistically significant, was relatively small. In a somewhat similar fashion, the current study revealed lower burden scores on the RMBPC for African American caregivers compared to Caucasian caregivers, although the difference was not statistically significant. Therefore, the question still remains as to whether African American and Caucasian caregivers experience different levels of burden, and if so, whether the difference is large enough for real-world intervention.

Results of the current study indicate no difference in resilience levels between African American and Caucasian caregivers. Further, the overall sample as well as the two ethnic groups scored relatively high on the scale, with mean scores ranging from 5.8 to 6.0 out of a possible 7.0. These results were not in line with those of Gaugler, Kane, and Newcomer (2007) who found that Caucasian dementia caregivers were more likely to have low levels of resilience compared to caregivers in ethnic minority groups.

While some studies have focused on resilience in a general dementia caregiver population (see Harmell, Chattillion, Roepke, & Mausbach, 2011) or the positive aspects of caregiving (see Pinquart & Sörensen, 2005), few, if any, other studies have directly explored resilience in dementia caregivers among different ethnic groups. This lack of literature indicates a high need for further exploration into caregiver resilience across ethnicity.

Regarding the main focus of the study, to evaluate the psychometric properties of the CITS using a dementia caregiver population, results were varied. Factor analyses within the broad sample as well as the African American sample of participants yielded four separate factors, while the Caucasian sample yielded five factors. These results differ from the three-factor coping model originally revealed by Matthews and Campbell (1998) using a university student population.

Reliability coefficients for each CITS subscale were similarly varied. While the alpha and split-half coefficients exceeded minimum thresholds for task- and emotion-focused coping scales across samples, coefficients on the avoidance scale were mostly unacceptable for the broader samples and the Caucasian sample. However, coefficients for the avoidance scale among the African American sample were well above the .70 threshold. Compared to the original Matthews and Campbell (1998), the alpha coefficients for the broad sample task- and emotion-focused scales in this study were comparable (.827 and 849 vs. .84–.86) but the avoidance scale alpha coefficient was lower (.770). The original CITS study did not compare scale reliability among different ethnic groups (Matthews & Campbell, 1998).

Finally, the validity analyses yielded fairly consistent results across the three samples, although correlations between each subscale and the two burden scales were varied and often contradictory. For example, resilience was moderately positively correlated with task-focused coping and slightly negatively correlated with emotion-focused coping across all three samples. Resilience and avoidance coping were negatively correlated for all but the African American caregiver sample. Burden, on the other hand, varied in its relationship with coping style across samples. For the broader sample, burden correlated with emotion-focused coping but the s-ZBI was negatively correlated while the RMBPC was positively correlated. Only the RMBPC positively correlated with emotion-focused coping in the African American sample, while only the s-ZBI negatively correlated with emotion-focused coping in the Caucasian sample. Validity results obtained in this study were not directly comparable to those in the original Matthews and Campbell (1998) study. These results may indicate that a simple, three-factor model of coping may be inappropriate for use with dementia caregivers.

Implications

As Matthews and Campbell (1998, p. 824) indicated, "Coping responses are important influences on both the operator's subjective reactions and objective performance. Choice of coping strategy is closely linked with stress symptoms." The most predominant stress symptoms of caregivers can be aggregated as caregiving burden (Braithwaite, 1992), and findings from the current study did not reveal a clear choice of coping strategy to effectively address said burden. Yet, the commonality of validity among all three CITS subscales was their convergence, in expected directions, with resilience. Findings from the current study suggested advocacy of task-focused coping as it relates to a positive outcome of psychological health – resilience, and in particular, AD caregiver resilience.

On a different note, this study's sample reflects the aging trend among AD caregivers. A decade ago, the average age of an AD caregiver was 48 (Alzheimer's Association & NAC, 2004). Presently, the average age is approximately 60, with 23% at age 65 or older (Langa et al., as reported in Alzheimer's Association, 2013). A MetLife study (2006) found that the average age the AD caregiver is 64, and a decade older for spousal, AD caregivers. Older, spousal caregivers have a 63% higher mortality rate than their younger counterparts (Family Caregiver Alliance, 2012). No longer is the topic of AD caregivers an aging issue only because of their care recipients. AD caregivers are now, themselves, an older adult population. As such, they demand greater attention from the *aging* healthcare community, e.g., geriatricians, geriatric nurses, gerontological social workers, aging researchers, etc. It is important for these healthcare professionals to understand the triangular dynamic between AD caregiver age, health, and care recipient institutionalization. That is, as age of AD caregivers increase, so does their likelihood for poorer health conditions increase; and as caregiver health (mental and physical) diminishes, the decision to institutionalize the care recipient may be expedited (Brodaty, 2009; Sansoni, Anderson, Varona, & Varela, 2013).

Limitations and Future Research

The study's sample was skewed toward female AD caregivers. Though this is reflective of the caregiver population, it somewhat neglects male caregivers. Future research should address the dearth in literature regarding male AD caregivers, especially considering the rapid rise of this population (Bennett, 2012). Also, the current study did not expose resolute validity with the CITS. Additional evaluation(s) of this coping measure with AD caregivers would be helpful in determining whether the CITS demonstrates convergent validity with caregivers' main source of stress, caregiving burden.

Conclusion

Pertaining to factor structure and reliability, the CITS appears to be a psychometrically sound measure of task-focused, emotion-focused, and avoidance coping strategies. These findings were comparable to the originally reported CITS properties, though the scale appeared to be more reliable among the African American sample. Each subscale, with the exception of avoidance coping in the African American sample, converged with caregiver resilience across samples; however, validity findings across the three samples were mixed regarding the subscales' convergence with the most common, broad health risk to AD caregivers – caregiving burden. The CITS is a relatively brief, easy-to-administer measure to appraise diverse coping strategies. Healthcare professionals can utilize this appraisal to gain insight into the utility of the caregiver client's coping strategy, at least as it pertains to the strategy's impact with AD caregiver resilience.

References

Alzheimer's Association. (2013). *2013 Alzheimer's disease facts and figures*. Retrieved from www.alz.org/downloads/facts_figures_2013.pdf

Alzheimer's Association. (2009). *2009 Alzheimer's disease facts and figures*. Retrieved from www.alz.org/national/documents/report_alzfactsfigures2009.pdf

Alzheimer's Association & National Alliance for Caregiving. (2004). *Families care: Alzheimer's caregiving in the United States*. Retrieved from www.alz.org/national/documents/report_familiescare.pdf

Ashley, N. R., & Kleinpeter, C. H. (2002). Gender differences in coping strategies of spousal dementia caregivers. *Journal of Human Behavior in the Social Environment, 6*(2), 29-46. doi:10.1300/J137v06n02_03

Auerbach, S. M. (1992). Temporal factors in stress and coping: Intervention implications. In B. N. Carpenter (Ed.), *Personal coping: Theory, research, and application* (pp. 133-147). Westport, CT: Praeger.

Bédard, M., Molloy, D., Squire, L., Dubois, S., Lever, J., & O'Donnell, M. (2001). The Zarit Burden Interview: A new short version and screening version. *Gerontologist, 41*(5), 652-657. doi:10.1093/geront/41.5.652

Bennett, J. (2012). Male caregivers: A growing segment of the Alzheimer's community. *Association, NYC Chapter Newsletter, 36*. Retrieved from www.alznyc.org/nyc/newsletter/winter2012/02.asp#.UyOjj_mICm4

Bennett, S., Sheridan, M. J., & Richardson, F. (2014). Caregiving as ministry: Perceptions of African Americans providing care for elders. *Families in Society: The Journal of Contemporary Social Services, 95*(1), 51-58.

Braithwaite, V. (1992). Caregiving burden: Making the concept scientifically useful and policy relevant. *Research on Aging, 14*(1), 3-27. doi:10.1177/0164027592141001

Brodaty, H., & Donkin, M. (2009). Family caregivers of people with dementia. *Dialogues in Clinical Neuroscience, 11*(2), 217-228.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267-283. doi:10.1037/0022-3514.56.2.267

Endler, N. S., & Parker, J. D. A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology, 58,* 844-854. doi:10.1037//0022-3514.58.5.844

Family Caregiver Alliance. (2012). *Selected caregiver statistics*. Retrieved from www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=439

Gaugler, J., Kane, R., & Newcomer, R. (2007). Resilience and transitions from dementia caregiving. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 62B*(1), 38-44.

Gitlin, L. N., Winter, L., Dennis, M. P., & Hauck, W. W. (2007). Assessing perceived change in the well-being of family caregivers: Psychometric properties of the Perceived Change Index and response patterns. *American Journal of Alzheimer's Disease & Other Dementias, 21*(5), 304-311.

Gough, H. R., Wilks, S. E., & Prattini, R. J. (2010). Spirituality among Alzheimer's caregivers: Psychometric reevaluation of the intrinsic spirituality scale. *Journal of Social Service Research, 36*(4), 278-288. doi:10.1080/01488376.2010.493848

Haley, W., Gitlin, L., Wisniewski, S., Mahoney, D., Coon, D., Winter, L., & ... Ory, M. (2004). Well-being, appraisal, and coping in African-American and Caucasian dementia caregivers: Findings from the REACH study. *Aging & Mental Health*, *8*(4), 316-329. doi:10.1080/13607860410001728998

Harmell, A., Chattillion, E., Roepke, S., & Mausbach, B. (2011). A review of the psychobiology of dementia caregiving: A focus on resilience factors. *Current Psychiatry Reports*, *13*(3), 219-224. doi:10.1007/s11920-011-0187-1

Hatchett, G. T., & Park, H. L. (2004). Relationships among optimism, coping styles, psychopathology, and counseling outcome. *Personality and Individual Differences, 36*(8), 1755-1769. doi:10.1016/j.paid.2003.07.014

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*. *20*, 141-151. doi:10.1177/001316446002000116

Kline, P. (2000) *Handbook of psychological testing* (2nd ed.). London: Routledge.

Kosberg, J., Kaufman, A., Burgio, L., Leeper, J., & Sun, F. (2007). Family caregiving to those with dementia in rural Alabama: Racial similarities and differences. *Journal of Aging and Health*, *19*(1), 3-21. doi: 10.1177/0898264306293604

Lazarus, A., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer Publishing Company.

Little, K. G., & Wilks, S. E. (2011). Psychometric evaluation of a proposed Alzheimer's aggression scale. *American Journal of Alzheimer's Disease & Other Dementias*, *26*(5), 373-380. doi:10.1177/1533317511414553

Lovelace, L. (2012). *The effects of coping strategies on burden among male Alzheimer's caregivers*. (Master's thesis). Retrieved from Louisiana State University's electronic theses and dissertations database.

Matthews, G., & Campbell, S. E. (1998). Task-induced stress and individual differences in coping. *Proceedings of the Human Factors and Erogonomics Society Annual Meeting*, *42*(11), 821-825. doi:10.1177/154193129804201111

Matthews, G., Emo, A. K., Funke, G., Zeidner, M., Roberts, R. D., Costa, P. T. Jr., & Schulze, R. (2006). Emotional intelligence, personality, and task-induced stress. *Journal of Experimental Psychology: Applied Psychology*, *12*(2), 96-107. doi:10.1037/1076-898X.12.2.96

MetLife Mature Market Institute. (2009). *The MetLife study of Alzheimer's disease: The caregiving experience*. Retrieved from www.metlife.com/assets/cao/mmi/publications/studies/mmi-alzheimers-disease-caregiving-experience-study.pdf

Myers, L., Fleming, M., Lancman, M., Perrine, K., & Lancman, M. (2013). Stress coping strategies in patients with psychogenic non-epileptic seizures and how they relate to trauma symptoms, alexithymia, anger, and mood. *Seizure*, *22*(8), 634-639. doi:10.1016/j.seizure.2013.04.018

National Alliance for Caregivers, & AARP. (2009). *Caregiving in the US: 2009*. Retrieved from www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf

Navaie-Waliser, M., Spriggs, A., & Feldman, P. H. (2002). Informal caregiving: Differential experiences by gender. *Medical Care*, *40*(12), 1249-1259. doi:10.1097/00005650-200212000-00012

Norman, G. R., & Streiner, D. L. (1994). *Biostatistics: The bare essential*. St. Louis, MO: Mosby.

Pinquart, M., & Sörensen, S. (2005). Ethnic differences in stressors, resources, and psychological outcomes of family caregiving: A meta-analysis. *The Gerontologist*, *45*(1), 90-106. doi:10.1093/geront/45.1.90

Rathier, L. A., Davis, J. D., Papandonatos, G. D., Grover, C., & Tremont, G. (2013). Religious coping in caregivers of family members with dementia. *Journal of Applied Gerontology*, 0733464813510602.

Rice, V. (2012). Theories of stress and relationship to health. In V. H. Rice (Ed.), *Handbook of stress, coping, and health* (pp. 22-42). Wayne State University, Detroit, MI: SAGE Publications, Inc.

Sansoni, J., Anderson, K. H., Varona, L. M., & Valera, G. (2013). Caregivers of Alzheimer's patients and factors influencing institutionalization of loved ones: Some considerations on existing literature. *Annals of Hygiene: Preventive Medicine in the Community*, *25*(3), 235-246. doi:10.7416/ai.2013.1926

Scharlach, A. E., Kellam, R., Ong, N., Baskin, A., Goldstein, C., & Fox, P. J. (2006). Cultural attitudes and caregiver service use: Lessons from focus groups with racially and ethnically diverse family caregivers. *Journal of Gerontological Social Work*, *47*(1/2), 133-156. doi:10.1300/J083v47n01_09

Schulz, R., & Beach, S. R. (1999). Caregiving as a risk factor for mortality: The caregiver health effects study. *JAMA*, *282*(23), 2215-2219. doi:10.1001/jama.282.23.2215.

Sterba, K. R., Burris, J. L., Heiney, S. P., Ruppel, M. B., Ford, M. E., & Zapka, J. (2014). "We both just trusted and leaned on the Lord": A qualitative study of religiousness and spirituality among African American breast cancer survivors and their caregivers. *Quality of Life Research*, 1-12.

Sun, F., Kosberg, J. I., Kaufman, A. V., & Leeper, J. D. (2010). Coping strategies and caregiving outcomes among rural dementia caregivers. *Journal of Gerontological Social Work*, *53*(6), 547-567. doi:10.1080/01634372.2010.496823

Teri, L., Truax, P., Logsdon, R., Uomoto, J., Zarit, S., & Vitaliano, P. P. (1992). Assessment of behavioral problems in dementia: The revised memory and behavior problems checklist. *Psychology and Aging, 7*, 622-631. doi:10.1037/0882-7974.7.4.622

Wartella, J., Auerbach, S., & Ward, K. (2009). Emotional distress, coping and adjustment in family members of neuroscience intensive care unit patients. *Journal of Psychosomatic Research*, *66*(6), 503-509. doi:10.1016/j.jpsychores.2008.12.005

Wilks, S. (2008). Psychometric evaluation of the shortened resilience scale among Alzheimer's caregivers. *American Journal of Alzheimer's Disease & Other Dementias*, *23*(2), 143-149. doi: 10.1177/1533317507313012

Wilks, S. E., & Croom, B. (2008). Perceived stress and resilience in Alzheimer's disease caregivers: Testing moderation and mediation models of social support. *Aging Mental Health*, *12*(3), 357-365. doi:10.1080/13607860801933323

Zarit, S. H., Orr, N. K., & Zarit, J. M. (1985). *The hidden victims of Alzheimer's disease: Families under stress.* New York, NY: New York University Press.

Zarit, S.H., Reever, K.E., & Bach-Peterson, J. (1980). Relatives of the impaired elderly: Correlates of feelings of burden. *Gerontologist*, *20*(6), 649-655.