UCSF

UC San Francisco Previously Published Works

Title

Development and Evaluation of the Eight-Item Caregiver Self-Efficacy Scale (CSES-8)

Permalink

https://escholarship.org/uc/item/4c91r8bh

Journal

The Gerontologist, 62(3)

ISSN

0016-9013

Authors

Ritter, Philip L
Sheth, Khushboo
Stewart, Anita L
et al.

Publication Date

2022-03-28

DOI

10.1093/geront/gnaa174

Peer reviewed

THE GERONTOLOGICAL SOCIETY OF AMERICA®

Measurement Article

Development and Evaluation of the Eight-Item Caregiver Self-Efficacy Scale (CSES-8)

Philip L. Ritter, PhD,[1,*] Khushboo Sheth, MD,[1,2] Anita L. Stewart, PhD,[3] Dolores Gallagher-Thompson, PhD,[4] and Kate Lorig, DrPH[1]

[1]Department of Immunology and Rheumatology, Stanford University School of Medicine, Palo Alto, California, USA, [2]VA Palo Alto Healthcare System, Palo Alto, California, USA, [3]Institute for Health and Aging, Center for Aging in Diverse Communities, University of California San Francisco, San Francisco, California, USA, [4]Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Palo Alto, California, USA.

*Address correspondence to: Philip L. Ritter, PhD, Department of Immunology and Rheumatology, Stanford University School of Medicine, 1000 Welch Road, Suite 204, Palo Alto, CA 94304, USA. E-mail: philr@stanford.edu

Abstract

Background and Objectives: This paper describes the development and evaluation of a short caregiving self-efficacy measure. The self-administered 8-item Caregiver Self-Efficacy Scale (CSES-8) was developed to reflect components of typical caregiver support interventions and to be practical for inclusion in future self-efficacy and caregiving research.
Research Design and Methods: We administered the CSES-8 in 2 samples: participants in an intervention for caregivers of persons with cognitive disabilities, and a voluntary online survey for caregivers of adults. We evaluated the completion rate, item-scale correlations, reliability, descriptive statistics, and preliminary construct validity of the CSES-8 in both samples, and sensitivity to change in the intervention sample.
Results: The intervention caregivers' sample ($N = 158$) was 85% female (mean age = 65 years). The online survey sample ($N = 138$) was 90% female (mean age = 78). In both samples, the CSES-8 had excellent internal consistency reliability (.89 and .88) and good distribution with sufficient variability to detect change. Test–retest reliability was good in the online sample (.73). As evidence of construct validity, most hypotheses were confirmed in both samples. The CSES-8 was sensitive to change at 6 months for caregivers in the intervention program ($p < .001$).
Discussion and Implications: The CSES-8 is short, comprehensive with respect to common components of interventions to improve caregivers' quality of life, and sensitive to change. It can serve a useful role exploring mechanisms by which caregiver intervention studies work, and it can be helpful in examining whether self-efficacy mediates the effect of these interventions on various outcomes such as psychological well-being.

Keywords: Caregiver, Dementia, Scale, Self-efficacy

Background and Objectives

There are more than 40 million adults supporting or caring for adults with disabilities (including dementia) who live in the community in the United States (National Alliance for Caregiving, 2015), referred to as informal, unpaid caregivers.

These caregivers have a unique set of tasks and burdens as defined by the American Psychological Association and the Caregiver Alliance (American Psychological

Association, 2020). These include household tasks such as cooking, housekeeping, and transportation; personal care such as bathing, toileting, and grooming; and managing finances. Tasks can also include coordinating medical care, communicating with physicians, and having to make decisions for the person for whom they care. Depending on the nature of the care recipient's symptoms, caregivers also sometimes deal with disruptive behaviors and emotions.

Caregivers often feel unprepared for this role because of lack of skills (e.g., managing disruptive behaviors), time demands, competing priorities (work, family), feelings of personal responsibility, and pressure from other family members (United Health Hospital Fund, 2012). The adverse impact on caregivers can be manifested in terms of perceived burden and stress due to caregiving, as well as depression, health problems (fatigue, sleep problems), and increased risk of injury (Schulz & Eden, 2016).

Numerous interventions to support caregivers aim to make it easier for them to provide the needed care. Interventions include a variety of components such as teaching skills and techniques for performing caregiving tasks, and problem solving. Some include components to help caregivers manage stress and take care of themselves, such as healthy eating, exercise, and relaxation techniques. Other components include finding help, legal issues, and communicating with family friends and health care professionals. Interventions tend to focus on behavioral strategies that can ultimately lead to improved outcomes for caregivers.

Interventions designed to improve certain behavioral skills and manage stress often are based on principles of social cognitive theory (Bandura, 1997). A key element of this theory is self-efficacy, or the strength of one's belief in being able to complete specific tasks or behaviors, originally posited by Albert Bandura in the 1970s. There is much evidence that confidence in being able to perform specified behaviors (self-efficacy) predicts performance of those behaviors and tasks. Because self-efficacy is a state, not a trait, interventions can enhance it. Interventions that increase confidence in performing various targeted behaviors (self-efficacy) often also lead to behavior change. Thus, self-efficacy has become a well-known mechanism on the pathway to achieving those behaviors.

Caregiving self-efficacy is a critical step along the pathway of efforts to help caregivers achieve optimal health outcomes. Caregiving self-efficacy generally pertains to one's confidence in performing various caregiving tasks and coping with the difficulties of caregiving. Caregiving self-efficacy is thus a powerful concept that can help us understand how caregiver interventions work to reduce perceived burden and psychological distress (depression, anger). For example, having the self-efficacy or confidence to deal with caregiving tasks is associated with lower caregiver distress (Steffen et al., 2002). If evidence is strong that increasing self-efficacy is a mechanism (mediator) for helping caregivers achieve positive outcomes, caregiver interventions could routinely include components to enhance self-efficacy.

There is good evidence that interventions designed to increase self-efficacy are successful in doing so. Several pre–post studies observed significant increases in self-efficacy. Powerful Tools for Caregivers, a 6-week peer-led community-based intervention, demonstrated significant increases in caregiver self-efficacy immediately after the intervention (N = 259) (Boise et al., 2005). Savvy Advanced, a reinforcement study for the Savvy program, found significant increases in caregiver self-efficacy at 5 and 12 months (Samia et al., 2019). In a small study of a six-session yoga intervention, mostly Latinas, caregiving self-efficacy was enhanced (Waelde et al., 2004). Building Better Caregivers (BBC), a 6-week, peer-led intervention, demonstrated significant 12-month increases in self-efficacy (Lorig et al., 2017). A 6-week adaptation of Resources for Enhancing Alzheimer's Caregiver Health (REACH) for primarily Hispanic caregivers observed 6-month improvements in four dimensions of caregiving self-efficacy (Czaja et al., 2018). In one of the few randomized trials, five 90-min home visits by occupational therapists enhanced caregiver self-efficacy (N = 171) (Gitlin et al., 2001). Two meta-analyses provide excellent information. One found that online caregiver interventions that targeted self-efficacy significantly increased caregiver self-efficacy (Parker Oliver et al., 2017). The average effect size for changes in self-efficacy was 0.86 in a meta-analysis of 27 studies of controlled meditative interventions for caregivers and health professionals (Dharmawardene et al., 2016).

To explore whether caregiver self-efficacy mediates the effect of caregiver interventions on improved outcomes, interventions must not only increase self-efficacy but also improve caregiver outcomes. If both conditions are achieved, investigators can model whether caregiving self-efficacy is in fact this mechanism. Despite evidence that interventions improve caregiver self-efficacy, few studies have tested whether improved caregiver self-efficacy is the mechanism by which the intervention improves outcomes.

There is suggestive evidence that self-efficacy is a mediator in several cross-sectional studies. Caregiver self-efficacy mediated help-seeking behaviors, behavioral problems of their care partner, and dysfunctional thoughts about caregiving (Au et al., 2009). Márquez-González and colleagues (2009) reported similar results for Spanish-speaking caregivers. In a study of the effects of caregiver self-efficacy and spirituality on depression, both had an additive effect with a high sense of spirituality and self-efficacy being associated with lover levels of depression (Lopez et al., 2012). Gilliam and Steffen (2006) found that there was a strong direct correlation between caregiver self-efficacy and depression, but that self-efficacy did not moderate the relationship between stressors and depression.

To advance research in caregiving self-efficacy as a mediator, we need more studies to include a measure of caregiving self-efficacy. Although there are good measures that have been used in caregiving studies, the measures have some limitations for this purpose. We provide

a brief summary of the history of measures of caregiving self-efficacy in Table 1, ending with the Revised Scale for Caregiving Self-Efficacy (RSCSE). The RSCSE has become the gold standard. A literature review of 58 studies from around the world using the RSCSE found that studies supported the findings of the original study as well as the RSCSE's sensitivity to change (Steffen et al., 2018).

Although the RSCSE has served us well, to enable more study of caregiving self-efficacy, we see four issues. First, a shorter measure is needed, as the use of short forms has facilitated more widespread use of many measures and may reduce respondent burden. Second, although it may be difficult to capture all aspects of caregiving, we desired a measure that reflected a broader range of components of caregiver interventions. The three RSCSE subscales measure obtaining respite, controlling upsetting thoughts, and responding to disruptive behaviors, but do not include other important components such as communicating with friends, family or health professionals, decision making, or using community resources to help with the caregiving tasks and with stress management. Third, a measure needs to be easy to self-administer, as interviewer administration is impractical for many studies, particularly those delivered via the internet. Fourth, to be modeled as a potential mediator in intervention studies, a single score (while at the same time reflecting important components) would be desirable. The RSCSE consists of three separate subscales and the authors "strongly advocate" not using a total score (Steffen et al., 2002, p. 78). Although multiple self-efficacy scales or subscales can be included in causal models, a single measure would provide more concise results and reduce the possibility of collinearity.

Our goal was to create a short caregiving self-efficacy measure that addressed these issues, based on our experience with developing short, self-administered self-efficacy scales (Lorig et al., 1996; Ritter & Lorig, 2014). The purpose of this paper is to describe the development and testing of a short self-efficacy measure for use in interventions to support caregivers, and in surveys or cross-sectional studies. The measure was developed to be self-administered, brief, and require a single score for analytic purposes. It aimed to reflect the scope of components of many interventions to help caregivers (e.g., obtaining respite, reducing stress). Specifically, we wanted to reflect the scope of the BBC Programs. We also present information on the reliability and preliminary construct validity in two samples, as well as its sensitivity to change in one intervention study.

Research Design and Methods

First-Generation Measure

The impetus for further development of the RSCSE was our development of an intervention to reduce caregiver stress. The BBC intervention was a 6-week asynchronous internet-based program offering caregivers a toolbox of strategies to enhance caregiving skills (Lorig et al., 2012). There was new content each week and participants could log in as often as they wished. It

Table 1. Previous Caregiver Self-efficacy Scales

Reference	Name of scale	No. of items	Samples	Final scales	Description
Denney (1994)	Unpublished dissertation	58	NA	NA	
Zeiss et al. (1999)	Caregiver Self-Efficacy Scale	10 + 4	217 caregivers	• Self-care • Problem solving	"First-generation" measures
Gottlieb and Rooney (2003)	RIS Eldercare Self-Efficacy Scale	10	146 family caregivers of relatives with dementia	• Instrumental caregiving • Self-soothing • Relational (with care recipient)	13 items were reduced to 10 with three subscales. Many items are specific to caregivers of relatives
Steffen et al. (2002)	Revised Scale for Caregiving Self-Efficacy (RSCSE)	15	Caregivers Study 1: *N* = 169 Study 2: *N* = 145	• Obtaining respite • Controlling upsetting thoughts about caregiving • Responding to disruptive patient behaviors	Continued development from Zeiss et al. (1999) to improve content validity and reduce ceiling effects. Added 37 items, conducted psychometric testing on 51 items in two studies, examined construct validity. Interviewer-administered
Márquez-González et al. (2009)	RSCSE–Spanish translation		Spanish sample 180 caregivers of relatives with dementia		Good internal consistency of subscales. Those with high RSCSE scores reported, among other things, less depression

targeted caregivers of adults with cognitive disabilities (e.g., stroke, age-related dementia, traumatic brain injury). The intervention, based on Social Cognitive Theory, included techniques to increase caregiving self-efficacy. The content was determined based on caregiver focus groups, a review of lay literature aimed at caregivers, and the scientific literature on caregiver burden. The intervention focused on several broad types of caregiver support: (a) stress management, including controlling negative thoughts about caregiving and obtaining respite; (b) skills training to make it easier to perform the tasks such as how to respond to disruptive behaviors; (c) general coping and problem solving skills; (d) health behaviors such as sleep, diet, and exercise; and (e) finding resources in the community to help with the tasks and help manage stress. Social interaction took place on threaded bulletin boards.

To reflect adequately these intervention components, we first developed an 18-item Caregiving Self-Efficacy Scale (CSES; Supplementary Appendix 1), adapted (with permission) from the 15-item RSCSE (Steffen et al., 2002). We retained all items in the obtaining respite and controlling upsetting thoughts subscales, added items to reflect the broader content of our intervention (finding resources in the community, managing stress, practicing good health behaviors, and coping with unexpected problems), and simplified items on responding to disruptive behaviors. The simplification included using general situations which may apply to a broader range of caregivers rather than specific examples (e.g., rather than "asks you 4 times in the first one hour after lunch when lunch is," we used "acts in a way that causes you stress"). We reformatted items to be self-administered. We simplified instructions and modified the original 100-point response scale to a 1–10 scale. We have used a 1–10 response scale in previous studies and found it to be understandable to participants (Lorig et al., 1996). In the RSCSE, to refer to the care recipient, the interviewer would substitute the care recipient's name in each item. We modified this to say "care partner" in each item. The 18 items were combined into one overall score. Results from 60 caregivers at baseline showed an internal consistency reliability of .89, and statistically significant improvements in caregiver self-efficacy were observed 6 months postintervention (Lorig et al., 2012).

Development of a Shorter Measure: the CSES-8

Our opportunity to develop a shorter measure was our second study of the BBC intervention, designed to be a small-group (face-to-face) intervention. We adapted the online version for in-person delivery. We targeted caregivers of adult care recipients with cognitive disabilities (e.g., stroke, age-related dementia, traumatic brain injury).

We began by modifying our 18-item Caregiver Self-Efficacy measure. Our goal was to retain at least one item to reflect each component of the intervention. Using baseline data from the first BBC intervention (Lorig et al., 2012), we dropped items that were highly correlated with other items (redundant), combined some highly correlated items, and added one new item (prevent care recipient from becoming disruptive). The content of the eight items is shown in Table 2 and includes the following caregiving content areas (item numbers in parentheses): obtaining respite (1), controlling negative thoughts (2, 3), coping with new situations (4), stress management (5), self-care (6), finding resources (7), and preventing disruptive behaviors (8). As in the first-generation measure, respondents were asked to rate on a 10-point scale (with endpoints labeled), their confidence in being able to do the tasks listed, ranging from 1 (not at all confident) to 10 (totally confident). A copy of the questionnaire is included in Supplementary Appendix 2.

Table 2. Item Content of the Eight-Item Caregiving Self-Efficacy Scale (CSES-8)

Instructions for all items are to rate how sure or confident they are that they can do the tasks at the present time on a 1–10 scale, with endpoints labeled (1 = not at all confident, 10 = totally confident).

Item no.	Text of item
1	How sure or confident are you that you can ask a friend/family member to stay with your care partner for a day when you need to run errands or see the doctor yourself?
2	How sure or confident are you that you can stop yourself from thinking about unpleasant aspects of taking care of your care partner?
3	How sure or confident are you that you can stop yourself from worrying about future problems that might come up with your care partner?
4	How sure or confident are you that you can cope with unexpected or new situations that may come up with your care partner?
5	How sure or confident are you that you can do the things necessary to keep your stress under control?
6	How sure or confident are you that you can do the things necessary to take care of your own health?
7	How sure or confident are you that you can find resources in the community (meals, legal, support groups, etc.) that can help you take care of yourself and your care partner?
8	How sure or confident are you that you can sometimes prevent your care partner from becoming angry or disruptive?

Note: The format for the 1–10 scale varies between the self-administered and the online version. The self-administered questionnaire and scoring instructions are available in Supplementary Appendix 2.

Data Sources for Evaluating Psychometrics

In the *BBC In-person Intervention Study*, we evaluated the psychometrics of the eight-item Caregiver Self-Efficacy Scale (CSES-8). Recruitment described elsewhere (Lorig et al., 2017) was done by four geographically distinct community organizations, each using their own methods of recruitment. The data consisted of self-administered questionnaires at baseline (completed in person) and at 6 and 12 months (mailed) after the start of the intervention. In addition to the CSES-8, we administered several measures that would help us explore construct validity. The Zarit Burden Inventory (ZBI) measures caregiver burden (Parks & Novielli, 2000). The Caregiver Strain Index (CSI) measured caregiver strain and stress (Thornton & Travis, 2003). Last, we measured depression using the PHQ-8 scale, a modified version of the PHQ-9 (Kroenke & Spitzer, 2002). We assessed race/ethnicity, gender, marital status, age, and relationship to the care recipient as well as the age of the care recipient.

The *Volunteer On-line Study* was the second source of data and consisted of volunteer caregivers who completed an online survey about caregiving. We used social media snowball recruiting mainly via a self-management list serve and networks of list serve participants. From these list serves, over a short period, 138 caregivers clicked a link and completed the survey. This convenience sample was limited to caregivers of adults, but not otherwise restricted. In addition to the CSES-8, respondents completed the three previously validated RSCSE subscales, modified in the same manner we had used when developing the 18-item scale (*First-Generation Measure* section, above). A subset of the volunteers who agreed to be identified by leaving their email were asked to complete the CSES-8 a second time 2–3 weeks later for test–retest purposes. Only minimal demographic information was obtained: gender, age, and relationship to the care recipient.

Methods of Analysis

We scored the CSES-8 by averaging all nonmissing items; thus, the possible score ranged from 1 to 10 with higher scores indicating higher self-efficacy. If one or two items were missing, then the score was the mean of the remaining six or seven items. If more than two items were missing, the entire scale was coded as missing.

We analyzed the psychometric characteristics separately within each data set. Principal components analysis was used to test whether the scales were unitary or multidimensional. To determine if all items met scaling criteria, we examined item-scale correlations corrected for overlap. Cronbach alphas measured internal consistency reliability. In the *Volunteer On-line Study*, correlations between initial and repeated questionnaires were used to measure repeatability or test–retest reliability. Descriptive statistics were used to report the means, standard deviations, and tests for normal distribution. The distributions were examined for possible floor or ceiling effects.

Construct validity was examined through two strategies. First, we evaluated Pearson correlations of the CSES-8 with the other measures administered in the two studies, to determine if hypotheses were confirmed. In the *BBC In-person Intervention Study*, we hypothesized that the CSES-8 would be the most highly correlated with the two caregiver burden measures, and the least correlated with the depression scale. As preliminary evidence for examining whether changes in self-efficacy paralleled changes in caregiver burden and distress, we also examined Pearson correlations of 6-month changes in the CSES-8 and changes in the three measures of caregiver burden and distress. In the *Volunteer On-line Study*, we hypothesized that correlations of the CSES-8 would be moderate with all three modified RSCSE subscales. We hypothesized that the CSES-8 would be most highly correlated with controlling upsetting thoughts (because two items overlapped), next most highly correlated with obtaining respite (one overlapping item), and least correlated with responding to disruptive behaviors.

The second strategy for exploring construct validity was to determine if caregiver self-efficacy varied by demographic characteristics. We used *t* tests to determine whether there were significant differences in mean CSES-8 scores by gender of caregiver, race of caregiver (non-Hispanic White vs other), and relationship to care recipient (spouse of the caregiver vs parent of caregiver). We used Pearson correlations to examine whether CSES-8 scores were associated with age. In the *Volunteer On-line Study*, we compared mean scores by gender, and relationship to the care recipient. We also used Pearson correlations to look at whether CSES-8 scores were associated with the age of the care recipient.

Sensitivity to change was measured within the *BBC In-person Intervention Study* by comparing the CSES-8 at baseline with 6- and 12-month postintervention scores. Change scores were computed as the baseline score subtracted from the later score; thus, a positive change score indicated improvement; paired *t* tests were used to assess the significance.

Results

Demographic Characteristics of Study Participants

Of the 158 caregivers in the *BBC In-person Intervention Study*, 71.3% were non-Hispanic White, 7.6% Asian, 11.5% Black, 6.4% Hispanic, and 3.2% other or mixed. The majority were married (66.5%). Age ranged from 23 to 89; mean age was 65.4 (*SD* = 10.6). The care recipients of these caregivers were primarily spouses or domestic partners (48.1%) or parents/parents-in-law (39.9%). The remainder were adult children (3.8%), friends (3.1%), siblings (1.3%), or others (3.8%). Although most caregivers were female (84.8%), more care recipients (57.6%) were male. The age of care recipients ranged from 23 to 99; mean age was 79.0 (*SD* = 12.1).

A total of 138 caregivers in the *Volunteer On-line Study* completed the questionnaire. Caregivers were primarily female (89.1%). The care recipient of these caregivers was mostly parents (49.1%) and spouses (31.9%). Other recipients included siblings (4.3%), adult children (2.9%), and others such as grandparents or friends. Two respondents were caring for two care recipients and one was caring for three. Slightly more than half of care recipients were female (57.3%). The mean age of care recipients was 76.6 (*SD* = 14.3) with a range of 24–101.

Scalability and Reliability

Item completion in both studies was near perfect. Among *BBC In-person Intervention Study* participants, 155 of 158 participants (98.1%) completed all eight items at baseline. Three participants did not complete item 1 but completed the other seven items. Among the 138 participants in the *Volunteer On-line Study*, 137 (99.3%) completed all eight items. One participant did not complete item 1 but completed all other items. In the smaller retest sample (*N* = 47), all participants completed all eight items.

Principal components analysis resulted in a single factor for both samples. Table 3 presents item-scale correlations corrected for overlap and internal consistency reliability coefficients (Cronbach alpha) for both samples. For the *BBC In-person Intervention Study*, item-scale correlations ranged from .44 (item 8) to .78 (item 5). The internal consistency reliability was .89. For the *Volunteer On-line Study*, item-scale correlations ranged from .47 for item 1 to .78 for item 5. Internal consistency reliability was .88. In the test–retest reliability substudy, 47 participants responded 2–3 weeks later (average time to repeat assessment was 17.3 days). The baseline CSES-8 was correlated $r = .75$ ($p < .001$) with the repeated CSES-8.

Descriptive Statistics

For the *BBC In-person Intervention Study*, the mean CSES-8 at baseline was 6.02 (*SD* = 2.13), just above the midpoint of the possible score of 1–10 (Table 4). At 6 months, the mean was 6.62 (*SE* = 2.13, *N* = 117). At baseline, there were no participants with the minimum value of one and four with the maximum value of 10 (2.5%). At 6 months, there were no participants with the minimum value of 1 and 2 with the maximum value of 10 (1.7%). Skewness at baseline was –0.06 and kurtosis was –0.69. Skewness at 6 months was –0.47 and adjusted kurtosis was –0.60. Shapiro–Wilk test for normality was 0.980 ($p = .036$) at baseline and 0.962 ($p = .002$) at 6 months.

For the *Volunteer On-line Study*, the mean was 5.88 (*SD* = 1.90), near the midpoint of the scale range. There were no participants with the minimum value of 1 and one participant with the maximum value of 10 (0.72%). Skewness was –0.19 and kurtosis was –0.75. Shapiro–Wilk test for normality was 0.980 ($p = .036$).

Construct Validity

For the *BBC In-person Intervention Study*, as hypothesized, the CSES-8 at baseline was correlated moderately and negatively with ZBI ($r = -.66$, $p < .001$), with the Patient Health Questionnaire depression ($r = -.53$, $p < .001$), and with the CSI ($r = -.46$, $p < .001$, see Table 5). The highest correlation was with the ZBI (as hypothesized), but the lowest correlation was with the CSI; we had hypothesized that the lowest correlation would be with the PHQ-8. As hypothesized, positive 6-month changes in self-efficacy were significantly associated with decreased caregiver burden ($r = -.39$, $p < .001$), depression ($-.43$, $p < .001$), and caregiver strain ($-.24$, $p < .01$).

Table 3. Item Statistics, Internal Consistency Reliability (Cronbach Alpha), Item-Scale Correlations Corrected for Overlap: Two Samples

| Item no. | BBC Intervention Study (baseline) (*N* = 158) | | Volunteer On-line Study (*N* = 138) | |
| | α = .89 | | α = .88 | |
	Item mean (*SD*)	Correlation with total[a]	Item mean (*SD*)	Correlation with total[a]
1	6.08 (3.49)	.55	5.96 (3.27)	.47
2	6.48 (2.81)	.71	5.88 (2.72)	.68
3	5.13 (2.96)	.69	4.68 (2.53)	.69
4	6.14 (2.65)	.68	5.98 (2.28)	.71
5	5.88 (2.74)	.78	5.62 (2.47)	.78
6	6.38 (2.69)	.75	6.02 (2.47)	.74
7	6.24 (2.73)	.67	6.71 (2.50)	.63
8	5.77 (2.81)	.44	6.09 (2.56)	.47

Notes: BBC = Building Better Caregivers.
[a]The total is the mean for the other seven items.

Table 4. Descriptive Statistics for the CSES-8 in Two Samples

Study	*N*	Mean (*SD*)	Possible range	Observed range	Shapiro–Wilk test for normality
BBC In-person Intervention Study (baseline)	158	6.02 (2.13)	1–10	1.25–10	0.981 (*p* = .032)
Volunteer On-line Study	138	5.88 (1.90)	1–10	1.38–10	0.980 (*p* = .036)

Note: BBC = Building Better Caregivers; CSES-8 = eight-item Caregiving Self-Efficacy Scale.

Table 5. Pearson Correlations Between CSES-8 and Other Measures: Construct Validity

	BBC In-person Intervention Study		Volunteer On-line Study
Caregiver measures	Correlation with CSES-8 at baseline (*N* = 158)	Correlation of 6-month change with change in other measures (*N* = 117)	Correlation with CSES-8 (*N* = 138)
Caregiver self-efficacy (RSCSE[a])			
Obtaining respite	–		.68 (*p* < .001)
Responding to disruptive patient behaviors	–		.51 (*p* < .001)
Controlling upsetting thoughts	–		.83 (*p* < .001)
Caregiver burden			
Zarit Burden Inventory	−.66 (*p* < .001)	−.39 (*p* < .001)	
Caregiver Strain Index	−.46 (*p* < .001)	−.24 (*p* < .001)	
Caregiver distress			
PHQ-8 depression	−.53 (*p* < .001)	−.43 (*p* < .001)	

Notes: BBC = Building Better Caregivers; CSES-8 = eight-item Caregiving Self-Efficacy Scale; PHQ-8 = eight-item Patient Health Questionnaire depression scale; RSCSE = Revised Scale for Caregiving Self-Efficacy.
[a]RSCSE is a modified version (see text).

Using independent sample *t* tests, there were no significant differences in mean baseline CSES-8 scores by gender of caregiver (*t* = 0.11, df = 157, *p* = .91) or relationship to care recipient (spouse vs parent, *t* = 0.26, df = 137, *p* = .79). Non-Hispanic White participants had a lower mean baseline CSES-8 than other ethnicities (5.73 vs 6.78, *t* = 2.87, df = 157, *p* < .005). When we examined Cronbach's alphas separately for non-Hispanic White and other ethnicities, they were essentially identical: .89 for other ethnicities (*N* = 44) and .89 for non-Hispanic Whites (*N* = 112). There were no significant correlations between age of caregiver or age of care recipient and baseline CSES-8.

For the *Volunteer On-line Study*, the correlations between the CSES-8 and the three modified RSCSE subscales were *r* = .68 for self-efficacy for obtaining respite, .51 for self-efficacy for responding to disruptive patient behaviors, and .83 with self-efficacy for controlling upsetting thoughts about caregiving (all *p* < .001). The magnitude and pattern were as hypothesized. There were no associations between the CSES-8 and age of care recipient, and no significant mean differences by gender or relationship to care recipient. For this quick on-line survey, we neglected to obtain ethnicity.

Sensitivity to Change: BBC In-person Intervention Study

Within the *BBC In-person Intervention Study,* there were 117 participants with 6-month data. Mean change was 0.67 (*SD* = 1.75, *N* = 120, *t* = 4.22, df = 119, *p* < .001 from paired *t* test) indicating that self-efficacy improved. The effect size of this change (Cohen's *d*) was .39. At 12 months, there were 106 remaining participants. Mean 12-month change was 0.79 (*SD* = 1.72, *t* = 4.73, df = 106, *p* < .001, Cohen's *d* effect size = .45), suggesting slight continued improvement.

Discussion and Implications

Our evaluation of the CSES-8 suggests that we were successful in developing a short measure of caregiver self-efficacy that reflects a variety of components of caregiver support interventions. It was easily completed in both online and paper-and-pencil versions, and there were virtually no missing data. The measure was shown to be unidimensional, requiring only one score. We provided evidence of its reliability and preliminary evidence of its construct validity, and it was sensitive to change in one intervention.

The CSES-8 is clearly unidimensional, which was our goal. This means we can assess the variety of components of caregiver interventions in one single measure of self-efficacy. This does not negate the usefulness of the three separate RSCSE scales nor preclude the possibility of continued development of self-efficacy scales or subscales for other specific aspects of caregiving. It does, however, meet our goal of having a minimal effective number of items

when evaluating caregiver programs within a questionnaire containing numerous other relevant scales.

Means of the CSES-8 were 6.02 and 5.88 in the two sample populations, with *SD*s around 2. These are near the midpoint of the 1–10 scale. There was no evidence of ceiling or floor effects, and based on the kurtosis, the distribution had only slight tendencies to have flatter distributions than normal. Cronbach alphas were high (.89 and .88). The correlation of $r = .73$ between two administrations of the scale is acceptable evidence of test–retest reliability.

The relatively high correlations within the *Volunteer On-line Study* of the CSES-8 with modified versions of the three previously validated RSCSE subscales provided good evidence of construct validity. However, because the CSES-8 was derived from the RSCSE, and some items overlapped, future research could examine its correlation with an independent measure of caregiver self-efficacy, for example, Gottlieb and Rooney's (2003) eldercare self-efficacy scale. The moderate correlations of the CSES-8 with depression and two measures of caregiver burden were also supportive of construct validity. Our results are consistent with those of Zeiss and colleagues (1999) who found associations between earlier caregiver self-efficacy measures and both depression and caregiver burden.

The CSES-8 showed statistically significant sensitivity to change when administered 6 months after participants began an intervention designed, among other things, to enhance self-efficacy. Thus, it appears to have captured a moderate increase in self-efficacy following the completion of the intervention program. Does this represent a clinically significant change in self-efficacy? Self-efficacy was originally posited as a mediating or moderating factor for explaining other outcomes. Thus, clinical significance would not be of prime importance. However, self-efficacy has often been used as a proximal outcome measure. In this case, there are different ways of looking at clinical significance. Butler and colleagues (2020) correlated changes in self-efficacy with changes in clinical outcomes using patient-based and clinical anchors, as suggested by Revicki and colleagues (2008). We did not specifically look for such anchors, but two of the three correlations of change in CSES-8 with change in other caregiver outcomes (Table 5) were greater than the $r = .3$ that they suggest is meaningful. Riegel and colleagues (2011), based on the work of Hays and colleagues (2005), suggested that self-efficacy change of half a standard deviation is clinically meaningful (i.e., a Cohen's d effect size of 0.5). Our effect size changes for CSES-8 were lower than this threshold (0.31 at 6 months and 0.36 at 12 months). Because the standard deviation of change of a study depends on the heterogeneity of the population, using effect sizes could result in a more diverse population having a higher threshold for clinical significance than a more homogeneous population. The importance of sample mix was further discussed by Chiarotto et al. (2016, p. 707) who found that "MIC [minimal important change] values were different for patients with low or high baseline values …"

Another approach to determining minimal significant levels of self-efficacy would be to examine cut points associated with effective outcomes. An unpublished study (Lorig et al., 2013) found that scores of 7 and above on a 10-point self-efficacy question were more strongly associated with completing action plans than scores below 7 and resulted in greater differences between dichotomized higher and lower scores than lower or higher cut points. In the *BBC In-person Intervention Study,* the proportion with CSES-8 scores of 7 and above increased from 36% at baseline to 50% at 6 months ($p < .001$). Further study would be required to determine if this increase was also associated with improved outcomes and if 7 was the optimal cut-point.

Because caregiver self-efficacy has been found to be both a moderator and a mediator of outcomes, there is a need for a measure of this variable that is efficient, valid, sensitive, and comprehensive. The CSES-8 appears to meet these criteria and would likely be useful for studies of the relationships between interventions and other caregiver outcomes.

Limitations

Both samples of caregivers were relatively small. The caregivers in both samples were predominantly non-Hispanic White and female. The *BBC In-person Intervention Study* sample was mainly caregivers of older recipients with cognitive or other disabilities, while the *On-line Volunteer Study* sample was younger and had more types of care recipients. It remains possible that the CSES-8 would have less reliability, validity, or sensitivity in populations of caregivers with very different demographics. It would be desirable to test the CSES-8 on larger and more diverse populations of caregivers and of caregivers of a broader range of care recipients (e.g., spinal cord injuries, cancer patients).

Unfortunately, we did not include ethnic identification in the *Volunteer On-line Study*. It would be desirable to examine the scale separately by ethnic group and to see if non-Hispanic White participants had statistically significant lower baseline CSES-8 scores in that study, as they did in the *BBC In-person Intervention Study*. Further study of the relationship between ethnicity and caregiver self-efficacy would be desirable.

Although the CSES-8 had statistically significant increases after an intervention and changes were correlated with measures of caregiver burden, strain, and depression, further study would be necessary to determine if these changes were clinically significant.

The scale uses the phrase "care partner" rather than the more common term "care recipient." This terminology was developed during focus groups with caregivers and used in the online and face-to-face versions of the BBC Intervention

studies. We believe that the terms are equivalent and would not result in changes if "care recipient" were used in the questions. However, this should be tested in future studies.

Conclusion

The CSES-8 appears to be a promising tool. It has good reliability and construct validity in two independent samples, and it has sensitivity with respect to a specific caregiver support intervention. Thus, it has the potential of proving useful in modeling self-efficacy as a moderator of other caregiver outcomes. The measure can also be used in surveys and other applications to access levels of caregiver self-efficacy. We look forward to further research using this measure to continue to build evidence for its usefulness.

Supplementary Material

Supplementary data are available at *The Gerontologist* online.

Conflict of Interest

None declared.

References

American Psychological Association. (2020). *Common caregiver problems.* https://www.apa.org/pi/about/publications/caregivers/practice-settings/common-problems/

Au, A., Lai, M. K., Lau, K. M., Pan, P. C., Lam, L., Thompson, L., & Gallagher-Thompson, D. (2009). Social support and well-being in dementia family caregivers: The mediating role of self-efficacy. *Aging & Mental Health*, **13**(5), 761–768. doi:10.1080/13607860902918223

Bandura, A. (1997). *Self-efficacy: The exercise of control.* W.H. Freeman.

Boise, L., Congleton, L., & Shannon, K. (2005). Empowering family caregivers: The powerful tools for caregiving program. *Educational Gerontology*, **31**(7), 573–586. doi:10.1080/03601270590962523

Butler, J., Khan, M. S., Mori, C., Filippatos, G. S., Ponikowski, P., Comin-Colet, J., Roubert, B., Spertus, J. A., & Anker, S. D. (2020). Minimal clinically important difference in quality of life scores for patients with heart failure and reduced ejection fraction. *European Journal of Heart Failure*, **22**(6), 999–1005. doi:10.1002/ejhf.1810

Chiarotto, A., Vanti, C., Cedraschi, C., Ferrari, S., de Lima E Sà Resende, F., Ostelo, R. W., & Pillastrini, P. (2016). Responsiveness and minimal important change of the Pain Self-Efficacy Questionnaire and short forms in patients with chronic low back pain. *The Journal of Pain*, **17**(6), 707–718. doi:10.1016/j.jpain.2016.02.012

Czaja, S. J., Lee, C. C., Perdomo, D., Loewenstein, D., Bravo, M., Moxley, J. H., & Schulz, R. (2018). Community REACH: An implementation of an evidence-based caregiver program. *The Gerontologist*, **58**(2), e130–e137. doi:10.1093/geront/gny001

Denney, J. E. (1994). *Development and validation of the caregiving self-efficacy scale* [Unpublished doctoral dissertation]. University of Missouri.

Dharmawardene, M., Givens, J., Wachholtz, A., Makowski, S., & Tjia, J. (2016). A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals. *BMJ Supportive & Palliative Care*, **6**(2), 160–169. doi:10.1136/bmjspcare-2014-000819

Gilliam, C. M., & Steffen, A. M. (2006). The relationship between caregiving self-efficacy and depressive symptoms in dementia family caregivers. *Aging and Mental Health*, **10**(2), 79–86. doi:10.1080/13607860500310658

Gitlin, L. N., Corcoran, M., Winter, L., Boyce, A., & Hauck, W. W. (2001). A randomized, controlled trial of a home environmental intervention: Effect on efficacy and upset in caregivers and on daily function of persons with dementia. *The Gerontologist*, **41**(1), 4–14. doi:10.1093/geront/41.1.4

Gottlieb, B. H., & Rooney, J. A. (2003). Validation of the RIS Eldercare Self-Efficacy Scale. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, **22**(1), 95–107. doi:10.1017/S0714980800003767

Hays, R. D., Farivar, S. S., & Liu, H. (2005). Approaches and recommendations for estimating minimally important differences for health-related quality of life measures. *COPD*, **2**(1), 63–67. doi:10.1081/copd-200050663

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, **35**, 509–521. doi:10.3928/0048-5713-20020901-06

López, J., Romero-Moreno, R., Márquez-González, M., & Losada, A. (2012). Spirituality and self-efficacy in dementia family caregiving: Trust in God and in yourself. *International Psychogeriatrics*, **24**(12), 1943. doi:10.1017/S1041610212001287

Lorig, K., Ritter, P. L., Laurent, D. D., & Yank, V. (2017). Building Better Caregivers: A pragmatic 12-month trial of a community-based workshop for caregivers of cognitively impaired adults. *Journal of Applied Gerontology*, **38**(9), 1228–1252. doi:10.1177/0733464817741682

Lorig, K., Ritter, P. L., Plant, K., & Laurent, D. D. (2013). *Action plans in an online chronic disease self-management program.* Unpublished manuscript.

Lorig, K., Stewart, A., Ritter, P., Gonzalez, V., Lynch, J., & Laurent, D. (1996). *Outcome measures for health education and other health care interventions.* Sage.

Lorig, K., Thompson-Gallagher, D., Traylor, L., Ritter, P. L., Laurent, D. D., Plant, K., Thompson, L. W., & Hahn, T. J. (2012). Building Better Caregivers: A pilot online support workshop for family caregivers of cognitively impaired adults. *Journal of Applied Gerontology*, **31**(3), 423–437. doi:10.1177/0733464810389806

Márquez-González, M., Losada, A., López, J., & Peñacoba, C. (2009). Reliability and validity of the Spanish version of the Revised Scale for Caregiving Self-Efficacy. *Clinical Gerontologist*, **32**(4), 347–357. doi:10.1080/07317110903110419

National Alliance for Caregiving. (2015, June). *Caregiving in the US 2015*. NAC and the AARP Public Institute. https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf

Parker Oliver, D., Patil, S., Benson, J. J., Gage, A., Washington, K., Kruse, R. L., & Demiris, G. (2017). The effect of internet group support for caregivers on social support, self-efficacy, and caregiver burden: A meta-analysis. *Telemedicine and e-Health*, **23**(8), 621–629. doi:10.1089/tmj.2016.0183

Parks, S. M., & Novielli, K. D. (2000). A practical guide to caring for caregivers. *American Family Physician*, **62**(12), 2613–2622.

Revicki, D., Hays, R. D., Cella, D., & Sloan, J. (2008). Recommended methods for determining responsiveness and minimally important differences for patient-reported outcomes. *Journal of Clinical Epidemiology*, **61**(2), 102–109. doi:10.1016/j.jclinepi.2007.03.012

Riegel, B., Lee, C. S., & Dickson, V. V. (2011). Self care in patients with chronic heart failure. *Nature Reviews Cardiology*, **8**(11), 644. doi:10.1038/nrcardio.2011.95

Ritter, P. L., & Lorig, K. (2014). The English and Spanish Self-Efficacy to Manage Chronic Disease Scale measures were validated using multiple studies. *Journal of Clinical Epidemiology*, **67**(11), 1265–1273. doi:10.1016/j.jclinepi.2014.06.009

Samia, L. W., O'Sullivan, A., Fallon, K. C., Aboueissa, A. M., & Hepburn, K. W. (2019). Building on self-efficacy for experienced family caregivers: The Savvy Advanced Program. *The Gerontologist*, **59**(5), 973–982. doi:10.1093/geront/gny016

Schulz, R. & Eden, J. (Eds.). (2016). *Families caring for an aging America*. The National Academies Press.

Steffen, A. M., Gallagher-Thompson, D., Arenella, K. M., Au, A., Cheng, S. T., Crespo, M., Cristancho-Lacroix, V., López, J., Losada-Baltar, A., Márquez-González, M., Nogales-González, C., & Romero-Moreno, R. (2018). Validating the Revised Scale for Caregiving Self-Efficacy: A cross-national review. *The Gerontologist*, **59**(4), e325–e342. doi:10.1093/geront/gny004

Steffen, A. M., McKibbin, C., Zeiss, A. M., Gallagher-Thompson, D., & Bandura, A. (2002). The Revised Scale for Caregiving Self-Efficacy: Reliability and validity studies. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, **57**(1), P74–P86. doi:10.1093/geronb/57.1.p74

Thornton, M., & Travis, S. S. (2003). Analysis of the reliability of the modified Caregiver Strain Index. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, **58B**, S127–S132. doi:10.1093/geronb/58.2.S127

United Health Hospital Fund. (2012). *Home alone: Family caregivers providing complex chronic care*. AARP Public Policy Institute. https://www.aarp.org/content/dam/aarp/research/public_policy_institute/health/home-alone-family-caregivers-providing-complex-chronic-care-rev-AARP-ppi-health.pdf

Waelde, L. C., Thompson, L., & Gallagher-Thompson, D. (2004). A pilot study of a yoga and meditation intervention for dementia caregiver stress. *Journal of Clinical Psychology*, **60**(6), 677–687. doi:10.1002/jclp.10259

Zeiss, A. M., Gallagher-Thompson, D., Lovett, S., Rose, J., & McKibbin, C. (1999). Self-efficacy as a mediator of caregiver coping: Development and testing of an assessment model. *Journal of Clinical Geropsychology*, **5**(3), 221–230. doi:10.1023/A:1022955817074