

## RESEARCH ARTICLE

# A new measure of professional caregiver coping in long-term care: The LTC COPE

Philip D. Sloane<sup>1,2</sup>  | Sheryl Zimmerman<sup>1,3</sup> | Lea Efird-Green<sup>1</sup> | Jasmine L. Travers<sup>4</sup> | Krista M. Perreira<sup>5</sup> | Karen Bluth<sup>6</sup> | Christine Lathren<sup>7</sup> | David Reed<sup>1</sup>

<sup>1</sup>The Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

<sup>2</sup>Department of Family Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

<sup>3</sup>Schools of Social Work and Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

<sup>4</sup>Rory Meyers College of Nursing, New York, New York, USA

<sup>5</sup>Department of Social Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

<sup>6</sup>Department of Psychiatry, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

<sup>7</sup>Department of Physical Medicine and Rehabilitation, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

## Correspondence

Philip D. Sloane, The Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, 725 Martin Luther King Jr. Blvd, Chapel Hill, NC 27599-7590, USA.  
Email: [Philip\\_sloane@med.unc.edu](mailto:Philip_sloane@med.unc.edu)

## Funding information

Alzheimer's Association, Grant/Award Number: ARCOM-22-879224

## Abstract

**INTRODUCTION:** The professional caregiver workforce (nursing assistants and personal care aides) is critical to quality of care and quality of life in nursing home (NH) and assisted living (AL) settings. The work is highly stressful, so improving responses to stress in this workforce could contribute to satisfaction and retention. This research developed a coping measure appropriate for the diverse professional caregiver workforce.

**METHODS:** A multistage process identified and refined existing and new items. Ten racially and ethnically diverse professional caregivers advised on item selection and refinement. Subsequently, using an online QR code-accessed questionnaire, data were collected from 391 professional caregivers from 10 NHs and 3 AL communities in three states, yielding a sample that was 87% female, widely distributed in age and experience, and racially/ethnically diverse (42% Black, non-Hispanic/Latinx; 25% White, non-Hispanic/Latinx; 20% Hispanic/Latinx; 7% Asian, non-Hispanic/Latinx; and 21% born outside the United States). Analyses examined psychometric properties and principal components analysis identified factors within which items and scales aggregated.

**RESULTS:** The final instrument, named the Long-Term Care Cope (LTC Cope), includes 26 items aggregated into six factors, which explained 60% of the variance: avoidance (five items, loadings 0.58–0.76); adaptive psychological strategies (six items, loadings 0.33–0.89); active engagement (five items, 0.47–0.89); maladaptive psychological strategies (three items, loadings 0.90–0.93); actions to minimize emotional impact (four items, loadings 0.28–0.74); and substance use (three items, loadings 0.61–0.88). Respondents often reported using multiple items within multiple factors when responding to stressful situations at work.

**DISCUSSION:** The coping strategies of professional caregivers are highly individual, with caregivers tending to utilize multiple strategies. The LTC Cope instrument and its component subscales are promising for future research to improve understanding of stress-related coping in this diverse workforce and inform and evaluate interventions.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2024 The Author(s). Alzheimer's & Dementia: Translational Research & Clinical Interventions published by Wiley Periodicals LLC on behalf of Alzheimer's Association.

**KEYWORDS**

assisted living, care aides, coping, nursing assistants, nursing homes, stress

**Highlights**

- A new measure was developed to help us better understand how professional caregivers (nursing assistants and personal care aides) deal with work-related stress.
- Professional caregivers in nursing homes and assisted living tend to use multiple approaches to deal with job stress.
- Ways professional caregivers cope with stress vary widely—some address problems directly, some try to deal with the emotional toll of the work, and others involve avoiding the problems or their emotional consequences.

## 1 | INTRODUCTION

The majority of personal care for residents of nursing homes (NHs) and assisted living (AL) communities is provided by professional caregivers (also referred to as direct care workers). This workforce is comprised of approximately 1.2 million individuals whose typical job title in NHs is nursing assistant and in AL is personal care aide.<sup>1</sup> Activities of this workforce include assisting with daily activities such as bathing, toileting, and feeding; managing behavioral expressions in persons with cognitive impairment; monitoring changes in condition; and communicating with families and licensed nurses.<sup>2</sup>

The importance of professional caregivers to residents' quality of care and quality of life is indisputable. Still, job stress and turnover rates are high—an endemic problem that is severe enough that the lack of both workers and applicants for these positions is a national crisis.<sup>3</sup> Reasons for this worker shortage are multiple: personal care provision is physically and emotionally challenging; workloads often exceed government standards; educational requirements are minimal; workers frequently feel disrespected and undervalued by supervisors; and compensation is low.<sup>4</sup> Furthermore, the majority of professional caregivers are women from minoritized racial/ethnic communities and/or immigrants, and so are more likely to experience additional stressors such as poverty, traumatizing life events, social and workplace-based discrimination, and racism.<sup>5–8</sup> In addition, a high proportion of professional caregivers are also caregivers at home, frequently for multiple generations of family members.<sup>9</sup>

Improving the professional caregiver workforce is a critical but complex issue. Better pay and benefits, more educational requirements, and greater inclusion in care team decision-making are strategies that may help to the degree that they are implemented.<sup>10</sup> Indeed, a case can be made for greater professionalization of this workforce, due to increasing resident complexity and the sophistication required to care optimally for persons who are frail or disabled.<sup>11</sup> Barriers to raising the status and reimbursement of this workforce are extensive; however. They include traditional negative attitudes toward this work, hierarchical leadership and administrative structures, lack of fiscal transparency

among providers, and the reluctance of third-party payers to markedly increase reimbursement.<sup>2,7,8,12</sup>

On an individual level, a strategy to bolster the workforce is to foster and improve workers' ability to successfully manage life and work stresses through strengthening their coping skills and resilience.<sup>13,14</sup> Improving these skills could help buffer against stressors in life, thereby improving work performance and providing benefits in personal lives, relationships, and even physical health. Although only part of a comprehensive solution to turnover and job dissatisfaction, enhancing coping and resilience could be particularly valuable to this workforce, given both the highly stressful nature of the work and the stressful life situations of many of the workers.<sup>15</sup> Furthermore, it has the benefit of not requiring substantial changes in funding and reimbursement.

Because the professional caregiver workforce is diverse, multiple approaches to improving stress management and fostering resilience may be needed; examples include developing peer support networks, training supervisors to be more in tune with staff, treating mental health issues such as depression, and training in techniques such as mindfulness. These should be informed by tools and methods appropriate for this population, and their success should be determined based on sound psychometric characteristics. Unfortunately, measures of coping appropriate for this diverse workforce do not yet exist. In fact, existing measures have been largely developed on non-Hispanic White, highly-educated subjects, and so are limited in their ability to describe and assess such issues as coping and resilience in the professional caregiver workforce.

To address the limited literature on coping strategies of the professional caregiver workforce, we sought to develop a parsimonious measure of coping and resilience strategies for this population. Beginning with existing measures derived from the literature, we undertook a series of discrete steps to identify, refine, and modify or supplement existing measures, to develop a measure targeted to professional caregivers working in NHs and AL communities. Our ultimate goal was to develop a brief measure, that has good validity and reliability, covers a wide range of coping styles and strategies, and is appropriate

for the diverse and multicultural nature of the professional caregiver workforce.

## 2 | METHODS

Three steps were involved in developing the new measure: initial item selection, item refinement, and data collection. Subsequently, the psychometric properties of the final measure were calculated, and principal components analysis was conducted to identify factors within which the various items aggregate. Study methods were approved by the Institutional Review Board of the University of North Carolina at Chapel Hill[.

### 2.1 | Initial item selection

To generate a list of proposed items, we reviewed the literature on measures of coping with stress, developing a preliminary list of those that were brief, complemented each other, and had been used and validated in English in racially/ethnically diverse and low-income populations similar to the long-term care (LTC) professional caregiver workforce. Many items were taken from the Brief COPE,<sup>16</sup> a measure with multiple two-item scales, derived from decades of work.<sup>17,18</sup> Due to a perceived high prevalence and diversity of religiosity in this population, we also included items from a broader measure, the Brief RCOPE,<sup>19</sup> which had been used in Muslim as well as Christian samples.<sup>20</sup> The third included measure was the Brief Resilient Coping Scale,<sup>21</sup> which has excellent psychometric properties and has had considerable use in the past decade,<sup>22</sup> and the fourth was the Self-Compassion for Youth Scale, a scale with six short subscales,<sup>23</sup> that has been used in samples with adolescents from minoritized racial groups as well as nursing assistants.<sup>15,23</sup> Finally, to measure responses to specific caregiving situations, we included the Positive Aspects of Caregiving scale, which was developed and validated in family caregivers of persons with Alzheimer's disease.<sup>24</sup>

### 2.2 | Item refinement

To determine the suitability of the compiled items for our target population and identify items not included in the initial set, we recruited 10 diverse professional caregivers as advisors. Eight were women: four self-identified as White, three as Black, two as East Asian, and one as Hawaiian/Pacific Islander. Three identified as Hispanic/Latinx, and three were US immigrants. Their mean age was 42 years (range 26–65). All had worked for a minimum of 6 months (usually much longer) as professional caregivers. Eight worked primarily in NHs and two in AL communities. One lived in Illinois, two in New York, four in North Carolina, and two in California.

Eight advisors were consulted twice, the other two were consulted once, as they could not be reached for the second consultation. Consultations were separated by 2 months, occurring at key stages in

### RESEARCH IN CONTEXT

1. **Systematic review:** The professional caregiver workforce (nursing assistants and personal care aides) carries out stressful, challenging work that is critical to the quality of care and quality of life in residential long-term care (LTC) settings. We found that no instruments were tailored to and little research had addressed stress-related coping in this critical workforce.
2. **Interpretation:** We developed a new measurement tool, the LTC Cope, which captures the wide range of coping through 26 items and 6 subscales and exhibits good psychometric properties, and we administered the LTC Cope to 391 professional caregivers whose diversity mirrors that of this workforce.
3. **Future directions:** Use of the LTC Cope could improve understanding of this diverse workforce and potentially inform interventions.

the development and refinement of the instrument. Consultations averaged 90 min and asked about sources of stress in LTC, stress relief, and coping strategies the advisors had used themselves or observed being used by other professionals: an item-by-item critique of the draft items, including words or phrases that were unclear, recommendations about substitute or new items, and opinions on the best way to gain high response rates from professional caregivers. Based on these consultations, items were simplified to be less wordy and more direct, new items were added to the measurement set (e.g., smoking and use of a physical object such as a rubber squeeze ball); ambiguous response items (e.g., in items addressing relationships between caregivers and supervisors) were added; and other items were modified or omitted.

Based on community advisor input, the research team chose to recruit a modest number of NHs and AL communities that were geographically diverse and had individuals who would promote the study by announcing it at staff meetings and posting notices in staff break rooms. The questionnaire was placed online using Qualtrics, with access via a QR code or hyperlink provided on recruitment flyers. Enrollment was confidential and participants were paid \$100 for completion of the online questionnaire.

### 2.3 | Questionnaire completion

To qualify for the study, an individual had to (a) be age 18 or older, (b) be working as a nursing assistant, personal care aide, or similar job that involves providing personal care to older persons and/or persons with disabilities, (c) have worked in that capacity for an average of 20 h or more per week for at least 3 of the past 6 months, (d) feel comfortable answering written questions in English (with the clarification that the

individual did not need to be a native English speaker and could have help understanding the questions, but that the answers needed to be their own), and (e) provide consent to participate in the online study. An option was provided for individuals to be interviewed via telephone rather than complete the online questionnaire, no one asked for that option.

## 2.4 | Data collection and analysis

The items and participant recruitment strategy were pilot-tested in three NHs (one each in CA, NC, and NY) and one AL community (in NC). Recruitment and data completeness were excellent; minimal changes were made, and so, data collection was expanded to an additional seven NHs (one in CA, two in NC, two in NY) and two AL communities (both in NC), with the number based on the budget available to reimburse participants for their time.

Once data had been cleaned, individual item distributions were examined, and proposed subscales were examined for item-to-total correlations, internal consistency (Cronbach's alpha), and changes in the item-total correlation with individual items removed. This iterative process aimed to minimize the number of items while maintaining the breadth of coping strategies. Importantly, three items that did not factor well with any subscale were retained as solo items due to their distributions: THC/marijuana use, smoking, and calling out sick from work. After making modifications, we conducted a principal component analysis using a promax rotation to identify the factors in the overall measure and the factor loadings for each item in a subscale. Factor loadings below 0.25 were not included. Cronbach's alpha was calculated for each of the subscales.

## 3 | RESULTS

In total, 459 eligible individuals responded; of these, 68 (14.8%) failed to complete more than 10% of items and therefore were deleted. The mean number of respondents per participating LTC setting was 30 and the estimated target of eligible respondents varied between 25 and 50. Characteristics of the 391 survey respondents are displayed in Table 1. All were aged 18 or older and had worked as a nursing assistant, personal care aide, or similar role in an NH or AL community an average of 20 h or more per week for at least 3 of the previous 6 months. Of our sample, the majority (87%) were female; comparison data for AL and NHs are 81% and 91%, respectively.<sup>1</sup> Racially/ethnically, 42% were Black, non-Hispanic/Latinx; 25% were White, non-Hispanic/Latinx; 20% were Hispanic/Latinx; and 7% were Asian, non-Hispanic/Latinx; comparison data for AL and NHs, respectively for Blacks, Asians, and Hispanic/Latinx are 30%, 6%, and 12% for AL and 38%, 5%, and 13% for NHs.<sup>1</sup> A little over a fifth had been born outside the United States, and age and years of experience in LTC displayed a wide distribution.

### 3.1 | Distribution of recommended measures

The final measure totals 61 items across 26 distinct domains or subscales (Table 2). Four are single items (seeking reassignment, leaving/avoiding work, THC/marijuana use, and smoking) because they did not scale well with other items. Of the remaining subscales, 10 include 2 items, 11 include 3 items, and 1 includes 4 items. Changes that were made to arrive at these final items included the addition of items on attitudes about supervisors and, in response to the analysis of item-to-total correlations, shortening of the resilient coping and religious coping scales.

The proportion of respondents reporting more than minimal use of the specific coping actions described by individual items ranged from 4% to 95%, with lower usage generally occurring for items perceived as having a socially or personally negative connotation, such as irritability/venting or substance use, and higher percentages appearing for items of a positive nature, such as resilient coping or mindfulness. Table 2 also reports the name of each measure or subscale, the number of items in each subscale, Cronbach's alpha for each subscale, and the general category within which each has been placed. Alphas were predominantly more than 0.70 (satisfactory internal consistency), with 8 measures having alphas over 0.80 (good). Six alphas were in the range of 0.60 to 0.69 (marginal). The lowest alpha was 0.54.

### 3.2 | Results of factor analysis

The principal components analysis of all 26 items/subscales used an oblique rotation to allow for correlation among the components and resulted in the identification of six factors with eigenvalues > 1.0 that together accounted for 60% of the variance in the measure. Results are displayed in Table 3. The factors are labeled based on the general principles that seem to link the items within the component: avoidance (five items, with factor loadings ranging from 0.58 to 0.76); adaptive psychological strategies (six items, factor loadings ranging from 0.33 to 0.89); active engagement (five items, factor loadings ranging from 0.47 to 0.89); maladaptive psychological strategies (three items, factor loadings ranging from 0.90 to 0.93); actions to minimize emotional impact (four items, factor loadings ranging from 0.28 to 0.74), and substance use (three items, factor loadings ranging from 0.61 to 0.88). The overall alpha for all items is 0.73; alphas for the subscales varied from 0.49 (for substance use) to 0.88 for maladaptive psychological strategies.

### 3.3 | Correlation between subscales

Correlations between the subscales identified by principal components analysis are displayed in Table 4. The largest correlations were between avoidance and substance use (0.45) and between active engagement and minimizing emotional impact (0.44). In addition, maladaptive psychological strategies had modest correlations with avoidance (0.29) and substance use (0.31).

**TABLE 1** Characteristics of respondents (N = 391).

Category	Variable	N	(%)
Race/ethnicity <sup>a</sup>	Black, Non-Hispanic/Latinx	165	(42.1)
	White, Non-Hispanic/Latinx	99	(25.3)
	Asian, Non-Hispanic/Latinx	28	(7.2)
	Hispanic/Latinx	77	(19.7)
Gender	Male	51	(13.0)
	Female	339	(86.7)
	Nonbinary	1	(0.3)
Age	18–29	114	(29.2)
	30–39	97	(24.8)
	40–49	84	(21.5)
	50–59	61	(15.6)
	60 or older	35	(9.0)
Birthplace	United States	302	(77.2)
	United States territory	8	(2.0)
	Other country	81	(20.7)
Education	Some high schools or less	27	(6.9)
	High school / GED	252	(64.4)
	Associate degree from a community college / some college	84	(21.5)
	Bachelor's degree from a college or university	28	(7.2)
Current or most recent LTC work setting	NH	175	(44.8)
	AL community	139	(35.5)
	Both a NH and an AL community	77	(19.7)
Certification	CNA only	189	(48.3)
	Medication technician/aide	51	(13.0)
	Both CNA and medication technician/aide	79	(20.2)
	Neither	72	(18.4)
No. of years working as a nursing assistant or personal care aide	<1	45	(11.5)
	1–5	114	(29.2)
	6–10	83	(21.2)
	11–20	82	(21.0)
	21+	49	(12.5)
	Over 1 year, but unspecified total	18	(4.6)
Hours worked in LTC in the previous week	< 29 h	40	(10.2)
	30–39 h	81	(20.7)
	40 h	170	(43.5)
	41–50 h	73	(18.7)
	> 50 h	27	(6.9)

Abbreviations: AL, assisted living; CNA, certified nursing assistant; NH, nursing home.

<sup>a</sup>22 participants who self-identified as “other” or “mixed” race were excluded from analyses in this category.

Pearson correlations between the various measures are displayed in Table 5. Wide variation is noted, with most correlations in the modest ranges, and no correlations of 0.80 or higher, suggesting independence of the identified measures. Measures with the highest correlations tended to be located within the factors identified in Table 3.

## 4 | DISCUSSION

This paper reports the range of coping strategies used by a diverse sample of 391 professional caregivers to deal with work-related stress and describes a new measure—the Long-Term Care Cope (LTC

**TABLE 2** Psychometric properties of work stress coping strategies of professional caregivers in NHs and AL (N = 391).

Item or subscale	No. of items	Alpha	Frequency of use <sup>a</sup>	Item(s)
Acceptance <sup>b</sup>	2	0.52	58% 73%	I learn to live with it I accept the reality of what is happening
Active coping <sup>b</sup>	2	0.62	76% 67%	I take action to try to make the situation better I concentrate my efforts on doing something about the situation
Behavioral disengagement <sup>c</sup>	4	0.60	47% 51% 38% 13%	I take a short break, such as going outside or to the break room and putting my head down. I eat or drink something, for example, cookies coffee, or soda I do something regularly after a work shift to let go of stress I keep something with me that I can touch or squeeze to relieve stress, such as a rubber stress ball or rosary beads
Cognitive disengagement <sup>c</sup>	2	0.71	17% 10%	I give up trying to deal with it I give up attempting to cope
Common humanity <sup>d</sup>	3	0.89	85% 87% 92%	When I feel I'm not "good enough" in some way, I try to remind myself that other people sometimes feel this way too. When I'm sad or unhappy, I remember that other people also feel this way at times When things aren't going well, I keep in mind that life is sometimes hard for everyone.
Denial <sup>b</sup>	2	0.60	16% 25%	I refuse to believe what is happening I say to myself "this isn't real"
Humor <sup>b</sup>	2	0.74	34% 22%	I make jokes about it I make fun of the situation
Irritability/venting <sup>c</sup>	3	0.63	20% 8% 4%	I say things to let my unpleasant feelings escape I am irritable toward my coworkers I am irritable toward the residents I care for
Isolation <sup>  </sup>	3	0.90	68% 60% 63%	When I feel sad or down, it seems like I'm the only one who feels that way. When I feel bad or upset, I tend to feel most other people are probably happier than I am. When I'm really struggling, I tend to feel like other people are probably having an easier time of it.
Leaving or avoiding work <sup>f</sup>	1	NA	8%	I call out from work or leave work early
Mindfulness <sup>d</sup>	3	0.81	90% 93% 93%	When something upsetting happens, I try to see things as they are without blowing it out of proportion. When something upsets me, I try to notice my emotions and not get carried away by them. When something difficult happens, I try to see things clearly without exaggerations
Over identification <sup>d</sup>	3	0.85	82% 72% 71%	When I feel frustrated or disappointed, I think about it over and over again When I'm feeling bad or upset, I can't think of anything else at the time When I fail at something, I get really upset about it.
Planning <sup>b</sup>	2	0.54	71% 72%	I think hard about what steps to take I try to come up with a plan about what to do
Positive reframing <sup>b</sup>	2	0.73	65% 67%	I look for something good in what is happening I try to see it in a different light, to make it seem more positive
Religious coping <sup>e</sup>	3	0.92	73% 68% 69%	I seek God's love and care I seek help from God in letting go of my anger I try to see how God might be trying to make me stronger through it
Resilient coping <sup>e</sup>	2	0.82	95% 94%	Regardless of what happens to me, I believe I can control my reaction to it. I believe I can grow in positive ways by dealing with difficult situations.
Seeking reassignment <sup>f</sup>	1	NA	12%	I try to get reassigned to different residents or a different hall

(Continues)



**TABLE 2** (Continued)

Item or subscale	No. of items	Alpha	Frequency of use <sup>a</sup>	Item(s)
Self-blame <sup>b</sup>	2	0.76	19% 25%	I blame myself for things that happen I criticize myself
Self-distraction <sup>c</sup>	3	0.54	64% 52% 38%	I turn to other activities to take my mind off things, such going to movies, watching TV, reading, daydreaming, sleeping, or shopping I look for something to take my mind off things I do something regularly after a work shift to let go of stress
Self-judgment <sup>d</sup>	3	0.87	66% 70% 73%	When I notice things about myself that I don't like, I get really frustrated. I get mad at myself for not being better at some things. I'm really hard on myself when I do something wrong.
Self-kindness <sup>d</sup>	3	0.84	91% 83% 80%	I try to be kind and supportive to myself when I'm having a hard time. I'm kind to myself when things go wrong and I'm feeling bad I try to be understanding and patient with myself even when I mess up.
Smoking <sup>f</sup>	1	NA	19%	I smoke cigarettes
Substance use <sup>c</sup>	3	0.68	4% 6% 7%	I use alcohol or other drugs to help me get through it I use alcohol or other drugs to make myself feel better I take one or more prescription medications such as a tranquilizer or antidepressant
THC or marijuana use <sup>f</sup>	1	NA	5%	I take one or more nontraditional medications to relieve stress, such as edibles containing CBD or THC, or smoking marijuana before work
Using emotional support <sup>b</sup>	2	0.54	48% 52%	I get comfort and understanding from someone I get support from others
Using instrumental support <sup>c</sup>	3	0.69	50% 50% 45%	I try to get advice or help from other people about what to do I get help and advice from other people I try to involve one or more supervisors in helping solve problems

Abbreviations: AL, assisted living; NH, nursing home; LTC, long-term care.

<sup>a</sup>Proportion of respondents employing this strategy more often than "A little" on two slightly different 4-point scales, one for Brief Cope items and one for Religious Coping, and more than "Not very often" on one 5-point scale for Self-compassion items (see below). Consequently, these numbers represent general trends but are not strictly comparable because of wording differences across instruments.

<sup>b</sup>Scales and items identical to those in brief cope scale other than minor wording changes to be more appropriate for the long-term care work setting.<sup>16</sup>

<sup>c</sup>Scales and items that contain elements of the brief cope instrument but that have been markedly altered to fit the long-term care population and setting, including adding and/or deleting items and rewording items to be more appropriate for the setting.<sup>16</sup>

<sup>d</sup>Scales and items identical to those in the mindful self-compassion for youth scale.<sup>23</sup>

<sup>e</sup>Modified and shortened from items in two versions of the resilient coping scale.<sup>21,22</sup>

<sup>f</sup>New items based on interviews with project advisors (nursing assistants or persons who had recently worked as nursing assistants), and which did not factor well with any existing scales/indexes.

<sup>g</sup>Modified and shortened from items in two versions of the religious coping scale.<sup>19,20</sup>

Cope)—of 26 distinct coping strategies, which aggregates into six factors. It can be used to evaluate strategies specifically used in this workforce, with the goal of better understanding and, ultimately, developing strategies to improve individual workers' coping skills and well-being. The six factors are avoidance, adaptive psychological strategies, active engagement, maladaptive psychological strategies, minimizing emotional impact, and substance use (Table 3). Avoidance strategies include denial, disengaging emotionally, irritability/venting, leaving work, and trying to get reassigned to different residents. Somewhat similar but distinctly different approaches are grouped into two additional factors: minimizing emotional impact, which includes self-distraction, acceptance, humor, and behavioral disengagement; and substance use (smoking, THC/marijuana, or other substances, including prescription drugs). A fourth strategy involves maladaptive psychological strategies of isolation, overidentification, and self-judgment. Distinctly different are active engagement and adaptive psychological

strategies. Active engagement includes the use of instrumental and/or emotional support, planning, positive reframing, and active coping; adaptive psychological strategies include mindfulness, self-kindness, common humanity, resilient coping, religious coping, and the absence of self-blame.

Frequency of use data from Table 2 makes it clear these professional caregivers employ many different approaches to contend with work-related stresses. Based on principal components analysis, only one of the six categories of coping styles—active engagement—involves actions directed at solving problems and seeking solutions (Table 3). The others describe a wide range of behaviors used by professional caregivers to sidestep directly confronting workplace-related stressors.

The literature on coping provides considerable support for the typology that resulted from the principal components analysis. Based on the pioneering work of Lazarus and Folkman, coping can be viewed

**TABLE 3** Factor analysis of coping items, resulting in six subscales.<sup>a</sup>

Factor/subscale. (alpha)	Items	Loadings					
		1	2	3	4	5	6
Avoidance (0.74)	Trying to get reassigned	0.76					
	Denial	0.75					
	Irritability/venting	0.72					
	Cognitive disengagement	0.62				0.31	
	Leaving or avoiding work	0.58					
Adaptive psychological strategies (0.75)	Mindfulness		0.89				
	Self-kindness		0.89				
	Common humanity		0.84				
	Resilient coping		0.53				
	Religious coping	0.28	0.42				
	Absence of self-blame		0.33		-0.31		
Active. engagement (0.80)	Using instrumental support			0.87			
	Using emotional support			0.87			
	Planning			0.67			
	Positive reframing			0.60		0.27	
	Active coping			0.47		0.32	
Maladaptive psychological strategies (0.88)	Isolation				0.93		
	Overidentification				0.92		
	Self-judgment				0.90		
Minimizing emotional impact (0.64)	Self-distraction	0.27				0.74	
	Acceptance					0.67	
	Humor					0.66	
	Behavioral disengagement					0.28	0.26
Substance use (0.49)	Smoking cigarettes	-0.31					0.88
	THC or marijuana use						0.72
	Substance use	0.27					0.61

Note: Overall alpha for all items is 0.73.

<sup>a</sup>Extraction method: principal component analysis. Rotation method: promax. Factor loadings below 0.25 were omitted.

**TABLE 4** Subscale correlation matrix.

Component	Avoidance	Adaptive mental/ emotional strategies	Active engagement	Maladaptive mental/ emotional strategies	Minimize emotional impact	Substance use
Avoidance	1.00					
Adaptive mental/ emotional strategies	-0.20	1.00				
Active engagement	0.01	0.36 <sup>a</sup>	1.000			
Maladaptive mental/ emotional strategies	0.29 <sup>a</sup>	-0.15	0.07	1.000		
Minimize emotional impact	0.17	0.19	0.44 <sup>a</sup>	0.22	1.000	
Substance use	0.45 <sup>a</sup>	-0.18	0.09	0.31	0.24	1.000

<sup>a</sup>Indicates correlations between components > 0.25.



**TABLE 5** Correlation between coping items.

Strategy	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
A. Active coping																									
B. Planning	0.56 <sup>a</sup>																								
C. Using instrumental support	0.42 <sup>a</sup>	0.43 <sup>a</sup>																							
D. Resilient coping	0.30 <sup>a</sup>	0.18	0.21																						
E. Positive reframing	0.53 <sup>a</sup>	0.59 <sup>a</sup>	0.45 <sup>a</sup>	0.36 <sup>a</sup>																					
F. Religious coping	0.13	0.18	0.25	0.20	0.23																				
G. Using emotional support	0.33 <sup>a</sup>	0.39 <sup>a</sup>	0.64 <sup>b</sup>	0.25	0.38 <sup>a</sup>	0.14																			
H. Mindfulness	0.31 <sup>a</sup>	0.19	0.15	0.56 <sup>a</sup>	0.26	0.25	0.16																		
I. Self-kindness	0.29	0.15	0.15	0.45 <sup>a</sup>	0.23	0.21	0.014	0.71 <sup>b</sup>																	
J. Common humanity	0.29	0.14	0.22	0.47 <sup>a</sup>	0.30	0.24	0.24	0.68 <sup>b</sup>	0.56 <sup>a</sup>																
K. Acceptance	0.36 <sup>a</sup>	0.35 <sup>a</sup>	0.26	0.19	0.42 <sup>a</sup>	0.11	0.29	0.17	0.09	0.15															
L. Irritation/Venting	0.10	0.06	0.010	-0.13	-0.02	0.06	0.11	-0.13	-0.02	-0.03	0.01														
M. Self-judgment	0.03	0.06	0.06	-0.15	-0.04	-0.04	0.07	-0.11	-0.14	0.03	0.15	0.20													
N. Self-blame	0.06	0.14	0.10	-0.19	-0.01	-0.12	0.15	-0.17	-0.27	0.11	0.11	0.30	0.45 <sup>a</sup>												
O. Isolation	0.08	0.11	-0.00	-0.11	-0.06	-0.00	0.03	-0.09	-0.06	0.06	0.04	0.20	0.77 <sup>b</sup>	0.33 <sup>a</sup>											
P. Over-identification	0.04	0.21	-0.03	-0.08	-0.07	-0.05	0.05	-0.05	-0.05	0.02	0.09	0.16	0.73 <sup>b</sup>	0.35 <sup>a</sup>	0.75 <sup>b</sup>										
Q. Humor	0.18	0.14	0.13	-0.01	0.16	0.04	0.11	-0.02	0.00	0.01	0.24	0.26	0.23	0.28	0.18	0.20									
R. THC or marijuana use	0.06	0.01	0.08	-	0.02	0.07	0.08	-0.02	0.04	0.05	0.06	0.32	0.15	0.26	0.12	0.03	0.22								
S. Smoking	0.04	0.07	0.05	-0.11	-0.02	0.00	0.03	-0.09	-0.06	-0.01	0.10	0.21	0.17	0.23	0.11	0.16	0.14	0.30 <sup>a</sup>							
T. Self-distraction	0.34 <sup>a</sup>	0.33 <sup>a</sup>	0.27	0.13	-0.28	0.08	0.23	0.16	0.16	0.16	0.33 <sup>a</sup>	0.22	0.13	0.21	0.13	0.17	0.36 <sup>a</sup>	0.07	0.05						
U. Substance use	0.04	0.00	0.09	-0.22	-0.11	-0.09	0.11	-0.14	-0.09	-0.07	0.03	0.46 <sup>a</sup>	0.21	0.35 <sup>a</sup>	0.20	0.21	0.26	0.45 <sup>a</sup>	0.34 <sup>a</sup>	0.15					
V. Denial	0.05	0.06	0.09	-0.10	-0.02	0.11	0.09	-0.04	-0.01	-0.03	0.02	0.46 <sup>a</sup>	0.15	0.19	0.16	0.15	0.17	0.24	0.09	0.26	0.32 <sup>a</sup>				
W. Behavioral disengagement	0.29	0.33 <sup>a</sup>	0.33 <sup>a</sup>	0.06	-0.21	0.15	0.27	0.05	0.09	0.25	0.26	0.33 <sup>a</sup>	0.26	0.25	0.23	0.20	0.27	0.21	0.31	0.42 <sup>a</sup>	0.25	0.23			
X. Cognitive disengagement	-0.04	-0.05	-0.02	-0.23	-0.17	0.04	-0.01	-0.17	-0.15	-0.14	0.04	0.46 <sup>a</sup>	0.23	0.42 <sup>a</sup>	0.20	0.19	0.28	0.30 <sup>a</sup>	0.13	0.18	0.39 <sup>a</sup>	0.49 <sup>a</sup>	0.19		
Y. Leaving or avoiding work	0.01	0.02	0.06	-0.10	-0.03	0.01	0.11	-0.12	-0.10	-0.08	0.03	0.49 <sup>a</sup>	0.20	0.35 <sup>a</sup>	0.20	0.14	0.21	0.29	0.10	0.16	0.40 <sup>a</sup>	0.25	0.23	0.36 <sup>a</sup>	

Note: Correlation coefficient.

Strength of association:

<sup>a</sup>Pearson's  $R = 0.30-0.59$ .

<sup>b</sup>Pearson's  $R \geq 0.60$ .

into two general categories, problem-focused, and emotion-focused.<sup>17</sup> These are additionally divided by some authors into “positive” and “negative” behaviors—though so-called negative behaviors such as avoidance may be quite helpful when change in the stressor is difficult or impossible to achieve. Another typology contrasts problem-focused (instrumental) strategies, which seek a change or solution to the source(s) of stress, with emotion-focused (palliative) strategies, which focus on feelings that arise from stress and adversely impact the individual<sup>25</sup>; this too is represented well by several of the factors identified in the analysis. Still another typology identifies five patterns of coping with work-related stress that largely mirror the results of our principal components analysis, three of which are individual (avoidance coping, active coping, passive coping) and two of which are socially focused (confiding in others, and social leisure activities).<sup>26</sup>

Whether one method of coping is more successful than another is unclear and may depend on the individuals' resources and position, the work setting, and the sources of stress themselves. One longitudinal study of coping styles of case managers hired to work with seriously and persistently mentally ill clients concluded that control-oriented coping strategies clearly acted as work stress buffers and that those who relied exclusively on avoidance coping strategies reported higher general levels of negative consequences 3 months later.<sup>27</sup> Contrasting results were, however, found in a longitudinal study of construction machine company workers, which found that a combination of high problem-focused coping and high distraction may lead to lower stress responses and better performance in high-job-stress situations than the combination of high problem-focused coping and low distraction.<sup>28</sup> Professional caregivers in NHs and AL communities tend to have limited ability to change work systems and, therefore, may tend to be best served by employing a combination of active engagement and indirect, disengaged coping strategies. The optimal set of strategies would depend on the individual's cultural and personal background and the specifics of the job situation, such as the leadership style of managers in their workplace.<sup>29</sup>

The measures and items developed and validated by this research require further study. Among the areas we suggest for further research include determining their distributions in larger populations, further examining the construct validity of the subscales, examining their relationship to outcomes such as staff turnover and job satisfaction, and determining whether they are sensitive to change over time. Furthermore, it is possible that in our quest to be parsimonious, the modest number of items in each measure may prove insufficient when applied to other settings; however, the fact that we grounded this effort with established short measures, only making changes when supported by analyses, provides support for the robustness of our results.

Research on stress and coping in the professional caregiver workforce is relatively new, and in that context this work is preliminary. Nevertheless, the LTC Cope represents the best available resource on evaluating coping in this critical workforce, and in that context, we recommend that some or all items be used within the LTC industry as well as in future research. Use of this tool could identify prevalent coping strategies in specific workplaces, which could then point to high-yield interventions. For example, if strategies involving avoidance

of both work and of supervisors, an appropriate intervention might address the workplace hierarchy. Alternatively, if many staff inclined toward mindfulness-related approaches, a formal mindfulness training program might enhance these strengths. In this manner, this tool could help identify worker behaviors that could either be supported or, if appropriate, reduced through education and training, as our group has done with mindful self-compassion training.<sup>30</sup>

## ACKNOWLEDGMENTS

We thank the professional caregivers who provided data and who served as project advisors, and the following individuals who assisted in the development of the study design: Cheryl Giscombe, PhD, RN, MSN; Johanna Silbersack Hickey, MSW; Christopher Wretman, PhD; Mae Lynn Reyes-Rodriguez, PhD; and Lynne Sampson, PhD. This work was supported by the Alzheimer's Association (Grant #ARCOM-22-879224).

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest. Author disclosures are available in the [Supporting Information](#).

## CONSENT STATEMENT

All human subjects provided informed consent, as per federal guidelines. The study was carried out under IRB Exemption #22-01623 from the Office of Human Research Ethics of the University of North Carolina at Chapel Hill.

## ORCID

Philip D. Sloane  <https://orcid.org/0000-0002-7194-4995>

## REFERENCES

1. PHI. *Direct Care Workers in the United States—2021*. PHI. Accessed April 24, 2023. <https://www.phinational.org/resource/direct-care-workers-in-the-united-states-key-facts-2/>
2. National Academies of Sciences, Engineering, and Medicine. Committee on the Quality of Care in Nursing Homes. *The National Imperative to Improve Nursing Home Quality: Honoring Our Commitment to Residents, Families, and Staff*. The National Academies Press; 2022.
3. American Health Care Association. *State of the nursing home industry: Dec 2022 survey*. AHCA. Accessed January 23, 2023. <https://www.ahcancal.org/News-and-Communications/Fact-Sheets/FactSheets/SNF-Survey-December-2022.pdf>
4. National Consumer Voice. *High staff turnover: a job quality crisis in nursing homes*. National Consumer Voice; 2022. Accessed April 24, 2023. [https://theconsumervoic.org/uploads/files/issues/High\\_Staff\\_Turnover-A\\_Job\\_Quality\\_Crisis\\_in\\_Nursing\\_Homes.pdf](https://theconsumervoic.org/uploads/files/issues/High_Staff_Turnover-A_Job_Quality_Crisis_in_Nursing_Homes.pdf)
5. Kusmaul N, Waldrop DP. Certified nursing assistants as frontline caregivers in nursing homes: Does trauma influence caregiving abilities?. *Traumatology*. 2015;21(3):251-258.
6. Sloane PD, Williams CS, Zimmerman S. Immigrant status and intention to leave of nursing assistants in U.S. nursing homes. *J Am Geriatr Soc*. 2010;58:731-737.
7. Sloane PD, Yearby R, Konetzka RT, Li Y, Espinoza R, Zimmerman S. Addressing systemic racism in nursing homes: a time for action. *J Am Med Dir Assoc*. 2021;22:886-892.
8. Travers JL, Teitelman AM, Jenkins KA, Castle NG. Exploring social-based discrimination among nursing home certified nursing assistants. *Nurs Inq*. 2020;27(1):e12315.

9. DePasquale N, Davis KD, Zarit SH, Moen P, Hammer LB, Almeida DM. Combining formal and informal caregiving roles: the psychosocial implications of double- and triple-duty care. *J Gerontol B Psychol Sci Soc Sci*. 2016;71:201-211.
10. Scales K. Transforming direct care jobs, reimagining long-term services and supports. *J Am Med Dir Assoc*. 2022;23:207-213.
11. Zimmerman S, Sloane PD, Rashik MI. Let's rename nursing assistants what they are: professional caregivers. *J Am Med Dir Assoc*. 2022;23:1755-1756.
12. Kemper P, Brannon D, Barry T, Stott A, Heier B. Implementation of the Better Jobs Better Care demonstration: lessons for long-term care workforce initiatives. *Gerontologist*. 2008;48(Spec No 1):26-35.
13. Folkman S, Moskowitz JT. Coping: pitfalls and promise. *Annu Rev Psychol*. 2004;55:745-774.
14. Hu T, Zhang D, Wang J. A meta-analysis of the trait resilience and mental health. *Person Individ Differ*. 2015;76:18-27.
15. Lathren C, Sheffield-Abdullah K, Sloane PD, et al. Certified nursing assistants' experiences with self-compassion training in the nursing home setting. *Geriatr Nurs*. 2021;42:1341-1348.
16. Carver CS. You want to measure coping but your protocol's too long: consider the brief COPE. *Int J Behav Med*. 1997;4:92-100.
17. Folkman S, Lazarus RS. An analysis of coping in a middle-aged community sample. *J Health Soc Behav*. 1980;21:219-239.
18. Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: a theoretically based approach. *J Pers Soc Psychol*. 1989;56:267-283.
19. Pargament K, Feuille M, Burdzy D. The brief RCOPE: current psychometric status of a short measure of religious coping. *Religions*. 2011;2(1):51-76.
20. Pieper JZT, van Uden MHF, van der Valk L. Praying as a form of religious coping in Dutch highly educated Muslim women of Moroccan descent. *Arch Psychol Relig*. 2018;40(2-3):141-162.
21. Sinclair VG, Wallston KA. The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*. 2004;11:94-101.
22. Windle G, Bennett KM, Noyes J. A methodological review of resilience measurement scales. *Health Qual Life Outcomes*. 2011;9:8.
23. Neff KD, Bluth K, Tóth-Király I, et al. Development and validation of the self-compassion scale for youth. *J Pers Assess*. 2021;103:92-105.
24. Tarlow BJ, Wisniewski SR, Belle SH, Rupert M, Ory MG, Gallagher-Thompson D. Positive aspects of caregiving. *Res Aging*. 2004;26:429-453.
25. Schaufeli WB. *Coping with job stress*. *International Encyclopedia of Social and Behavioral Sciences*. 2d ed. Elsevier; 2015.
26. Somers MJ, Casal J. Patterns of coping with work-related stress: a person-centred analysis with text data. *Stress Health*. 2021;37:223-231.
27. Koeske, GF, Kirk SA, Koeske RD. Coping with job stress: which strategies work best?. *J Occup Organ Psychol*. 1993;66:319-335.
28. Beh LS, Loo LH. Job stress and coping mechanisms among nursing staff in public health services. *Int J Acad Res Bus Soc Sci*. 2012;2(7):131-176.
29. Castle NG, Decker FH. Top management leadership style and quality of care in nursing homes. *Gerontologist*. 2011;51:630-642.
30. Bluth K, Lathren C, Silbersack Hickey JVT, Zimmerman S, Wretman CJ, Sloane PD. Self-compassion training for certified nurse assistants in nursing homes. *J Am Geriatr Soc*. 2021;69:1896-1905.

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**How to cite this article:** Sloane PD, Zimmerman S, Efrid-Green L, et al. A new measure of professional caregiver coping in long-term care: The LTC COPE. *Alzheimer's Dement*. 2024;10:e70010. <https://doi.org/10.1002/trc2.70010>