

Measuring Stress in a Clergy Population: *Lessons Learned from Cognitive Interview testing of the Perceived Stress Scale with Clergy*

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Abstract

The most commonly used self-report stress measure is the ten-item Perceived Stress Scale (PSS), first published by Cohen in 1983. The PSS it seeks to measure one's appraisal of stress, helplessness and self-efficacy. We determined how Christian clergy might respond to the PSS by conducting cognitive interview testing with a sample of twelve United Methodist pastors. Interviews were audiotaped and summarized, with content analysis conducted on the summaries. Data saturation was achieved. Participants reported strong negative reactions to PSS language like "upset" and "angered." Although the PSS considers higher perceived control to be indicative of less stress, participants reported that they consider accepting lack of control as a sign of faith. Participants reported fears of being poorly regarded as religious leaders upon endorsing items like lack of ability to "handle personal problems." Participants indicated that their theological beliefs of seeking God's way and being faithful conflicted with items such as "things are going your way" and "you could not overcome." When answered by Christian pastors, the majority of PSS items may be subject to under-reporting and response bias. Future research should identify valid stress measures for Christian clergy and assess the validity of the PSS in non-clergy Christian populations.

KEYWORDS

Perceived Stress Scale, clergy, measurement, stress, religion/spirituality, Christian

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Introduction

Despite notable spiritual coping strategies, clergy experience many work-related stressors, including responding to parishioners' crises, church conflict, performance pressure, and boundary ambiguity [1, 2, 3, 4]. Additionally, clergy report that their stressors outstrip their coping resources. To better understand the impact of stress on clergy, we sought to identify a valid, reliable, and culturally appropriate measurement tool, a task that proved more challenging than anticipated [5,3].

Although ubiquitous in popular dialogue, stress is difficult to define. In the past several decades, stress models have evolved from the simple stimulus-response model to the current dynamic, psychobiological model with multiple inter-related variables (Monroe, 2008). Even though researchers' theoretical understanding of stress has improved, their ability to measure stress has made little concurrent progress. Indeed, the most commonly used measure of stress, the Perceived Stress Scale (PSS), was first published in 1983 and has been only slightly modified since. Over the past 30 years, the PSS has been translated into 25 languages and used in hundreds of published articles [7, 8].

The popularity of the PSS is not without reason. When developed, it represented a significant improvement over Life Events checklists, which were limited by their inability to assess a particular event's impact on a given individual [7, 9]. The PSS was the first instrument that measured outcomes of cognitive appraisal, a construct first described by Lazarus in the 1960s [10]. Appraisal is a cognitive process by which individuals weigh the risk stressors pose against available coping resources, resulting in a person-specific assessment of threat [11]. The PSS items operationalize felt threat as the extent to which respondents feel their lives to be unpredictable, uncontrollable, or overwhelming, the sum of which is "perceived stress" [7]. Exploratory factor analysis of the ten-item PSS-10 found a two-factor structure of the six-item Perceived Helplessness Subscale ($\alpha=0.85$) and the four-item Perceived Self-efficacy Subscale ($\alpha=.89$) [12]. When tested across twelve studies, the PSS-10 demonstrated strong internal consistency ($\alpha=0.74-0.91$) [13].

When choosing a stress measure for our clergy population, we identified the PSS for its brevity and sound validation history. However, we recognized that the PSS might be limited by its reliance on a potentially outdated definition of stress that only includes appraisal theory; other factors affecting the stress response, such as physical and emotional resilience, are not included. Additionally, the PSS utilizes only two indicators—perceived helplessness and perceived self-efficacy—of the appraisal construct, when there are likely many. Variables such as positive emotions (interest, pride, humor, love), meaning (religion, spirituality), physical resources (exercise, nutrition), and acceptance also impact the stress response, yet these constructs are untapped by the PSS. In addition to these concerns, we wondered whether PSS terminology could be interpreted differently across culturally diverse populations [14]. The purpose of this study was to use cognitive interviewing to: 1) assess the PSS-10's content validity in a clergy population with deeply-held Christian values and 2) identify the PSS-10 items with the greatest likelihood of causing response error.

Methods

Content Validity, Response Error, and Cognitive Interviewing

Content validity is the extent to which the items that compose a questionnaire sufficiently reflect the construct being measured [15]. There are many causes of weak content validity, including failure to represent all dimensions of a construct, ambiguous terminology in item design, and inadvertent use of strongly connotative terms [16, 17]. The presence of any one of these content validity issues can result in survey responses that do not accurately reflect the true values of what is being measured, a problem called response error [18]. We chose to investigate the content validity and resultant response error of the PSS-10 using cognitive interviewing.

Cognitive interviewing is a qualitative data collection method that focuses on understanding how respondents interpret and respond to survey questions [19]. Based on Tourangeau's model of the thought process, the method explores item comprehension, processes used to calculate and select response options, and contextually-specific interpretations of survey items [20]. The technique uses open-ended prompts that ask the respondent to "think aloud" about what influenced their answer [16, 21]. For example, the PSS asks, "In the last month, how often have you been upset because of something that happened unexpectedly?" After the respondent answers the survey item, a cognitive interviewer might ask: "What were you thinking as you answered the question? What does the term 'upset' mean to you? What came to mind when you thought about 'things happening unexpectedly'?" Once sources of response error are identified, error can be minimized by revising the survey administration process or the survey questions themselves. In practice, seven to ten interviews are required in order to reach consensus on the content validity of survey items [16].

Sample and Recruitment

Eligible participants were United Methodist clergy who 1) lived within 50 miles of our university, 2) had served as active clergy in the past three years, and 3) were enrolled in Spirited Life, a wellness intervention funded by The Duke Endowment for United Methodist clergy in North Carolina. We invited eligible clergy via email to participate in the study and scheduled interviews with all respondents. Participants were offered \$50 compensation for participation.

Data Collection

Cognitive interviews, lasting between 45 and 90 minutes, took place in a private room in the respondent's home or church. Two researchers attended each interview, one conducting the interview and one taking notes. We asked participants general follow-up probes (i.e., "Were there any words or phrases that were confusing to you?") and item-specific probes (i.e., "In your own words, what does it look and feel like to be angry."). We documented responses through audio recording and handwritten notes. We stopped conducting interviews after we were certain data saturation, i.e., when no further new or relevant information emerges, was achieved [22].

Analysis

An interviewer and notetaker independently completed summaries for each interview, highlighting direct quotes when they were recorded. Then, we cross-checked the summaries for accuracy and completeness. When needed, the interviewer supplemented summaries with direct quotes after reviewing the audio files. Because of the targeted nature of cognitive

interviewing, word-for-word transcripts were not required for data analysis. The interviewer performed content analysis of the interview summaries, systematically coding and categorizing the data by topic [16]. Topically grouped responses were carefully examined to identify patterns and themes in the data [23]. The study was approved by the Duke University Institutional Review Board and all participants provided informed consent.

Results

Twelve pastors completed interviews. The sample was composed of 67% men, with an average age of 53 and average ministerial experience of 24 years. Item-by-item results are summarized below.

PSS Item 1. In the last month, how often have you been upset because of something that happened unexpectedly?

The majority of pastors (9/12) defined “upset” using highly emotional language: “feeling blown away,” “emotionally distraught,” “angry to the point of losing control,” “needing to cry,” “like drowning,” or “lacking hope or peace.” One pastor said the word has a “negative, angry flavor” and feels “a little bit judgmental.”

After defining “upset” as a relatively intense emotional experience, several pastors (4/12) reported that they did not experience the emotion, or if they did, it was in a much diminished form. One pastor attributed this to his “hope, deep abiding peace, and spiritual maturity.” Two pastors discussed the lack of feeling upset as a vocational skill a person must possess or develop over time to have a healthy ministry. To prevent feeling upset, one pastor stated his goal to be “invested yet withdrawn” from the stressors in his ministry. Another pastor saw being upset as a breach of professional boundaries.

When thinking about the things that “happen unexpectedly,” more pastors thought exclusively of work (6/12) than of both work and home (3/12). Additionally, several pastors (4/12) noted that they had learned to expect the unexpected and therefore were not often upset by unexpected happenings. One pastor said he starts each day acknowledging that things will happen that he cannot plan for.

Overall, stress might be under-reported in this item because of the strong, negative emotional interpretation of the word “upset,” the beliefs of some pastors that being in control of emotions is an aspect of spiritual and vocational maturity, and the pervasiveness of unexpected happenings in the daily life of a minister. Additionally, the pastors’ focus on work rather than the entirety of their lives when answering the question could omit a number of stressors that would otherwise be incorporated into a pastor’s response.

PSS Item 2. In the last month, how often have you felt that you were unable to control the important things in your life?

Pastors (6/12) described lack of personal control as normal, both in and outside of their work. Examples included lack of control over church leadership decisions, appointments to new churches, retirement issues, parishioners’ problems, and their own health issues. One pastor stated that even when things seemed under control, they usually were not.

Though two pastors remarked that being unable to control important things caused some stress, the majority of pastors (8/12) described a deep acceptance of their lack of control that was rooted in Christian faith. One pastor described how she had “given up” control of her life

to God. When she felt out of control, she asked, "How can I best manage this to allow God to do what He does?" Another pastor described "coming to terms" with his lack of control. Another said his "need to control" was diminished because he trusted God. He believed it healthy to relinquish control and experienced inner peace when he did so.

Two pastors pointed out that giving up control was not always simple. One said, "Clergy want and like control. You are supposed to feel peace because God is in control. Pastors are well-trained from a theological perspective to say that they have no control. Still, people want pastors to be in control." Another pastor said she struggled with wanting to control things that she should not. Accepting her lack of control caused emotional relief. She attributed the acceptance to strong faith and greater maturity.

The Christian emphasis on relinquishing control makes answering this item confusing for pastors and undercuts its validity. Additionally, pastors might be prone to under-report stress caused by lack of control because doing so might cast doubt on their faith.

PSS Item 3. In the last month, how often have you felt nervous and "stressed"?

Pastors answered this question more easily than other PSS items. They defined "nervous" differently from "stressed." All pastors (8/12) who offered a definition for "nervous" used language associated with lower levels of anxiety: "jittery," "a little scared," "anxiety," "on edge," and "butterflies." "Stressed," alternatively, was defined as more emotionally intense: "getting wound up," "losing sleep at night," "it takes over," "you cannot handle it," "fear," "tears," and "being unable to cope." Several pastors (5/12) used depression and anger language in their stress definitions: "melancholy," "depressed," "sad," "frustrated," "feelings of inadequacy," "anger," and "shouting." One pastor called the term "stressed" a "heavy word." Another pastor said he did not often feel stressed, but when he did it was a "system shutdown."

The differing definitions of "nervous" and "stressed" did not always trouble respondents. Five pastors said they felt the terms, though different, were harmonious. Three pastors ignored the word "nervous" and focused on the word "stressed" when answering. Defining stress as relatively emotionally intense might make it less likely that pastors would endorse the item. One pastor said answering this question felt like he was "confessing to stress."

PSS Item 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

Of the nine pastors who offered a definition for "personal problems," one-third thought primarily of problems at home, one-third thought primarily of work, and one-third thought of problems in both their home and work lives.

The majority of pastors (7/12) included both individual strengths and support network strengths in their definitions of "ability to handle." Two pastors commented that, if they had only considered their own resources, they would have rated their ability to handle problems as lower.

The concepts of control and faith were revisited when answering this question. Two pastors remarked on the impossibility of changing many things and defined "handling things" as doing what you can. A third pastor said, "Handling does not necessarily mean resolving the problem. If it isn't debilitating, you can weather it." Several pastors (4/12) stressed the importance of trusting that things will work out. Faith in God was mentioned as a resource during times when pastors were unsure if they could handle a problem. One pastor said faith was a source of

strength such that even if a problem were unresolved, everything would be okay. Another pastor called his faith “a safety net.” Remembering God’s presence replaced his stress with a sense of peace.

Two pastors commented that it might be difficult for their peers to admit to feeling unable to handle their problems. One thought pastors might be less likely to endorse higher responses because of the question’s emphasis on the individual handling the problem rather than the problem being in God’s hands. Another pastor shared that when he had not handled a situation well, he felt like a failure.

The inclusion of external resources, especially the power of God, in a pastor’s assessment of ability to handle things makes answering this question confusing. Additionally, pastors might be reluctant to report being unable to handle a situation because it might reflect poorly on themselves and/or their faith. Finally, not all pastors thought about all aspects of their lives when they answered, perhaps leading to the omission of important sources of stress. These three factors make it likely that this question would under-estimate levels of perceived stress.

PSS Item 5. In the last month, how often have you felt that things were going your way?

The phrase “going your way” was defined similarly across all 12 pastors: “things are going well,” “feeling positive,” “feeling happy,” “ease of life,” “contentment,” “peaceful feeling,” “good things are happening,” and “reaching goals.” Several pastors (5/12) said the question asked about optimism versus pessimism. One said she answered positively because even when things did not go her way, she had faith. Another said he actively tried to focus only on things that were going his way by praying at the end of each day, “It’s been a good day. It’s been enough.” Another pastor said he believed optimism to be a personality trait that pastors were not more likely to possess than people in other vocations. However, he noted that pastors feel more pressure to appear optimistic.

Despite the generally positive definitions of the term “going your way” several pastors (5/12) were troubled by the phrase. Two described the idea as “selfish,” saying things should be going God’s way according to His will. Another said humility was an important virtue, meaning that “God’s way” should always supersede “my way.” Another pastor said her goal was not for things to go her way but for her to do “what was best for Christ and His ministry in the world.” As such, things could be stressful and still be going her way because they were going God’s way.

This question highlights culturally specific connotations in the phrase “going your way.” For many Christians, setting aside selfish needs is an important aspect of serving God. Pastors’ hesitations in answering this question make it an unpredictable indicator of perceived stress.

PSS Item 6. In the last month, how often have you found that you could not cope with all the things that you had to do?

Most pastors’ (7/12) descriptions of what it means to “not cope” tended toward extreme manifestations of stress: “crying,” “panic attacks,” “falling apart,” “responding to an extreme situation or trauma,” “going within myself,” “like hitting a brick wall,” “anger,” and “having a breakdown.” One pastor said she did not want to answer because it hurt her pride and was “humbling.”

Some pastors (5/12) could not imagine a situation in which they could not cope. Their responses were grounded in language of faith, saying, “There are always ways to cope.” One pastor attributed his enduring ability to cope to having a “laidback” personality.

Pastors' relatively extreme definitions of what it would feel like to "not cope" might lead them to endorse this item at lower levels. As with Item #4, pastors might also hesitate to report difficulties with coping because it might reflect poorly on themselves and/or their faith.

PSS Item 7. In the last month, how often have you been able to control irritations in your life?

There was near universal confusion among pastors (10/12) as to whether the question asked about controlling the irritations themselves or controlling their response to the irritations. Six pastors commented that if the question asks about controlling the irritations, they would answer "never" because irritations are unavoidable. However, if the question is asking about controlling their irritability, they would answer "very often."

This item is unique in that, depending on one's interpretation, the item could lead to an over- or under-estimate of perceived stress.

PSS Item 8. In the last month, how often have you felt that you were on top of things?

Pastors expressed very little confusion or sensitivity when answering this item. When thinking about the things they might be "on top of," some thought mostly of tasks (5/12) but others thought of both tasks and emotions (5/12). One pastor stated that, unlike the term "going your way" from Item #5, the phrase "on top of things" seems to leave space for "how God wants things to be." This item appeared to be one of the better functioning items on the survey for clergy.

PSS Item 9. In the last month, how often have you been angered because of things that were outside of your control?

This item revisits the concept of control first introduced in Item #2. Five pastors gave examples of things outside of their control: "other people's behavior," "decisions made without the pastor's participation," "issues with denominational policies," "spouse's health," and "spouse's actions."

Pastors struggled with the term "angered." Though some (5/12) readily admitted to experiencing anger, many (6/12) talked about their discomfort with anger. One said that experiencing anger was tantamount to lack of faith. Another stated that anger itself was not a sin, but displaced anger was. A third said, "Clergy are not comfortable with anger and don't know what to do with it. The church doesn't allow people to be angry." The exception to this seems to be what several pastors (3/12) called "righteous anger." They stated that righteous anger is "holy anger" at injustices and this very specific type of anger is "constructive and rallying." Pastors said that other types of anger come with "baggage" and suggested that words such as "frustrated," "perturbed," or even "mad" would be easier for them to endorse.

Pastors' aversion to the idea of anger along with the Christian theology of control make it very likely that pastors will under-endorse this item.

PSS Item 10. In the past month, how often have you felt difficulties were piling up so high that you could not overcome them?

The phrase "could not overcome" had deep faith-based meaning for pastors. The majority of pastors (9/12) expressed that, through God, all could be overcome. One pastor noted, "This is despair language, suicide language," while another said, "being unable to overcome means giving up." According to one pastor, "The possibility that you cannot overcome something could be read as antithetical to grace." Another pastor stated that answering positively to Item #10 would be akin to a crisis of faith. There was great agreement among their responses:

"No matter what, God will see you through."

“No difficulty is insurmountable.”

“Even death has been overcome.”

“The God we believe in specializes in life over death.”

Because the word “overcome” is so theologically laden, it is likely that pastors will be unable to endorse this item.

Discussion

Our findings call into question the PSS-10’s validity to measure perceived stress with Christian clergy and potentially with other Christians of strong faith. We identified multiple sources of response error that might result in the under-report of stress if the PSS-10 is used with these respondents.

The first major source of error occurs because of the conflict between psychological and theological meanings of PSS-10 terminology. The psychological construct of locus of control, defined as “the beliefs that individuals hold regarding relationships between actions and outcomes,” has a long history of study dating back to Rotter’s social learning theory [24, 25]. Numerous studies have linked “internal locus of control,” in which an individual perceives himself to be in control of life’s outcomes, to better mental health [26, 27]. These studies have led researchers to assume that high levels of perceived control relate to less stress and more positive mental health, whereas low levels of perceived control relate to more stress and worse mental health. However, research on locus of control has failed to incorporate the perspectives of Christians, who are encouraged to relinquish their worries to God [28]. Along similar lines, Pargament has delineated the concept of positive religious coping, which includes believing that there is God-given meaning in difficult situations [29]. The conflict between psychological and theological perspectives on control emerged as pastors answered four of the PSS items. Consequently, the PSS-10’s language might inadvertently challenge pastors’ deeply held faith beliefs.

The second major source of error results because PSS-10 terminology might threaten the image of moral perfection that pastors often feel pressure to uphold [30]. Endorsing an item that asks about the ability to handle problems might feel like an admission of imperfections that diminishes the worth of the pastor’s ministry. Similarly, admitting to being unable to “cope” or “overcome” portrays a lack of faith.

In summary, the major threats to the content validity of the PSS-10 when used with clergy are the faith-driven conviction that God is in control and the vocational imperative to hide experiences of struggle. As one pastor described, she would feel as if she were “letting God down” if she endorsed some of the questions on the PSS-10. “The calling to ministry means that you have to give it your best. Admitting that you’re struggling is much more complex in ministry than in other types of work.”

We recommend that researchers studying clergy find alternative measures of stress that use less theologically loaded terms with weaker connections to concepts of success or failure. Such an instrument need not be based in appraisal theory like the PSS-10. For example, the Calgary Symptoms of Stress Inventory is a recently developed questionnaire that measures eight dimensions of stress symptoms [31]. It has been successfully used to measure changes in stress symptoms following stress reduction interventions [32, 33, 34, 35, 36]. However, if a

measure based on appraisal theory is desired, the measure might need to expand on the operationalization of the appraisal process beyond the two dimensions (perceived helplessness and perceived self-efficacy) used by the PSS-10. Other possible dimensions might be positive emotions, meaning, physical resources, and acceptance.

The primary strength of this study is our use of the widely accepted technique of cognitive interview testing [19], which offers a rare glimpse into the interaction between the respondent and questionnaire as reported directly by members of our study population. We performed systematic, in-depth, item-by-item analysis to describe the performance of the PSS-10. Although the faith beliefs held by our population of United Methodist clergy may be similar to devout Christians who are not clergy, it is important to note that our findings may not be generalizable to other populations. Future research is needed to assess the potential limitations of the PSS-10 in other Christian populations and to determine valid stress measures for Christian clergy. Measuring stress symptoms and coping in clergy is critically important to understand how clergy can optimally create conditions for their positive mental health, thereby allowing them to perform well and live life to the fullest, even while engaging in a demanding profession.

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References

1. Darling, C. A., Hill, E. W., & McWey, L. M. (2004). Understanding stress and quality of life for clergy and clergy spouses. *Stress & Health, 20*(5), 261-277. doi: 10.1002/smi.1031
2. Lee, C., & Iverson-Gilbert, J. (2003). Demand, support, and perception in family-related stress among Protestant clergy. *Family Relations, 52*(3), 249-257. doi: 10.1111/j.1741-3729.2003.00249.x
3. Proeschold-Bell, R.J., LeGrand, S., James, J., Wallace, A., Adams, C., & Toole, D. (2011). A theoretical model of the holistic health of United Methodist clergy. *Journal of Religion and Health, 50*(3), 700-720. doi: 10.1007/s10943-009-9250-1
4. Wang, P. S., Berglund, P. A., & Kessler, R. C. (2003). Patterns and correlates of contacting clergy for mental disorders in the United States. *Health Services Research, 38*(2), 647-673. doi: [10.1111/1475-6773.00138](https://doi.org/10.1111/1475-6773.00138)
5. Ellison, C. W., & Mattila, W. S. (1983). The needs of evangelical Christian leaders in the United States. *Journal of Psychology and Theology, 11*(1), 28-35.
6. Monroe, S. M. (2008). Modern approaches to conceptualizing and measuring human life stress. *Annual Review of Clinical Psychology, 4*, 33-52. doi: 10.1146/annurev.clinpsy.4.022007.141207

7. Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396.
8. Cohen, S., & Williamson, G.M. (1988). Perceived stress in a probability sample of the U.S. In S. Spacapan, & S. Oskamp (Eds.), *The social psychology of health: Claremont symposium on applied social psychology*. Newbury Park, CA: Sage.
9. Cohen, S. (1986). Contrasting the Hassles Scale and the Perceived Stress Scale: Who's really measuring appraised stress? *American Psychologist, 41*(6), 716-718.
10. Lazarus R. S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
11. Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology, 50*(5), 992.
12. Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10 item version of the Perceived Stress Scale. *Journal of College Counseling, 9*(2), 135-147. doi: 10.1002/j.2161-1882.2006.tb00100.x
13. Lee, E. (2012). Review of the psychometric evidence of the Perceived Stress Scale. *Asian Nursing Research, 6*(2012), 121-127.
14. Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: implications for prevention and treatment. *Annual Review of Clinical Psychology, 1*, 255-291. doi: 10.1146/annurev.clinpsy.1.102803.143948
15. Crocker, L. M., & Algina, J. (1986). *Introduction to classical and modern test theory* (Vol. 6277). New York: Holt, Rinehart and Winston.
16. Brod, M., Tesler, L. E., & Christensen, T. L. (2009). Qualitative research and content validity: Developing best practices based on science and experience. *Quality of Life Research, 18*(9), 1263-1278. doi: 10.1007/s11136-009-9540-9
17. Beatty, P. C., & Willis, G. B. (2007). Research synthesis: The practice of cognitive interviewing. *Public Opinion Quarterly, 71*(2), 287-311. doi: 10.1093/poq/nfm006
18. Hansen, M. H., Hurwitz, W. N., Marks, E. S., & Mauldin, W. P. (1951). Response errors in surveys. *Journal of the American Statistical Association, 46*(254), 147-190.
19. Drennan, J. (2003). Cognitive interviewing: Verbal data in the design and pretesting of questionnaires. *Journal of Advanced Nursing, 42*(1), 57-63. doi: 10.1046/j.1365-2648.2003.02579.x
20. Desimone, L. M., & Le Floch, K. C. (2004). Are we asking the right questions? Using cognitive interviews to improve surveys in education research. *Educational Evaluation and Policy Analysis, 26*(1), 1-22. doi: 10.3102/01623737026001001
21. Willis, G. (1994). Cognitive interviewing and questionnaire design: A training manual. *Cognitive Methods Staff Working Paper Series, No. 7*. Hyattsville, MD: National Center for Health Statistics.

22. Saumure, K., & Given, L. M. (2008). Data saturation. In L. Given (Ed.), *The SAGE encyclopedia of qualitative research methods*. Retrieved from <http://srmo.sagepub.com/view/sage-encyc-qualitative-research-methods/n99.xml>. doi:10.4135/9781412963909.
23. Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage Publications, Inc.
24. Lefcourt, H.M. (1991). Locus of control. In J. P. Robinson, P. R. Shaver, & L. R. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 413-499). San Diego, CA: Academic Press, Inc.
25. Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1-28.
26. Krause, N., & Stryker, S. (1984). Stress and well-being: The buffering role of locus of control beliefs. *Social Science & Medicine*, 18(9), 783-790. doi:10.1016/0277-9536(84)90105-9
27. Seeman, M. (2008). Personal control. *Psychosocial notebook*. University of California San Francisco Research Network on SES & Health. Retrieved January 2, 2014, from <http://www.macses.ucsf.edu/research/psychosocial/control.php#controlbeliefs>.
28. Welton, G. L., Adkins, A. G., Ingle, S. L., & Dixon, W. A. (1996). God control: The fourth dimension. *Journal of Psychology and Theology*, 24(1), 13-25.
29. Pargament, K. I. (1997). *The psychology of religion and coping: theory, research, practice*. New York: The Guilford Press.
30. Blackbird, T., & Wright, P. H. (1985). Pastors' friendships, part I: Project overview and an exploration of the pedestal effect. *Journal of Psychology & Theology*, 13(4), 274-283.
31. Carlson, L. E., & Thomas, B. C. (2007). Development of the Calgary Symptoms of Stress Inventory (C-SOSI). *International Journal of Behavioral Medicine*, 14(4), 249-256. doi: 10.1007/BF03003000
32. Carlson, L.E., & Garland, S. N. (2005). Impact of mindfulness-based stress reduction (MBSR) on sleep, mood, stress and fatigue symptoms in cancer outpatients. *International Journal of Behavioral Medicine*, 12(4), 278-285. doi: 10.1207/s15327558ijbm1204_9
33. Carlson, L. E., Doll, R., Stephen, J., Faris, P., Tamagawa, R., Drysdale, E., & Speca, M. (2013). Randomized controlled trial of mindfulness-based cancer recovery versus supportive expressive group therapy for distressed survivors of breast cancer (MINDSET). *Journal of Clinical Oncology*, 31(25), 3119-3126. doi: 10.1200/JCO.2012.47.5210
34. Garland, S. N., Tamagawa, R., Todd, S. C., Speca, M., & Carlson, L. E. (2013). Increased mindfulness is related to improved stress and mood following participation in a mindfulness-based stress reduction program in individuals with cancer. *Integrative Cancer Therapies*, 12(1), 31-40. doi: 10.1177/1534735412442370
35. Mackenzie, M. J., Carlson, L. E., Ekkekakis, P., Paskevich, D. M., & Culos-Reed, S. N. (2013). Affect and mindfulness as predictors of change in mood disturbance, stress symptoms, and quality of life in a community-based yoga program for cancer survivors. *Evidence-based Complementary and Alternative Medicine*, 2013(2013), Article ID 419496, 13 pages. doi: [10.1155/2013/419496](https://doi.org/10.1155/2013/419496)
36. Zernicke, K. A., Campbell, T. S., Blustein, P. K., Fung, T. S., Johnson, J. A., Bacon, S. L., & Carlson, L. E. (2013). Mindfulness-based stress reduction for the treatment of irritable

bowel syndrome symptoms: A randomized wait-list controlled trial. *International Journal of Behavioral Medicine*, 20(3), 385-396. doi: 10.1007/s12529-012-9241-6