DESIGNING AND VALIDATING A STRESS QUESTIONNAIRE ON INFORMAL CAREGIVERS: BASELINE DATA FROM TELEPHONE INTERVIEWS WITH CAREGIVERS FROM THE FAMILY CAREGIVER SUPPORT PROGRAM AT THE DURHAM COUNCIL FOR SENIOR CITIZENS

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Abstract

Daily caregiving can impact a caregiver's emotional and physical health. Some caregivers receive a break in providing care through respite care programs. The Durham Council of Senior Citizens provides respite care to participants in their Family Caregiver Support Program. The Council of Senior Citizens lacks a method to evaluate stress in their caregivers. Validated instruments that measure stress in the caregiver population include the Zarit Burden Interview (Zarit, Reever, Bach-Peterson, 1980) and the Caregiver Burden Scale (Montgomery, Borgatta, and Borgatta, 2000). The purpose of this study is to design and validate a questionnaire for informal caregivers at the Council for Senior Citizens. The results indicate the Zarit Burden Interview is a valid instrument in measuring stress in this population. No statistically significant relationships concerning participant stress were detected through the administration of the Caregiver Burden Scale. Due to the small population examined, further research is recommended to determine if the Caregiver Burden Scale should be continued as an element of the Family Caregiver Support Program Questionnaire.

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List of Abbreviations

	Abbreviation
Activities of Daily Living	ADL
Caregiver Burden Scale	CBS
Council for Senior Citizens	CSC
Department of Aging and Adults	DAAS
Family Caregiver Support Program	FCSP
Family Caregiver Support Program Questionnaire	FCSPQ
Instrumental Activities of Daily Living	IADL
Zarit Rurden Interview	ZBI

Introduction

Over 22 million Americans act as informal caregivers everyday to elderly or disabled people over 18 years old (Office of Women's Health, 2008). An informal caregiver is defined as someone who provides "extraordinary, uncompensated care, predominantly in the home setting, involving significant amounts of time and energy for months or years, requiring the performance of tasks that may be physically, emotionally, socially, or financially demanding" (Biegel, Sales, and Schultz, 1991). Formal caregivers are those who receive training and certification prior to providing care. Some characteristics of these informal caregivers are:

- Women (approximately 60% of caregivers are women)
- Middle-aged (40-64 years old)* as defined by Collins Dictionary (1999)
- Aging (approximately 13% are over 65 years)
- Currently employed (almost 60% work).

Office of Women's Health, 2008

Daily caregiving impacts a person emotionally and physically due to the demands of caregiving. A recent study analyzed data from 23 studies on caregiver stress from the last 30 years and found that caregivers have 23% more stress hormones and a 15% lower level antibody response than non-caregiver controls (Vitaliano, Zhang, and Scanlan, 2003). Other studies indicate that caregivers are at a higher risk for mortality than non-caregiver controls (Schulz and Beach, 1999), and experience higher levels of depression and anxiety (Beeson, Horton-Deutsch, Farran, Neundorfer, 2000). As the American population ages, more and more people will serve as informal caregivers to grandparents, elderly parents, companions, and even their children. It is necessary to understand reasons why and how providing care to someone impacts the caregiver's

health, quality of life and well being. In addition, it is necessary to find ways that society can help people take care of their loved ones in their homes by helping them manage their stress.

One way to alleviate stress from constant caregiving is through respite care, where the primary caregiver takes a break for a period of time while someone else provides care for the loved one. There are many options of respite care in the United States such as: adult day care; in home respite care; short term nursing homes; and day hospitals (Office of Women's Health, 2008). The Family Caregiver Support Program (FCSP) at the Council for Senior Citizens (CSC) in Durham, North Carolina offers respite care and educational programs to individuals who are primary caregivers of adults who need constant caregiving. The goal of the respite care program within the FCSP is to reduce caregiver' stress and burden of care by providing respite care on a regular basis. As a participant in this program, each caregiver qualifies for six hours of respite care per month from an outside agency. This program, in its sixth year, presently lacks a method or tools to evaluate self-reported level of caregiver stress. The purpose of this study is to design and validate a questionnaire to measure stress over time in informal caregivers at the CSC. Benefits of creating a measurement tool include accountability for measuring the impact of the respite care program on caregiver stress, capability to generate a focused needs assessment for future CSC programs, and opportunities to improve the program.

Designing the Questionnaire

To evaluate the Family Caregiver Support Program, an extensive literature search was conducted to determine the availability of any instruments that measure stress over time in caregivers. Currently, there are no instruments that measure stress over time. The Family

Caregiver Support Program Questionnaire (Appendix 1) was developed using the following caregiver stress measurement instruments: Zarit Burden Interview (Zarit, Reever, Bach-Peterson, 1980) and the Caregiver Burden Scale (Montgomery, Borgatta, and Borgatta, 2000). The Family Caregiver Support Program Questionnaire also includes demographic elements and specific questions related to the CSC program (e.g., Have you attended an educational program for caregivers at the Council for Senior Citizens?). The question "On a scale of 1 to 5, with 1, not at all, and 5, extremely, how would you rate how stressful caregiving is for you?" was included to validate the ZBI and the CBS with this population of informal caregivers.

The Zarit Burden Interview is the most widely used scale in measuring the burden on caregivers and is available in 27 languages. The original ZBI was introduced in 1980 as a 29 – item Likert Scale instrument (Zarit, Reever, Bach-Peterson,1980) that has been modified to a 22-item Likert Scale (Zarit, Orr, and Zarit,1985) and now is also available as a 12-item Likert Scale (Bédard, et al, 2001). The shorter version of the scale (12-item) is more suited for diagnostic groups of cognitively impaired older adults, and can be used for cross-sectional, longitudinal, and intervention studies (Bédard, et al, 2001). The score for the ZBI ranges from 0-88 for the 22-item scale and 0-48 for the 12-item scale. In general, a higher score on the ZBI indicates a higher level of stress and burden. Specifically, a score of 17 or higher on the 12-item ZBI scale may indicate a higher burden (Bédard, et al, 2001). Examples of questions from the ZBI include "DO YOU FEEL that because of the time you spend with your relative that you don't have enough time for yourself"? and DO YOU FEEL stressed between caring for your relative and trying to meet other responsibilities (work/family)?" While Zarit, Reever, and Bach-Peterson do not

explain why the words "DO YOU FEEL" are capitalized, it is theorized that these words are capitalized for emphasis so the caregiver can provide an honest opinion to rate their stress level.

The Caregiver Burden Scale is evaluated with three burden scores: Objective Burden, Subjective Demand Burden, and Subjective Stress Burden. This 14-item instrument is quick and easy to use. The Objective Demand score measures "perceived infringement or disruption of tangible aspects of a caregiver's life" (Montgomery, Borgatta, and Borgatta, 2000). Subjective Demand score is defined as the extent to which the caregiver perceives care responsibilities to be overly demanding (Montgomery, Borgatta, and Borgatta, 2000). And the Subjective Stress Burden score measures the emotional impact of caregiving responsibilities (Montgomery, Borgatta, and Borgatta, 2000). Objective Burden scores range from 6-30; Subjective Demand Burden scores range from 4-20; Subjective Stress Burden scores range from 4-20. Higher scores on these three burden scales indicate higher levels of stress. Questions include "Do you have personal privacy? Do you have attempts by your relative to manipulate you? Do you have time to spend in recreational activities?" The advantage of three different burden scores is the ability to distinguish the different types of burden to help design the most effective and appropriate types of intervention (Montgomery, Borgatta, and Borgatta, 2000). While some variables on the Zarit Burden Interview and CBS overlap, such as questions on privacy, stress, and social life, questions on the ZBI are more general than the CBS. For example, the ZBI asks "DO YOU FEEL that your social life has suffered because you are caring for your relative?", while the CBS is more specific and asks questions such as "Do you have vacation activities and trips?", "Do you have time for recreational activities and trips" and also asks "Do you have time for

friends and other relatives." Therefore, the questions on the ZBI are more broad and general, than the CBS.

The Family Caregiver Support Program Questionnaire is based on the 12-item Zarit Burden Interview for the ease of caregivers answering the questions in a telephone interview. In order to measure stress over a specific period of time, the question on the ZBI "Circle the response that best describes how you feel" was revised to "Please answer the following questions about how you felt in the last two weeks." Additionally, for the Caregiver Burden Scale, the question, "Since you began caregiving, how has assisting or having contact with the person for whom you care affected the following aspects of your life?" on the FCSPQ was revised to "In the last two weeks, how has assisting or having contact with the person for whom you care affected the following aspects of your life?" The interval of 2-weeks was added to the ZBI and the CBS so that all caregivers could answer the question within a standard timeframe. The CBS was also selected for inclusion in the FCSPQ to help the Council for Senior Citizens determine the areas of burden for future programs.

Therefore, stress can be potentially measured by three different scores in the Family Caregiver Support Program Questionnaire:

- 1. Zarit Burden Interview Score: A score of 17 or higher on this scale suggests a high level of stress and burden (Scores can range from 0-48).
- Caregiver Burden Scale (Scores in three areas: Objective Burden, Subjective Demand Burden, Subjective Stress Burden): High scores on each of these burden scales suggest a high level of stress and burden (Scores can range from 4-30).

3. Question 38: On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how stressful caregiving is for you? A score of 3 or higher on this scale suggests a high level of burden.

Methods

IRB approval was obtained to contact caregivers who participate and receive respite services in the Family Caregiver Support Program at the Council of Senior Citizens in Durham North Carolina, using the Family Caregiver Support Program Questionnaire (University of North Carolina Institutional Review Board Approval #08-1349). The IRB approval was sought to contact these caregivers at a baseline interview and a 3-month interview. Results from the 3-month interviews are not presently available for summarization and analysis.

- Inclusion criteria: All caregivers in the FCSP at the CSC in Durham, North Carolina.
- Exclusion criteria: No exclusions

Caregivers were contacted for baseline interviews from October 2008 until January 2009. All caregivers were sent letters notifying them of an upcoming telephone survey of the Family Caregiver Support Program by postal mail from the Program Director. Each caregiver was consented prior to administrating the telephone questionnaire. Consent was also obtained from the caregivers to abstract information from their respective Department of Aging and Adult Services (DAAS) 101 Form. This form documents the care recipient's Instrumental Activities of Daily Living and Activities of Daily Living. IADL are "home management and support tasks, such as bill paying" (North Carolina Department of Health and Human Services, 2009). ADL "refers to six activities - bathing, dressings grooming), mobility (ambulation/transfers), eating,

toileting and bowel/bladder incontinence that reflect a person's capacity for self-care" (North Carolina Department of Health and Human Services, 2009). According to the NC Division of Aging and Adult Services, caregivers would qualify for respite services if the care recipient has severe IADL impairment in four activities and has three deficits in ADLs (North Carolina Department of Health and Human Services, 2009). For this research project, the scores for IADL and ADL impairments were combined to create a composite IADL-ADL Index. Therefore, a composite score of 7 or higher would indicate a person qualifies for caregiver services. The purpose for abstracting data from the DAAS Form 101 is to determine if there are any notable differences in levels of the composite IADL-ADL Index or in the length of care compared to the caregiver reported level of stress. The DAAS Form 101 is provided in Appendix 2. In addition, other information about the caregiver was also abstracted from this form (e.g., *How many hours of care do you provide in a day? Are you a long distance caregiver?*).

Table 1 provides a summary of the baseline interview metrics. Thirty nine caregivers were contacted; 18 caregivers completed the Family Caregiver Support Program Questionnaire; a response rate of 46%. According to the Journal of Marketing Research, the response rate to this questionnaire is greater than that reported by a meta-analysis of 12 telephone questionnaire studies (1983). Of the non-completers only two caregivers refused to complete the questionnaire. The total of questionnaires not completed equaled 19. Reasons for not completed questionnaires include *Unable to Contact* and *Hospitalizations*.

Table 1			
Family Caregiver Support Program Questionnaire: Baseline Interview Metrics			
Interviews	Total		
Attempted	39		
Completed	18 (46%		
Refused	2 (5%		
Not Done	19 (49%		

Hypothesis

Three primary hypotheses were examined:

- 1. The Zarit Burden Interview should correlate with Question 38: "On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how stressful caregiving is for you?" In addition, Question 38 should also correlate with each burden score (Objective Burden, Subjective Demand Burden, Subjective Stress Burden) of the Caregiver Burden Scale.
- 2. Caregivers who provide care to people with high Instrumental Activities of Daily Living-Activities of Daily Living Index (IADL-ADL Index) or for a longer length of time will have more stress as measured by the Zarit Burden Interview, the three burden scores in the Caregiver Burden Scale, or by Question 38 than those caregivers of individuals with low IADL-ADL Index scores. Longer length of care, as measured by the Question 5 "How long have you been providing care" should be positively correlated with more stress as measured by the ZBI, CBS, and Question 38.
- 3. Caregivers who provide care to their parents will be more stressed than caregivers who are spouses as documented by the Zarit Burden Interview or the burden scores in the

Caregiver Burden Scale or Question 38, How stressful is caregiving for you.

Results

Caregiver Summary:

The mean age of caregivers in the study group is 65.7 years old. Sixty three percent of caregivers were female, which is similar to the data from the Office of Women's Health (2008). Mean age of care recipients is 79.3 years old. Fifteen out of the 18 (85%) caregivers live with their care recipient. Two caregivers (11%) reported providing care to more than one person in the household. Fifty-six percent of caregivers are retired, which is higher than the data from the Office of Women's Health (2008). Of those who are currently retired, 20% retired early due to the need to provide care. Almost 45% of these caregivers reported their health as "fair" or "poor." Thirty-one percent reported their health as "Good" or "Very Good." Only 25% reported their health as "Excellent." Almost 40% of caregivers reported that they have a physical impairment and of these caregivers, 71% reported this impairment limits their activity in caregiving. According to Vitaliano, Zhang, and Scanlan, caregivers have a slightly higher risk of health problems than non-caregiver controls (2003). In addition, the authors found a 63% higher risk of death among caregivers than non-caregiver controls in an average of four years (Vitaliano, Zhang, and Scanlan, 2003). The authors controlled for various factors such as gender and disease.

Evaluation of Hypothesis 1: Association of Stress Measures

A score of 17 on the Zarit Burden Interview indicates a high burden of stress (Bédard, et al, 2001). Of the interviewed caregivers, the scores ranged from 11 to 40, with a mean ZBI score

of 25, well above the threshold of 17 for this scale (see Table 2). The results for Question 38: "On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how stressful caregiving is for you?" for those interviewed revealed that no caregivers reported less than a value of 2 (slightly stressful), 31% reported 3 (moderately stressful), 44% reported 4 (quite a bit stressful), and 25% reported 5 (extremely stressful) as their level of stress. The most frequently observed response was "quite a bit stressful" (median=4.0). Table 2 provides the mean and related descriptive statistics for the ZBI, the burden scores in the CBS, and the mean score for Question 38.

The Zarit Burden Interview had a highly statistically significant positive correlation with the Question 38 (R=.67, p-value=0.045, Table 3). Table 3 provides the correlation coefficients among the ZBI to Question 38, and to the three burden scales from the Caregiver Burden Scale with Question 38. In addition, Question 38 was not significantly correlated with the Objective Burden, Subjective Demand Burden, or the Subjective Stress Burden scores of the CBS.

Descriptive Statistics of the Zarit Burden Interview, Caregiver Burden Scale, and Question 38 Scale Ν Median Std Mean Min Max 18.0 25.0 Zarit Burden Interview 26.5 7.5 14.0 40.0 Caregiver Burden Scale: Objective Burden 15.0 21.2 20.0 2.5 18.0 25.0 Caregiver Burden Scale: Subjective Demand Burden 14.0 12.5 12.5 2.0 10.0 17.0

15.0

16.0

12.2

2.94*

12.0

4.0

2.1

0.7

8.0

3.0

18.0

5.0

Table 2

Caregiver Burden Scale: Subjective Stress Burden

Question 38: How stressful is caregiving for you

^{*} Not at all = 0, Slightly =0, Moderately = 5 (31%), Quite a bit= 7(44%), Extremely= 4(25%)

Table 3

Correlation Coefficients of the Zarit Burden Interview, and the Caregiver Burden Scale to Question 38

Correlation	
coefficient to	
Question 38	p-value
0 .67	0.0045*
0.32	0.25
0.21	0.25
0.15	0.22
	Question 38 0 .67 0.32 0.21

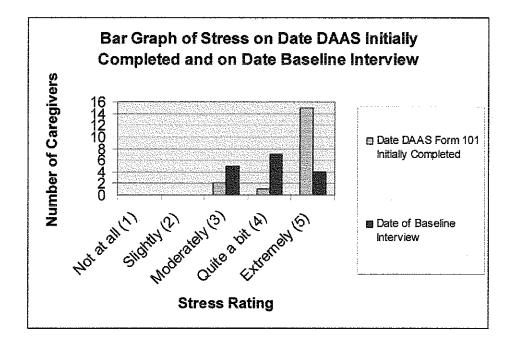
^{*} Statistically significant p-value < 0.010

Finally, an important finding was found when analyzing the data of stress on the Department of Aging and Adult Services Form 101 and at the time of the baseline interview. Table 2 provides the mean and related descriptive statistics for the ZBI, the burden scores in the CBS, and the mean score for the Question 38. Graph 1 provides the rating of stress on the date the Department of Aging and Adult Services Form was completed by the Program Director and the rating of stress on the date of the baseline interview. Fifteen caregivers indicated their stress as "Extreme" at the time of the DAAS form was completed; however, the number who rated their stress as "Extreme" at the time of the baseline interview dropped to only 25% or four caregivers. Although more analysis is needed to investigate this finding, this suggests that the respite program as provided by the Family Caregiver Support Program does provide stress relief to caregivers. These results should be viewed with caution since the average number of days between date DAAS Form 101 completion and date of the baseline interview was 97 days, with a range of 17 days to 438 days. Since there is such a wide variation between the assessments, we

cannot attribute the observed decline in self-reported caregiver stress due to the respite program alone.

Graph 1

Stress Rating on Date DAAS Form Initially Completed and on Date of Baseline Interview



Evaluation of Hypothesis 2: Impact of Recipient IADL-ADL Index and Length of Time Providing Care

No statistically significant relationship was found between the care recipient's Instrumental Activities of Daily Living and the Activities of Daily Living) Index scores, as abstracted from the Department of Aging and Adult Form 101, with the Zarit Burden Interview or the burden scores in the Caregiver Burden Scale or Question 38. The majority of the care recipients were documented as being dependent on their caregivers for support with activities of daily living. Mean IADL-ADL Index was 11.7 with a standard deviation of 1.1.An index score for the IADL-ADL of seven or higher would indicate a person qualifies for caregiving services.

There is little variation in the IADL-ADL Index scores in the study group and subsequently no significant relationship was able to be detected between impact of IADL-ADL Index and caregiver stress as measured by the ZBI or Question 38. Table 4 provides the descriptive statistics for IADL-ADL Index levels and Table 5 provides the correlation coefficient of the ZBI and Question 38, *How stressful is caregiving* compared to IADL-ADL Index scores. The Caregiver Burden Scales were not considered for this evaluation, since these measures were not found to be indicative of the level of stress for this study population.

More than 80% of caregivers interviewed reported having provided care for more than one year. No statistically significant relationship was found between length of caregiving with the Zarit Burden Interview, or the three burden scales in the Caregiver Burden Scale, or Question 38, *How stressful is caregiving (Table 6)*. Because the majority of caregivers have provided care for more than a year (median value of 4, > 1 year), there is little variation in length of caregiving which subsequently limits the ability to detect statistically significant relationships between length of care and caregiver stress. Expanded categories beyond the present should be included for future examination of these measures. Table 4 provides descriptive statistics on Instrument Activities of Daily Living and Activities of Daily Living Index. Table 5 provides information on the total length of care for caregivers. Table 7 provides details concerning the statistical comparisons of the length of care relative to the Zarit Burden Interview, Question 38, and the three burden of stress of Caregiver Burden Scale.

Γable 4						
Descriptive Statistics of the Inst Index Scores and Length of Ca	<u> </u>	Daily Li	ving and 2	Activities	of Daily L	iving
Variable Variable	N	Mean	Median	Std	Min	Max
IADL-ADL Index	13.0	11.7	12.0	1.1	4.0	13.0

Table 5		÷			
Total Length of C	Caregiving				
	< 1 month	1-6 months	7-12 months	> 1 year	Data not available
Length of Care	0	0	2 (11%)	13 (72%)	3 (17%)

Table 6		
Correlation Coefficients of the Zarit Burd of Daily Living-Activities of Daily Living I.		38 to Instrumental Activities
	Correlation coefficient	
Scale	to IADL	p-value
Zarit Burden Interview	-0.23	0.47
Question 38: How stressful is caregiving for you	-0.13	0.69

urden Interview, Question	38 and Caregiver Burd	len
Cochran-Mantel-	Cochran-Mantel	
Haenszel Statistic (df)	-Haenszel p-value	
0.3314 (1)		0.56
1.5734 (2)		0.45
	Cochran-Mantel- Haenszel Statistic (df) 0.3314 (1)	Haenszel Statistic (df) -Haenszel p-value 0.3314 (1)

	Correlation coefficient		-
Scale	to Length of Care	p-value	
Caregiver Burden Scale: Objective Burden	0.14	0).62
Caregiver Burden Scale: Subjective Demand Burden	0.04	0	0.90
Caregiver Burden Scale: Subjective Stress Burden	-0.22	0).43

Evaluation of Hypothesis 3: Relationship of Caregiver to Recipient

No statistically significant relationship was found between the caregiver's relationship to the care recipient and the reported stress scores of the Zarit Burden Interview, or the three burden scales in the Caregiver Burden Scale, or Question 38, *How stressful is caregiving*. Graph 1 provides a summary of the relationships of caregivers to care recipients in this study. In general, providing care to a person is very stressful, regardless of this person is a parent or a spouse or child. Further analysis could not be performed on the relationships of caregivers to care recipients due to the small sample size. Table 8 provides a summary of the Department of Aging and Adult Services 101 Form. These data indicate that this study group is mostly composed of middle-aged, married, African American women, who provide care to someone older.

Graph 2

Relationship of Care Recipient to Caregiver

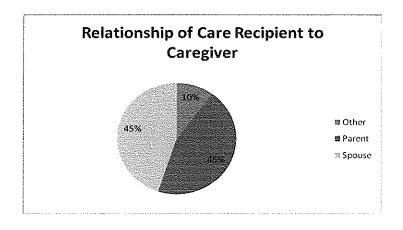


Table 8		
Department of Aging and Adult Services Form Summary		
Variable	Value	
Women Caregivers	61%	
Working Full Time Caregivers	39%	
African American Caregivers	61%	
Married Caregivers	61%	
Mean Caregiver Age	64 years	
Mean Care Recipient Age	79 years	

Discussion

The purpose of the Family Caregiver Support Program Questionnaire is to measure stress in an informal caregiver population over time. As mentioned in the introduction, informal caregivers are those who provide "extraordinary, uncompensated care, predominantly in the home setting, involving significant amounts of time and energy for months or years, requiring the performance of tasks that may be physically, emotionally, socially, or financially demanding" (Biegel, Sales, and Schultz, 1991). The FCSQ includes two instruments commonly used to measure stress in caregivers, the Zarit Burden Interview and the Caregiver Burden Scale. Limitations of this study include low participation (response rate of 46%). The ZBI was found to be statistically significant with Question 38, "On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how stressful caregiving is for you?" However, none of the three burden scores of the CBS revealed a statistically significant association with Question 38. The data from this study suggests that the ZBI is a valid instrument in measuring stress in informal caregivers who provided cared to someone for more than one year,

While some questions on the Zarit Burden Interview and the Caregiver Burden Scale (CBS) are similar, the CBS may be more appropriate for screening and intervening with newer caregivers. For example, the ZBI asks "DO YOU FEEL that you don't have as much privacy as you would like because of your relative?" and the CBS asks "Do you have personal privacy?" However, possible responses are slightly different. The ZBI questions a caregiver's burden at the current time. However, the CBS asks a person to compare their stress from a prior time. The choices are "A lot less," "A little less," "The same," "A little more," and "A Lot more." For caregivers who have provided care for some time, it is hypothesized there maybe little variation in their levels of burden in day-to-day routines such as changes in manipulation of care recipient, vacation activities or trips, or tension in life over a two week period. Therefore, the CBS may be more appropriately used to measure changes in burden levels in newer caregivers who may need assessment and placement into support programs based on their answer to questions related to the burdens of Objective Demand, Subjective Demand, or Subjective Stress.

The Zarit Burden Interview is an appropriate tool to measure stress in a new or an experienced caregiver because it asks simply "Please answer the following questions about how you feel in the last 2 weeks." The choices are "Never/Rarely," "Sometimes," "Quite Frequently," and "Nearly Always." These choices provide a person an opportunity to measure how they feel; it does not ask them to measure a difference in how they felt from before which may also introduce recall bias. The ZBI is a quick tool to measure stress in caregivers. The Caregiver Burden Scale which requires more thought and consideration is better suited to measure differences in burden levels in caregivers who come to the Council for Senior Citizens for initial help.

The information from the Department of Aging and Adult Form 101 (DAAS) allows us to measure differences in stress between the dates of completing the application for enrollment in the Family Caregiver Support Program to the date of the baseline interview. There was an observed difference in levels of stress or self reported health ratings at the time of completing the DAAS Form 101 and the time of the baseline interview (see Figure 2). This suggests that the current respite program does provide some relief in caregiving. However, the program as presently offered-may not suffice since the median rate of stress at the baseline interview revealed a value of 4, "Quite a bit" stressed (see Table 2). It is interesting to note that the caregivers, on average, are very satisfied with the Council for Senior Citizens Caregiver Program, as reported by a median score of 5 (Extremely satisfied) and a mean score of 4.1 for the question "On a scale of 1 to 5, with 1 not at all, and 5 extremely satisfied, how would you rate how satisfied you are with the caregiver program?" (Table 9) This suggests that the caregivers appreciate very much any assistance in caregiving. Almost 90% of the caregivers in this program are the primary caretakers of their loved ones.

Table 9	
Satisfaction of the Caregiver Program, Question 42"On and 5 extremely satisfied, how you would rate how satisform."	
Satisfaction	Value
Not at all satisfied	0%
Slightly satisfied	0%
Moderately satisfied	33%
Quite a bit satisfied	6%
Extremely satisfied	44%
No response received	17%

It remains disconcerting to confirm the level of stress and burden these caregivers feel.

According, to Bourgeois, Schulz, and Burgio (1996), respite interventions may not provide adequate amount of relief. The Council of Senior Citizens provides only six hours of respite care per month for a caregiver which may not be sufficient time to relax. Classes offered at the Council of Senior Citizens include monthly educational programs (e.g., Taking Care of YOU, Identifying and Reducing Personal Stress, Communication Feelings, Needs and Concerns).

However, only 20% of the caregivers interviewed attended an educational program at the Council for Senior Citizens. One frequently noted barrier to attending a class was "Who will take care of my loved one while I attend this class?".

Recommendations

With the findings from the baseline questionnaire, it appears the Caregiver Burden Scale does not provide an accurate measure of stress of caregivers already in the respite program who have provided care for at least 12 months. However, this may be due to small sample size of this study. Further research is warranted, but the data from the baseline questionnaire strongly suggests that the Zarit Burden Interview is a more accurate measure for caregiver stress.

Therefore, at this time, it is suggested that the Council for Senior Citizens modify the current Family Caregiver Support Questionnaire by removing the Caregiver Burden Scale (questions 24-37.) The ZBI scores and Question 38 correlate at a significant level, suggesting that the ZBI is a valid measure for measuring stress and burden in caregivers. However, there was no significant relationship between Questions 38 and the CBS scores. The CBS may be more appropriate for initial assessment for newer caregivers who are new participants in this program. Further research is needed to determine the reliability of the ZBI in measuring stress over time. Analysis

on the 3 month follow up questionnaire is forthcoming. These data will help determine the reliability of the ZBI across time.

In addition, it is also suggested that the CSC conduct the Family Caregiver Support Questionnaire on an annual basis to measure the stress of the caregivers. By conducting annual questionnaires, the CSC will be able to measure the short and long term objectives for this program: to reduce self-reported caregiver stress. In addition, findings from these annual surveys will aid the CSC in modifying the current program or creating additional interventions to reduce caregiver stress and burden. Results from this survey could also be used in grant proposals for additional funding for the Family Caregiver Support Program. As documented in this paper, caregivers face high levels of stress and burden. Any time away from caregiving provides time for a person to relax, although it may be only for a short time. Perhaps additional funding dollars could provide the CSC with the financial resources to offer more respite hours to caregivers on a monthly basis. Finally, if the results from the 3 month interview find the ZBI a reliable tool in measuring stress in caregivers, then the modified Family Caregiver Support Program Questionnaire (without the Cargiver Burden Score) could be used as a model for other respite programs that want to measure stress in caregivers, who have been providing care for 12 months or more.

Appendix 1: Council for Senior Citizens Summary Form Stress Inventory- Family Caregiver Support Program

Interval Baseline						
Questionnaire Status						
☐ Complete	Reasons Incomplete or Not Done					
\Box Incomplete \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow	>→→→→ □ Refused					
\square Not Done $\rightarrow \rightarrow \rightarrow$	>→→→→ □ Too ill/deaf					
	☐ Unable to locate					
	☐ Death					
	☐ Other					
Source ☐ Caregiver						
Interviewer Initials						
Questionnaire Entered By:	Date: / / / DD YYYY					
Ouestionnaire OC By:	Date: / /					

Council for Senior Citizens Stress Inventory- Family Caregiver Support Program

	Interval Li Baseline
	The purpose of this questionnaire is to understand how caring for someone may impact stress level. We understand that you are currently receiving respite care for someone you care for through an agency. Please answer the following questions about you, the caregiver. There are no wrong or right answers. Your answers will remain confidential and will not be released to anyone outside the research staff. This questionnaire will take approximately 10-15 minutes.
Tc	oday's Date:// MM D D YYYY
	emographics Your Current Working Status Uvorking Full Time Unemployed / Looking for Work Retired Disabled Other
2.	Do you feel your work is stressful? □ No □ Yes→→→→→→→ Does this impact your life at home? □No □Yes→→→ If yes, please describe how:
3.	Currently, how many people do you provide care for (not including yourself)? ☐ 1 ☐ 2 ☐ >3
4.	What is your relationship to the person your provide care for? Please check all that apply. Parent Spouse/Significant Other Child Sibling Uncle/Aunt Grandparent Grandchild Other

5.	How long have been providing care? (note: if you more than one person, please check the longest care.) □ <1 month □ 1-6 months □ 7-12 months □ >1 year	
6.	Do you receive any service or assistance with car ☐ No	re giving? Check all that apply.
	☐ Yes→→→→→→→ What services?	☐ In home respite care ☐ Short term respite care(≤7 day) ☐ Long term respite care (>7days) ☐ Formal care giving ☐ Financial assistance ☐ Help with household chores ☐ Adult day care ☐ Transportation assistance ☐ Private paid care giving (not through Council) ☐ Other
7.	Do you feel you need any additional services? ☐ No	Check all that apply.
	☐ Yes→→→→→→→→ What services?	☐ In home respite care ☐ Short term respite care (≤7 day) ☐ Long term respite care (>7days) ☐ Formal care giving ☐ Financial assistance ☐ Help with household chores ☐ Adult day care ☐ Transportation assistance ☐ Private paid care giving (not through Council) ☐ Other

8.	□ No □ Yes→→→→→→→ Including the person you provide care for, and yourself, how many people live in your home?# of people
9.	Does anyone else provide assist you in providing care for this person? ☐ No ☐ Yes→→→→→→→ Are you the primary care giver? ☐No ☐ Yes
10.	Is your current monthly household income more, less or about the same as a year ago? ☐ More ☐ Less ☐ About the same ☐ Don't know ☐ Prefer not to answer
11.	How well does your household's income meet your household's basic needs (i.e., food, clothing, shelter, and medical expenses, including medicines)? Not at all Somewhat Adequately More than adequately Don't know Prefer not to answer

Please answer	the following	questions	about ho	w you fe	el in the	last 2	weeks.
(Zarit Burden	Scale)						

Question	Never/Rarely	Sometimes	Quite Frequently	Nearly Always
12. DO YOU FEEL that because of the time you spend with your relative that you don't have enough time for yourself?	0			
13. DO YOU FEEL stressed between caring for your relative and trying to meet other responsibilities (work/family)?				
14. DO YOU FEEL angry when you are around your relative?				
15. DO YOU FEEL that your relative currently affects your relationship with family members or friends in a negative way?				
16. DO YOU FEEL strained when you are around your relative?				
17. DO YOU FEEL that your health has suffered because of your involvement with your relative?	0			
18. DO YOU FEEL that you don't have as much privacy as you would like because of your relative?	П			
19. DO YOU FEEL that your social life has suffered because you are caring for your relative?				
20. DO YOU FEEL that you have lost control of your life since your relative's illness				
21. DO YOU FEEL uncertain about what to do about your relative?				
22. DO YOU FEEL you should be doing more for your relative?				
23. DO YOU FEEL you could do a better job in caring for your relative?			П	

In the last 2 weeks,	how has assi	sting or having	g contact with	the person	for whom :	you care
affected the following	aspects of ye	our life? (Care	giver Burden	n Assessme	ent)	

Question	A lot less	A little less	The same	A little more	A Lot more
24. Do you have time to yourself?				П	О
25. Do you have stress in your relationship with your relative?					
26. Do you have personal privacy?					
27. Do you have attempts by your relative to manipulate you?			О		О
28. Do you have time to spend in recreational activities?			П		
29. Do you have unreasonable requests made of you by your relative?			П		
30. Do you have tension in your life?			О		
31. Do you have vacation activities and trips?					
32. Do you have nervousness and depression concerning your relationship with your relative?					
33. Do you have feelings that you are being taken advantage of by your relative?				П	
34. Do you have time to do your own work and daily chores?					П
35. Do you have demands made by your relative that are over and above what s/he needs?				П	
36. Do you have anxiety about things?		П		П	П
37. Do you have time for friends and other relatives					П

38. On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how stressful caregiving is for you?

1	2	3	4	5
Not at all	Slightly	Moderately	Quite a bit	Extremely
stressful	stressful	stressful	stressful	stressful

Please answer the following questions about YOUR overall health. 39. In general would you say your health is: □ Excellent □ Very good □ Good □ Fair □ Poor	
40. Do you have an impairment that limits your activity? ☐ No ☐ Yes→→→→→→ Does this impact your ability to provide care? →→☐No ☐Yes ☐Yes ☐ If yes, please describe how:)
41. Have you attended an educational program for caregivers at the Council for Senior Citizens? □ No →→Do you plan to attend caregiver education programs in the future? □ No □ Yes □ Yes	
Title/Topic:(When: Were you satisfied with this program? No Yes Title/Topic: When: Were you satisfied with this program? No Yes 42. On a scale of 1 to 5, with 1 not at all and 5, extremely, how would you rate how	
□ No □ Yes	

1	2	3	4	5
Not at all satisfied	Slightly	Moderately Quite a bit		Extremely
	satisfied	satisfied	satisfied	satisfied

Appendix 2: Department of Aging and Adult Services Form 101 (DAAS Form 101)

						1 (Long Form)
NC Department of Health and Human Services • Division of Aging and Adult Services						aging and Adult Services
Check the applicable category or categ	rories below and fo	llow соггезр	юnding dire	ctions.		Service Codes
HCCBG congregate nutrition (186)						
congregate meals (181) Sections I						
HCCBG – general (250) or medical						
Family Caregiver Support Program (services 820, 830, 840, 850); and HCCBG Respite Services [in-home aide respite (235, 236, 237, 238), group respite (309) and institutional respite (210)]						
Sections I, VI, and VII (caregiver information) and Sections III, IV, and V (care recipient information)						
HCCBG - Care management (610), home-delivered meals (020), NSIP-only home-delivered meals (021),						
home-delivered supplemental meals (022) complete Sections I, II, IV, V (If appropriate),						
VI (if appropriate), and VII						
For all other HCCBG services complete Sections I, IV, V (if appropriate), VI (if appropriate), and VII						
Region Code Provider Code						Arrange and the second
1. Client (Caregiver) Status:	theck the appropri	ate box. Mor	e than one t	ox may	y be	appropriate. Date
☐ New Registration/Activate (c	omplete all per i	nstructions	above) '	_		<u> </u>
☐ Walting for Service: service	codes:	(0	omplete Se	ection	l - u	nit based
services only)						
☐ Inactive ☐ applie	s to client/caregiv	ver OR	□ applie	es to c	are	recipient
☐ adult care home/assiste		moved				
alternative living arrang	-	improved f	iunction/ne	ed elin	mino	nted
☐ death	_	service not	= -			
☐ hospitalization		iliness				Ì
other (specify)		nursing hor	me placen	rent		
☐ Change (complete Section	l, Items 2, 4, 5 ai	nd any cha	inged item	s.ì		
2. Name Lost	First	<u> </u>		-	M.I.	4. Last 4 Digits SSN
,				1		
3. Street Address line 1				5. Date of Birth DD WYYY		
						MM DD YYYY
Mailing Address tine 2		•••				Special Eligibility (under age 60) 6. Phone #
wating Address the 2						o. Filone #
						☐ No phone
City	State		Zip			County
7. Sex 8. At/Below	9. Marital S	tatue (cho	ale anna)	10	Ш	usehold size (check one)
(check one) Poverty	1		,	.v.		lives alone
Female Level (check one)		•				
I Male '		- Bassaria				
Yes		•	red/widowed) group/shared home			
□ No		d to answe				efused to answer
	ck one race which ent most closely identifies	Check all that apply	12. His Ask:	panic, Are yo	/La u of	tino (check one) Hispanic or Latino origin?
a. Black or African-American				-		Yes □ No
b. Aslan			(a person of			an, Puerto Rican, South or Central American, or other
c. American Indian						culture of origin, regardless of race)
or Alaska Native d. White	[]" "	· -				guage Spoken uage do you speak in your home?
e. Native Hawaiian/other	` "			* • 2 * CZ & J.	ung	ango no jou spout in your nonce-
Pacific Islander	The second second		Lang	guage		
f. Unknown/refused						
g. Other (specify)			I			
14. Overall Functional Status:		At-risk _	High Risk	(If Se	ctioi	n IV is required, do not complete.)

. Nutrition Health Score			Refused to Ans
a. Do you have an illness or condition that made you change the kind and/or amount of food you eat?	☐ Yes	□No	
b. How many meals do you eat per day?	#		
c. How many servings of fruit per day?	#		
d. How many servings of vegetables per day?	#		
e. How many servings of mllk/dairy products per day?	#		
f. How many drinks of beer, liquor, or wine do you have every day or almost every day?	#		
g. Do you have tooth/mouth problems that make it hard for you to eat?	□Yes	□No	
h. Do you always have enough money or food stamps to buy the food you need?	□Yes	□№	
i. How many meals do you eat alone daily?	#		
J. How many prescribed drugs do you take per day?	#		
k. How many over-the-counter drugs do you take per day?	#		
I. Have you lost 10 or more pounds in the past 6 months without trying?	□Yes	□No	
m. Have you gained 10 or more pounds in the past 6 months without trying?	☐Yes	□No	О
n. Are you physically able to shop for yourself?	□Yes	□No	
o. Are you physically able to cook for yourself?	□Yes	□No	
p. Are you physically able to feed yourself?	□Yes	□No	
		}	

		İ	
		Ì	

16. Name Lost	First			M.I.	Last 4	Digits SSN	
Street Address tine 1	I						
Mailing Address line 2						4 Th. 47	
· · · · · · · · · · · · · · · · · · ·					Date o	of Birth	
City	State		Żp		ММ	DD	YYYY
17. Is care recipient a person with s	evere di:	sabilitie	s? □Yes □I	Vo.	L		
8. Does care recipient live in same	househo	old as ca	regiver? □Y	es 🗖	No		
19. Care recipient marital status: (ch	eck one)	☐ single ☐ mark				livorced/widow	ed)
Section IV: Complete for all clients/re	cipients	except o	congregate m	ıtritio	n, trans	portation	
or minor relative children							
20. Does client (care recipient) have s	ionificar	ıt memo	orv loss or cor	ifusio	n? '[]\	(es TINo	
, , , , , , , , , , , , , , , , , , , ,	-						
1. Number of IADL		t (care ent) can				puestion #21 or i ne of the followi	
(Instrumental Activities	салу	out the	Client (care		t (care	Client (care	Client (care
of Daily Living)		ng tasks ut help.	reciplent) cannot do and		pient) t do and	recipient) cannot do	reciplent) ho no one who
	-	T .	has someone unpaid		meone d who	and has both unpaid & paid	cassists.
	YES	NO	who assists.		sists.	assistance.	
a. Prepare meals							
b. Shop for personal items							
c. Manage own medications		1 1	1 himmed	_		Branch .	
c. Manage own medications d. Manage own money (pay bills)						Ū	
							
d. Manage own money (pay bilis)							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Dail)							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Dailta. Eat							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Dail a. Eat b. Get dressed							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Daila. a. Eat b. Get dressed c. Bathe self							
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Daila. Eat b. Get dressed c. Bathe self d. Use the tollet	Y Living						
d. Manage own money (pay bills) e. Use telephone f. Do heavy housework g. Do light cleaning h. Transportation ability Total "no" column = IADL Impairments 2. Number of ADL (Activities of Dail) a. Eat b. Get dressed c. Bathe self d. Use the tollet e. Transfer into/out of bed/chalr							

Section V: Complete for HCCBG respite, FCSP, and others responding with "1" or more in	ı # 23.
24. How many hours per day of help, care, or supervision does care recipient need? a. # of daily hours needed	
25. How many hours per day of help, care, or supervision does primary caregiver provided # of daily hours provided b. If not daily, # of hours per week provided	e ?
26. Primary caregiver's relationship to care recipient: (check one)	
□ wife □ granddaughter/granddaughter-in-law □ grandmotf □ husband □ grandson/grandson-in-law □ grandfathe □ daughter/daughter-in-law □ nlece □ aunt □ son/son-in-law □ nephew □ uncle □ sister □ mother □ other relative □ brother □ father □ non-relative	nf √⊖
Section VI: Complete for all caregivers. Questions 27-30 should be answered only by car	
27. Primary caregiver's self-reported health on scale of 1 (poor) to 5 (excellent)(Choose one.)	$\begin{array}{c c c c} 3 & 4 & 5 \\ \hline
28. Primary caregiver: How stressful for you is caregiving on a scale from 1 (not at all/very low) to 5 (very high) (Choose one.)	
29. Primary caregiver's paid employment status:	
 ☐ Full-time ☐ Quit due to caregiving ☐ Retired early due to caregiving ☐ Retired/full benefits ☐ Lost job/dismissed due to 	caregiving
30. Is the primary caregiver a long distance caregiver? ☐ Yes ☐ No	
Section VII: REQUIRED FOR ALL CLIENTS.	
I, the client, understand the information contained on this form will be kept confidential unless disclosure court order or for authorized federal, state or local program reporting and monitoring. I understand that may have to Social Security benefits or other federal or state sponsored benefits shall not be affected by the aforementioned information. My signature authorizes the providing agency to begin the service(s) re	any entitlement I the provision of
DATE:CLIENT (Caregiver) SIGNATURE:	
DATE:AGENCY EMPLOYEE SIGNATURE:	
EMERGENCY CONTACT PERSON	
Name:	
Phone (day): (evening):	
☐ Refused to provide emergency contact information	
Provider Use Only! Registration Update	Page 4 of 4

Appendix 3: Information to be abstracted from Client Registration Form DAAS 101

Question	Caregiver	Recipient of Care			
Age (calculate from DOB)					
2. Gender	☐ Male ☐ Female				
At/below poverty level	□ No □ Yes				
4. Marital Status	☐ Single/never married ☐ Married/living as married ☐ Divorced or Widowed ☐ Refused to answer	☐ Single/never married ☐ Married/living as married ☐ Divorced or Widowed ☐ Refused to answer			
5. Race	☐ Black or African- American ☐ Asian ☐ American Indian or Alaskan Native ☐ White ☐ Native Hawaiian/other Pacific Islander ☐ Unknown or Refused ☐ Other				
6. Is care recipient a mine disability?☐ No☐ Yes	or child with mental retardation	or developmental			
7. Does care recipient have significant memory loss or confusion?☐ No☐ Yes					

Information to be abstracted from Client Registration Form DAAS 101 cont

				er to items 49one of the follo		3-63 are "no"
	Client (care recipient) can carry out the following tasks without help.		Client (care recipient) cannot do	Client (care recipient) cannot do	Client (care recipient) cannot do and has	
Number of IADL (Instrumental Activities of Daily Living)	YES	NO	and has someone unpaid who assists	and has someone paid who assists	both unpaid and paid assistance	Client (care recipient) has no one to assists.
Prepare meals prepare						
9. Shop for personal items					WARRANI CALL	
10. Manage own medications						
11. Manage own money (pay bills)						
12. Use telephone						
13. Do heavy housework						
14. Do light cleaning						
15. Transportation ability						
16. Total "no column"=IADL imp	airments					
17. Eat						
18. Get dressed						
19. Bathe self						
20. Use the toilet						
21. Transfer into/out of toilet						
22. Ambulate (walk or move about the house without one's help						
Total "no column"=ADL impairment	3					,
22 Harrimani harri	nor do.	of holp ca	YO OF CLIPS	ioion doos s	ara rasisia-	+ nood?
23. How many hours	per day	or neip,ca	ire or superv	rision does d	are recipien	it need?
hours	if	not daily ,	# of hours p	er week nee	eded	
24.How many hours provide?	per day	of help, ca	are, or supe	rvision does	primary car	egiver
hours		-	# of hours p			
25. Is the primary ca	regiver a	long dista	ance caregiv	er? □No□Ye	es	

26. House hold size
27. Household size
□Lives alone
□2 in home
□3 in home
□Group/share home
□Refused to answer
28. Care recipient a person with severe disabilities?
□No□Yes
29. Does care recipient live in the same household as caregiver (# 18)
□No□Yes 20. Have many compaid corrections invalved in corp including maintage corrections? (#23)
30. How many unpaid caregiver involved in care including primary caregiver? (#23)
31. Primary caregiver's relationship to care recipient
Wife
Husband
Daughter/daughter-in law
Son/son in law
Sister Brother
Grand-daughter/drand-daughter in law
Grand-son/grand son in law
Niece
Newphew
Mother
Father
Grandmother
Grandfather
Aunt
Uncle Other relative
Other felative
32. Primary caregiver's self-reported health on a scale of 1 to 5
33. Primary caregiver: How stressful is care giving on a scale of 1 to 5 (#29)

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