

# Outcomes of a Stress Management and Resiliency Training (SMART) Program for Family Caregivers of Individuals With Advanced Head and Neck Cancer

Sherry S. Chesak, PhD, RN, Ann Marie Dose, PhD, RN, Jay Mandrekar, PhD, Dara James, PhD, MS, Deidre R. Pachman, MD, Susanne Cutshall, DNP, APRN, CNS, Debbie Lynn Fuehrer, MA, LPCC, and Amit Sood, MD

**OBJECTIVES:** To conduct a single-arm prospective pilot study examining the feasibility, acceptability, and preliminary effectiveness of a Stress Management and Resiliency Training (SMART) intervention among family caregivers (FCGs) of individuals with head and neck cancer (HNC).

**SAMPLE & SETTING:** This study was conducted with 26 FCGs of individuals with HNC receiving chemotherapy in the medical oncology clinic at the Mayo Clinic Comprehensive Cancer Center.

**METHODS & VARIABLES:** The SMART intervention consisted of in-person and online components. Measurements included feasibility, acceptability, self-compassion, resilience, perceived stress, anxiety, and mindfulness.

**RESULTS:** Results support acceptability of the SMART program and provide recommendations to improve feasibility. Data indicate significant improvements in self-compassion ( $p = 0.03$ ) and anxiety ( $p = 0.02$ ), with positive trends for resilience, stress, and mindfulness.

**IMPLICATIONS FOR NURSING:** This study warrants further research with larger, more diverse samples testing the efficacy of the program, its mechanism of action, and potential synergistic effects among individuals receiving oncology care, FCGs, and nurses.

**KEYWORDS** resilience; caregiver; oncology; stress; mindfulness; self-compassion

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According to the National Alliance for Caregiving (2021), an estimated 21% of adults in the United States are unpaid caregivers to an adult with health or functional needs, and 19% of these caregivers indicate that their own health is fair to poor. There are more than four million individuals who care for an adult with cancer in the home setting (AARP Family Caregiving, 2020), and a large majority of family caregivers (FCGs) report a high burden of care, negative emotions, and multiple unmet needs (National Cancer Institute, 2022). In 2021, there were 1,898,160 new cancer cases in America, with 66,630 being head and neck cancers (HNCs) (e.g., tongue, mouth, larynx, pharynx) (American Cancer Society, 2022). Treatment of HNC can involve surgery, radiation therapy, and chemotherapy, and it frequently consists of all three modalities (Schlichting et al., 2019). The burden of care for patients with HNC is great, and it often includes meticulous oral and skin care, tube feeding, tracheostomy care, hydration, enteral nutrition, and complex pain management (Paek et al., 2018).

FCGs are often thrust into their roles unexpectedly and experience a plethora of negative physical and emotional symptoms resulting from stress, which can lead to impaired sleep and immune function (Northouse, Williams, et al., 2012), greater risk for heart disease or musculoskeletal impairments (Kim et al., 2015), greater risk for some cancers (Shin et al., 2016), and long-term depression (Kim et al., 2014). FCGs can also experience poor health because of endocrine responses to stress, as well as exercise avoidance or smoking to cope with stress (Firth et al., 2020; Litzelman et al., 2018).

FCGs can experience more distress than their care recipients and may have poorer overall psychological health, greater anxiety, and more fears of cancer recurrence. FCGs may also need to address alcohol and tobacco misuse in family members with HNC (Aupérin, 2020; Melin-Johansson et al., 2012; Williams & McCorkle, 2011). Stress is worse for FCGs when the patient is undergoing active cancer treatment or if the FCG is female or a spouse, has no choice in the caregiver role, spends more hours providing direct care, or experiences lifestyle modifications to provide tube feeding or tracheostomy care (Longacre et al., 2012). FCGs may provide care more than eight hours per day for up to two years for patients undergoing treatment (Given et al., 2012), and they often prioritize patient needs more than their own (Bevans & Sternberg, 2012).

Nurses have led research and practice initiatives to address caregiver needs for decades and know that when FCGs experience poor physical and emotional health, patient care suffers (Bevans & Sternberg, 2012; Given et al., 2012; Grady & Gullatte, 2014; Grady & Rosenbaum, 2015; Northouse, Katapodi, et al., 2012). When FCGs have unmet needs, there are negative influences on the patient's physical health, mental health, and quality-of-life (QOL) outcomes (Douglas et al., 2016; Grady & Rosenbaum, 2015). Various types of interventions have been tested with FCGs of individuals with cancer, such as psychoeducation; skill development for coping, communication, and problem-solving; and counseling. However, reports of outcome variables from these interventions have been limited (Frambes et al., 2018). A review of studies assessing the outcomes of psychosocial care of FCGs of individuals with cancer identified that interventions could improve FCGs' coping skills, knowledge, and QOL; however, these interventions are rarely implemented into practice (Northouse, Williams, et al., 2012).

Although negative outcomes of FCG stress are known, acknowledging the effect of potential protective factors, such as resilience, is an emerging concept (Peterson et al., 2014). Resilience can develop as a response to stress, but it can also lessen the negative effects of stress. Most oncology research has focused on resilience in patients only (Ghanei Gheshlagh et al., 2016; Hwang et al., 2018). However, in one study, a higher level of resilience in FCGs of patients with HNC was associated with less FCG distress (Simpson et al., 2015). In addition, identifying the benefits of caregiving has been found to contribute to positive outcomes for caregivers, such as improvement in the

caregiver experience and the enhancement of overall caregiver well-being (Li & Loke, 2013).

Patients and families have consistently ranked compassionate care among their greatest healthcare needs (Sinclair et al., 2016). Compassionate care is particularly relevant to individuals with cancer and their caregivers because of the significantly higher intensity and burden of care required for individuals with cancer compared to other patients (National Alliance for Caregiving, 2016). Self-compassion (i.e., having compassion for oneself in a time of need) is a practice that has been consistently linked with reduced anxiety and depression, as well as improved emotional well-being, coping, and interpersonal relationships (Neff & Dahm, 2015). In addition, the cultivation of self-compassion has been associated with increased compassion for others (Neff & Pommier, 2013). Because depression and social isolation are two key risk factors for caregiver distress (Adelman et al., 2014), the practice of self-compassion among caregivers could mitigate burdens and lead to improved compassion and care for individuals with cancer.

Mindfulness interventions have been shown to reduce stress and anxiety for patients (Leppin et al., 2014) and FCGs (Li et al., 2016; Schellekens et al., 2017), as well as improve self-compassion in the general public (Birnie et al., 2010). However, one challenge for implementing mindfulness interventions among FCGs of individuals with cancer is that many programs necessitate six to eight sessions during a two-month period. Demands of caring for individuals receiving outpatient chemotherapy, particularly those with HNC, may prevent many FCGs from being able to engage in and finish these programs. This study examined the feasibility of and acceptability for FCGs of individuals with HNC undergoing outpatient chemotherapy to participate in a brief mindfulness intervention. This study is also a first step toward the goal of examining the influence of a brief mindfulness intervention on resilience, stress, anxiety, mindfulness, and self-compassion in FCGs of individuals with HNC.

During mindfulness practices, it is conceptualized there is simultaneous interplay among intention (why someone is practicing), attention (attending to the here and now), and attitude (nonjudgmental, with openness and compassion) (Shapiro et al., 2006). This interplay allows individuals to shift their perspectives from dwelling on the past or ruminating about the future to simply existing in the present moment and witnessing it without preconceptions (Brown et al.,

2007; Shapiro et al., 2006). The Stress Management and Resiliency Training (SMART) program, developed by Amit Sood, MD, is a brief mindfulness program that guides participants to delay judgment and pay greater attention to the uniqueness of the environment around them rather than the contents of the mind. A key component of the program is the integration of mindfulness practices, such as attention training, to improve awareness of the present moment (Folkman & Greer, 2000; Lazarus, 1993) into everyday life to lessen stress (Sood et al., 2011; Sood & Jones, 2013).

The SMART program includes education on embracing the present moment with more gratitude, compassion, acceptance, and forgiveness, as well as refining interpretations of experiences by focusing on meaning and purpose. Through attention training, participants can experience increased relaxation as they engage in the present moment. This counteracts the default mode of excessive thinking about the past or the future, which leads to stress and anxiety (Brown & Ryan, 2003). Attention training is fostered through incorporating the following two mindful attention practices: joyful attention and kind attention. Joyful attention entails delaying judgment and paying attention to novelty, whereas kind attention entails sending silent, positive greetings to others (Sood et al., 2011). Finally, interpretation refinement is taught through practicing principles of gratitude, compassion, acceptance, meaning, forgiveness, celebration, reflection, and prayer (Sood & Jones, 2013).

The SMART program has been shown to provide improvements in resilience, anxiety, perceived stress, mindfulness, and QOL among breast cancer survivors (Loprinzi et al., 2011), physicians (Sood et al., 2011), radiologists (Sood et al., 2014), and nurses (Chesak et al., 2015, 2019, 2021; Magtibay et al., 2017). In a SMART/yoga study with caregivers and patients receiving transplantation, significant ( $p < 0.005$ ) improvements were noted in perceived stress, depression, anxiety, and negative affect (Stonnington et al., 2016). Self-compassion outcomes of the SMART program have not yet been measured.

One key principle of the SMART program is compassion for self and others. Program content includes ways to practice compassion in daily life. The program is based on mindfulness principles, which are a key component of the practice of self-compassion (Germer & Neff, 2019). Self-compassion has been identified as an outcome of mindfulness-based practices (Golden et al., 2021). Implementing a SMART program intervention for FCGs has the potential

to improve self-compassion, protect psychological health, and improve well-being. This, in turn, may support them in providing effective, compassionate care to patients.

There are many promising outcomes of mindfulness practices and resilience training programs, including the SMART program, in other populations. However, because of the paucity of studies with clear outcome variables for FCGs of individuals with cancer and the failure to implement studied interventions into practice, it is critical to test the feasibility, acceptability, and efficacy of interventions like the SMART program with FCGs and leverage outcomes to support future integration of mindfulness interventions for FCGs into practice. The purpose of this study was to examine the feasibility and acceptability of the SMART intervention when provided to FCGs of individuals receiving chemotherapy for advanced HNC. In addition, the investigators examined the preliminary effects of the SMART intervention on stress, self-compassion, resilience, anxiety, and mindfulness in FCGs.

## Methods and Variables

### Sample and Setting

This study was conducted with 26 FCGs, aged 18 years or older, of individuals with HNC who were receiving chemotherapy in the medical oncology clinic at the Mayo Clinic Comprehensive Cancer Center in Rochester, Minnesota. Inclusion criteria were (a) self-identifying as the primary caregiver of an individual with advanced HNC, (b) living with the care recipient at least 50% of the time, (c) having the ability to read and speak English, and (d) being cognitively intact. The exclusion criterion was having a severe mental health diagnosis, which would require a more supervised program.

A sample size of 20 is sufficient in pilot studies to meet the goals of feasibility of methods and acceptability to participants (Morris & Rosenbloom, 2017). Based on attrition rates in previous research with similar populations (Dose et al., 2017), target enrollment was increased to 26 to improve chances of having complete data on a total sample of 20 FCG participants.

This single-arm prospective pilot study was approved by the Mayo Clinic Institutional Review Board, and written consent as well as Health Insurance Portability and Accountability Act authorization was obtained by all study participants. The aims of the study were to (a) examine the feasibility and acceptability of the study procedures, measures,

and intervention and (b) investigate the preliminary effectiveness of the SMART intervention on self-reported outcomes of self-compassion, resilience, perceived stress, anxiety, and mindfulness in FCGs at baseline and eight weeks after the initial intervention.

### Recruitment

Participants were recruited from the medical oncology clinic at the Mayo Clinic Comprehensive Cancer Center. Potential participants were identified by clinicians and a study coordinator who conducted chart reviews to identify individuals whose FCGs would likely be eligible. FCGs of potential participants were approached by the study coordinator during the care recipient's chemotherapy treatment appointment, and study inclusion and exclusion criteria were verified. Those who met the criteria were provided with information regarding the study protocols and were offered the opportunity to ask questions. If FCGs were undecided, they were provided with an informational flyer with study team contact information. Informed consent was obtained from those who agreed to participate.

### Intervention

Following the consent process and the completion of baseline instruments, all participants attended a 90-minute small-group SMART session provided by study investigators. The SMART session consisted of education about stress responses and principles of compassion, gratitude, mindful presence, kindness, and a resilient mindset. Brief, practical exercises for gratitude and mindful presence of one to two minutes each were introduced and practiced. The format was interactive, informal, and adaptable to the group's needs. After the group session, participants were instructed in using an online course with supplemental instructional videos for ongoing follow-up and skills practice during the eight-week study (Resilient Option, n.d.). Participants were also given a copy of the book *The Mayo Clinic Guide to Stress-Free Living* (Sood, 2013), which they were instructed to read during the eight-week study. The study team contacted participants by telephone every two weeks for the duration of the study to assess their progress and remind them to continue with the program components (see Figure 1). Samples of questions asked were as follows:

- Have you been able to practice the techniques offered during the small-group SMART session?
- If yes, about how many days have you practiced in the past two weeks?

- How much of the online course have you been able to complete in the past two weeks?
- How much of the book have you been able to complete in the past two weeks?

### Measures

Feasibility was measured by numbers and percentages of participant recruitment, enrollment, and accrual; retention of participants in the SMART intervention study; and components of the SMART intervention used by participants. Other data related to participant recruitment, such as the number of potential eligible participants, the number excluded for each of the specific inclusion and exclusion criteria, and the number of participants who chose not to enroll, were also measured. Use of the intervention was measured by the number of days that study participants practiced the activities (SMART techniques, online course, book) related to the program, as well as by self-reported completion percentages.

Acceptability was measured by satisfaction with the research process using the Was It Worth It (WIWI) questionnaire (Chauhan et al., 2012). The WIWI questionnaire was developed to evaluate patient satisfaction with cancer clinical trial participation in the cooperative group setting, with results reported as individual items. No psychometric data for this tool are available. Acceptability and satisfaction with the SMART intervention were also measured using the program evaluation questionnaire developed by the investigators.

Effectiveness measures were conducted at baseline (prior to the small-group SMART session), and eight weeks later. These were self-report measures

### FIGURE 1. Study Interventions and Measures Schedule

#### Baseline

- Preintervention effectiveness measures
- Small-group Stress Management and Resiliency Training session

#### Weeks 1–8

- Online course
- Book self-study
- Telephone calls from study team (every 2 weeks)

#### After Week 8

- Feedback, feasibility and acceptability measures
- Postintervention effectiveness measures

**Note.** Online course based on Resilient Option, n.d. Book self-study used Sood, 2013.

**TABLE 1. Sample Characteristics**

Characteristic	All Participants (N = 26)		Completers (N = 16)		Noncompleters (N = 10)	
	$\bar{X}$	Range	$\bar{X}$	Range	$\bar{X}$	Range
Age (years)	64.5	44-74	64.1	52-74	58.3	44-68
<b>Characteristic</b>		<b>n</b>		<b>n</b>		<b>n</b>
<b>Sex</b>						
Female		25		16		9
Male		1		-		1
<b>Education</b>						
Completed high school		2		2		-
Technical or associate degree		5		2		3
Bachelor's degree		13		7		6
Graduate degree		6		5		1
<b>Relationship to patient</b>						
Spouse or partner		23		14		9
Parent		2		1		1
Sibling		1		1		-
<b>Patient attended class with family caregiver</b>						
Yes		13		10		3
No		9		5		4
Missing data		4		1		3

of perceived stress, self-compassion, resilience, anxiety, and mindfulness. Demographic data were also collected at baseline. The study team conducted measures by hand and entered them into a REDCap database (Harris et al., 2009).

Stress was measured using the Perceived Stress Scale (PSS) (Cohen et al., 1983), a 14-item, five-point Likert-type scale that provides a global measure of perceived stress in the past two weeks. Responses range from 0 (never) to 4 (very often), with higher scores indicating greater stress. The reliability of the PSS is adequate ( $\alpha = 0.86$ ), and it correlates with other instruments such as the Number of Life Events ( $r = 0.2$ ,  $p < 0.01$ ) and Impact of Life Events ( $r = 0.35$ ,  $p < 0.01$ ) (Cohen et al., 1983).

Self-compassion was measured using the Self-Compassion Scale-Short Form (SCS-SF), which provides a single global score for self-compassion (Raes et al., 2011). This 12-item, five-point scale with scores ranging from 1 (almost never) to 5 (almost always) measures compassion toward oneself in a time of need, with higher scores indicating greater self-compassion. The SCS-SF has demonstrated adequate internal consistency ( $\alpha \geq 0.86$ ) and correlates

well with the long-form Self-Compassion Scale ( $r \geq 0.97$ ).

Resilience was measured using the 10-item Connor-Davidson Resilience Scale (CD-RISC). Total scores range from 0 to 40, with higher scores indicating greater resilience. The CD-RISC has been found to have adequate internal consistency ( $\alpha = 0.85$ ), validity, and negative correlation with the PSS ( $r = -0.76$ ,  $p < 0.001$ ) (Campbell-Sills & Stein, 2007; Connor & Davidson, 2003).

Anxiety symptoms were measured using the Patient-Reported Outcomes Measurement Information System Short Form v1.0-Anxiety 8a (PROMIS Anxiety) (Cella et al., 2010). The PROMIS Anxiety answer options range from 1 (never) to 5 (always), with higher scores indicating greater anxiety. Its reliability has been reported as greater than 0.89, with strong correlation between the short form and the total item bank ( $r = 0.96$ ) (Cella et al., 2010). Its correlations with other established instruments are strong, including the Center for Epidemiological Studies Depression Scale ( $r = 0.75$ ) and the Mood and Anxiety Symptom Questionnaire ( $r = 0.8$ ) (Cella et al., 2010).



Mindfulness was measured using the Mindfulness Attention Awareness Scale (MAAS), a 15-item, six-point Likert-type measure assessing mindfulness of moment-to-moment experiences. MAAS scores range from 1 (almost always) to 6 (almost never), with higher scores indicating greater mindfulness. The MAAS has adequate internal reliability ( $\alpha = 0.89$ ) (Brown & Ryan, 2003). Construct validity has been demonstrated through confirmatory factor analysis (Brown & Ryan, 2003; MacKillop & Anderson, 2007). Higher MAAS scores have been associated with lower mood disturbance as measured by the Profile of Mood States in individuals with cancer ( $r = -0.39$ ) (Carlson & Brown, 2005).

### Statistical Analysis

Data for participants who completed the study were entered into a REDCap database. Analyses were performed using SAS, version 9.4. Descriptive summaries were reported using mean and SD for age as a continuous variable and frequencies and percentages for categorical variables such as gender. Data collected from various scales (i.e., survey instruments) were summarized using median, minimum, and maximum because of non-normal distribution. There were 26 participants enrolled in this pilot study. Effectiveness of the SMART intervention was assessed using Wilcoxon signed-rank tests comparing measurements from baseline to week 8. Because of the pilot nature of the study and smaller sample size, no adjustments for multiple comparisons were performed. All tests were two-sided, and p values less than 0.05 were considered statistically significant.

## Results

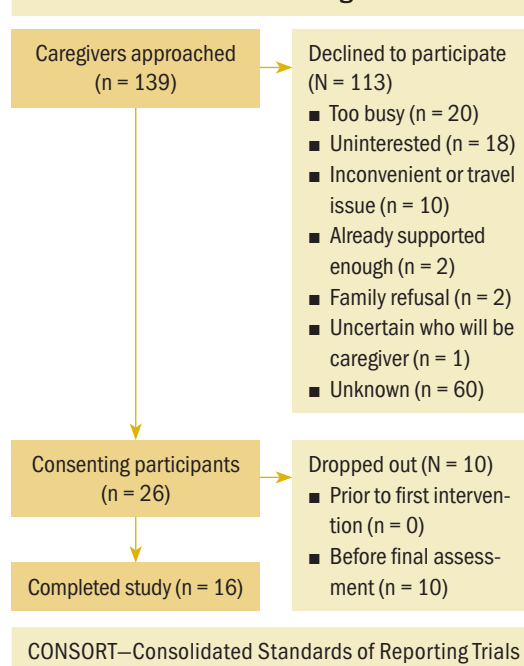
### Demographics

Twenty-six FCGs consented to participate, and 16 completed the study (defined as those who participated in the group session and completed measures at baseline and eight weeks). No participants dropped out of the study before the initial intervention. The participants were largely female ( $n = 25$ ), had a mean age of 64.5 years, tended to hold a bachelor's degree ( $n = 13$ ), and were frequently the spouse or partner of the patient ( $n = 23$ ). There was not a significant difference between the demographics of study completers and noncompleters (see Table 1).

### Feasibility and Acceptability

Of the 139 individuals who were approached to participate in the study, 26 agreed to participate (19% enrollment rate) and 16 completed the study (62%

**FIGURE 2. CONSORT Flow Diagram**



completion rate) (see Figure 2). No participants were excluded for inclusion or exclusion criteria. For those who did not agree to participate, 53 provided a reason such as too busy ( $n = 20$ ), uninterested ( $n = 18$ ), inconvenient or travel issue ( $n = 10$ ), already supported enough ( $n = 2$ ), family refusal ( $n = 2$ ), and uncertain who will be the caregiver ( $n = 1$ ).

When study completers ( $n = 16$ ) were asked how often they practiced the principles they learned in the small-group SMART session during the study period, most indicated they did so 41%–60% of the time ( $n = 7$ ) (see Table 2). Responses to the WIWI questionnaire items showed that most study completers answered “yes” to the following: “Study was worthwhile” ( $n = 14$ ), “would participate in the study again” ( $n = 15$ ), and “would recommend the study to others” ( $n = 14$ ). In addition, the majority indicated that their QOL had improved because of the study ( $n = 12$ ), and their overall experience with the study was better than expected ( $n = 11$ ) (see Table 3).

The program evaluation questionnaire was completed by 17 participants, and responses to the questions on the satisfaction portion of the questionnaire, measured on a scale from 1 (very disappointed, unlikely, or unhelpful) to 5 (very satisfied, likely, or helpful), indicated that most were either satisfied or very satisfied with the intervention ( $\bar{X} = 4.1$ ), would likely recommend the program to others ( $\bar{X} = 4.4$ ), and

**TABLE 2. Program Evaluation Questionnaire Data (N = 17)**

Evaluation Item	Score (“Not Satisfied” to “Very Satisfied”)						$\bar{X}$		
	0	1	2	3	4	5			
How satisfied were you with the SMART intervention?	-	-	-	3	9	5	4.1		
Evaluation Item	Score (“Not at All” to “Very Likely”)						$\bar{X}$		
	0	1	2	3	4	5			
How likely would you be to recommend this program to others?	-	-	-	2	9	6	4.4		
Evaluation Item	Score (“Not at All” to “Very Helpful”)						$\bar{X}$		
	0	1	2	3	4	5			
How helpful was the SMART program?	-	-	-	4	4	9	4.3		
Evaluation Item	Score (“None” to “Overwhelming”) <sup>a</sup>								$\bar{X}$
	0	1	2	3	5	6	7	8	
The burden in doing the SMART program was . . .	1	3	1	4	3	1	2	1	3.8
Evaluation Item	Score (“Very Difficult” to “Very Easy”)					$\bar{X}$			
	1	2	3	4	5				
How difficult was it for you to practice the skills you learned?	-	1	5	5	6	3.9			
Evaluation Item	Score (“Too Long” to “Too Short”)					$\bar{X}$			
	1	2	3	4	5				
What did you think about the length of the SMART class?	-	1	10	3	3	3.5			
Evaluation Item	Score						$\bar{X}$		
	0%	1%–20%	21%–40%	41%–60%	61%–80%	81%–100%			
How much of the book <i>The Mayo Clinic Guide to Stress-Free Living</i> were you able to read?	1	4	5	2	1	4			
What percentage of days during the past 8 weeks were you able to practice the SMART techniques?	-	2	2	7	2	4			
Evaluation Item	Score (“Very Difficult” to “Very Easy”)					$\bar{X}$			
	1	2	3	4	5				
Describe the ease of use of the online modules.	-	1	1	3	7	4.3			
Evaluation Item	Score (“Very Disappointed” to “Very Satisfied”)					$\bar{X}$			
	1	2	3	4	5				
What was your overall satisfaction with the modules?	-	-	2	4	5	4.3			
Evaluation Item	Score (“Very Negative” to “Very Positive”)					$\bar{X}$			
	1	2	3	4	5				
Consider the entire intervention for the following question: How was your overall experience?	-	-	2	4	11	4.5			

<sup>a</sup> Scores range from 0 to 10. Only values that participants scored are listed in this line item.  
 SMART—Stress Management and Resiliency Training  
**Note.** Not all respondents answered all of the questions, so some responses may not total 17.

found the program helpful ( $\bar{X} = 4.3$ ). When asked which aspects of the program participants liked the most, common themes were as follows: (a) the in-person class and the materials provided helpful information regarding understanding the brain and stress, such as how to override it with mindfulness, and having a choice about whether to be stressed; (b) the program provided stress management tools that were practical to begin immediately and fit into daily life; and (c) the online modules provided a convenient way to access the materials. One participant stated that “[the fact that] I was invited during a stressful situation [turned] my thinking around instantly after the class.” Another stated, “[The program] taught me a new way to focus—helped me to stay more in the moment—[to] be kind and make other people feel good.”

When asked what aspects of the program needed improvement, common themes were as follows: (a) would have been helpful to have the program before caregiving began; (b) would have liked a more effective way to follow up (suggestions included group follow-up meetings versus individual meetings and having some type of closure at the end of the program); (c) would have been helpful if the program was more tailored to caregivers; and (d) would have liked to have reminders to practice the principles of the program. One participant said that the individual follow-up calls did not provide much additional value, but it was “nice to have a compassionate voice on the other end.” Another stated, “I know I would get more out of this with discussion, hearing others’ thoughts.”

### Effectiveness

Five scales (PSS, SCS-SF, CD-RISC, PROMIS Anxiety, and MAAS) were used to assess the effectiveness of the SMART intervention. A descriptive summary of scores at baseline, week 8, and change from baseline

to week 8, along with the p values from Wilcoxon signed-rank tests, is presented in Table 4. Statistically significant improvements in self-compassion ( $p = 0.0251$ ) and anxiety ( $p = 0.0217$ ) were observed among the 16 participants who provided data at both time points. Scores for stress ( $p = 0.806$ ), resilience ( $p = 0.281$ ), and mindfulness ( $p = 0.189$ ) all improved from baseline to week 8, but improvements were not statistically significant.

### Implications for Nursing

Findings from this pilot study show that the intervention was found to be acceptable among participants; however, additional work, such as optimizing recruitment and retention efforts, is needed to enhance feasibility. The recruitment and retention rates (19% and 62%, respectively) for this study were low compared to those identified in a review of literature regarding recruitment and retention in biobehavioral intervention studies with FCGs of individuals with cancer (Song et al., 2021). The literature review reported an average recruitment rate of 33% with a range of 8%–100%, and an average retention rate of 68% with a range of 19%–100% in the intervention arms across all studies (Song et al., 2021). Effective strategies to enhance recruitment in future studies are warranted, such as using relevant language for FCGs in recruitment materials (Hansen et al., 2017); recruiting purposefully through social media, at community outreach centers, and at events where FCGs of people with cancer would be (Hansen et al., 2017; Song et al., 2021); and streamlining the process of identifying and determining eligible participants who would be most likely to benefit from the intervention (Song et al., 2021). Effective strategies for retention, such as identifying the optimal time for enrollment within the course of the patient’s illness,

**TABLE 3. Acceptability Data (N = 16)**

Topic	Yes	No	Uncertain
Study was worthwhile	14	-	2
Would participate in the study again	15	-	1
Would recommend the study to others	14	-	2
Topic	Improved	Got Worse	Stayed the Same
Quality of life changed due to study	12	-	4
Topic	Better Than Expected	Worse Than Expected	Same as Expected
Overall experience with study	11	-	5

**Note.** Based on Was It Worth It questionnaire by Chauhan et al., 2012.



**TABLE 4. Effectiveness Data From Baseline to Week 8 (N = 16)**

Outcome Scale	Baseline			Week 8			Change			p
	M	min	max	M	min	max	M	min	max	
CD-RISC	32	19	39	32	24	40	-1	-9	7	0.281
MAAS	64	55	77	68.5	40	83	-5	-16	15	0.1888
PROMIS	19	10	28	15	9	21	2.5	-3	12	0.0217*
PSS	22.5	12	29	19.5	7	26	5.5	-12	15	0.0806
SCS-SF	43.5	34	54	45.5	40	57	-2.5	-17	5	0.0251*

\* p < 0.05

CD-RISC—Connor–Davidson Resilience Scale; M—median; MAAS—Mindfulness Attention Awareness Scale; max—maximum; min—minimum; PROMIS—Patient-Reported Outcomes Measurement Information System Short Form v1.0—Anxiety 8a; PSS—Perceived Stress Scale; SCS-SF—Self Compassion Scale—Short Form

**Note.** The CD-RISC is a 10-item scale with total scores ranging from 0 to 40, with higher scores indicating greater resilience. The MAAS is a 15-item, 6-point Likert-type measure assessing mindfulness of moment-to-moment experiences. MAAS scores range from 1 (almost always) to 6 (almost never), with higher scores indicating greater mindfulness. The PROMIS is an 8-item, 5-point Likert-type scale with scores ranging from 1 (never) to 5 (always), with higher scores indicating greater anxiety. The PSS is a 14-item, 5-point Likert-type scale that provides a global measure of perceived stress in the past 2 weeks. Responses range from 0 (never) to 4 (very often), with higher scores indicating greater stress. The SCS-SF is a 12-item, 5-point Likert-type scale that measures compassion toward oneself in a time of need, with higher scores indicating greater self-compassion.

designing interventions to be flexible, identifying the ideal length of the treatment time period and number of sessions, and reducing the number of follow-up assessments, are also warranted (Song et al., 2021). Finally, it would be beneficial to interview participants who dropped out of the study to identify their specific rationales.

Subsequent investigation of the acceptability, feasibility, and effectiveness of the SMART intervention would be beneficial in other groups of FCGs with high levels of distress, such as caregivers of patients with brain, spine, or nervous system cancers. Further research is also warranted to explore this program in a fully virtual capacity. The ability to participate virtually could address concerns about the COVID-19 pandemic as well as transportation or logistical challenges for busy FCGs, which may increase participation and satisfaction. Another study improvement could be to involve the patient in the intervention. Some evidence supports using dyadic interventions to improve stress and well-being in individuals with advanced lung cancer and their spouses (Milbury et al., 2020). Further research could also seek to identify which caregivers may benefit most from which types of supportive interventions, such as individual, dyadic, or group. Some participants provided feedback that they would appreciate a more effective way to follow up with the investigation team. A program could be developed to adapt to individual needs by providing more or fewer follow-up sessions for participants depending on their outcomes and preferences.

Caregivers for individuals with cancer receive psychosocial support from services such as social work or palliative care, but this often must be in conjunction with patient visits. There are few resources available that focus primarily on supporting caregivers. This intervention provides an opportunity for caregivers to come together and focus on their own self-care and resilience. Findings from the study demonstrate that participation in the SMART program led to significant improvements in self-compassion and anxiety for FCGs, as well as trends in a positive direction for stress, resilience, and mindfulness. Similar benefits were noted in a previous study with a SMART/ yoga intervention for caregivers and patients receiving transplantation, where significant ( $p < 0.005$ ) improvements were demonstrated in perceived stress, depression, anxiety, and negative affect (Stonnington et al., 2016). In addition, a SMART intervention with new nurses demonstrated positive trends in outcomes of stress, mindfulness, anxiety, and resilience (Chesak et al., 2015). In another study with nurse residents, significant ( $p < 0.001$ ) improvements were noted for stress, mindfulness, and resilience in the intervention group compared to a control group (Chesak et al., 2021). In a study with experienced nurses, significant ( $p < 0.001$ ) improvements were noted for stress, burnout, happiness, and mindful attention (Magtibay et al., 2017). Qualitative analysis from one of the studies found, among other outcomes, that the SMART intervention enhanced participants' ability to manage emotionally taxing and task-oriented components of

their roles, made them feel better about themselves, and increased their sense of calm (Chesak et al., 2019).

Outcomes from this study suggest that FCGs may experience similar benefits as professional caregivers from the SMART program. The findings indicating improved psychological health among FCG participants are supported by additional work from a systematic review across a population of caregivers, which shows that mindfulness-based programs can improve the psychological well-being of FCGs with various health conditions and diagnoses (Li et al., 2016).

Because study outcomes demonstrate support for the acceptability of the SMART program among FCGs, oncology nurses may want to participate in further SMART training with the goal of educating FCGs of patients with cancer. There should be future studies identifying whether nurses who integrate lessons from the SMART intervention and improve their own psychological well-being would be able to authentically educate patients and their FCGs using the program.

An evidence-based, easily accessible program to reduce stress and improve resilience, self-compassion, and mindfulness may help to improve psychological health and well-being among nurses faced with extensive job demands and complicated patient care requirements. Improving nurses' well-being can benefit nurses directly and those they care for in an indirect or synergistic way.

## Conclusion

The SMART program is acceptable among FCGs of individuals with advanced HNC, and efforts toward optimal feasibility (i.e., recruitment and retention strategies) are warranted for future studies. Effectiveness data demonstrated statistically significant improvements in self-compassion and anxiety, with positive trends for stress, resilience, and mindfulness. Limitations of the study were a small sample size, lack of control group, and lack of gender diversity among participants, as well as lack of race or ethnicity data. Additional research is warranted with larger numbers, a controlled design, and a more diverse sample to potentially enhance generalizability of results; identify which caregivers may benefit most from which types of supportive interventions, such as individual, dyadic, or group; determine the mechanism of action of the program; and identify whether nurses who care for individuals with complex health-care needs would benefit in tandem with their care recipients in a synergistic way, from participating in the SMART program.

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## KNOWLEDGE TRANSLATION

- A resilience training program for family caregivers can be acceptable and effective.
  - Tailoring the Stress Management and Resiliency Training program to enhance its feasibility for family caregivers is warranted.
  - Future research can study aspects of a resilience training program, such as the mechanism of action, benefits of group follow-up sessions, and possible synergistic benefits of including individuals receiving oncology care, family caregivers, and nurses in the program.
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**Sherry S. Chesak, PhD, RN**, is a nurse scientist in the Division of Nursing Research, **Ann Marie Dose, PhD, RN**, is a principal health services analyst in the Division of Health Care Policy and Research in the Kern Center, and **Jay Mandrekar, PhD**, is a professor of biostatistics, all at the Mayo Clinic in Rochester, MN; **Dara James, PhD, MS**, is a postdoctoral scholar in the Edson College of Nursing and Health Innovation at Arizona State University in Phoenix; **Deidre R. Pachman, MD**, is a physician, **Susanne Cutshall, DNP, APRN, CNS**, is a clinical nurse specialist, and **Debbie Lynn Fuehrer, MA, LPCC**, is a mind-body medicine counselor and instructor in medicine, all at the Mayo Clinic; and **Amit Sood, MD**, is the executive director of the Global Center for Resiliency and Wellbeing in Rochester. Chesak can be reached at [chesak.sherry@mayo.edu](mailto:chesak.sherry@mayo.edu), with copy to [ONFEditor@ons.org](mailto:ONFEditor@ons.org). (Submitted January 2022. Accepted May 19, 2022.)

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## QUESTION GUIDE FOR A JOURNAL CLUB

Journal clubs can help to increase and translate findings to clinical practice, education, administration, and research. Use the following questions to start discussion at your next journal club meeting. Then, take time to recap the discussion and make plans to proceed with suggested strategies.

1. Discuss common issues faced by caregivers of individuals with advanced head and neck cancer.
2. Examine the Stress Management and Resiliency Training program format in terms of its feasibility. What are the strengths and weaknesses of this design?
3. From a practice perspective, discuss the benefits and drawbacks of the proposed intervention.

Visit <https://bit.ly/1vUqbVj> for details on creating and participating in a journal club. Contact [pubONF@ons.org](mailto:pubONF@ons.org) for assistance or feedback. Photocopying of the article for discussion purposes is permitted.