

Feasibility of EASE: a psychosocial program to improve symptom management in head and neck cancer patients

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Abstract

Purpose Head and neck cancer (HNC) patients experience multiple physical and psychosocial symptoms associated with their cancer treatment. The Easing and Alleviating Symptoms during Treatment (EASE) study utilized a mixed methods design to examine the feasibility of a tailored telephone-based coping and stress management intervention to improve symptom management and psychosocial care among HNC patients.

Methods An Embedded Correlational Mixed Methods Design was utilized to answer two research questions: (1) is the EASE intervention feasible? and (2) Did EASE participants report improvements in psychosocial outcomes after completion of the EASE intervention? HNC patients were assessed at baseline and 3 months. Psychosocial measures included cancer-specific distress, pain, social support, and

quality of life. Project records and exit interviews were conducted to assess acceptability and satisfaction with the intervention.

Results The mean age of the participants was 60 years (SD=9.5), 76 % were male, 47 % married/partnered, and 57 % had a history of tobacco use. Of the 24 participants who were enrolled, 16 completed the intervention. Participants and telephone counselors reported high levels of satisfaction. Although the small sample size and lack of a control group limit our ability to assess the efficacy of the intervention, our findings suggest that the intervention helped to buffer the negative emotional and physical impact of cancer treatment.

Conclusions This pilot study demonstrated that the EASE intervention is feasible and acceptable to HNC cancer patients undergoing treatment. The study findings revealed some challenges of implementing a psychosocial intervention in HNC patients and inform future intervention studies with this population.

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Introduction

Head and neck cancer (HNC) is one of the most traumatic forms of cancer because of the impact on fundamental aspects of living (i.e., eating, breathing, and swallowing) and the potential for long-term dysfunction and disfigurement [1]. Treatment for many head and neck cancers includes concomitant chemotherapy and radiation treatment, which is associated with a number of significant physical and social-emotional side effects [2, 3]. HNC patients have poorer quality of life (QOL) [4–6], higher frequency (30–40 %) of distress [7–10], and an

increased risk of suicide compared to other cancer patients [11, 12]. Although some of these problems gradually resolve following the cessation of treatment, a large proportion (24–50 %) of HNC patients report chronic dysfunction [7, 13, 14], which can result in psychological difficulties [8]. Recent studies have reported a strong association between psychosocial factors, quality of life, and survival in head and neck cancer patients [15, 16]

Psychosocial interventions for head and neck cancer patients

To date, there are a limited number of published psychosocial intervention studies—defined broadly as interventions that include psychological, behavioral, and psychoeducational components—assessing QOL outcomes in HNC patients. These studies include a mixture of content (e.g., patient education, coping skills training) and modalities (e.g., individual, group-based) making cross comparisons difficult. Hammerlid [17, 18] tested the impact of a long-term psychological group therapy for newly diagnosed head and neck cancer patients [17]; therapy cases demonstrated improvement in QOL compared to controls. The second trial assessed the impact of a short-term psychoeducational program for patients at 1-year posttreatment. The intervention group showed improvements in measures of physical symptoms and functioning [18]. A study by Petruson and colleagues [19] found no difference in health-related quality of life between controls and participants who engaged in repeated meetings with a multidisciplinary medical team for 1 year following their initial cancer diagnosis. Allison and colleagues [20] reported positive findings from a pilot study examining the feasibility of a coping intervention that offered participants a choice of several intervention modalities, including individual, group, and home-format options. Participants experienced improvements in global quality of life and reductions in depressive symptoms. In another study, HNC patients with posttreatment psychosocial dysfunction were able to self-select into an individualized problem-focused intervention or a control condition. The intervention group reported decreases in psychological distress and improved social functioning and quality of life scores [21]. Research suggests that psychosocial interventions, especially those that contain elements of cognitive-behavioral therapy, can have a significant impact on various QOL outcomes [22]. In terms of the modality, a survey of HNC patients who recently completed cancer treatment reported a preference for individual psychosocial interventions over group-based programs, bibliotherapy, or computer-assisted therapy [23].

The method for delivering psychosocial interventions can also impact the success of the intervention. The telephone is frequently utilized as an acceptable and valid modality for

delivering psychosocial interventions. Previous work demonstrates that telephone-based psychosocial interventions aimed at decreasing distress and improving clinical outcome are effective and efficacious for a variety of medical patients [24–28]. A telephone-based intervention is particularly relevant to HNC patients undergoing treatment; it decreases the burden of coming into the clinic for additional visits, and it is able to reach those with geographical barriers, poor social support, and/or treatment-related symptoms that can hinder the desire and ability to travel away from their home [29–31]. Some of the disadvantages of the telephone is that the counselor is unable to assess the patients' nonverbal behaviors and expressions. Additionally, HNC patients who find it difficult to speak, suffer from a hearing impairment, or experience attention and/or concentration problems would find it challenging to participate in a telephone-based intervention.

The goals of this pilot study were to: (1) test the feasibility and acceptability of a psychosocial intervention delivered by telephone [Easing and Alleviating Symptoms during Treatment (EASE)] designed to improve symptom management in newly diagnosed HNC patients undergoing cancer treatment and (2) to provide a preliminary assessment of the intervention benefits among EASE participants. The EASE intervention involved (1) an ongoing systematic assessment of physical, psychosocial, and functional needs; (2) a psychoeducational component geared toward the management of treatment side effects, and (3) coping skills training to facilitate adaptive coping and improve self-care and symptom management. A recent review of the literature did not produce any published empirical studies in oncology testing a psychosocial intervention delivered by telephone to aid HNC patients with information and techniques to cope with treatment-related symptoms.

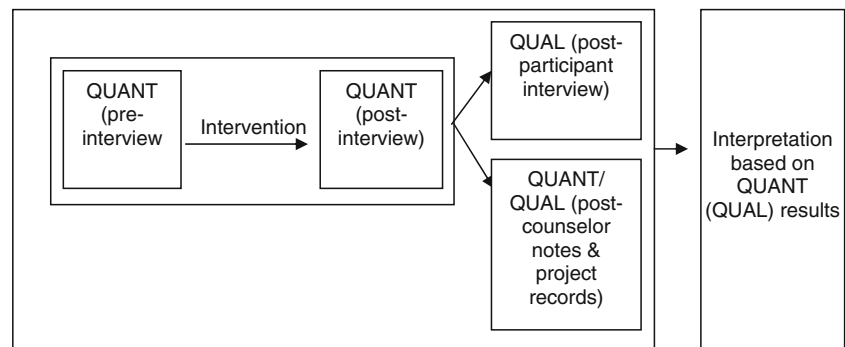
Methods

Study design and participant enrollment

An Embedded Correlational Mixed Methods Design [32] was applied based on the assumption that solely relying on a quantitative approach would not sufficiently answer the two research questions stated above; therefore, qualitative data components were embedded within the quantitative correlational design to examine the process of the EASE intervention [32]. Figure 1 graphically displays the use of the mixed methods analysis.

Potential participants were identified and recruited from a university-based Radiation Oncology Clinic at the time of their initial consult. Eligibility criteria included: (1) a recent diagnosis of cancer of the head and neck, (2) receiving curative treatment that included radiotherapy, (3) access to

Fig. 1 Diagram notation of mixed methods analysis of EASE intervention. *QUAL* qualitative data collection, *QUANT* quantitative data collection. Diagram notation of mixed methods provided by Creswell and Plano-Clark [32]



a telephone, (4) English speaking, and (5) no overt psychosis or other medical or psychological condition that could interfere with the ability to consent and/or participate in the program. The study was approved by an Institutional Review Board and was compliant with the current HIPAA regulations and guidelines [33]. Due to the correlational nature of the study design, convenience sampling was imposed to evaluate the feasibility of the EASE intervention. Enrollment into the study and written informed consent took place at the time of the radiotherapy consult or during one of the treatment visits. Given that these conversations occurred in a private area, and the intervention was delivered by phone to patients in their home, there were no ethical concerns regarding other patient's desire to receive additional services via the EASE program.

The EASE intervention

EASE utilized the empirically supported Transactional Model of Stress and Coping (TMSC) as a conceptual model. TMSC predicts that those who are able to handle and adapt to the challenges of cancer treatment will experience lower levels of distress and higher quality of life [24, 34]. Transactional-based interventions utilizing cognitive-behavioral intervention strategies are associated with improved coping and adaptation to stressful life events [10]. The EASE intervention aimed to facilitate adaptive appraisals of stress and active coping among participants, as well as reduce emotional distress and increase self-efficacy related to symptom management. EASE included up to eight telephone counseling sessions delivered during the course of cancer treatment. Telephone sessions were scheduled to correspond with key phases in the illness treatment continuum (e.g., time of diagnosis, active treatment, and end of treatment), and the number of sessions was determined by the length of the patient's treatment. Although the EASE intervention was tailored and adapted to meet the unique needs of HNC patients, the foundation of the EASE intervention was strongly based on the evidence-based cognitive-behavioral stress management model established and tested by Antoni and colleagues which is associated with decreases in

distress and improvements in quality of life in other cancer populations [35, 36]. In addition to stress management and coping skills training, EASE also provided psychoeducation aimed at increasing understanding of treatment-related factors (i.e., treatment side effects, mechanisms of treatment, and cancer-specific knowledge) with the aim of improving self-care behaviors.

Outcome measures

Telephone assessment interviews were conducted at baseline and at 1 month following completion of the intervention to provide a preliminary assessment of the intervention benefits. The baseline interviews included a battery of quantitative outcome measures that were completed on average of 9.29 days (SD=6.89) following recruitment into the project. In addition to the quantitative measures used in the baseline assessment, the post-intervention interview also included qualitative process evaluation questions to assess acceptability and satisfaction with the intervention. Table 1 includes an overview of the key outcome variables. The interviews were conducted by professional telephone interviewers from the Computer-Assisted Telephone Interviewing Unit at the University of Colorado which has completed in excess of 100,000 telephone interviews, the vast majority of which were funded by the National Cancer Institute, Center for Disease Control, and the American Cancer Society. The data collected by the interviewers were directly entered into an IRB-approved ACCESS database that was later transferred into an SPSS database.

In addition to the pre- and post-intervention assessments, eight participants completed qualitative exit interviews consisting of 22 open-ended questions regarding recruitment procedures, intervention process (timing, content, and use of telephone), overall impressions of the program, and suggestions for improvement (see Table 2). The qualitative elements of these interviews were transcribed by the research assistant and entered into a single database using NVivo Qualitative software, with qualitative responses label by participant ID [37]. To evaluate the feasibility of the EASE program, detailed project records were analyzed. These records included qualitative and quantitative data: (1) participation rates, (2) number of telephone counseling sessions completed, (3) debriefing

Table 1 Key outcome measures

Key outcomes	Source of data
Cancer-specific distress	Impact of Events Scale (IES; [42]) Reliability, Intrusion (7 items; $\alpha=.78$) and Avoidance (8 items; $\alpha=.82$). Split-half reliability of the total scale is .86
Quality of life	The Functional Assessment of Cancer Therapy—H and N (FACT-H&N; [43]). Reliability, $\alpha=0.89$
Pain	The Pain Disability Index (PDI; [44]) Reliability, $\alpha=0.86$
Social support	Interpersonal Support Evaluation List—ISEL-12; [45]). Reliability, $\alpha=0.90$
Satisfaction with the EASE program	<ul style="list-style-type: none"> • Process evaluation questions—blend of fixed response (i.e., Likert-type questions) and open-ended questions • Qualitative exit interviews
Participant characteristics	Demographics (age, marital status, education, and family income) Medical variables (cancer stage and treatment)

calls with the telephone counselors asking about their impressions of the acceptability and effectiveness of the intervention (see Table 2), and (4) counselor notes detailing the symptoms endorsed by the participant, issues covered during the session, and any resulting action plan.

Data analysis

Both quantitative and qualitative data were analyzed to provide support for the two research questions. Regarding the quantitative data, descriptive statistics (frequencies and percentages), effect sizes (Cohen's d), and nonparametric correlations (τ) were computed. Following Cohen's [38] guidelines, .20 is small effect, .50 is a medium effect, and .80 depicts a large effect. Since the research was conducted as an intervention-only design, observed effect sizes may not be exclusively attributed to our intervention. All effect sizes are corrected for scale direction, with positive values indicating a desired outcomes (e.g., decrease in distress, increase in social support, and quality of life) and negative value depicting an undesired outcome. Due to the limited sample size, significance testing was not conducted and p values are not reported. Qualitative data were analyzed using constant comparison techniques and extracting themes that emerged within the data and achieved saturation. Finally, the quantitative results were compared to the qualitative findings to determine if the two data sources supported or contradicted each other.

Results

The results described below include both the qualitative and quantitative findings used to determine the feasibility, acceptability, and participant satisfaction of the EASE

intervention (research question 1). This section also describes the psychosocial outcomes in order to determine the potential effectiveness of the intervention (research question 2) as well as suggestions for future implementation as stated by the participants and the telephone counselors.

Feasibility: recruitment and retention

A total of 28 participants were approached, and 24 enrolled in the project over the 12-month accrual period. Of the 24 participants who enrolled in the study, 21 completed the baseline assessment and 16 completed the intervention, receiving a range of two to ten sessions (five individuals received one to three sessions, eight received four to six sessions, and three received seven to ten sessions). Eleven participants completed all assessment points, resulting in a 52.3 % retention rate when accounting for those who died during the course of the intervention ($n=2$). A flow diagram of the EASE study is presented in Fig. 2.

Participants who started but did not complete the EASE program were more likely to be younger, divorced or never married, and employed full time or on disability. Demographic and medical characteristics of the 21 participants that completed the initial assessment are displayed in Table 3.

Acceptability of the EASE intervention

Information about acceptability of the intervention was gathered via project records, the process evaluation questions included in the final assessment, post-intervention interviews with the participants, and debriefing calls with the telephone counselor. Qualitative analysis of these data indicates that the delivery method, timing, and format of the EASE intervention were acceptable to the majority of the

Table 2 Process evaluation questions

Participant exit interview questions

Overall: most helpful (four-point Likert scale)

1. Please rate how useful this program was for you.
2. What was the most useful aspect of the program? Least helpful?

Recruitment (open-ended questions)

3. When were you approached for participation in this study? Did you feel the timing was respectful of your illness and treatment?
4. Do you feel you were recruited early enough in your treatment?
5. What about the study interested you or encouraged you to enroll?
6. What additional information would have been helpful in making your decision?
7. Looking back, did you have a clear understanding of the nature of the intervention at the time of enrollment?
8. Would you be interested in completing the initial questions/assessment online versus over the phone? Some other way?

The process of the intervention (open-ended questions)

Phone

9. How did it work for you to participate in this program by phone (pros/cons)?
10. Would it have been helpful to meet the counselor face-to-face once prior to starting the EASE program?
11. Were you happy with the number of phone contacts and counseling calls that you received (why/why not)?

Direction of content

12. Did you feel that you were able to direct the calls to meet your needs?
13. Would you have appreciated more instruction or education from the counselor on certain topics (if so, which topics)?

Timing

14. Was it most helpful for you to talk to the counselor before, during, or after your treatment?
15. If you did not get to talk to the counselor before you started treatment, would you have liked contact and/or information and counseling prior to the start of treatment?
16. What was the most difficult aspect of your treatment?
17. Was the EASE program able to assist you with this?
18. Did you feel prepared for the end of treatment?
19. Did contact with the counselor help you feel more prepared for the end of treatment and the phase after treatment (why/why not)?
20. Would you have liked more contact after the end of treatment? For how long?

Program improvements

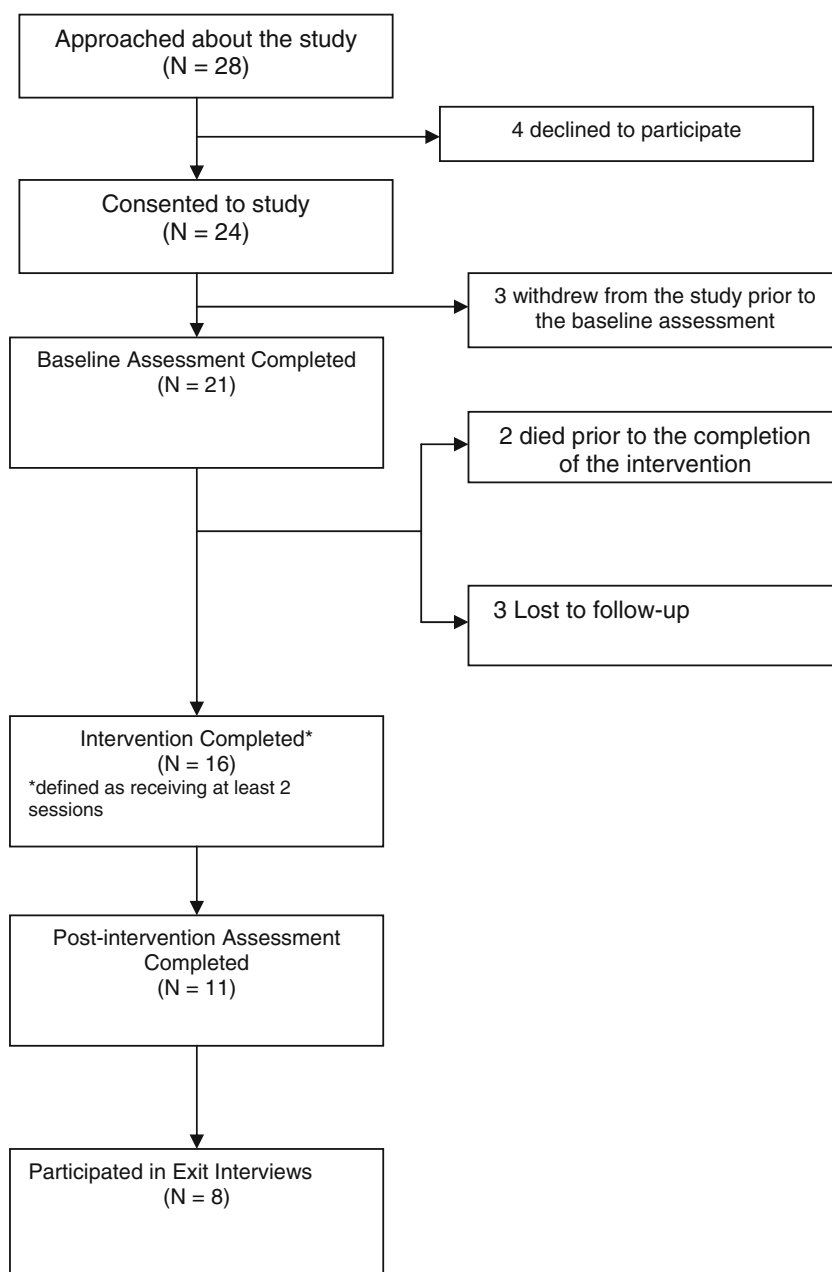
21. Would you recommend this program to other patients like yourself (why/why not)?
22. What could we do to improve this program? Is there anything else that would have helped you through this process?

Counselor debriefing questions

1. Overall, how would you rate participants' receptivity to the counseling process? (seven-point Likert scale)
2. When did the participants seem most engaged/least engaged in the counseling process? (pretreatment, beginning treatment, mid-treatment, end of treatment, after treatment)?
3. What could we do to improve this program? (open-ended question)

participants. Regarding the delivery of counseling via telephone calls, the majority of participants agreed that phone counseling was preferred, with two participants opposing the use of phone counseling attributing their lack of satisfaction to the impersonal nature of this form of communication. In terms of the number of calls, a few participants suggested reducing the number of counseling calls, especially on days when they received cancer treatment, and

three participants suggested increasing the frequency of calls. When asked about the utility of receiving counseling calls while undergoing cancer treatment, the majority of participants (66.7 %) felt that their treatment-related side effects interfered with the counseling calls. The process of conducting the telephone counseling intervention was viewed positively by the telephone counselors. The counselors rated at least half of the participants (56.3 %) as being

Fig. 2 Study flow chart

“highly responsive” to the counseling sessions and reported that participants were most engaged in the counseling intervention at the beginning of their cancer treatment (56.3 %), with less engagement found in the middle (18.8 %) and end of treatment (25.0 %).

It is important to note that three participants were unable to participate in the exit interviews because of health and/or logistical issues. Review of their process evaluation responses indicated that they all had overwhelmingly positive reviews of the study. Based on these follow-up assessments, it appears they would have positively impacted the acceptability and satisfaction outcomes associated with the exit interviews had they participated in this process.

Satisfaction with the EASE intervention

Exit interview data suggest that the majority of participants were highly satisfied with the EASE program. For example, one participant stated “It worked out really well for me. I enjoyed it. I enjoyed talking to my counselor, and everything was really great. I think it’s a good program.” Despite the majority of participants (63 %) being satisfied with the program, three participants agreed with the statement, “this program as not very useful” because (as stated as the reason by each of the three), they “already had a good support system,” their “symptoms were not very severe,” and they had “extensive knowledge about their treatment.” However,

Table 3 Participant characteristics ($N=21$)

Demographic/medical variable	Percentage/mean (SD)
Age	$M=59.66$ years, $SD=9.78$
Gender	
Male	76.2 %
Female	23.8 %
Education	
< Associate degree	51.9 %
\geq Associate degree	47.6 %
Employment	
Full time	47.6 %
Unemployed	9.5 %
Retired	42.9 %
Tumor site	
Tongue	42.9 %
Oralopharyngeal and Tonsillar	23.8 %
Larynx	14.3 %
Nasopharynx	9.5 %
Supraglottis	4.8 %
Unknown	4.8 %
In stage 4	76.2 %
Currently on chemo	85.7 %
Currently had feeding tube:	76.2 %
Median Karnofsky score	70 (range, 60–80)
Tobacco use	
Past tobacco use	57.1 %
No past tobacco use	42.9 %
Alcohol use	
No past alcohol use	4.8 %
Low alcohol use (1–2 drinks/week)	42.9 %
Moderate alcohol use (3–9 drinks/week)	42.9 %
High alcohol use (≥ 10 drinks/week)	9.5 %

The total number of participants who completed the baseline assessment was 21

these three participants also displayed an improvement in various psychosocial outcomes following the completion of the EASE intervention.

Preliminary psychosocial outcomes

A small decrease in participants' cancer-specific distress was observed between the two time points, displayed by the small positive effect sizes found for the Impact of Events Scale (IES), on both the Intrusive and Avoidance subscales (Table 4). Participants experienced a decrease in HNC-specific QOL (e.g., problems related to eating, drinking, and speaking; more head and neck related pain), small decrease in the domains of functional and physical well-being, and no substantial change in emotional and social/

family well-being. Participants displayed no change in their pain scores and a small decrease in perceived social support.

Suggestions for future implementation

To gain a deeper understanding of how the EASE program could be improved, participants and counselors were asked for suggestions for future implementation. Two suggestions emerged. The first suggestion was to have the counselor and the patient meet prior to beginning the telephone counseling intervention. Counselors and participants agreed that an initial face-to-face meeting would "have helped establish a trust." One of the participants who had an opportunity to engage in a face-to-face meeting with their counselor stated that because of this meeting, "I had a little better understanding and feel; I could relate and communicate better because I had seen my counselor at least once and she was a person and not a voice over the phone."

The other frequent suggestion revolved around the timing of the counseling sessions. The majority of participants felt that it would have been helpful to talk to the counselor prior to the onset of cancer treatment. One participant stated, "That might be a good idea [starting the intervention prior to treatment] because obviously many people would feel apprehensive when you learn you've been diagnosed with cancer." Additionally, a few participants suggested extending counseling after treatment was completed to assist them in managing long-term side effects.

Discussion

The primary goal of this study was to test the feasibility and acceptability of a telephone-based psychosocial intervention for individuals undergoing treatment for HNC and to provide a preliminary assessment of intervention benefits. A mixed methods design was utilized in order to obtain a more complete understanding of participants' experience. The EASE intervention was acceptable, feasible, and clinically relevant to HNC patients, and the project was able to successfully recruit newly diagnosed head and neck cancer patients into the study. This is especially significant since other studies have reported difficulty recruiting this population for psychosocial interventions [39].

Despite our ability to successfully recruit HNC patients who were undergoing curative treatment, 33 % of participants did not complete the intervention. Although our findings suggest that there may be some demographic and medical variables that are associated with noncompletion (e.g., age, relationship status, and employment status), future psychosocial intervention studies need to consider innovative strategies to improve adherence to psychosocial and behavioral interventions.

Table 4 Effect sizes for psychosocial changes from baseline to post-intervention ($N=11$)

Measure	Means and standard deviations		Effect size Baseline to 3 months
	Baseline	Post-intervention	
Impact of Events Scale (IES)			
IES—Total score	24.64 SD=9.09	23.18 SD=8.01	0.17
IES—Avoidance	13.27 SD=5.35	12.27 SD=4.20	0.21
IES—Intrusion	11.36 SD=4.13	10.91 SD=4.57	0.10
Functional Assessment of Cancer Therapy (FACT)			
FACT—HN (head and neck)	47.73 SD=9.59	42.45 SD=6.31	-0.66
FACT—GF (functional)	27.79 SD=5.62	26.68 SD=4.17	-0.23
FACT—GP (physical)	29.41 SD=6.18	27.29 SD=5.89	-0.35
FACT—GE (emotional)	26.89 SD=2.49	26.80 SD=2.25	-0.04
FACT—GS (social–family)	29.80 SD=7.08	29.36 SD=4.15	-0.08
Pain Disability Index (PDI)	11.18 SD=20.04	12.08 SD=12.91	-0.05
Interpersonal Support Evaluation List (ISEL)	12.45 SD=4.97	13.14 SD=4.21	-0.15

$d=.20$ (small effect), $d=.50$ (moderate effect), $d=.80$ (large effect) [37]

The small sample size and the lack of a control group do not allow us to comment on the effectiveness of the intervention. Nevertheless, our findings suggest that the intervention may have helped to buffer the negative emotional and physical impact of cancer treatment. We postulate that distress reductions among participants are likely to be more than what we would expect in a usual care comparison group. Studies of HNC patients have reported increases in distress and decreases in quality of life at the end of treatment [39], suggesting that the modest decreases in cancer-specific distress that we observed may be meaningful. While large gains in psychosocial outcomes were not reported, all participants who completed the program displayed an increase in at least one desired outcome, with 81.8 % of participants increasing in at least two or more outcome domains.

Interestingly, participants reported a decrease in social support across the two time points. Although this is not what we had expected, a recent longitudinal study of HNC patients assessed at diagnosis and 12 months posttreatment described similar findings [40]. It is hypothesized that the high levels of physical and emotional distress in this population limit their ability to seek out social support [41]. Despite the observed decrease in social support scores, the quantitative findings suggest that the majority of participants appreciated the social support that they received through their participation in the EASE intervention. To

illustrate, one participant stated, “I think the young lady listening to me, offering support, encouragement; you know just having someone you can talk to was a great thing.”

Special challenges and limitations

Head and neck cancer treatment is associated with a high number of treatment side effects and a subsequent decrease in quality of life [1–6]. HNC patients struggle to cope with the many challenges of treatment while attempting to manage the other aspects of their lives such as work responsibilities, family issues, and social relationships. EASE was developed with the goal of alleviating some of the stressors associated with cancer treatment. Unfortunately, many of the participants had difficulty finding the time to participate in regular counseling sessions because of competing demands and intrusive physical symptoms, such as fatigue and mouth and throat pain. This was evident in the counselors’ observation that participants were less engaged in the intervention during the middle and end phases of treatment, when many HNC patients experience an increase in the severity of their physical symptoms. Additionally, many of the participants were reticent to discuss intensely emotional issues during the telephone sessions. This reluctance may reflect the HNC patients’ perception that they did not have

the emotional and physical resources to handle some of the strong emotions that may have been triggered by some of these discussions.

The small sample size and lack of a comparison group limit our ability to assess the impact of the EASE intervention on symptom management and overall quality of life. We postulate that the observed improvements in these participants are likely to be more than we would expect in a usual care comparison group given the documented decreases in quality of life observed in HNC patients undergoing treatment [4–6].

Implications and future directions

The EASE pilot intervention study demonstrated acceptability and feasibility of a psychosocial intervention aimed at improving symptom management and coping skills in newly diagnosed head and neck cancer patients. Our lower than expected retention rate suggests that the EASE intervention did not satisfy the needs of all of these patients. Nevertheless, we were able to demonstrate that a proportion of HNC patients were able to successfully complete a psychosocial intervention while concurrently undergoing cancer treatment. The participants reported high levels of satisfaction with the program and high levels of self-efficacy regarding their ability to implement and utilize the skills that they had learned and practiced over the course of the program. Participants also provided feedback on the aspects of the EASE intervention that could be improved. Many noted that they would have preferred to begin the intervention sessions prior to the onset of treatment, and they would have appreciated the opportunity to meet their counselor face-to-face. Future interventions should consider including a face-to-face follow-up with patients who were not able to complete the phone intervention as well as a web-based resource for those who find that more convenient.

Although our small, single-group design limited our ability to interpret our psychosocial outcomes, the preliminary findings suggest that the intervention may have decreased cancer-specific distress during treatment. Future studies should carefully consider ways to integrate the counseling sessions into the cancer treatment continuum such that HNC patients receive adequate support during key phases of treatment (e.g., diagnosis, surgery, chemotherapy/radiation, and the reentry phase). These findings provide support for and inform design of future randomized trials to examine the efficacy of psychosocial interventions in newly diagnosed HNC patients.

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