



## Short communication

# Goal-focused Emotion-Regulation Therapy for young adult survivors of testicular cancer: Feasibility of a behavioral intervention

Michael A. Hoyt<sup>a, \*</sup>, Christian J. Nelson<sup>b</sup>

<sup>a</sup> Department of Population Health and Disease Prevention and the Chao Family Comprehensive Cancer Center, University of California, Irvine, USA

<sup>b</sup> Department of Psychiatry and Biobehavioral Science, Memorial Sloan Kettering Cancer Center, USA



## ARTICLE INFO

**Keywords:**  
Intervention  
Testicular cancer  
Goal  
Young adult  
Feasibility  
Depression  
Anxiety  
Adjustment

## ABSTRACT

**Background:** Young adult cancer testicular survivors experience impairing, distressing, and modifiable physical, behavioral, and psychosocial adverse outcomes that persist long after the completion of primary medical treatment. These include psychological distress and poor psychosocial adjustment, impaired navigation of life goals, persistent treatment side effects, and fear associated with elevated risk of secondary malignancies and chronic illness. This paper describes the feasibility and acceptability of a novel intervention, Goal-focused Emotion-Regulation Therapy (GET) aimed at improving distress symptoms, emotion regulation, and goal navigation skills in young adult testicular cancer patients. **METHODS:** Participants (N = 6) were recruited from a large comprehensive cancer center and received the GET intervention that included six individual sessions across eight weeks. Following all sessions, participants underwent a qualitative interview. **RESULTS:** Results supported the feasibility in recruitment and retention and overall positive satisfaction, working alliance, and helpfulness of the intervention. Clinically meaningful change was observed in both depression and anxiety. **CONCLUSION:** With slight adaptation, results support the feasibility of a future clinical trial.

## 1. Introduction

Testicular cancer is commonly diagnosed in young adulthood, and incidence has been rising in recent years [1]. The psychosocial impact of testicular cancer includes elevations in anxiety and depression, as well as fertility and sexual dysfunction, masculinity threat, work-related problems, and worry about the future [2,3]. The long consequences are more severe and persistent in those receiving chemotherapy, and include neuropathy, hearing loss, infertility, and increased risk of secondary malignancies and cardiovascular disease [4,5].

Despite this, there is a paucity of research developing and testing psycho-oncology interventions for young adult survivors, and none specifically tailored to the needs of young men. Interventions that focus on improving self-regulation in the form of skills to navigate developmentally-matched goals and cancer-related emotions may be particularly critical when cancer occurs in early adulthood. Goal-focused Emotion-regulation Therapy (GET) was developed as a behavioral intervention to prevent short- and longer-term adverse impact of testicular cancer in young adults [6].

## 2. Material and methods

### 2.1. Participants and recruitment

Potential participants were recruited from a urology clinic at a major comprehensive cancer center until a total of six young adult (ages 18 to 39) testicular cancer survivors completed the six-session intervention. Subject inclusion criteria included: 1) age 18–39 years at time of consent; 2) confirmed diagnosis of testis cancer; 3) completion of chemotherapy for testicular cancer within 2 years of consent; 4) a score of <1.8 on the goal navigation scale or <0.6 on the goal facility scale of the Cancer Assessment for Young Adults (CAYA) or ≥4 on the Distress Thermometer; 5) English fluency; and 6) provision of informed consent. Participants with a lifetime history of psychiatric or cognitive disturbance were excluded.

Three identified as white, non-Hispanic; and the remaining three participants identified as Asian, African-American, or Hispanic/Latino, respectively. Three participants were married and all but one participant completed at least a four-year college degree. Five identified as straight and one as gay. Two participants were currently full-time stu-

\* Corresponding author. University of California, Irvine Population Health and Disease Prevention, 653 E Peltason Drive, Irvine, CA, USA  
E-mail addresses: [mahoyt@uci.edu](mailto:mahoyt@uci.edu) (M.A. Hoyt), [nelsonc@mskcc.org](mailto:nelsonc@mskcc.org) (C.J. Nelson).

dents, two were employed, and two were unemployed. Annual income ranged from under \$15,000 to over \$100,000.

## 2.2. Intervention

GET is a six-session intervention delivered individually over eight weeks to enhance self-regulation (i.e., goal processes and emotion regulation) through improved goal navigation skills, improved sense of meaning and purpose, and better ability to regulate specific emotional responses. Each session was 60 min in duration. Interventionists had a minimum of master's level training in counseling or clinical psychology. GET draws heavily from the principles of Hope Therapy [7], with an emphasis on goal navigation skill-building. Sessions were conducted individually and in person and were guided by a treatment manual. The manual was previously refined through cognitive testing with testicular cancer survivors. See Hoyt et al. [6] for more complete description of the intervention components.

## 2.3. Measures

**Acceptability and tolerability.** These were partially determined through examination of process measures and also included data from qualitative interview. These included a patient satisfaction questionnaire, a 6-item questionnaire administered after the last session that was adapted from a measure used in our team's prior intervention studies. Items query subjects' responses to the various components of the intervention (e.g., content, timing and length of sessions). Participants also completed the Working Alliance Inventory-Short Form [8].

**Clinical outcomes.** Outcome assessments were conducted pre- and immediately post-intervention participation. The primary outcome target was identified as depressive and anxiety symptoms and was measured using the Depression Scale of the Hospital Anxiety and Depression Scale (HADS), a 14-item self-rated questionnaire of overall psychological distress, and is well tested in cancer populations [9].

**Qualitative interview.** A semi-structured debriefing interview was conducted following completion of all intervention sessions and questionnaires. The focus was on understanding participants' experience of session content, intervention format and delivery, and at-home exercises.

## 2.4. Data analysis

Data analysis focused on the examination of descriptive data. Variables means were computed with a focus on examination of the feasibility of the assessment process. Change in variables was evaluated for clinically meaningful, and not statistically significant change.

Analysis of qualitative data called upon thematic analysis procedures [10] and involved reading and rereading transcripts to best identify and understand themes. To foster trustworthiness, conclusions were shared with participants to assess adequacy and the degree it reflected their experience.

## 3. Results

Recruitment spanned across approximately six months. Twelve potential participants were approached to achieve the final sample; two did not meet inclusion criteria, and four declined participation. Thus, six patients enrolled in the study. No patient drop-out occurred; all enrolled patients completed all sessions of the intervention as well as all questionnaire assessments.

Both the satisfaction questionnaire and the qualitative synthesis revealed a high level of satisfaction. Participants stated that GET met their expectations either "moderately" (4/5;  $n = 2$ ) or "extremely" (5/5;  $n = 4$ ). Further, the helpfulness of GET concepts was rated as "quite a bit" (4/5;  $n = 3$ ) or "extremely" (5/5;  $n = 3$ ). No dissatisfaction

was expressed on ratings of length, number of sessions, or homework assignments; however, in qualitative interviews three participants stated they would have liked to have more sessions or a transition to on-going psychotherapy. Finally, the Working Alliance Inventory-SF mean was 5.9/7 ( $SD = 0.90$ ), indicating that strong rapport and a relatively robust working alliance was established.

Interview data revealed suggestions to improve the intervention. Briefly, these included a greater desire to normalize their experiences. As one participant states:

"Cancer is a big deal and I am not really sure if I am doing ok. I came into this hoping to hear about how guys similar to me are doing .... Like, am I normal? Am I ok?"

In addition, participants identified the desire to have greater focus on cancer-specific content. Specifically, these included navigating difficulties in cancer-related disclosure and incorporating some emphasis on self-care activities (e.g., sleep quality, healthy eating, physical activity). Finally, participants expressed a desire for bolstering of emotion-regulation skills. One participant describes:

Zeroing in on my emotions was new. I actually didn't think it was going to be that big for me, but it was kind of fascinating. It made me see how cancer is on my mind more often than I thought. That was the one area I kept thinking we could go further. I was like 'oh, you could push me more'."

Examination of clinical outcome measures (see Fig. 1) reveals a decline in average depression (average decline: 3.85 on HADS-D scale) and anxiety (average decline: 1.4 on HADS-A scale) scores. As displayed in the figure, a clinically meaningful shift can be inferred for both depression and anxiety.

## 4. Discussion

Our results suggest feasibility and acceptability of the GET intervention in young adult testicular cancer survivors as well as in regard to the implemented recruitment and retention strategies. Overall, participants experienced a strong therapeutic alliance with their study therapist. They indicated high satisfaction and that the GET intervention was both helpful and in alignment with their expectations.

Importantly, participants also identified opportunities to optimize the content of the sessions. These largely centered on areas in which participants wanted more depth and greater focus. A critical observation was that the majority of participants came to the intervention unsure of their need for intervention, questioning the normalcy of their post-cancer adjustment, and with expectations that a focus on emotions would be of minimal utility. However, collectively participants indicated desire for more in-depth emotional focus and more time spent on cancer-specific topics. Not only will these observations assist in optimizing the intervention, but also highlight the need for additional psychosocial services for this patient group.

### 4.1. Study limitations

There are several important limitations to acknowledge. The sample size is notably small. Although appropriate for the goals of this work, conclusions that extend beyond feasibility testing should not be drawn. It is also possible that participants who chose to respond to this small investigation are not representative of the broader patient population. Also, collected data relied on self-report and study investigators conducted all interviews, which could have resulted in response bias. Finally, future pilot trials should consider the possibility that qualities of the interventionists could influence adherence, feasibility, and acceptability.

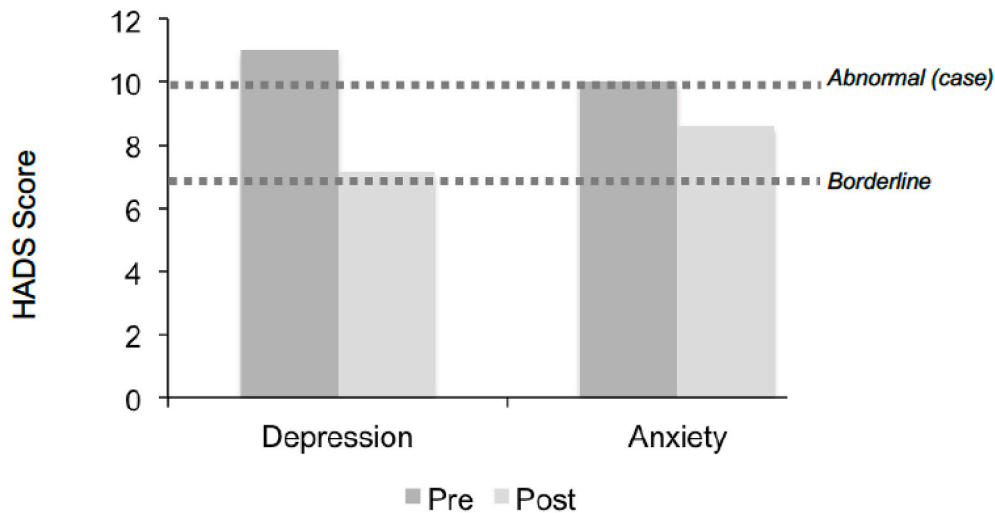


Fig. 1. Change in depression and anxiety.

## 5. Conclusion

In conclusion, our findings suggest feasibility and proof-of-concept of the GET intervention. Conduct of a future randomized controlled trial of GET would benefit from some enhancement to optimize the intervention. This might include bolstering of approaches to normalize patient experiences, increased focus on emotion regulation skill building, and greater attention on cancer-specific goal processes.

## Funding

This study project was supported by the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grants UL1TR000457 and UL1TR001414.

## Declaration of competing interest

The authors declare that they have no competing interests or conflicts of interest.

## References

- [1] National Cancer Institute NCI, Cancer stat facts: testicular cancer, <https://seer.cancer.gov/statfacts/html/testis.html>.
- [2] A.B. Smith, C. Rutherford, P. Butow, I. Olver, T. Luckett, P. Grimison, et al., A systematic review of quantitative observational studies investigation psychological distress in testicular cancer survivors, *Psycho Oncol.* 27 (2018) 1129–1137.
- [3] T.J. Hartung, A. Mehnert, M. Friedrich, et al., Age-related variation and predictors of long-term quality of life in germ cell tumor survivors, *Urol. Oncol.* 34 (2016) 60.e1–60.e6.
- [4] H.S. Hagnes, T. Wethal, N. Aass, et al., Cardiovascular risk factors and morbidity in long-term survivors of testicular cancer: a 20-year follow-up study, *J. Clin. Oncol.* 28 (2010) 4649–4657.
- [5] R. Hellesnes, O. Kvammen, T.A. Myklebust, et al., Continuing increased risk of second cancer in long-term testicular cancer survivors after treatment in the cisplatin era, *Int J cancer* 147 (2020) 21–32.
- [6] M.A. Hoyt, A.W. Wang, S.J. Ryan, E.C. Breen, J.S. Cheavens, C.J. Nelson, Goal-focused Emotion-Regulation Therapy for young adult survivors of testicular cancer: a pilot randomized controlled trial of a biobehavioral intervention protocol, *Trials* 21 (2020) 325.
- [7] J.S. Cheavens, D.B. Feldman, A. Gum, S.T. Michael, C.R. Snyder, Hope therapy in a community sample: a pilot investigation, *Soc. Indic. Res.* 77 (2016) 61–78.
- [8] T.J. Tracey, A.M. Kokotovic, Factor structure of the working alliance inventory, *Psychol. Assess.: J. Consult. Clin. Psychol.* 1 (1989) 207–210.
- [9] A.S. Zigmond, R.P. Snaith, The hospital anxiety and depression scale, *Acta Psychiatr. Scand.* 67 (1983) 361–370.
- [10] V. Braun, C. Clarke, Using thematic analysis in psychology, *Qual. Res. Psychol.* 3 (2006) 77–101.