Cognitive Behavioral Effects on Perceived Stress Management Skills (PSMS) and Quality of Life (QoL) in Women with Gynecologic Malignancies

Chantel M. Ulfig, M.S.,¹ Michael Marsiske, Ph.D.,¹ Michael H. Antoni, Ph.D.,² Elizabeth L. Kacel, M.S.,¹ Rachel Postupack, Ph.D.,¹ Laura Trinastic, Ph.D.,¹ Diego Esparza-Duran, Ph.D.,¹ Christina McCrae, Ph.D.,¹ Michael Robinson, Ph.D.,¹ Lori B. Waxenberg, Ph.D.,¹ Jacqueline Castagno, M.D.,³ and Deidre B. Pereira, Ph.D.¹

¹Dept of Clinical & Health Psychology, College of PHHP, UF; ²Dept of Psychology, UM; ³Division of Gyn Onc, Dept of OB/GYN, College of Medicine, UF National Cancer Institute (NCI) R01 CA138808 (PI: Deidre B. Pereira, PhD); ClinicalTrials.gov Identifier: NCT02609880

ABSTRACT

- Background:** Diagnosis and treatment of gynecologic cancer is distressing, often resulting in multiple challenges and demands for patients. Several studies have displayed relationships among perceived stress management skills (PSMS), mood, and quality of life (QoL) in oncology patients; however, literature is lacking among those with gynecologic malignancies. Cognitive Behavioral Therapy for insomnia and pain (CBTi.p.), an empirically based psychological intervention may represent an integral component to improve patient outcomes.
- Objective:** The objective is to examine the effects of a 6-week individual CBTi.p. on PSMS and QoL in women with gynecologic cancer from baseline (T1) to post-intervention (T2), 6-8 week follow-up (T3), & 1-year follow-up (T4).
- Methods:** Participants were 35 women (M age=59.11, $SD=11.47$) with newly diagnosed and confirmed gynecologic malignancies and clinically significant sleep disturbances, recruited post-surgery. A randomized controlled trial was conducted. Participants were randomized to CBTi.p. ($N=18$) or Psychoeducation only ($N=17$). PSMS was assessed with the Measure of Current Status-Modified. Health related QoL was assessed with the Functional Assessment of Cancer Therapy-General (FACT-G), including FACT-Emotional Well-Being Subscale.
- Results:** Mixed linear models were used to examine CBTi.p. effects on PSMS and QoL. Women randomized to CBTi.p. demonstrated significant increases in PSMS ($b=.298, p=.009$) and emotional well-being ($b=.082, p=.028$) from T1 to T3 compared to women randomized to the Psychoeducation condition. CBTi.p. associated improvements at T3 were maintained at T4.
- Conclusions:** A 6-week CBT intervention improved PSMS and emotional well-being in women with gynecologic malignancies and clinical sleep difficulties throughout 1-year follow-up. Our future research will explore whether parallel improvements occur in inflammatory/angiogenic cytokines and stress hormones.

INTRODUCTION

- Every year in the United States approximately 90,000 women are diagnosed with gynecologic cancer and 30,000 die from the disease¹.
- Obtaining a cancer diagnosis and undergoing treatment is often distressing² with individuals experiencing psychological and physical effects.
- Furthermore, the Biobehavioral Model of Tumorigenesis states that psychological factors such as distress, appraisal of stressors, and perceived coping as well as neuroimmune factors can affect cancer initiation, progression, and recurrence³.
- Among the oncology literature, patients perceived coping abilities, such as PSMS have been related to positive mood and improved QoL⁴.
- CBT is a common psychological treatment that effectively treats insomnia and pain.
- CBTi.p. involves: psychoeducation, relaxation strategies, pleasant activity scheduling, and identifying/restructuring maladaptive sleep and pain appraisals.
- CBT has been shown to improve PSMS and QoL across a variety of cancers; however, research is limited in gynecologic cancers^{5,6}.
- This study explored whether CBTi.p. improved PSMS and health-related QoL in women with gynecologic malignancies.

PARTICIPANTS AND METHODS

PARTICIPANTS: 35 women with surgically confirmed gynecologic malignancies and clinically significant sleep difficulties recruited from UF Gynecology Oncology and enrolled in a randomized clinical trial investigating Cognitive Behavioral Effects on sleep, pain, mood, and cytokines. Women were randomized to 6 weeks of CBTi.p. ($N=18$) or Psychoeducation ($N=17$).

STUDY TIMELINE:

Inclusion Criteria

- Confirmed primary GYN cancer
- Clinically significant sleep difficulties
- Surgical resection as a first line tx.
- Participation in a 6-week intervention
- Fluent in English
- Age 18 and older

Exclusion Criteria

- Participation in other beh. sleep tx.
- Diagnosis of sleep apnea
- History of seizures
- Current suicidal intent/plan
- History or current severe psychopathology

MEASURES:

- Measure of Current Status-Modified: PSMS⁷**
 - 23-items on 5-point scale ranging from: “I cannot do this at all” to “I can do this extremely well”
- Functional Assessment of Cancer Therapy Scale (FACT-G)⁸:** Health-related QoL
 - 4 Domains: Physical, Social, Functional, & Emotional Well-being
- MacArthur Sociodemographic Questionnaire⁹:** Demographics
- Electronic Medical Record Review:** Disease Characteristics
- Sleep Diaries (14 days)/Clinical Sleep & Pain Interview:** Clinical Sleep Difficulties

PARTICIPANT CHARACTERISTICS

Characteristics	N	%	M±SD
Total Sample	35		
Randomized to CBTi.p.	18		
Randomized to Psychoeducation	17		
Age			59.11 ± 11.47
Race (Caucasian)	31	88.6%	
Ethnicity (Non-Hispanic)	33	94.3%	
Marital Status: (Married)	23	65.7%	
Education (years)			14.06 ± 2.43
Cancer Type			
Endometrial	26	74.3%	
Ovarian	4	11.4%	
Fallopian Tube	1	2.9%	
Cervical	1	2.9%	
Vulvar	3	8.6%	
Cancer Stage			
Stage I	20	57.1%	
Stage II	3	8.6%	
Stage III	9	25.7%	
Stage IV	1	2.9%	
Unknown Stage	2	5.7%	

RESULTS

- Mixed Linear Models using IBM ® SPSS ® 24.0.

- PSMS (Figure 1)**
- Women randomized to CBTi.p. demonstrated significant increases in PSMS from T1 to T3 ($b=.298, p=.009$) compared to those in the Psychoeducation group.
- Improvements in PSMS were maintained at 1-year follow-up (T4).

Figure 1: CBTi.p. Improves PSMS in GYN Cancer.