Cognitive Behavioral Effects on Total Wake Time in Women with Gynecologic Malignancies and Insomnia

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INTRODUCTION

- Over 220,000 new cases of gynecologic cancers are expected to be diagnosed in 2018, with an estimated death rate of 32,000 (ACS, 2018).
- GYN cancer treatments are associated with numerous outcomes, the most common being sleep disturbance (Kvale & Schuster, 2006).
- Empirical evidence indicates that sleep disturbance contributes to depression, low quality of life, and morbidity (Garnder et al., 2012).
- Total Wake Time (TWT) and has been used as an indicator of sleep disturbance in oncology literature (Berger et al., 2005; Ancoli-Israel, 2006).
- While there is evidence for the effectiveness of Cognitive Behavioral Therapy for insomnia (CBTi) in breast cancer survivors (Moore, Schmiege & Matthews, 2015; Johnson et al., 2016), there exists a lack of empirical evidence on its efficacy within gynecologic malignancies.
- This study examined the effects of a CBT intervention for insomnia and pain (CBTi.p.) on TWT in women with confirmed gynecologic cancers.

PARTICIPANTS & METHODS

- Study design: Parallel-group Randomized Clinical Trial (RCT)
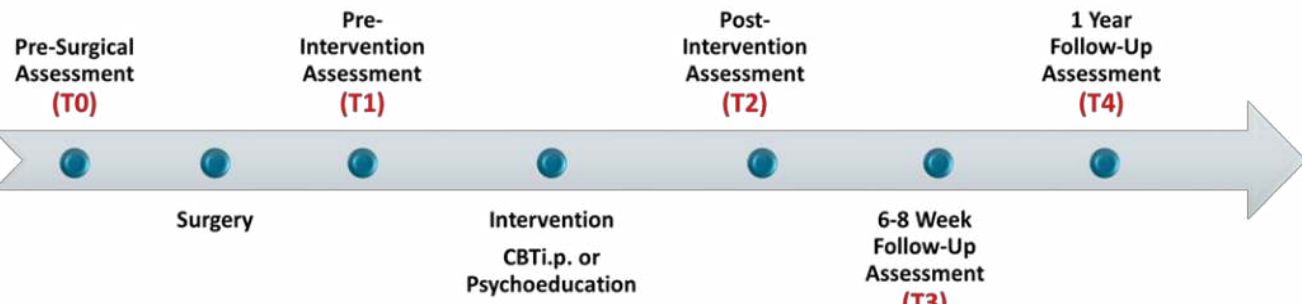

Inclusion Criteria
- Confirmed primary GYN cancer
- Clinically significant sleep difficulties
- Surgical resection as a first line tx
- Participation in a 6-week intervention
- Fluent in English & Age 18 and older

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

- Subjective TWT was assessed via 14 days of sleep diaries at: (1) baseline/post-surgical assessment (T1; Wk0); (2) post-intervention (T2; Wk7), (3) 6-8 wk follow-up (T3; Wk14), and (4) one-year follow-up (T4; Wk66).

DETAILED CONSORT FLOW DIAGRAM
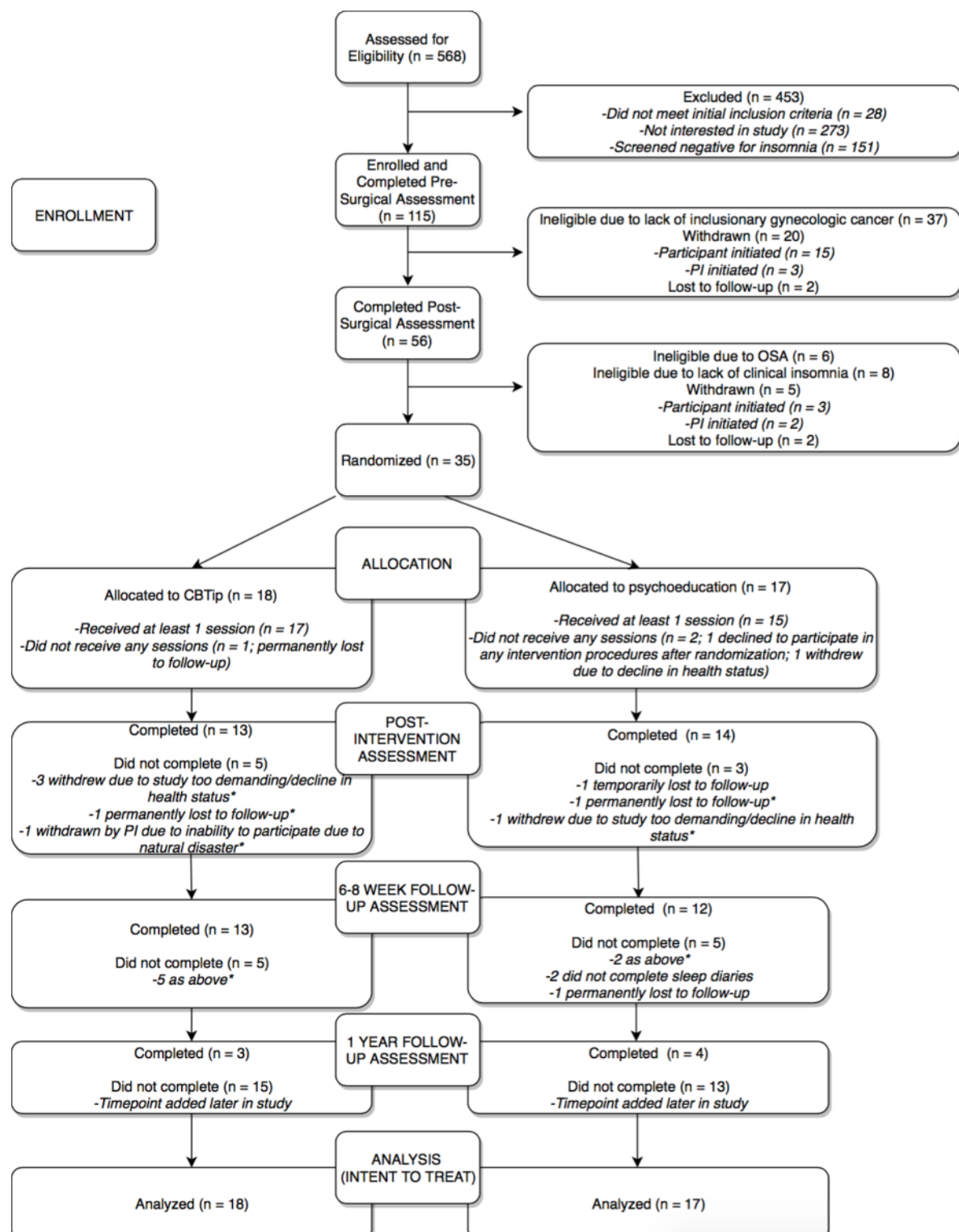
RESULTS

Participant Characteristics	N	M	SD	%
Total Sample	35			
Group (CBTi.p.)	18			51
Group (Psychoeducation)	17			49
Age (years)		59.43	11.18	
Education (years)		14.06	2.42	
Race (Caucasian)	31			89
Ethnicity (Non-Hispanic)	33			94
Physiological Characteristics	**N**	**M**	**SD**	**%**
Cancer Stage				
Stage I	20			57
Stage II	3			8
Stage III	9			26
Stage IV	1			3
Unknown Stage	2			6
Tumor Site				
Endometrial	26			74
Ovarian	4			11
Fallopian Tube	1			3
Cervical	1			3
Vulvar	3			9

- Mixed linear modeling (MLM) was conducted to examine longitudinal group differences on subjective TWT with planned contrasts examining group differences in TWT at Wk7, Wk14, and Wk66.
- Immediately post-intervention at Wk7, CBTip participants showed a nonsignificant trend toward lower TWT (b=-28.15, p=0.055) compared to Psychoeducation participants.
- By Wk14, this trend was fully significant, such that CBTip participants demonstrated significantly lower TWT (b=-32.24, p=0.036) compared to Psychoeducation participants.
- There were no group differences in TWT at Wk66.
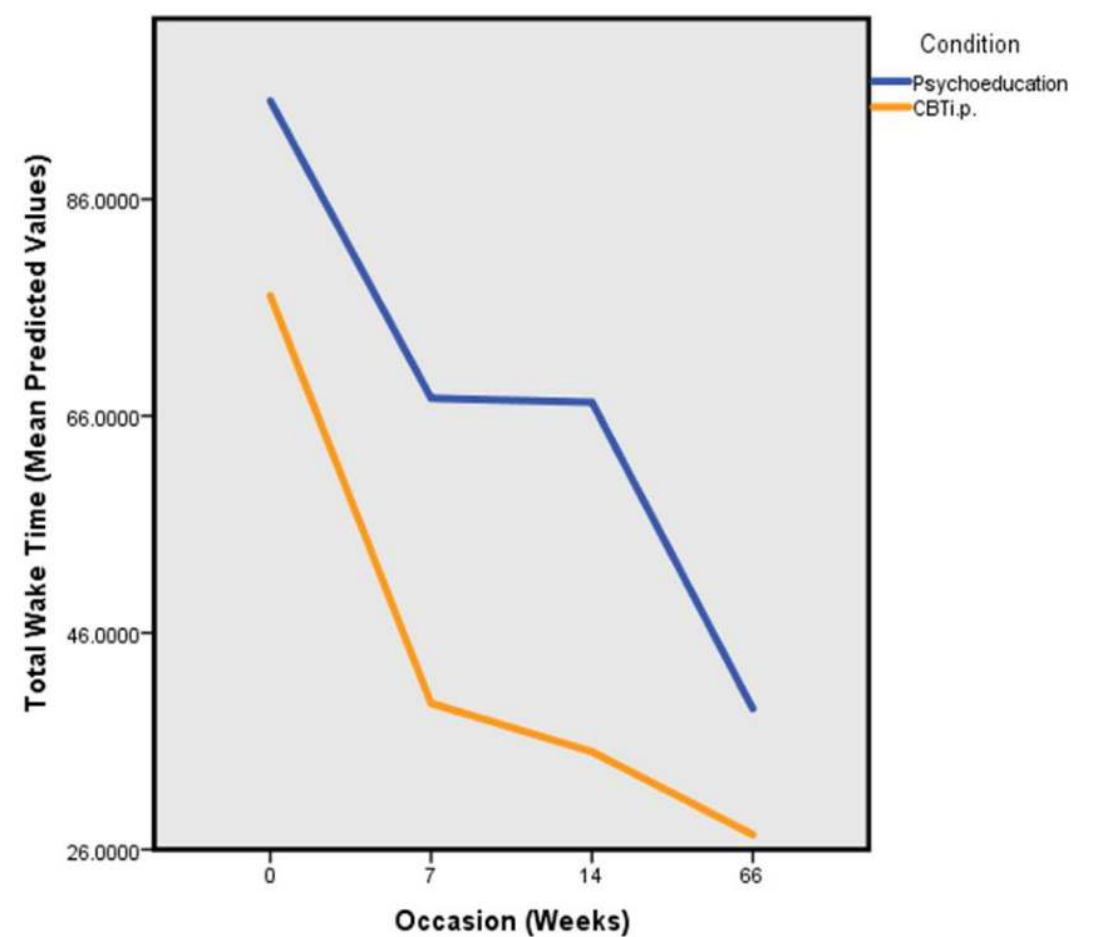
CONCLUSION

- CBTi.p. significantly reduced TWT in women with gynecologic cancers and insomnia during the acute post-surgical treatment phase.
- CBTi.p. may be an efficacious psychological intervention in improving sleep disturbance in women with gynecologic malignancies and insomnia.
- Given that sleep disturbance has been related to health outcomes and morbidity, the development and dissemination of interventions that improve sleep disturbance in women with gynecologic malignancies and insomnia may represent an essential supportive care need that, if met, can help improve cancer outcomes.
- Future research will focus on bidirectional effects of sleep and Hypothalamic-pituitary-adrenal (HPA) axis dysregulation in following the premises outlined by Antoni and Colleague's (2006) Biobehavioral Model of Tumorigeneses.