

Examining the Effects of E-mail Delivered Cognitive Behavioral Therapy on Sleep Outcomes in College Students

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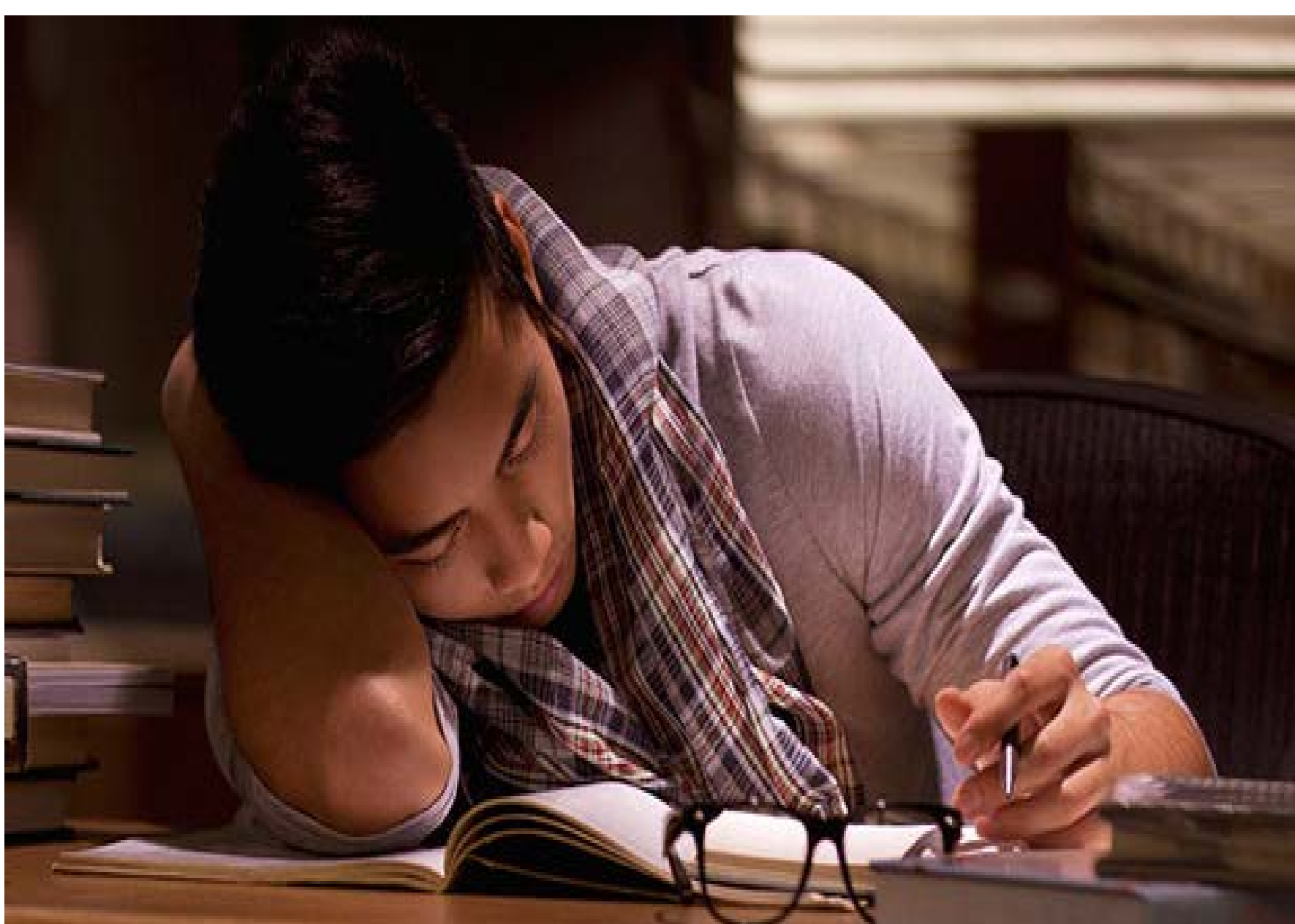


Introduction

- Prevalence of daytime sleepiness, sleep deprivation, and irregular sleep are high among college students, as 50% of college students report daytime sleepiness, and 70% attain insufficient sleep (Hershner & Chervin, 2014).
- Sleepiness and sleep deprivation can have a detrimental effect on college students, with impacts on learning and memory, impaired mood, increased risk of motor vehicle accidents, and increased risk of academic failure (Hershner & Chervin, 2014).
- Cognitive Behavioral Therapy for Insomnia (CBT-I) has been established as an effective non-pharmacological treatment for adults with insomnia and is based on changing sleep-related behaviors and thoughts through patient education

Purpose

- The purpose of this ongoing project is to examine the effectiveness of a six week modified e-mail delivered version of CBT-I on knowledge of sleep, sleep quality, daytime sleepiness, sleep hygiene practice, and alcohol use in college students.



CBT-I Intervention

Intervention Group - will receive 6 weekly e-mail delivered CBT-I educational sessions on the following:

- Stimulus Control**
- Sleep Restriction**
- Sleep Hygiene**
- Relaxation Training**
- Cognitive Restructuring**
- Relapse Prevention**

Control group: directed to UB Health Services sleep website

Methods

- Inclusion Criteria:** College students aged 18 – 24; full time students; score of 7+ on ISI.
- Exclusion Criteria:** taking prescription meds for sleep/psychiatric disorder; diagnosis/symptoms of another sleep related disorder; significant psychiatric condition
- Tools for Screening and Outcome Measures:** Insomnia Severity Index (ISI), 16-Item Dysfunctional Beliefs and Attitudes about Sleep (DBAS), Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), Sleep Hygiene Index (SHI), Demographic Questionnaire and Alcohol Use Disorders Identification Test (AUDIT)
- Timeline:** These will be administered at baseline, six weeks after baseline (as primary post-test), and at after four weeks (as second post-test) to evaluate efficacy and sustainability of the intervention
- Analysis:** Descriptive Statistics, Paired t-test, Independent t-test

Results

Table 1 Demographic Characteristics of Sample (N = 44)

		Frequency	Percent (%)
Assignment	Intervention	27	61.4%
	Control	17	38.6%
Gender	Male	16	36.4%
	Female	28	63.6%
Race	Caucasian	7	15.9%
	Asian	26	59.1%
	AA/Black	6	13.6%
	Hispanic	3	6.8%
	Other	2	4.5%
College Year	Freshman	2	4.5%
	Sophomore	9	20.5%
	Junior	10	22.7%
	Senior	14	31.8%
	Graduate Student	9	20.5%
Living Environment	House	14	31.8%
	Apartment	21	47.7%
	Dorm	9	20.5%
Occupation	Yes	20	45.5%
	No	24	54.5%
Alcohol Use	Yes	28	63.6%
	No	16	36.4%
Age	Mean (±SD)	20.86 (±1.64)	
	Range	18-25	

Table 2 Paired t-test Results Comparison Between Pre- and Post- Test in Intervention group (N= 27)

Variables	Test	Mean	SD	95% CI		t	Sig (2-tailed)
				Low	High		
DBAS-16	Pre	97.39	20.29	6.38	23.14	3.619	.001
	Post	82.63	23.13				
ESS	Pre	11.44	4.43	.94	5.16	3.421	.002
	Post	8.22	5.67				
SHI	Pre	40.52	5.67	1.37	5.93	2.270	.032
	Post	37.41	5.98				
AUDIT	Pre	5.74	6.47	1.09	4.75	2.321	.028
	Post	3.22	4.96				
PSQI	Pre	10.85	3.21	.88	5.37	4.037	.000
	Post	7.30	2.64				

Table 3A Average Sleep Outcomes at Six Weeks (N=44)

Variables	Assignment	Mean	SD
DBAS-16	Intervention	82.63	23.13
	Control	96.76	14.07
ESS	Intervention	8.22	4.43
	Control	10.53	4.11
SHI	Intervention	37.41	5.98
	Control	44.47	4.52
AUDIT	Intervention	3.22	4.96
	Control	3.71	5.29
PSQI	Intervention	7.30	2.64
	Control	10.53	3.79

Table 3B Independent t-test Results Comparison of Outcomes in Two Groups (N=44)

Variables	t	Sig (2-tailed)	95% CI	
			Low	High
DBAS-16	-2.264	.029	-26.74	-1.54
ESS	-1.728	.091	-5.00	.387
SHI	-4.174	.000	-10.48	-3.65
AUDIT	-.307	.760	-3.66	2.69
PSQI	-3.08	.005	-5.39	-1.07

Discussion

- Preliminary findings indicate that participants in the intervention group showed statistically significant improvement on sleep outcomes.
- Also, they demonstrated more positive attitudes toward sleep, better sleep quality, and better sleep hygiene, compared to the control group at 6 weeks.

Conclusions and Implications

Our findings suggest that email-delivered CBT-I might have the ability to improve sleep outcomes in college students. An e-mail delivered intervention is a simple, feasible, and cost-effective tool that clinicians can use to promote healthy sleep in college students.

References

Available on request

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