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EXPLORING DIFFERENCES IN SELF-REPORT SLEEP MEASURES IN ADULTS WITH INSOMNIA WHO USE OR DO NOT USE SLEEP MEDICATION

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Introduction: Adults seeking non-pharmacological treatment for insomnia often present for care already taking prescription medication for sleep. Understanding how such patients differ from those who do not use medication could be useful for guiding treatment. This study examined associations between sleep medication use and measures of self-report sleep characteristics at baseline in an RCT of cognitive behavioral therapy for insomnia (CBTI).
Methods: We examined baseline data from 237 middle-to-older-aged adults with insomnia disorder (175 women, M age = 63.17) enrolled in the ongoing RCT on Effectiveness of Stepped-Care Sleep Therapy (RESTING). Participants were dichotomized by whether they reported taking at least one prescription medication for sleep. Sleep measures included the Insomnia Severity Index (ISI), PROMIS Sleep-Related Impairment short form, Epworth Sleepiness Scale (ESS), Cognitive Presleep Arousal Scale, Dysfunctional Attitudes and Beliefs About Sleep Scale, and two weeks of sleep diaries yielding average nightly sleep onset latency, wake time after sleep onset, total sleep time, and sleep quality ratings. MANOVA compared medication users and non-users across sleep measures.
Results: Seventy-seven (32.5%) participants reported taking at least one prescription medication for sleep at baseline. MANOVA results indicated that sleep measures collectively differed by medication use, $F(9, 226) = 3.74$, $p < .001$; Wilk's $\Lambda = .87$, partial η-sqd = .13. Bonferroni-adjusted follow-up comparisons ($p < .005$) found that only ESS significantly differed between medication users and non-users, $F(1, 234) = 15.17$, $p < .001$; partial η-sqd = .06. Medication users had lower sleepiness scores (M = 5.86, SD = 4.68) than non-users (M = 8.46, SD = 4.84). The association between medication use and less daytime sleepiness was maintained after adjusting for ISI.
Conclusion: Sleep medication use displayed little association with sleep measures in adults about to undergo CBTI, excepting endorsement of less daytime sleepiness by medication users. While more research is needed to understand the implications of sleep medication use for adults engaging in CBTI, these initial findings suggest that CBTI therapists should be thoughtful about sleepiness in non-medication users, and the potential emergence of sleepiness among patients who engage in sleep medication taper while in treatment.
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LIVING ALONE AS A PREDICTOR OF SYMPTOM CHANGE DURING COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA

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Introduction: Interpersonal factors have implications for sleep quality. Research has begun to explore how such factors may play a role in cognitive behavioral therapy for insomnia (CBTI). This study investigated whether living alone predicts reductions in insomnia severity and sleep-related daytime impairment across the first two months of treatment in a trial of CBTI.
Methods: Participants were 224 middle-to-older-aged adults with insomnia (166 women, M age = 63.16) enrolled in the ongoing Randomized Controlled Study on Effectiveness of Stepped-Care Sleep Therapy (RESTING). All study participants received CBTI, delivered either via a therapist or a validated software program. At baseline, participants indicated whether they lived alone or with at least one other person. The Insomnia Severity Index (ISI) and PROMIS Sleep-Related Impairment (SRI) short form were administered at baseline and two months after starting treatment. Mixed effects models assessed whether living alone predicted reduction in symptoms across the first two months of CBTI.
Results: Across the total sample, ISI scores decreased from baseline to two months (β=-3.52, SE=0.35, $p<.001$, 95% CI=-4.20, -2.84). Living alone was not associated with baseline ISI scores nor change in ISI score. A reduction in PROMIS SRI score was also observed in the total sample from baseline to two months (β=-4.18, SE=0.50, $p<.001$, 95% CI=-5.15, -3.21). Living alone was not associated with baseline SRI score, but it did predict reduction in SRI score (β=-3.23, SE=0.88, p=.001, 95% CI=1.31, 5.15). Participants living alone displayed less reduction in SRI compared to those living with at least one other person.
Conclusion: Participants undergoing CBTI who live alone experienced reduction in insomnia severity over the course of treatment, but they displayed less improvement in daytime sequalae of poor sleep compared to those living with others. Future studies should further explore how living status contributes to insomnia treatment response across both nighttime and daytime sleep symptomology. Regular engagement with others living in the home may be important for insomnia treatment to translate into perceived functional improvements during the day.
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PREFERENCE FOR DIGITAL CBTI: CHANGES DUE TO THE COVID-19 PANDEMIC IN A RANDOMIZED CONTROLLED TRIAL OF CBTI FOR MIDDLE AGED AND OLDER ADULTS

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Introduction: Digital CBTI programs are effective at treating symptoms of insomnia. They also have the potential to increase treatment reach, convenience, and affordability for patients, and to reduce long wait times for behavioral sleep medicine providers. The COVID-19 pandemic has instigated an increased reliance on the use of technology for many. Thus, this study evaluates middle aged and older adults before and during the COVID-19 pandemic to assess: (1) differences in treatment modality preference (digital vs. therapist-led CBTI) and (2) sleep-related predictors of treatment modality preference.
Methods: Participants were older adults (N=229, 74% female, mean age=63.14) who were enrolled in the RCT of the Effectiveness of Stepped-Care Sleep Therapy in General Practice (RESTING) study. At baseline, participants rated if they would prefer to access CBTI digitally or with a CBTI therapist, either in person or via telemedicine. After March 2020, in person was no longer listed

as an option. Participants completed the Insomnia Severity Index (ISI) and a two-week sleep diary that allowed for an assessment of total sleep time (TST), sleep onset latency (SOL), and wake after sleep onset (WASO). Analyses compared responses to these items from participants completing assessments before March 2020 (Pre-Covid; n=74, 65% female, mean age=62.52) and after March 2020 (During-Covid; n=155, 78% female, mean age=63.44).
Results: Pre-Covid, 26% of participants preferred digital treatment, 47% of participants preferred a therapist-led intervention, and 27% did not express a preference. During-Covid, 35% of participants preferred digital treatment, 32% of participants preferred a therapist-led intervention, and 32% did not express a preference. This difference was statistically significant (c2=4.24, p=0.04). Responses were not significantly different between the first six months and the most recent six months of the pandemic (p=0.60). None of the sleep measures (ISI, TST, SOL, WASO) were associated with treatment modality preference in the full sample, Pre-Covid, or During-Covid.
Conclusion: The COVID-19 pandemic was associated with increased preference for digital CBTI among patients who are 50 and older, regardless of insomnia severity. Findings suggest that digital CBTI may be an acceptable treatment to many individuals with insomnia, thus increasing its dissemination potential.
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PREDICTORS OF RESPONSE TO DIGITAL CBTI IN A RANDOMIZED CONTROLLED TRIAL OF MIDDLE AGED AND OLDER ADULTS WITH INSOMNIA

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Introduction: Digital CBTI (dCBTI) may serve as a good initial intervention in a stepped-care approach to treat insomnia. Understanding who is likely to respond to dCBTI can guide triaging of care, thus shortening wait times for those who most need to meet with an insomnia therapist. The purpose of this study was to examine baseline predictors of response to a dCBTI program after two months of access.
Methods: Participants were 173 middle aged and older adults with insomnia (M age=63.56 [SD=8.43], 76% female) who received the dCBTI SleepioTM for two months in the RCT of the Effectiveness of Stepped-Care Sleep Therapy in General Practice (RESTING) study. Baseline predictors included the Epworth Sleepiness Scale (ESS), Dysfunctional Beliefs and Attitudes about Sleep (DBAS), preference for treatment (digital vs. therapist-delivered), and comfort with technology. At baseline and two-month follow-up, participants completed outcome measures, including the Insomnia Severity Index (ISI) and the PROMIS-Sleep Related Impairment (PROMIS-SRI). Multilevel modeling was used.
Results: In the full sample, no predictors were associated with change on the ISI. Among our predictors, only higher DBAS scores were associated with a smaller reduction in PROMIS-SRI scores from baseline to two-month follow-up (Beta=-0.88, SE=0.35, p=0.01 , 95% CI=-1.57, -0.19). Among those who preferred digital CBTI (n=52), none of the predictors were associated with the ISI or PROMIS-SRI. Among those who preferred therapist-led CBTI (n=66), greater comfort with technology was associated with greater reduction on the ISI (Beta=-1.77, S =0.78, p=0.02 , 95% CI=-3.30, -0.24) and higher DBAS scores were associated with a smaller reduction on the PROMIS-SRI (Beta=-1.63, S =0.56, p<0.01 , 95% CI=-2.73, -0.53).
Conclusion: The results highlight the importance of targeting dysfunctional beliefs and attitudes, which is consistent with research examining the DBAS in CBTI. Results also indicate that patient preference is an important factor to consider when triaging patients to insomnia care. While additional predictors should be examined, these preliminary findings indicate that dCBTI may be a good initial treatment option for those with high level of comfort using technology and lacking a preference for therapist-led CBTI.
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THE APNEA AND INSOMNIA RESEARCH (AIR) TRIAL: AN INTERIM REPORT

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Introduction: Many sleep apnea patients suffer from comorbid insomnia disorder. Although cognitive behavioral insomnia therapy (CBTI) has proven effective for insomnia among such patients, access to trained CBTI providers remains limited. The current study is testing a digital CBTI (dCBTI) among PAP-prescribed sleep apnea patients with comorbid insomnia.
Methods: Patients enrolled in this trial complete baseline measures and are randomized to dCBTI or sleep hygiene (CTRL). After 8 weeks, all patients are reassessed. Patients in the dCBTI arm who reach remission by this time point are offered no additional insomnia treatment, whereas those who do not achieve insomnia remission are randomly assigned either another 8 weeks of dCBTI or a therapist delivered CBTI (TCBTI). All groups are reassessed at the end of this second 8-week treatment phase and then again at 3- and 6-month follow-ups. This report considers changes in scores on the Insomnia Severity Index (ISI) from baseline to the end of the second 8-week treatment, as well as insomnia remission (ISI < 8) and responder rates (> 8 point decline on the ISI) of dCBTI and TCBTI relative to the CTRL. The sample for this report included the first 305 participants (mean age = 56.5±12.5 yrs.; 57.1% females).
Results: Both dCBTI and TCBTI recipients showed greater (p = .0001) and comparable reductions in ISI scores from baseline to the end of the second 8-week treatment phase than did those in the CTRL group. Average ISI score improvements moved dCBTI and TCBTI recipients from moderately severe to mild insomnia symptoms. Significant group differences were noted for both the responder (X2 (2) =19.29, p < 0.0001) and remission rates (X2 (2) =13.89, p = 0.001). Responder rates for those participants switched to TCBTI (50%) were noteably higher than those continued with dCBTI (30.5%) and those in the CTRL group (19.2%); but remission rates were comparable (30.5% vs. 29.2%) and sigificantly higher than the rates shown by the CTRL group (19.2%).
Conclusion: The dCBTI tested compares well with TCBTI for reducing insomnia symptoms and achieving insomnia remission in those with insomnia and sleep apnea, but insomnia responder rates may be improved by switching patients to TCBTI.
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