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PROJECT SUMMARY – TECHNICAL AUDIENCE:

Treatment non-adherence is a significant problem with positive airway pressure treatment (PAP) and non-invasive ventilation (NIV) in pulmonary and sleep patients. In sleep disordered breathing (SDB) populations, 50% of adults are non-adherent and 25% refuse PAP treatment at provider recommendation. PAP is the first-line treatment of SDB in adults. When PAP is used less than four hours per night, a clinical benchmark of non-adherence, treatment benefits are minimal and risks, such as cardiovascular and metabolic consequences, motor vehicle injury/accidental death, and everyday functional impairment, are heightened. PAP use less than four hours per night is also not cost-effective. Our extensive prior published work on PAP treatment non-adherence in SDB adults, specifically obstructive sleep apnea (OSA), identifies claustrophobia with mask-delivered PAP is common, estimated at 60%, and significantly influential on PAP non-adherence. No rigorous evidence exists to address this problem. As claustrophobia is a phobic anxiety disorder, characterized by anxiety provoked by exposure to a specific situation leading to avoidance behavior, an intervention approach that targets anxiety is a potential opportunity to reduce claustrophobia-induced anxiety with mask-delivered PAP. Moderate to large effects for anxiety with employ of mindfulness-based stress reduction (MBSR) are reported. We propose an open-label, randomized controlled pilot trial (RCT) in adults with OSA (n=24) with MBSR for claustrophobia (MBSR-C) arm compared with wait list control condition (WL) to address the aims: (1) Determine the effect size of MBSR-C on the primary outcome, claustrophobia severity and secondary outcome, claustrophobia frequency, with PAP use; (2) Explore differences in PAP adherence by group assignment and explore the relationship between claustrophobia (claustrophobia severity change scores, baseline to second outcome interval at 12 weeks) and the tertiary outcome, objectively measured PAP adherence for MBSR-C group compared to WL; and (3) Determine the feasibility of protocol implementation and delivery and participant acceptability of MBSR-C to support subsequent design of a fully-powered efficacy RCT. The preliminary findings from this pilot study have high potential to stimulate evidence-based recommendations and further research that addresses the critical problem of claustrophobia with PAP. To date, there are no guidelines, practice standards, or substantial published evidence that addresses claustrophobia with mask-delivered PAP/NIV. Future work will extend beyond SDB populations to address other NIV user populations which will impact both pulmonary and sleep patients’ quality of life, disease outcomes, and management of lung health.