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Title: Long-term efficacy of motivational interviewing on improving continuous positive airway pressure adherence in obstructive sleep apnea: A randomized controlled trial

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Body: Introduction: Long term adherence to continuous positive airway pressure (CPAP) treatment in obstructive sleep apnea (OSA) subjects is important to alleviate symptoms and prevent health-related consequences. Objectives: This study aimed to examine the long-term efficacy of a theory-based behavioral education (BMI-E) programme on improving CPAP adherence. We hypothesized that the application of BMI-E at the initial phase of using CPAP would enhance CPAP adherence in the long term. Methods: Newly diagnosed OSA subjects were randomized into either standard education (SE) or BMI-E. SE group received general advice on CPAP use and BMI-E group received SE with an additional education session and a phone follow up. BMI-E programme consisted of theory-based education with brief motivational interviewing and negative-message framing. Primary outcome was to assess CPAP adherence 1 year after receiving BMI-E programme. Improvement in daytime sleepiness as assessed by Epworth Sleepiness Score (ESS) was secondary outcome. Results: 100 subjects ranged from mild to severe OSA, were recruited with a mean±SD age of 52±10 years and ESS of 9±5. At 1 year, the proportion of subjects using CPAP were 84% versus 49% (p<0.001), the proportion of adherent (≥4 hours per day and ≥70% of days) were 63% versus 27% (p<0.001), in BMI-E group versus SE group, respectively. BMI-E also significantly reduced ESS by 2.1 (95% CI, 0.1 to 4.2, p=0.044), as compared with SE. Conclusions: Subjects receiving BMI-E were more likely to continue to use CPAP with better adherence and greater improvement in daytime sleepiness even after 1 year receiving BMI-E.