Authors' objectives

Background: Although effective in the treatment of obstructive sleep apnoea (OSA), continuous positive airway pressure (CPAP) is not universally accepted by users. Educational, supportive and behavioural interventions may help people with OSA recognize the need for regular and continued use of CPAP. Objectives: To assess the effectiveness of strategies that are educational, supportive or behavioural in encouraging people who have been prescribed CPAP to use their machines. Search methods: Searches were conducted on the Cochrane Airways Group Specialised Register of trials. Searches are current to 17 January 2013. Selection criteria: We included randomised parallel controlled trials that assessed an intervention designed to inform participants about CPAP or OSA, to support them in using CPAP or to modify their behaviour in increasing their use of CPAP machines. Studies of any duration were considered. Data collection and analysis: Two review authors assessed studies to determine their suitability for inclusion in the review. Data were extracted independently and were entered into Review Manager software for analysis. Main results: Thirty studies (2047 participants) were included. We categorised studies by intervention type: supportive interventions during follow-up, educational interventions and behavioural therapy. Across all three intervention classes, most studies incorporated elements of more than one intervention. For the purposes of this systematic review, we categorised them by the prevailing type of intervention, which we expected would have the greatest impact on the study outcome. Baseline Epworth Sleepiness Scale (ESS) scores indicated that most participants experienced daytime sleepiness, and CPAP was indicated on the basis of sleep disturbance indices. A vast majority of recruited participants had not used CPAP previously. Most of the studies were at an unclear risk of bias overall, although because of the nature of the intervention, blinding of both study personnel and participants was not feasible, and this affected a number of key outcomes. Adverse events were not reported in these studies. Low- to moderate-quality evidence showed that all three types of interventions led to increased machine usage in CPAP-naive participants with moderate to severe OSA syndrome. Compared with usual care, supportive ongoing interventions increased machine usage by about 50 minutes per night (0.82 hours, 95% confidence interval (CI) 0.36 to 1.27, N = 803, 13 studies; low-quality evidence), increased the number of participants who used their machines for longer than four hours per night from 59 to 75 per 100 (odds ratio (OR) 2.06, 95% CI 1.22 to 3.47, N = 268, four studies; low-quality evidence) and reduced the likelihood of study withdrawal (OR 0.65, 95% CI 0.44 to 0.97, N = 903, 12 studies; moderate-quality evidence). With the exception of study withdrawal, considerable variation was evident between the results of individual studies across these outcomes. Evidence of an effect on symptoms and quality of life was statistically imprecise (ESS score -0.60 points, 95% CI -1.81 to 0.62, N = 501, eight studies; very low-quality evidence; Functional Outcomes of Sleep Questionnaire 0.98 units, 95% CI -0.84 to 2.79, N = 70, two studies; low-quality evidence, respectively). Educational interventions increased machine usage by about 35 minutes per night (0.60 hours, 95% CI 0.27 to 0.93, N = 508, seven studies; moderate-quality evidence), increased the number of participants who used their machines for longer than four hours per night from 57 to 70 per 100 (OR 1.80, 95% CI 1.09 to 2.95, N = 285, three studies; low-quality evidence) and reduced the likelihood of withdrawal from the study (OR 0.67, 95% CI 0.45 to 0.98, N = 683, eight studies; low-quality evidence). Participants experienced a small improvement in symptoms, the size of which may not be clinically significant (ESS score -1.17 points, 95% CI -2.07 to -0.26, N = 336, five studies). Behavioural therapy led to substantial improvement in average machine usage of 1.44 hours per night (95% CI 0.43 to 2.45, N = 584, six studies; low-quality evidence) and increased the number of participants who used their machines for longer than four hours per night from 28 to 47 per 100 (OR 2.23, 95% CI 1.45 to 3.45, N = 358, three studies; low-quality evidence) but with high levels of statistical heterogeneity. The estimated lower rate of withdrawal with behavioural interventions was imprecise and did not reach statistical significance (OR 0.85, 95% CI 0.57 to 1.25, N = 609, five studies, very low-quality evidence). Authors' conclusions: In CPAP-naive people with severe sleep apnoea, low-quality evidence indicates that supportive interventions that encourage people to continue to use their CPAP machines increase usage compared with usual care. Moderate-quality evidence shows that a short-term educational intervention results in a modest increase in CPAP usage. Low-quality evidence indicates that behavioural therapy leads to a large increase in CPAP machine usage. The impact of improved CPAP usage on daytime sleepiness, quality of life and long-term cardiovascular risks remains unclear. For outcomes reflecting machine usage, we downgraded for risk of bias and inconsistency. An additional limitation for daytime sleepiness and quality of life measures was imprecision. Trials in people who have struggled to persist with treatment...
are needed, as currently little evidence is available for this population. Optimal timing and duration and long-term effectiveness of interventions remain uncertain. The relationship between improved machine usage and effect on symptoms and quality of life requires further assessment. Studies addressing the choice of interventions that best match individual patient needs and therefore result in the most successful and cost-effective therapy are needed.


**Bibliographic details**

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