Proceedings of the Nutrition Society (2023), **82 (OCE1)**, E24 doi:10.1017/S0029665123000320

Winter Conference 2022/23, 24–25 January 2023, Architecture of food: processing, structure and health

Tailored sleep hygiene counselling in combination with diet and physical activity advice for weight reduction in an employee well-being programme: a randomised feasibility study delivered remotely

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Evidence suggests short sleep may hinder weight loss efforts[(1)]. Tackling sub-optimal sleep habits may support adherence to lifestyle interventions[(2)]. The feasibility of delivering an employee wellbeing programme to improve sleep alongside weight loss has not been tested. The aim was to evaluate the feasibility of a remotely delivered lifestyle intervention, involving sleep hygiene counselling in combination with diet and physical activity advice, among university desk-based staff who fully/partially work from home, self-report inadequate sleep duration (<7 h per night), and wish to lose weight.

The King's-WHOLE feasibility study assessed programme engagement (percentage of eligible volunteers consented), attrition (percentage loss to follow- up), adherence to sleep hygiene intervention, and protocol compliance (attendance at consultations/group sessions and data provision) in King's College London (KCL) desk-based employees aged 18–70, BMI >25kg/m^2, reporting habitual sleep duration <7 h/night. The objective was to recruit 28 participants allowing for ~15% attrition. Upon completing informed consent, participants self-weighed and completed 7-day baseline data collection including activity, sleep and dietary intakes, before randomisation in groups of 3 into a sleep intervention arm (sleep + diet + physical activity; SDP) or standard intervention arm (diet + physical activity; DP) at week 2. Participants were blinded to the sleep extension aim of the intervention. One-to-one behaviour change consultations were delivered (weeks 2, 6 and 10) and group support sessions (weeks 4, 8 and 12). Activity, sleep and dietary intake data were collected at weeks 5, 9 and 14 (endpoint). At-home weight was measured weekly. Ethical approval KCL RESCM21/22-26423.

The study ran February-August 2022. Of 51 who completed the screening questionnaire, 37 were eligible. Nine were waitlisted and 28 (5 M/23 F, mean age 42, SD 12) consented to take part (100% engagement) and were randomised. Six participants were not short-sleepers at week 1 (baseline) according to actigraphy data. There was 18% attrition: 4 dropped out prior to intervention (2 no reason given, 2 no longer eligible) and 1 during intervention (left the country). On SDP, at baseline and endpoint respectively, 9/12 and 9/11 and on DP, 12/12 and 8/12 participants complied to protocol. Five/10 lost >1 kg by week 14 following SDP compared with 8/11 DP participants. Total sleep period (including awakenings) increased in 30%, 50% and 55% of the SDP group (range 2 min to 1 h 45 min) and in 60%, 64% and 58% of the DPl group (range 1 min to 2 h 9 min) at weeks 5, 9 and 14, respectively.

Engagement was high in a remotely-delivered workplace lifestyle intervention and attrition rates were as expected. Protocol adherence was relatively high and over half of participants lost weight, but adding sleep behaviour change to diet and exercise may increase burden and lower intervention compliance.

References

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2. Hall WL (2022) *Br J Nutr* **128**, 561–568.