Behavioural intervention to reduce sedentary behaviour: the effect of physical activity on perceived mental fatigue levels.

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Résumé

Background: In a societal context characterized by the increasing digitalization of work and the predominance of office-based tasks, sedentary behaviour is on the rise among working populations. Furthermore, office work places significant demands on cognitive resources, resulting in heightened mental fatigue.
Objective: This study aimed to evaluate the effects of a behavioural intervention designed to reduce sedentary behaviour. Secondly, we aimed to assess the changes in physical activity levels and mental fatigue experienced before and after the intervention.

Methods: A total of 11 Université de Lorraine employees participated in a 90-day intervention. Prior to this, each participant wore an ActivPAL4 activity monitor for one week and completed four validated questionnaires designed to assess mental fatigue (BRUMS), perceived workload (NASA-TLX), sedentary behaviour and physical activity (ONAPS-PAQ) and workplace health and well-being (SATIN). Participants were then provided with personalised booklets designed to encourage reducing sedentary behaviour and increasing physical activity, incorporating desk exercises and training routines. After 45 days, mental fatigue and perceived workload were reassessed. On day 90, participants were required to wear the ActivPAL4 monitor for one week and complete the same questionnaires again. Focus groups were also convened to gather qualitative feedback on how to improve the behavioural intervention.

Results: Baseline data revealed a significant positive correlation between daily sedentary time and mental fatigue ($p = 0.023$, $r = 0.674$). In addition, a significant negative correlation was identified between mental fatigue and both weekly MET-minutes of physical activity ($p = 0.026$, $r = -0.662$) and weekly minutes of vigorous physical activity ($p = 0.017$, $r = -0.658$)
Conclusion: Preliminary results suggest that the behavioural intervention reduces sedentary time and increases activity levels. These results highlight the links between sedentary behaviour and mental fatigue levels. Furthermore, an increase in physical activity, particularly at a vigorous intensity, was associated with lower perceived mental fatigue.

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