

Are Simultaneously Delivered Health Behavior Change Interventions the Way of the Future?: a Comment on King et al.

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Non-communicable chronic diseases are associated with a small number of modifiable health risk behaviors, such as diet, tobacco use, physical activity, and alcohol consumption [1]. Unfortunately, the prevalence of these health risk behaviors is high and they tend to occur in clusters [2]. As such, the evaluation of population-based interventions that can influence multiple health behaviors to reduce the burden of chronic disease and health care costs seem to make good (economic) sense [3]. The scarcity of studies evaluating such interventions is therefore surprising, and many questions on how such interventions are best delivered remain unanswered. For example, it is unknown how many health behaviors can be targeted effectively in a single intervention without “overloading” participants [4]. Similarly, it is unclear whether such interventions are best to be implemented sequentially (one behavior after another) or simultaneously (all at once) [5].

In this respect, King et al. [6] have conducted a timely and interesting study. The study focused on two health behaviors (diet and physical activity) with four intervention groups: a sequential exercise-first group, a sequential diet-first group, a simultaneous group, and a control group. The time interval between sequential interventions was 4 months. At the end of the 12-month intervention, the results showed that the behaviors targeted first in the sequential interventions had changed more than the behaviors targeted secondly. However, in the simultaneous intervention both behaviors had changed equally with a magnitude close to that of the first behavior in the sequential interventions. The authors conclude that delivering

physical activity interventions simultaneously may result in the most positive sustained outcomes across two health behaviors.

Two other diet and physical activity studies have applied similar study designs, also incorporating sequential and simultaneous intervention groups [7, 8]. In line with King et al. [6], Hyman et al. [7] concluded that the simultaneous intervention was superior, while Vandelanotte et al. [8] indicated they were equally effective. As such, simultaneous interventions may be preferred, given the outcomes of these three studies, as well as the lower cost, potential for drop-out and participant burden associated with implementing simultaneous interventions [8]. The study by King et al. [6] was the only one to observe a potential suppression effect of diet, suggesting that physical activity change might be difficult when dietary change is already underway. A higher “cognitive load” for dietary interventions was suggested as a cause for this.

The study by King et al. [6] was limited by the fact that participants were selected for having high stress levels, which limits the generalizability of the findings, for not including objective physical activity assessments, and for not following up behavior change after the end of the 12-month intervention. However, applying a well-tested and theory-based intervention strengthened the study, as well as having high study quality and intervention fidelity, and having low participant attrition.

While this study adds important information to the literature on multiple health behavior interventions, this area is under-researched and more efforts are needed. For example, sequential intervention delivery might have been sub-optimal, as the ideal interval between interventions is unknown. Similarly, sequential interventions might perform better when participants are allowed to choose which behavior to tackle first, as to better align with readiness to change one behavior over another.

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