

Home-delivered Between-Meal Snacks for Fragile Elderly People

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Aim of study

Fragile elderly people are at risk of undernutrition when living in their own home despite receiving meal delivery services. Weight loss is associated with increased morbidity and mortality. To reduce the problem home-delivered **Between-Meal Snacks (BMS)** were tested as a supplement in a region of Denmark. This pilot study aims to evaluate four physiological outcomes of the intervention before large-scale implementation.

Method

A quasi experiment was setup with an intervention group (n=39, mean age 85.3) at nutritional risk and a control group (n=32, mean age 80.8) eating at senior centers. The intervention group received bags of BMS twice a week for 18 weeks. Each bag consisted of four BMS (total 2800-4800 KJ and 20-56 g protein) (See figure 1). Base and end line effect assessment of body composition (using the Inbody 270 analyzer) and right handgrip strength was evaluated (See figure 2). Between-group mean differences were analyzed with unpaired t-tests and illustrated using Box and Whiskers plots. Whiskers represent data between minimum and maximum without potential outliers (See figure 3).

Results

The intervention group had increased weight (mean \pm SD) of 0.88 \pm 2.96 kg and fat mass of 1.56 \pm 2.55 kg but reduced muscle mass of 0.14 \pm 1.09 kg. In comparison, the control group had increased weight of 0.29 \pm 2.56 kg and fat mass of 0.27 \pm 3.65 kg but reduced muscle mass of 0.04 \pm 1.76 kg. None of the between-group mean differences were statistically significant (P=0.44, P=0.20, and P=0.82, respectively). The intervention group had an increased handgrip strength of 1.40 \pm 5.27 kg, while a decrease of 1.41 \pm 3.27 kg was observed for the control group resulting in a statistically significant between-group mean difference (P=0.02).

Conclusion

This study suggests that providing fragile elderly people living at home with BMS in addition to main meals may contribute to prevent weight loss although a larger sample size is required to document a statistically significant effect. The weight gained was presumably due to an increased fat mass. This is somewhat in contradiction to their increased handgrip strength suggesting an improved level of physical performance. The increased handgrip may also indicate an improved nutritional status. However, the observed changes can also be attributed to the use of similar but not identical groups of elderly in the study design.



Figure 1. Examples of home-delivered between-meal snacks

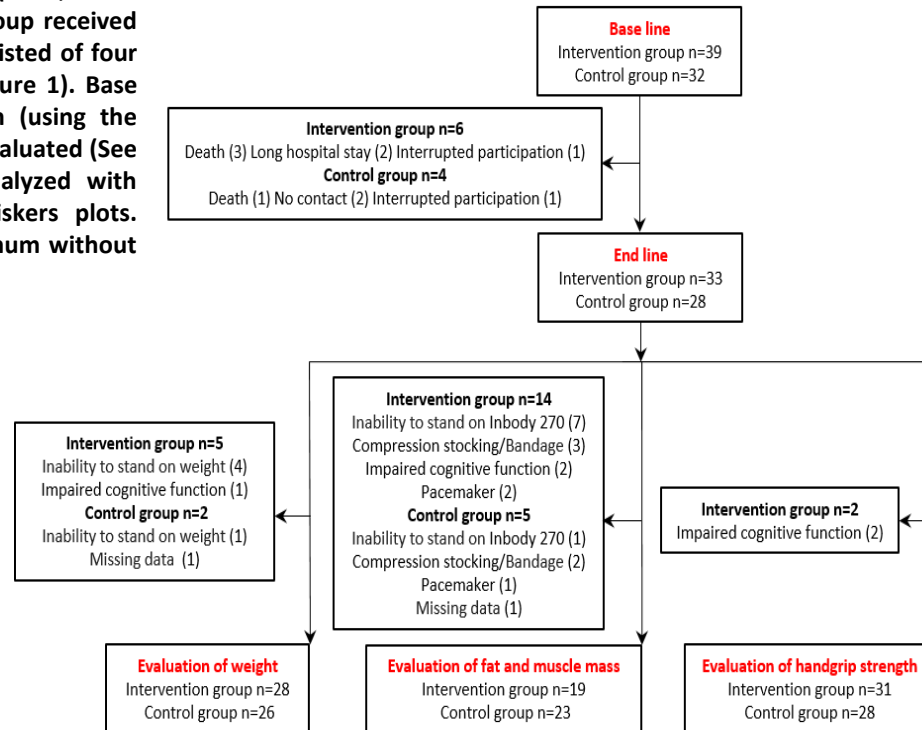


Figure 2. Cohort diagram.

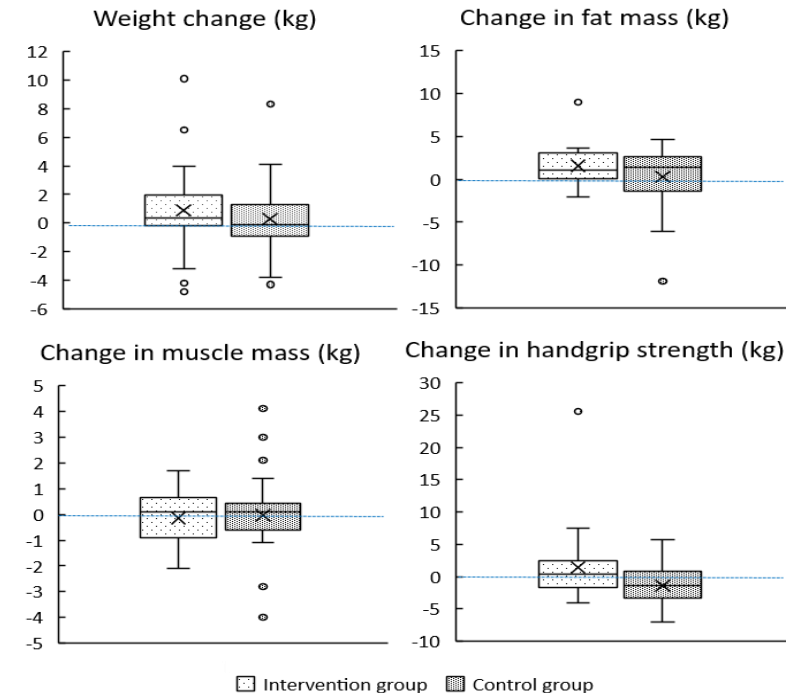


Figure 3. Box and Whiskers plots. The cross marks the mean.