Does the built environment influence the effectiveness of behavioral weight management interventions?

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Abstract

Outcomes of behavioral lifestyle interventions for promoting weight loss vary widely across participants. The effectiveness of a weight management intervention may depend on a person's environmental context. This study compared short- and longer-term effects of a structured nationwide weight management program for people living in neighborhoods with different levels of walkability and different access to recreational places (parks, fitness facilities). Drawing on the health production model, we tested competing hypotheses for whether treatment effects of the program complement environmental supports or substitute for environmental constraints. We studied the US Department of Veterans Affairs (VA) MOVE! weight management program using VA electronic heath record data (2009–2014) and a difference-in-differences design with an inverse propensity score matched comparison group. A total of 114,256 program participants and 498,494 non-participants comprised the sample. Built environment features were measured within one-mile of each person's home. We estimated program effects on body mass index (BMI) for subgroups with different built environments at 6-, 12-, 18-, and 24-month follow-up using linear regressions with person and year fixed effects. At 6 months, the program reduced BMI by 0.4–0.6 kg/m$^2$ among men and 0.3–0.5 kg/m$^2$ among women. The effect diminished at 12, 18, and 24 months. The program effect did not vary significantly across subgroups with different walkability, park access, or fitness facility access. The MOVE! program was not sensitive to environmental context. Results did not lend support to either hypothesis that the MOVE! program complements or substitutes for a person's built environment to affect weight management outcomes.

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