

Mediation and Moderation Effects of the “5 A Day Achievement Badge” Intervention for Boy Scouts

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ABSTRACT

Purpose: To test the moderating effect of parent value for health (PVH) and mediating effects of fruit and vegetable (FV) availability, FV accessibility, child asking behavior (CAB), and FV preference changes on the relationship between program dose and change in FV consumption from an intervention that increased FV consumption among middle school aged Boy Scouts. **Methods:** 233 10-14 year old Boy Scouts were recruited from 42 troops randomly assigned to intervention or control. Intervention: Weekly troop meetings and Internet activities over 9-weeks aimed at increasing home FV availability and accessibility through CAB; increasing FV preference through troop taste testings and recipe preparation homework assignments completed with parents. Control: “mirror image” physical activity intervention (Jago et al., 2006). Measures: FV consumption and preference collected pre and post by the Scout; FV availability, FV accessibility, CAB, and PVH were collected post by the parent. Number of recipes prepared, website log-on rate, and number of meetings attended created a program dose factor score. Mediation and moderation were tested with structural equation modeling (SEM) to assess goodness of fit of two models (Model 1: change in F consumption, and Model 2: change in V consumption) among two groups (Scouts with parents of low PVH and those with parents of high PVH). **Results:** Model 1, $X^2(N=233, df=20) = 21.99$; $p=.34$; CFI=.99, RMSEA=.03, and Model 2, $X^2(N=233, df=20) = 19.41$; $p=.50$; CFI=1.00; RMSEA=<.001, demonstrated good fit for the data. Weak evidence PVH moderated the program dose and change in F consumption (Model 1) and V consumption (Model 2) relationships. Model 1: In the high PVH group, program dose was related to CAB ($r=.19$), and accessibility ($r =-.24$) and preferences ($r=.32$) were related to change in F consumption; in the low PVH group, preference only was related to change in F consumption ($r=.24$). Model 2: In the high PVH group, program dose was related to CAB ($r=.19$), and preferences were related to change in V consumption ($r=.35$); in the low PVH group, preferences only were

related to change in V consumption ($r=.25$). No relationship between dose and change in F or V consumption. **Conclusions:** PVH may moderate effects of intervention dose on change in FV intake; however, more research is needed with larger samples. Associations were detected among variables in each model, suggesting possible mechanisms for change of FV intake; however, no variables served as mediators between intervention dose and change in F or V intake leaving questions about how the intervention led to changes in FV intake.

KEYWORDS: Mediators, Moderators, Fruit and Vegetables, Intervention