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Research Article OSHQ $F

Findings from a School-based Weight Management Trial

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Abstract

Objective: Social influences play an important role in shaping adolescents' dietary and physical activity behaviors. We examined the role of perceived modeling and perceived social support from family and friends on diet and physical activity behaviors among overweight and obese adolescents participating in a weight management trial.

Methods: Six high schools were randomized to a school-nurse delivered behavioral weight management intervention or an information attention-control. Data on perceived support and modeling of healthy eating and physical activity from family and friends and dietary and physical activity behaviors were obtained from participants (N=82) at baseline and 2- and 6-months follow-up.

Results: Linear mixed models were used to examine associations between social factors at baseline and diet and physical behaviors at 6 months. Friend support was correlated with increased fruit and vegetable consumption (0.4 servings/day) and decreased added sugar intake (-14.2 grams/day) (p's<0.05). Family support for physical activity, friend support for physical activity, and family modeling of physical activity were associated with increased number of days/week active for ≥ 60 minutes/day (0.7 days/week; 0.6 days/week; and 0.4 days/week, respectively, p's<0.05).

Conclusions: Among overweight and obese high school adolescents, support from family and friends was associated with a greater number of improvements in diet and physical activity at follow-up than modeling. Strategies to solicit support may maximize efficacy of adolescent obesity intervention efforts.

Keywords:

Obesity; Adolescent; Social support; Modeling; Diet; Physical activity

Adolescence is a critical period for addressing overweight and obesity, with 15.2% of U.S. adolescents in grades 9-12 overweight and 13.0% obese in 2011 [1]. Obesity during adolescence is associated with immediate and long-term negative health outcomes, including heightened risk of developing type 2 diabetes, hypertension, depression, and continued obesity into aduk ᵠlekod [E,3]. ealthy weighg manĸfehent a ng adolescents is ẓᴰiticat, p pk̇tic ᵠiani as t^e ; esὰaᴲlish inderendence and ma e more cṠ i}lᵀN ᴀumᵀʋᶒlN ᴀf ᵠlee xomm]n Tsvironment [4], with respect to diet and physical activity behaviors.

Schools serve as a valuable intervention setting for obesity intervention, yet less than 14% of school-based interventions targeting body mass index (BMI) took place in high schools (approximate student population age range of 14-18 years) [5,6]. Findings from a pilot cluster-randomized trial of a school-based weight management intervention targeting high school youth indicated that the intervention was associated with improvements in dietary behaviors, but not BMI or physical activity, among overweight and obese adolescents [7]. Understanding the interplay of other factors related to weight management, such as social norms and infuences, is essential for advancing obesity intervention eforts among this population and preventing obesity-related complications and conditions later on in the life course.

Social support for behavior change and modeling of targeted behaviors are important behavior change facilitators [8]. Identifying how modeling and support infuence diet and physical activity is critical, as these experiences ofen occur outside of the intervention context. Several studies indicate the importance of parental and peer modeling of eating and physical activity patterns and social support for weight management eforts as important factors associated with children's dietary and physical activity patterns, particularly among younger children [9-15]. However, the infuence and provision of social support and modeling from various sources may change across

child development. For example, as children transition into

% Black	14.3	5.0	
% Hispanic Ethnicity	14.3	15.0	
Participation in free or reduced price lunch (%)	47.6	17.5	0.005
BMI			
Mean BMI percentile	96.4 (3.4)	95.3 (3.8)	0.188
% 85th < BMI <95th percentile (age and sex-adjusted)	21.4	40.0	
% BMI > 95th percentile (age and sex-adjusted)	78.6	60.0	
Perceived family & friend support			
Family support to engage in healthy eating	2.9 (0.6)	2.7 (0.8)	0.277
Friend support to engage in healthy eating	2.0 (0.6)	2.1 (0.9)	0.213
Family support to be physically active	2.8 (0.6)	2.6 (0.8)	0.222
Friend support to be physically active	2.8 (0.8)	2.5 (0.9)	0.796
Perceived family & friend modeling			
# of family members who eat healthy	2.2 (0.8)	2.3 (0.7)	0.966
# of friends who eat healthy	2.0 (0.7)	2.2 (0.8)	0.366
# of family members who are physically active	2.1 (0.8)	2.1 (0.9)	0.845
# of friends who are physically active	2.6 (0.6)	2.5 (0.7)	0.700
Dietary behaviours			
Servings of fruit in a typical day in past 7 days			0.439
% None	4.8	7.5	
% 1-2 servings per day	42.9	55.0	
% 3 or more servings per day	52.4	37.5	
Servings of vegetables in a typical day in past 7 days			1.000
% None	9.5	7.5	
% 1-2 servings per day	50.0	50.0	
% 3 or more servings per day	40.5	42.5	
Servings of fruit and vegetables in a typical day in past 7 days			0.439
% None	4.8	7.5	
% 1-2 servings per day	42.9	55.0	
% 3 or more servings per day	52.4	37.5	
# of times drink soda (not diet) in a typical day in past 7 days			0.020
% None	19.1	37.5	
% 1-2 times per day	66.7	35.0	
% 3 or more times per day	14.3	27.50	
Mean # days eat breakfast in past 7 days	3.1(2.4)	3.7(2.9)	0.327
# of times eat food from fast food restaurant in past 7 days			0.257

% None	31.0	47.5	
% 1-2 times	54.8	37.5	
% 3 or more times	14.3	15.0	
Mean total sugar intake (grams)	109.6 (72.7)	116.4 (56.2)	0.644
Mean added sugar intake (grams)	73.7 (63.2)	79.0 (55.8)	0.501

Table 2 presents

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