

Integrating Motivational and Family Variables to Improve Weight Loss Outcomes in Underserved Adolescents



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Background

- Obesity has become an epidemic in the U.S. over the past 3 decades
 - Rates of overweight have tripled
 - Higher rates in ethnic minorities
 - Close to 40% of African American adolescents are considered at-risk for overweight or overweight
 - Higher rates in female adolescents
 - Numerous health risks associated with adolescent overweight



Background

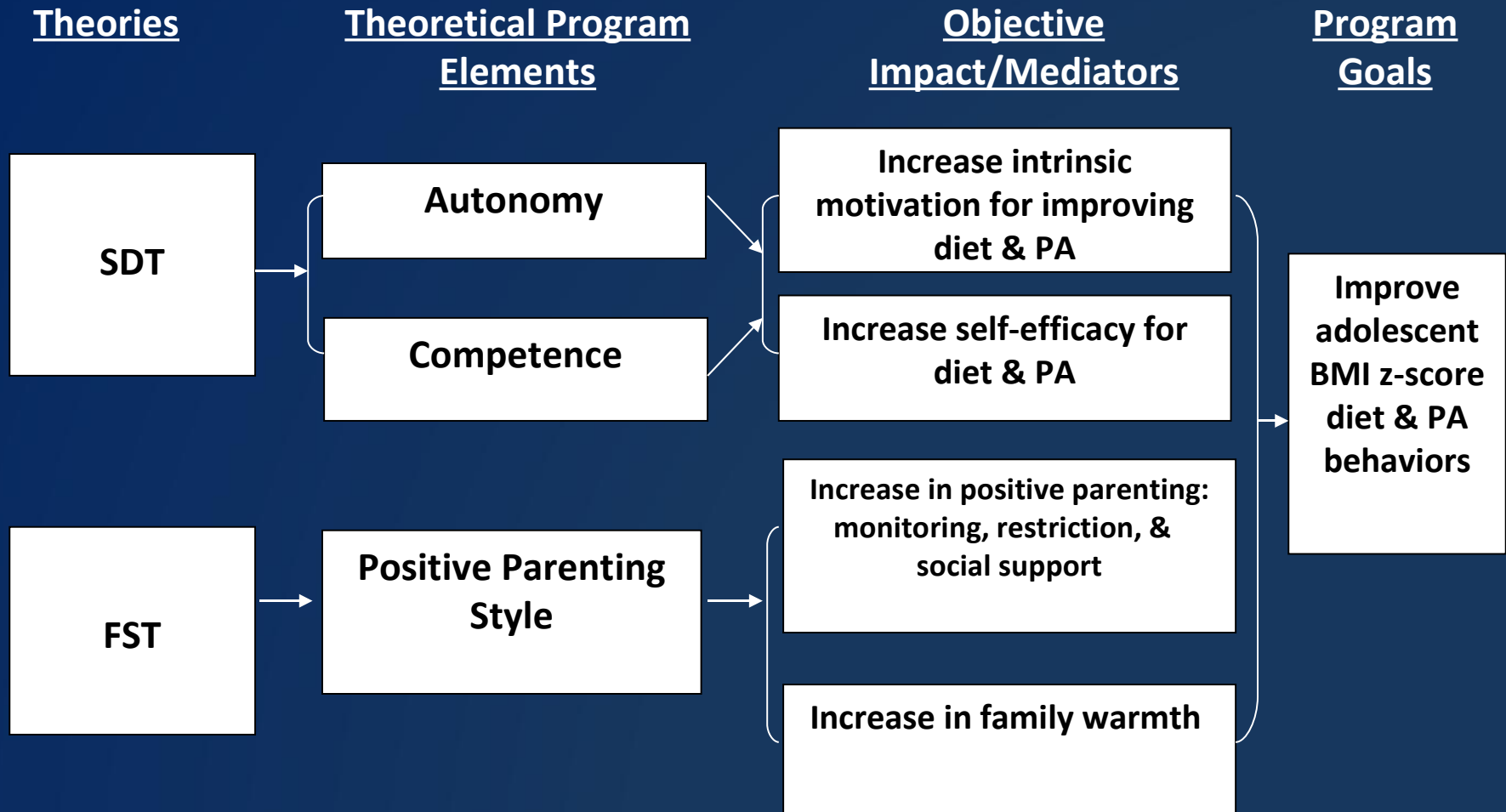
- Motivational variables (autonomy, choice) have been associated with:
 - Improvements in adolescent physical activity and dietary behaviors (Wilson 2002, 2005)
- Family variables (positive parenting styles; family warmth) have been associated with positive adolescent health behaviors (Rhee, 2008; Kitzman-Ulrich et al, 2009).
- Few interventions have integrated these constructs into weight loss programs.

Methods

- Adolescent participants and their parents participated in a 2-week run-in phase (N=25).
- Twenty families were randomized to:
 - Motivational + Family Weight Loss
 - Basic Health Education
 - 75% Underserved
- Families were recruited through:
 - Community Partners
 - Eau Claire Cooperative Health Centers
 - YMCA
 - USC School of Medicine
 - Radio and newspaper advertisements

	M+FWL	BH
N	9	11
Age (yrs)	12.4 ± 1.6	13.1 ± 1.3
African American	66.7%	64.3%
Female	66.7%	71.4%
BMI	36.2 ± 4.8	32.1 ± 5.1

M+FWL Intervention Model



M+FWL Intervention

- 8 weeks
 - 6 weekly group meetings
 - 2 weeks online support
- Lifestyle approach to diet and PA
- Specific calorie goal
 - 200 – 300 calorie reduction in energy intake
 - 100 – 200 calorie energy expenditure
 - Promote gradual weight loss



M+FWL Curriculum Matrix

Session	Theoretical Constructs	Content	Application
Working Together to Set Goals!	SCT: Behavioral Skills SSP/FST: Motivation, Competence SDT: Autonomy	SSP (family) Lifestyle approach to weight loss Self-monitoring Goal-setting	-Choose self-monitoring tool (online, logs, pictorial goal sheet) -How to goal set -Set weight loss goals - Participate in SSP video to generate positive family coping strategies -Self-monitoring station/SSP station -Receive calorie goal/or range
Balancing Act	SCT: Behavioral Skills FST: Nurturance (warmth), Competence FST/SCT: Social Support SDT: Autonomy/Competence	Energy Balance Positive parenting practices: limit setting, household guidelines Creating a healthy home	-Concept of energy balance -Record a typical day to estimate calories -Parents: FIT Parenting Tips -Teens: Making Your Home Healthier
Supporting Each Other	SCT: Behavioral Skills FST: Positive parenting, Nurturance (warmth) Competence	Positive communication Family Rules Sedentary behaviors	-Practice effective, positive communication -Schedule family meeting -Review media use pyramid -Establish family rules re: media use -Family sedentary behavior goals

Measures

- Objective measures of height and weight to calculate BMI & BMI z-score
- 24-hour dietary recall (3)
 - Dietary Assessment Unit at USC
- Self-report measures
 - Motivation for diet and physical activity (Wilson et al., 2002, 2005)
 - Family warmth – Self Report Family Inventory (Kitzman-Ulrich et al., 2009; Beavers et al., 1990)
 - Parenting Dimensions Inventory (Slater et al., 1987)

Results

Change Variable	M+FWL Group M (SD)	BH Group M (SD)
BMI †	-0.21 (0.74)	0.24 (0.76)
BMI z-score†	-0.01 (0.04)	0.02 (0.08)
Energy Intake (kcal)	-138.87 (253.11)	-0.86 (305.59)
Adolescent motivation for diet**	0.49 (0.51)	-0.05 (0.48)
Adolescent motivation for PA*	0.39 (0.44)	0.09 (0.36)

†p<.10; *p<.05; **p<.01

Results

- Parent social support for eating habits ($r=-0.54$, $p<.01$) and positive parenting styles ($r=-0.46$, $p<.03$) were correlated with reductions in adolescent BMI.
- Adolescent reported family warmth was correlated with a reduction in energy intake ($r=0.62$, $p<.01$), and positively correlated with adolescent motivation for diet ($r=0.53$, $p<.01$).

Results

- Retention rates were high
 - Slightly higher rates in M+FWL (91%) compared to BH (82%) group
- 78% of adolescents in the M+FWL group indicated the program provided helpful information on weight loss
- 100% indicated self-monitoring of diet and PA
- Families were very satisfied with program materials, and weekly program evaluation ratings were similar in both groups (M+FWL = 1.47; BH = 1.35)

Conclusions

- Demonstrated preliminary support for integrating SDT & FST into a behaviorally-based weight loss program.
- Demonstrated feasibility and satisfaction of program materials in primarily African American families.
- Short-term reductions in BMI z-score and energy intake.
- Increases in motivation for diet and PA.
- Associations between family variables and changes in BMI and energy intake.

Future Directions

- Larger studies are needed.
- Family and online components need further development.



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