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Exploring ambivalence in motivational interviewing with obese African American adolescents and their caregivers: A mixed methods analysis

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Abstract

Objective—We conducted an exploratory mixed methods study to describe the ambivalence African-American adolescents and their caregivers expressed during motivational interviewing sessions targeting weight loss.

Methods—We extracted ambivalence statements from 37 previously coded counseling sessions. We used directed content analysis to categorize ambivalence related to the target behaviors of nutrition, activity, or weight. We compared adolescent-caregiver dyads' ambivalence using the paired sample *t*-test and Wilcoxon signed-rank test. We then used conventional content analysis to compare the specific content of adolescents' and caregivers' ambivalence statements.

Results—Adolescents and caregivers expressed the same number of ambivalence statements overall, related to activity and weight, but caregivers expressed more statements about nutrition. Content analysis revealed convergences and divergences in caregivers' and adolescents' ambivalence about weight loss.

Conclusion—Understanding divergences in adolescent-caregiver ambivalence about the specific behaviors to target may partially explain the limited success of family-based weight loss interventions targeting African American families and provides a unique opportunity for providers to enhance family communication, foster teamwork, and build self-efficacy to promote behavior change.

Practice implications—Clinicians working in family contexts should explore how adolescents and caregivers converge and diverge in their ambivalence in order to recommend weight loss strategies that best meet families' needs.

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Keywords

Weight loss intervention; Motivational interviewing; Mixed methods

1. Introduction

The percentage of obese adolescents (Body Mass Index ≥95th percentile) in the United States more than tripled from 1980 (5%) to 2012 (18%) with a disproportionate number (23.7%) of African American adolescents affected [1]. The consequences of pediatric obesity are well known: increased risk for cardiovascular disease, pre-diabetes, bone and joint problems, asthma, sleep apnea and psychosocial problems like stigmatization and poor self-esteem. Adolescents who are obese are likely to remain obese into adulthood and have a greater risk of heart disease, type 2 diabetes, stroke, cancer, and osteoarthritis [2]. However, few weight loss interventions have specifically targeted African American adolescents, and those that have were generally unsuccessful [3–6].

The American Academy of Pediatrics recommends motivational interviewing [MI] for the prevention and treatment of obesity [7]. Its efficacy for weight loss has been demonstrated in adults [8,9] and children [10,11], but the results for adolescents have been mixed [3,12]. MI is a client-centered intervention to elicit and strengthen intrinsic motivation and self-efficacy for behavior change [13,14]. MI research has an empirically defined causal chain linking counselors' communication strategies to client change talk (patients' own desire, ability, reason, and need for change) and commitment language (specific intentions and plans for change) and change talk/commitment language to behavior change [15–17]. We have demonstrated that MI counselors' use of MI strategies predicts change talk and commitment language in African American caregivers and adolescents engaged in weight loss treatment [18,19].

The theoretical framework of MI identifies *ambivalence*—simultaneous and contradictory attitudes or feelings toward an object, person, or action—as a key barrier to change [13,14]. The importance of ambivalence is further supported by the Trans-theoretical Model [20] where ambivalence and its resolution are key factors in moving from contemplation to active behavior change. To date, no research has examined ambivalence utterances expressed during MI intervention sessions. Our research group's MI process coding scheme explicitly identifies ambivalence statements—statements composed of utterances expressing rationales that are both for and against behavior change. In this study, we used mixed methods to analyze the frequency and content of the ambivalence statements expressed by African American adolescents and caregivers during MI sessions targeting weight loss. Because there were no previous studies of ambivalence, we did not have an a priori hypothesis about the relationship between adolescent and caregiver ambivalence. We used quantitative methods to examine the frequency of ambivalence statements by targeted behaviors (nutrition, activity, and weight) and valence (whether weighted for or against change). We used both quantitative and qualitative methods to explore the specific content of adolescent and caregiver ambivalence utterances.

2. Methods

2.1. Participants in the parent study

Detroit, Michigan is a city with a majority African American population and high rates of overweight (40%) and obesity (23%) [21]. Participants were recruited from an urban children's hospital located within the city of Detroit. Adolescents meeting the following inclusion criteria were eligible: (1) BMI (kg/m²) 95th percentile, (2) self-identified Black, and (3) age 12.0–17.0. Exclusion criteria were: (1) obesity secondary to medication, e.g. steroid; (2) comorbid medical condition preventing normal exercise; (3) pregnancy or a medical condition where weight loss is contraindicated; (4) comorbid thought disorders, i.e. schizophrenia; (5) moderate or severe mental retardation; and (6) psychosis or suicidality.

Forty adolescent-caregiver dyads participated in the parent study. Three were excluded from this analysis because they were accompanied to the intervention session by a second caregiver and the coding instrument was not designed to code sessions with multiple caregivers. The mean adolescent age was 14.7 (SD = 1.63) and most were female ($n = 27$) living in two parent homes ($n = 25$). Most caregivers were biological mothers ($n = 36$); others were a biological father, adoptive mother and two female guardians. The median family income was \$16,000–\$21,999 ranging from less than \$1,000 to \$50,000–\$74,999. All caregivers provided informed consent and adolescents provided assent. The parent study was approved by the Institutional Review Board affiliated with the academic institution.

2.2. MI sessions in the parent study

Participants received a single MI session, approximately 60 min long, aimed at four target behaviors—nutrition, activity, weight, and program participation. Sessions were conducted by three MI counselors who were members of the Motivational Interviewing Network of Trainers (1 PhD psychologist, 1 PhD dietitian, and 1 Master's level psychologist). Counselors met first with adolescents alone, then with caregivers alone and ended with both together. Sessions were semi-structured and focused upon developing a weight loss plan. Beginning with an open-ended discussion about their current weight status, adolescents were given the option of focusing on nutrition or physical activity. Counselors used a variety of MI communication strategies to elicit adolescent change talk and commitment language while guiding adolescents toward setting behavior change goals consistent with their current motivational level. Adolescents were offered the opportunity to develop a change plan which, with permission, was later shared with their caregivers. Caregivers' sessions followed a similar format but focused on how they might support their adolescent's weight loss goals and plans. The session ended with adolescents, caregivers, and counselors discussing together their weight loss/support goals and plans.

2.3. Data coding in the parent study

Intervention sessions were video recorded using digital processing technology allowing simultaneous recording of the adolescents/caregivers and counselor resulting in a split-screen image on a single monitor [22]. Video recordings were transcribed by a professional transcription service. Sessions were coded using the Minority Youth—Sequential Coding of Process Exchanges (MY-SCOPE) [18]. Adolescents' and caregivers' talk was coded by turn,

defined as one speaker holding the floor. Turns could consist of a single utterance, like *uh-huh* or *maybe*, or a series of utterances. Adolescent/caregiver turns were coded for commitment language, change talk, or ambivalence if they addressed one or more target behavior—nutrition, activity, weight or program participation; other codes were assigned to turns not addressing a target behavior. Counselors' talk was coded for MI communication strategies (for a full description of the MY-SCOPE Code System, see Idalski Carcone et al., 2013) [18]. A primary coder independently coded all 37 sessions and a secondary coder co-coded a randomly selected 20% of the transcripts to monitor reliability, which was good ($\kappa = .696$).

2.4. Data extraction for the current study

For this secondary analysis, we extracted from the coded dataset all adolescent and caregiver statements assigned the ambivalence code. A total of 268 statements were extracted from 25 (67.6%) of the 37 participating families. (We excluded five statements about program engagement due low frequency). During MY-SCOPE coding, ambivalence statements were assigned a valence: statements weighted towards making behavior changes supportive of weight loss were coded ambivalence positive (AMB^+), as in Excerpt A. Statements weighted equally for and against change were coded ambivalence neutral (AMB°), as in Excerpt B. Statements weighted against change were coded ambivalence negative (AMB^-), as in Excerpt C.

Excerpt A: I wouldn't get teased any more, I would be able to shop at regular stores, and I probably would feel better about myself, but I would be hungry all the time (AMB^+).

Excerpt B: I'm really not sure about this. Sometimes I want to lose weight, and other times it feels like there's no point in trying (AMB°).

Excerpt C: Well, I'd look better, but I would be hungry. I would have to eat like a white girl—salads all the time and I would have to start sweating (AMB^-).

2.5. Data analysis of AMB codes

We conducted two levels of mixed methods data analysis. First, we examined ambivalence statements using directed content analysis [23] to categorize the statements according to target behavior. We then used the paired samples *t* and the Wilcoxon signed-rank tests to compare the frequency of adolescents' and caregivers' ambivalence statements. Finally, we analyzed the specific content of the statements using conventional content analysis [23].

2.6. Target behavior coding of ambivalence statements

Using directed content analysis [23], which derives its coding categories from previous research or theory, two authors (EB and SE) independently coded the content of each ambivalence statement to categorize them according to the target behaviors of nutrition, physical activity, and weight using the definitions in Table 1. Inter-rater reliability was excellent ($\kappa = .907$) with only 17 discrepancies to which a final target behavior code was collaboratively assigned. Five statements referencing two target behaviors were separated

into two statements (see example below). After target behavior coding, the final number of unique ambivalence statements was 273.

Excerpt D: Because technically, I mean if you, if you look at what she eats on a daily basis in my presence or that I know about, she doesn't eat a lot at all (*Nutrition*). But she sleeps like 12 h out the day. So it's like whatever you are eating you just laying on it (*Activity*).

2.7. Quantitative comparison of adolescent-caregiver dyads

We then tallied the ambivalence statements by speaker (adolescent or caregiver), target behavior (nutrition, activity, weight) and valence (AMB^+ , AMB° , AMB^-). We compared the frequency of adolescents' and caregivers' ambivalence statements in all 37 dyads using the paired samples *t*-test. Because there was evidence of heteroscedasticity (skew), we also tested the data with the nonparametric alternative, the Wilcoxon signed-rank test. As a final comparison, we constructed dichotomous variables to represent whether adolescents and caregivers expressed at least one ambivalence statements in each target behavior category. We then compared adolescents' and caregivers' ambivalence using McNemar's test.

2.8. Content coding of ambivalence utterances

To discover specifically what African American adolescents and their caregivers were ambivalent about, we used conventional content analysis [23] to characterize each ambivalence utterance. Conventional content analysis develops its coding categories inductively from the data. Through recursive readings, EB and SE developed the coding schema in Table 2. The content categories are conceptually similar to the MY-SCOPE ambivalence valences: categories 1 and 2, *things I could do* and *reasons why I might do these things*, are consistent with AMB^+ and AMB° , and category 3, *reasons why I might not do these things*, is consistent with AMB^- . Some turns, again, included content related to more than one category and, thus, were separated into multiple turns:

Excerpt E[Target Behavior Activity] Because, like, I, I, like, feel the important—I feel it is important to get (*things I could do*). But then on the other hand, I can't because it's not that much to do (*reasons why I might not do these things*).

Excerpt F[Target Behavior Activity] Well, it's about, I don't know if it's two miles. It's like 6,000 steps that we take. So, but, and I try to encourage her to get out with us. 'Come walk with us.' (*things I could do*). And, she doesn't want to do it and she's – it's a lot to get her to— (*reasons adolescent might not do these things*).

After separating AMB statements into multiple utterances, the number of unique ambivalence content utterances for this analysis was 363, 139 (38.3%) from adolescents and 224 (61.7%) from caregivers.

EB and SE then collaboratively coded the content of each ambivalence statement within each target behavior to consensus, developing specific content sub-codes for each target behavior. For example, in activity, the adolescent content sub-codes within *things I could do* included walking, biking, playing outside, using equipment, participating in school/

community activities, and limiting sedentary time. We then tallied the number of codes to determine their frequency by speaker, target behavior, and the content categories. We compared the content of the most frequently occurring codes in order to describe how adolescents and caregivers converged and diverged in their ambivalence about adhering to weight loss recommendations in each of the target behaviors.

3. Results

3.1. Target behavior coding

Among the 37 adolescent-caregiver dyads, caregivers expressed more ambivalence statements than adolescents overall ($M_{\text{diff}} = 1.76$, $SD = 7.28$) and by target behavior: nutrition ($M_{\text{diff}} = 0.89$, $SD = 2.74$), activity ($M_{\text{diff}} = 0.68$, $SD = 4.59$), and weight ($M_{\text{diff}} = 0.19$, $SD = 2.22$). These differences were not statistically significant, except for nutrition which was not statistically significant with the paired samples t -test ($p = .055$) but was with the Wilcoxon signed-rank test ($p = .021$). Caregivers also expressed more negatively-valenced statements ($M_{\text{diff}} = 1.81$, $SD = 6.63$), whereas adolescents expressed slightly more positively-valenced statements ($M_{\text{diff}} = 0.08$ vs. $M = 1.93$). Differences in valence were not statistically significant. Analyses using the McNemar's test confirmed these findings. Caregivers were more likely than their adolescent children to make one or more ambivalence statements about nutrition ($p = .039$), but there were no significant differences overall, within other target behaviors, or by valence. (Table 3)

To better understand the differences in adolescent-caregiver dyads, we conducted a post hoc analysis of the nutrition ambivalence codes. In this analysis, we merged the positively and neutrally-valenced ambivalence statements into a single category and then compared adolescents' and caregivers' positively/neutrally and negatively valenced nutrition-related ambivalence statements. Caregivers expressed a greater number of positive/neutrally-valenced nutrition-related ambivalence statements compared to adolescents ($M_{\text{diff}} = 0.57$, $SD = 1.91$, 95% CI $[-0.07, 1.20]$). Caregivers also expressed more negatively-valenced nutrition statements as compared to their adolescents ($M_{\text{diff}} = 0.32$, $SD = 2.32$, 95% CI $[-0.45, 1.10]$).

3.2. Content coding

3.2.1. Nutrition—Of the 363 unique utterances identified during content coding, 130 related to nutrition (Table 4). Adolescents ($n = 8$) and caregivers ($n = 12$) converged upon *eating/providing healthy foods* as *things I/adolescent could do*. Specifically, adolescents mentioned food choices most frequently, but occasionally drinks, eating healthy at family meals, not overeating, and following healthy eating advice. Caregivers said they could *buy healthy foods* (e.g., fruits and vegetables, 100% fruit juice), eat right, control what comes into the house (e.g., junk food), read ingredients, and find healthy foods the adolescent would like.

Adolescents and caregivers diverged sharply upon perceived barriers to making nutrition changes. The most frequently occurring adolescent *reason I/adolescent might not do these*

things was *family patterns* of food management ($n = 11$), particularly the meal time schedule (i.e., inconsistent meal timing, not eating breakfast) and eating at family events.

“It’s kind of hard to eat healthier around others. It’s like my main thing—how to eat around the other family members and stuff”.

In contrast, caregiver identified barriers were adolescents’ *unhealthy eating habits* ($n = 12$) and *family motivation* ($n = 9$). Caregivers discussed how adolescents eat the wrong foods, like junk food, don’t like healthy foods, are picky eaters, and they know how to eat healthy but do not.

“I’ll cook a meal . . . She’d rather have, like, chips, sandwiches, and a soda over a meal that I’ve prepared for her”.

Comments about *family motivation* included statements such as “we’re not motivated”, “I don’t know why we don’t”, and “it’s hard to say no”.

3.3. Activity

We identified 166 statements about activity (Table 5). Adolescents and caregivers converged upon *things I/adolescent could do*—*walk, bike, use equipment* and *school/community activities*, with walking mentioned most frequently by both. Both also converged upon *family support*. Adolescents mentioned “help from mom” as a primary *reason I might do these things* and caregivers concurred stating they could encourage their adolescent, invite them to join me/the family in activities, and find activities for them (*things I could do*). Caregivers viewed themselves as having a critical role in *family activities* ($n = 10$) such as walking, biking, dancing and exercise videos. Adolescents and caregivers also converged upon low motivation as the most frequently mentioned *Reasons I/adolescents might not do these things*. Adolescents’ statements ($n = 14$) included “don’t feel like it”, exercise is “optional”, “can’t stick with it”, it’s “not important [enough] to bother me”, and preference for sedentary activities like sleeping, lying down, computer and TV time. Caregivers ($n = 24$) agreed stating the adolescent “doesn’t want to”, “won’t do it”, “doesn’t stick to it” and “mind is made up”. Caregivers frequently cited adolescents’ low motivation as a *reason I might not do these things* ($n = 19$) citing the need for “constant reminders”, feeling like they are “talking to the wall”, adolescents “don’t care” and “I can’t make [them] do it”. Two caregivers encapsulated this theme with “I’m tired trying to motivate her” and “I’m frustrated”.

3.4. Weight

The target behavior of *weight* resulted in the fewest content codes ($n = 67$) which was partly due to the study design which focused on nutrition and activity (Table 6). The majority of the adolescents’ and caregivers’ weight statements were *reasons I might not do these things*. Adolescents most frequently mentioned accepting their weight ($n = 5$) and low motivation ($n = 5$). They expressed acceptance in statements remarking that their family is “big”, they would “rather be big than small”, “want to lose just a little”, and “I know it’s unhealthy but I’m fine with it”. Adolescents expressed low motivation in statements like “losing weight is hard”, “I’m tired of it”, and, in a perfect statement of ambivalence, “I’m somewhere in the middle”. Caregivers converged upon adolescents’ low motivation ($n = 12$) as the primary

reasons I might not do these things. Caregivers described frustration with trying to motivate teens: “I’ve done everything I could do” and “I’m frustrated”. These ideas were mirrored in their statements of *thing adolescents could* do. Caregivers pointed out that adolescents need to take responsibility for their weight loss ($n = 5$), noting their age – “she’s fourteen years old” – and sometimes abdicating their own responsibility – “I feel like it’s entirely up to her”. Caregivers diverged from adolescents perspective when they mentioned the *Expense* of shopping ($n = 5$).

4. Discussion and conclusion

4.1. Discussion

Although the MI framework identifies ambivalence as a key barrier to behavior change and encourages clinicians to explore ambivalence as a primary behavior change strategy [13,14], there have been no studies of ambivalence statements expressed during MI sessions. This study addresses this empirical gap by examining ambivalence in MI sessions for weight loss with African American adolescents and their caregivers. Our findings contribute to the theoretical and methodological literature as well as clinical practice.

In MI, the valence of ambivalence statements is an indicator of a person’s readiness to change the targeted behavior. Ambivalence statements in which patients express a greater number of reasons to change their behavior than to maintain it are characterized as positively valenced and signal greater readiness to change [24,25]. Conversely, negatively-valenced ambivalence statements are those in which a person’s reasons to maintain their current behavior or perceived barriers to behavior change outnumber their reasons to change which indicates lower readiness to change. We found that most families (68%) expressed ambivalence and caregivers and adolescents from the same family did not differ significantly in the number of ambivalence statements expressed overall. Our findings do, however, suggest that, the specific behaviors adolescents and caregivers are ambivalent about changing may differ. Compared to adolescents, caregivers expressed more positively/ neutrally-valenced statements about nutrition-related behavior changes.

One reason underlying caregivers’ optimism for making nutrition-related changes may be that they perceive greater control over nutrition. As the primary food purchasers for the family, caregivers have more control over nutritional changes as expressed in their statements about shopping for healthy food and preparing healthy meals. Adolescents, on the other hand, were optimistic about nutritional changes citing the family’s patterns of eating and drinking to be a barrier to nutrition changes. In contrast, adolescents expressed greater readiness to make activity-related changes whereas caregivers were pessimistic. Adolescents emphasized the activities available to them (e.g., walking, biking, school and community activities) and reasons to be active (e.g., fun, interesting). In contrast, caregivers stated teens’ low motivation to be a significant barrier, perhaps reflecting frustration based on previous attempts to motivate their children. Interestingly, although adolescents’ were more ready to change activity, they did agree with their caregivers that their own low motivation for activity was a barrier. These differences in adolescents’ and caregivers’ attitudes toward the specific behaviors targeted might help to explain the limited success of

previous MI-based weight loss program and, possibly, other family-based weight loss treatments.

Better understanding how adolescents and caregivers converge and diverge in their ambivalence about weight loss presents a unique opportunity for providers to enhance family communication, foster teamwork, and build self-efficacy to promote behavior change. Helping families understand one another's perspective on weight loss and the target behaviors is precisely the role of the provider. Engaging adolescents and caregivers in productive discussions about which behaviors to target and why is not only in alignment with the MI framework [24] but also teaches families to more effectively communicate and fosters their ability to collaboratively work together. To illustrate, both adolescents and caregivers in our study identified the adolescent's low motivation for making activity-related changes as a barrier to weight loss but both also recognized family support as a facilitator of change. By highlighting their shared ideas and engaging in a problem-solving discussion around how the caregiver can offer support that is not perceived negatively, the family is communicating more effectively and working together as a team. Similarly, adolescents were less ready to change their nutrition behaviors identifying family eating patterns as a barrier, whereas caregivers were ready to change their food purchasing patterns. Having a discussion about how they are aligned in their goal to eat healthier, can lead to more productive and effective communication, which will boost both adolescents' and caregivers' readiness and self-efficacy for behavior change, paving the way for a more favorable outcome.

Finally, adolescents and caregivers both expressed statements about weight as a target behavior much less frequently than statements about nutrition or activity. However, the content of the ambivalence statements provides an interesting insight into this finding. A common comment adolescents made about weight was acceptance, a sentiment that was echoed by their caregivers overtly and through comments about being happy and healthy. This finding is consistent with previous research suggesting that African American women are more accepting and positive about their weight and body image [26,27]. Weight loss programs targeting this group may need to approach weight loss from a perspective of health rather than weight loss.

Because this study was a secondary analysis, we were limited to the 37 MI sessions examined in the original pilot study which was an intervention refinement study (i.e., small N) focused on adapting MI for African American families. These sample limitations may have affected the content analysis, as some sub-codes, even the most frequently occurring ones, had low frequencies. Our ability to explore potentially confounding variables, such as adolescents' and caregivers' initial readiness to change, was also limited by our sample size. Thus, replication of this research with larger, more diverse samples is needed. This study explored ambivalence in one-on-one interactions. It would be informative to examine ambivalence expressed during triadic MI sessions, i.e., when counselors worked with adolescents and caregivers together.

4.2. Conclusion

This study examines an understudied area of MI clinical practice—the expression of ambivalence. In this research, we used a mixed methods approach to examine the frequency and content of ambivalence expressions. Understanding ambivalence and the role it plays in behavior change is important for clinicians who use MI in their practice as well as for researchers who seek to empirically test the principles of MI or its efficacy as a treatment approach. These results suggest that members of African American families receiving MI for weight loss may diverge about the specific behaviors to target, which may help explain the limited success of family-based weight loss interventions targeting this group. However, through increased communication, providers can help families see where their goals converge and help foster teamwork and self-efficacy toward the shared goal.

4.3. Practice implications

MI clinical guidance suggests ambivalence is a natural part of the change process; however, clinicians must understand the patient's readiness to change when determining how to respond to it. If a patient is still contemplating change, placing too much emphasis on ambivalence and lingering in discussions of pros and cons can obstruct momentum toward behavior change; whereas if the patient has decided to change, they may benefit from active exploration of their ambivalence [28]. When the patient's readiness to change is unclear, clinicians are encouraged to use double-sided reflections (i.e., those that acknowledge both the positive and negative aspects of change) ending with the positive. This approach allows clinicians to acknowledge negative ambivalence and, thereby, remain empathetic to the client's perspective. It also emphasizes the big picture and uses session time efficiently by focusing on the reasons for behavior change and the evocation of change talk. This study suggests clinicians working in family contexts may need to explore each participant's readiness to change separately to understand how adolescents and caregivers converge and diverge in their readiness to change and how this might impact their adherence to weight loss recommendations.

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Table 1

Target behavior coding.

Code	Definition	Examples
Nutrition	Statements about, attitudes toward, or behaviors related to food or drink	<i>Teen:</i> And I don't eat like on time. You know, I don't eat breakfast, my lunches are like when I get home from school it's like four, I eat dinner around like ten, go to bed around like two, so I know it's not healthym to do that either <i>Caregiver:</i> I do eat a lot of junk food and I bring it in the house and I give it to her
Activity	Statements about, attitudes toward, or behaviors related to activity, both physical and sedentary	<i>Teen:</i> I'll lay down, you know like that, or I'll get on the computer or something like that. And I know I need to like I guess do something active or whatever <i>Caregiver:</i> I think for our family, we have no motivation. We don't like to sweat, we don't like to be hot. We're girly girls
Weight	Statements about, attitudes toward, or behaviors related to weight, weight loss or weight gain	<i>Teen:</i> Well I've been trying to lose weight but it really never [goes] anywhere <i>Caregiver:</i> She's so tall, so I figured maybe by the time she get[s] in high school, she, she will slim out

Table 2

Content coding schema.

Adolescent categories	Caregiver categories ^a
1 <i>Things I could do</i>	1a <i>Things adolescent could do</i> 1b <i>Things I could do</i>
2 <i>Reasons I might do these things</i>	2 <i>Reasons I might do these things</i>
3 <i>Reasons I might not do these things</i>	3a <i>Reasons adolescent might not do these things</i> 3b <i>Reasons I might not do these things</i>

^aThe MY-SCOPE instrument separated caregivers' talk about their adolescents and their talk about themselves.

Table 3

Number of ambivalence statements expressed by adolescents and caregivers.

	Adolescent		Caregiver		Mean difference (95% confidence interval) ^a
	M (SD)	Median (IQR)	M (SD)	Median (IQR)	
Overall	2.81 (4.62)	1.00 (0.00, 3.50)	4.57 (8.06)	1.00 (0.00, 6.50)	-1.76 (-4.19, 0.67)
Target behavior					
Nutrition	0.92 (2.14)	1.00 (0.00, 1.00)	1.81 (2.89)	0.00 (0.00, 3.00)	-0.89 (-1.80, 0.02)
Activity	1.24 (2.62)	0.00 (0.00, 1.00)	1.92 (4.83)	0.00 (0.00, 1.50)	-0.68 (-2.21, 0.85)
Weight	0.65 (1.36)	0.00 (0.00, 1.00)	0.84 (2.20)	0.00 (0.00, 0.50)	-0.19 (-0.93, 0.55)
Valences					
AMB ⁺ (Positive)	0.95 (1.84)	0.00 (0.00, 1.00)	0.86 (1.75)	0.00 (0.00, 1.50)	0.08 (-0.56, 0.73)
AMB ⁰ (Neutral)	0.97 (1.71)	0.00 (0.00, 1.00)	1.00 (1.63)	0.00 (0.00, 1.00)	-0.03 (-0.58, 0.53)
AMB ⁻ (Negative)	0.89 (1.91)	0.00 (0.00, 1.00)	2.70 (6.92)	0.00 (0.00, 2.00)	-1.81 (-34.02, 0.40)

^aSensitivity analysis with Wilcoxon Signed Rank Test yielded similar test results.

Table 4

Content coding frequencies—nutrition.

Schema category description	Sub-code description	Frequency
Adolescents		
Things I could do	Eat healthy	8
	Don't eat when not hungry	3
	Don't eat unhealthy	2
	Family patterns (schedule)	1
	Motivation (<i>be serious</i>)	1
Reasons I might do these things	Family support	2
Reasons I might not do these things	Family patterns (schedule)	11
	Unhealthy eating habits	7
	Confused (<i>not seeing results</i>)	6
	People say things	3
	Lack of motivation	2
	Bored eating	2
Caregivers		
Things adolescents could do	Take responsibility	5
	Eat healthy	1
	Don't eat unhealthy	1
Things I could do	Healthy food (meals, shopping)	12
	Programs	5
	No unhealthy food	5
	Family support	4
	Motivation (<i>try harder</i>)	2
	Family patterns (schedule) s	1
Reasons I might do these things		0
Reasons adolescents might not do these things	Unhealthy eating habits	12
	Not taking responsibility	4
	Lack of motivation/teen	2
Reasons I might not do these things	Lack of motivation/family	9
	Junk food once in a while	5
	Confused (<i>no results</i>)	5
	Cost	4
	Family patterns (schedule)	2
	Unhealthy eating habits/family	1
Other		2

Table 5

Content coding frequencies—activity.

Schema category description	Sub-code description	Frequency
Adolescents		
Things I could do	Walk	4
	Bike	3
	Play	2
	Use equipment	2
	School/community activities	1
	Limit sedentary time	1
Reasons I might do these things	Family support	6
	Motivation (<i>need to be active</i>)	5
	Fun/interesting	4
Reasons I might not do these things	Lack of motivation	14
	Nothing to do	5
	Exercise boring	4
	Friends	4
	Neighborhood	2
	Family patterns (schedule)	1
Caregivers		
Things Adolescents could do	Walk	3
	Swim	3
	Community/school activities	3
	Bike rides	1
	Use equipment	1
Things I could do	Family activities	10
	Family support	6
Reasons I might do these things	Caregiver responsibility	2
Reasons adolescents might not do these things	Lack of motivation/teen	24
	Teen responsibility	4
	Nothing to do at home	3
	Health issues	2
	Bad neighborhood	1
Reasons I might not do these things	Motivating teen	19
	Family patterns	9
	Expense	5
	Lack of Motivation/caregiver	5
Other		2

Table 6

Content coding rank order—weight.

Schema category	Subcode descriptions	Subcode frequencies
Adolescents		
Things I could do	Go to a program	2
	Eat healthy	1
	Motivation (<i>take things seriously</i>)	1
Reasons I might do these things	Have more friends	3
	Be more healthy (health issues)	1
Reasons I might not do these things	Acceptance	5
	Lack of motivation	5
	Confused (<i>never goes anywhere</i>)	4
	Scale doesn't work for me	3
Other		3
Caregivers		
Things adolescents could do	Take responsibility	5
	Be happy (<i>low self-esteem, depression</i>)	3
	Be healthy (health issues)	2
	Eat right at school/out of house	1
	Motivation (<i>keep trying</i>)	1
Things I could do	Improve myself to improve her	2
	<i>Quit giving her junk food</i>	1
Reasons I might do these things		0
Reasons adolescents might not do these things	Acceptance	3
Reasons I might not do these things	Motivating Teen	12
	Expense	5
	Confused (<i>don't know why</i>)	4