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Primary care physicians' discussions of weight-related topics with overweight and obese adolescents: Results from the Teen CHAT pilot study

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Abstract

Physicians should counsel overweight adolescents about nutrition and exercise. We audio recorded 30 physician-adolescent encounters. Female, older, normal weight physicians and pediatricians were more Motivational Interviewing adherent. When physicians used MI skills, patients increased exercise, lost weight, and reduced screen time. Physicians should use MI techniques to help adolescents change.

Keywords

obesity; adolescents; patient-physician communication; Motivational Interviewing

Few physicians are trained to counsel adolescents about healthy weight. Counseling using Motivational Interviewing (MI) techniques has been effective.[1,2] MI is a patient-centered, directive counseling style used to explore and resolve ambivalence around behavior change [3] that shows promise for parents of overweight children[4] and adolescents.[5] We conducted this study to: 1) assess the quantity and MI quality of weight-related discussions between

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physicians and overweight adolescents; 2) examine physician characteristics related to discussion quality, and 3) assess whether discussion quality related to changes in fat reduction behaviors, exercise, screen time, sleep, and self-reported weight by one month post-encounter.

Method

Participants

Sixteen physicians consented; none refused. We reviewed physicians' schedules to identify eligible patients: English-speaking, BMI \geq 85th percentile for age and gender, age 12–18, not pregnant, and preventive or return visit scheduled. We sent patients and their parents letters, signed by the patient's physician, including a toll-free number for refusal. We obtained parents' and patients' verbal assent and administered a baseline telephone survey. Our research assistant then met patients in clinic and audio recorded their visits. Patients answered a follow-up survey one month later, and both patients and physicians received \$20 upon completion. This project was approved by Duke's Institutional Review Board.

Measures

Patient and physician demographics—Birth date, race, gender, self-reported weight and height, actual weight and height, MD specialty (pediatrics/family practice), and patients' self-reported weight at follow-up.

Patient fat intake—At baseline and follow-up, assessed preparation method and food consumption with the 33-item Kristal Food Habits Questionnaire[6] ($\alpha = .62$ in this sample).

Patient physical activity—At both surveys, used an adaptation of the 13-item Framingham Physical Activity Index[7] with the Compendium of Physical Activities to determine frequency and duration of moderate or vigorous physical activity (MVPA).[8]

Sleep—At both surveys, assessed average daily time patients spent sleeping and napping.

Screen time—At both surveys, assessed hours and minutes of daily (excluding school) television/video/computer time.

Audio recording measures

Content—Coded five “weight-related” topics: nutrition (including breakfast, sweetened beverages, and fast food), exercise, screen time, sleep, and BMI.

Motivational Interviewing—Two independent coders used the Motivational Interviewing Treatment Integrity scale (MITI).[9] Coders made global ratings of Empathy (conveying an understanding of patients' perspective) and “MI Spirit” (includes evocation: “eliciting” patients' own reasons for change; collaboration: acting as partners, supporting and exploring patients' concerns; autonomy: conveying that decisions to change lie within patients).

Coders also counted closed and open questions, simple reflections (conveys understanding, but adds no meaning to what the participant said), complex reflections (conveys understanding and adds substantial meaning), MI adherent behaviors (asking permission, affirming, providing supportive statements, and emphasizing control), and MI non-adherent behaviors (advising without permission, confronting, and directing). We created four scores (overall ICC = .92) based on ratios of: (1) Open questions to all questions, (2) Reflections to questions, (3) Complex reflections to all reflections, and (4) MI adherent to MI non-adherent behaviors.

Results

We sent 173 potentially eligible patients letters describing the study. Of 160 screened, 16 (10%) refused; 91 (57%) were ineligible. Twenty-three (43%) of the 53 eligible patients had no audio recordings (missed appointments or technical error); these 23 patients did not differ from the 30 in the final sample on gender, race, age, BMI percentile or self-reported BMI ($.20 \leq p \leq .89$). All 30 with audio data completed the follow-up survey.

Sample characteristics

See Table 1. Patient self-reported weight over the phone ($M=173.7$, $SD=36.3$) strongly correlated with measured weight ($M=181.2$, $SD=38.2$; $r=.93$).

Quantity of weight-loss discussions

Weight-related topics were addressed in 27 of 30 encounters and comprised a mean of 6.0 ($SD=4.9$) minutes per encounter. These were, in order of decreasing frequency: nutrition, exercise, BMI/weight, sleep, and screen time.

Quality of discussions

Physicians had low to moderate mastery of MI skills: open/all questions ($M=0.2$, $SD=0.1$), reflections/questions ($M=0.3$, $SD=0.3$), complex/all reflections ($M=0.2$, $SD=0.2$), and MI adherent/MI non-adherent behaviors ($M=0.5$, $SD=0.2$). They also had low to moderate global ratings of Empathy ($M=2.7$, $SD=0.8$) and MI Spirit ($M=2.2$, $SD=0.8$).

Physician predictors of MI skills

Female physicians and physicians with BMIs below the median asked more open-ended questions and made more reflections than questions ($.05 \leq p \leq .001$). Older physicians also made more reflections ($p=.05$). Pediatricians were more MI adherent than family physicians ($p=.02$).

Relationships between MI skills and patient outcomes

When physicians were more MI adherent, patients reported increasing moderate physical activity ($r = .41$, $p=.06$; Table 2). With higher physicians' MI Spirit score, patients reported reduced weight ($r = -.46$, $p=.02$). When physicians used more complex reflections, patients reduced their screen time ($r = -.41$, $p=.08$).

Discussion

As most of these physicians had no training in MI, their low MI skill level is not surprising. Some, however, were more skilled than others. Female physicians, older physicians, pediatricians, and those with lower BMIs demonstrated higher level of MI skills. This is consistent with studies suggesting female physicians are better communicators than male physicians.[10]

MI skills used during weight-related discussions were associated with patient behavior change. Physicians' higher MI Spirit was associated with patients' self-reported weight and greater MI adherence was associated with more patient exercise. These findings replicate those found in adult,[1] pediatric,[4] and adolescent samples.[5] Thus, encouraging and training physicians to use MI techniques may help adolescent patients attain a healthy weight.

Limitations and strengths

The small sample limited power; however, correlations were strong and suggest relationships beyond chance. We did not conduct nested analyses. Results may not generalize to settings

outside of academic medical centers; however, we likely portray a best-case scenario. Our measures for nutrition, exercise, and weight were simple; yet, self-reported weight at baseline correlated highly with measured weight.

Implications

This is the first study to examine weight-related discussions between primary care physicians and overweight adolescents. Findings suggest that physicians should be taught to address weight-related topics more effectively to encourage behavior change in adolescent patients. In addition, male, younger, family physicians, and those with higher BMIs, may benefit more from training.

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Table 1

Characteristics of patients and physicians

Characteristic	Patient (n=30) <i>M (SD) or %</i>	Physician (n=14) <i>M (SD) or %</i>
Age (M, SD)	14.3 (1.6)	41.1 (8.7)
Race (%)		
White	26.7	78.6
Black	73.3	21.4
Female (%)	63.3	64.3
New patient with physician (%)	26.0	--
BMI percentile (M, SD)	94.7 (4.6)	--
BMI	30.5 (6.0)	23.6 (4.6)

Spearman correlations between MI skills and changes \pm in patient weight-related behaviors from baseline to one month after the encounter

Table 2

MITI scores	Mean or ratio (SD)	Behaviors to reduce fat intake	MVPA	Sleep	Screen time	Self-reported weight
Empathy ¹	2.7 (0.8)	.13	.00	.02	-.09	-.19
MI Spirit ²	2.2 (0.8)	-.06	.05	-.14	.00	-.46**
Open-ended/all questions	0.2 (0.1)	.23	-.30	.17	-.11	.27
Reflections/questions	0.3 (0.3)	.08	-.31	.02	.17	.14
Complex/all reflections	0.2 (0.2)	.05	-.17	.02	-.41*	.08
MI-ad/MI non-ad	0.5 (0.2)	-.01	.41*	.25	.04	-.32

\pm Change in behavior = 1 month behavior – baseline behavior: For MVPA and sleep, positive correlation indicates an increase in physical activity and sleep. For fat intake, screen time and self-reported weight, a negative correlation indicates a reduction in fat intake, screen time and weight.

¹ Empathy assessed on 5-point Likert scale with 1=Not at all empathic and 5=Extremely empathic

² MI Spirit assessed on 5-point Likert scale with 1=Very low MI Spirit and 5=Very high MI Spirit

* p \leq .10

*** p \leq .05