

# Development and Feasibility of an Objective Measure of Patient-Centered Communication Fidelity in a Pediatric Obesity Intervention

Tracey Ledoux, PhD, RD<sup>1</sup>; Angela Hilmers, BS<sup>2</sup>; Kathy Watson, PhD<sup>2</sup>; Tom Baranowski, PhD<sup>2</sup>; Teresia M. O'Connor, MPH, MD<sup>2</sup>

## ABSTRACT

**Objective:** To develop a measure of person-centered communication (PCC) and demonstrate feasibility for use in primary care child obesity interventions.

**Methods:** *Helping Healthy Activity and Nutrition Directions* was a primary care intervention for families of overweight or obese 5- to 8-year-old children. The PCC Coding System (PCCCS) was based on theory and a validated motivational interviewing instrument. The PCCCS provided global scores, and total, positive, and negative PCC utterance frequencies. Three trained coders tested reliability of the PCCCS on audio recordings of sessions with 30 families. Potential uses of the PCCCS were demonstrated.

**Results:** The PCCCS demonstrated good inter-rater reliability for utterance frequencies but not for global scores.

**Conclusions and Implications:** The PCCCS is a reliable and feasible measure of PCC utterances. More research is needed to improve inter-rater reliability of the PCC global scale. The PCCCS may be used in the future to test fidelity of PCC interventions.

**Key Words:** patient centered, health education, child obesity, primary care, health behavior (*J Nutr Educ Behav.* 2013;45:349-354.)

## INTRODUCTION

Obesity is associated with type 2 diabetes, heart disease, sleep apnea, cancer, metabolic syndrome, and psychosocial functioning.<sup>1,2</sup> Childhood overweight and obesity track into adulthood.<sup>3</sup> The Expert Committee on the Assessment, Prevention, and Treatment of Child and Adolescent Obesity recommended primary care pediatricians provide evidence-based treatment using patient-centered communication (PCC) for overweight or obese children.<sup>4</sup> Patient-centered communication is based on Person-Centered Theory, which posits that change occurs when patients who are anxious for change are met with therapist expression of empathy, genuineness, and unconditional positive regard

within the context of a therapeutic relationship.<sup>5-7</sup> Many health organizations recommend PCC techniques to achieve behavior changes in obesity interventions.<sup>4,8-11</sup>

The extent to which an intervention can achieve desired goals is influenced by the extent to which the intervention was delivered and received as it was intended.<sup>12</sup> Evidence-based approaches require fidelity of intervention delivery<sup>12,13</sup>; however, there are no validated objective measures of PCC techniques for assessing whether non-physician interventionists are delivering PCC pediatric primary care obesity interventions with fidelity.

To assess fidelity of PCC interventions, an objective measure was needed. There are objective PCC measures of physician-patient encounters,

such as the Roter Coding System<sup>14,15</sup>; however, physician medical encounters are brief (eg, <15-minute) isolated visits and involve an opening, medical history, physical examination, information, and closing remarks,<sup>14</sup> whereas health-advising interactions are longer (eg, 30–45 minutes), occur repeatedly (eg, monthly for 6 months), and involve an opening, review of progress, establishment of new goals, treatment planning, and closure.<sup>16</sup> There are no known objective measures of PCC techniques for child obesity interventions. The purposes of this study were to develop a reliable coding system, the PCC Coding System (PCCCS), to assess PCC techniques used by trained staff in a child obesity primary care treatment program, and to demonstrate feasibility of its use as a process evaluation measure of fidelity.

## METHODS

The authors used data from a randomized, controlled pilot study of a child obesity intervention for this study. *Helping Healthy Activity and Nutrition Directions (HAND)* was a 6-month

<sup>1</sup>Department of Health and Human Performance, University of Houston, Houston, TX

<sup>2</sup>Children's Nutrition Research Center, United States Department of Agriculture/Agricultural Research Service, Baylor College of Medicine, Houston, TX

Address for correspondence: Tracey Ledoux, PhD, RD, Health and Human Performance, University of Houston, 3855 Holman Street, 104 Garrison Gym, Houston, TX 77204-6015; Phone: (713) 743-1870; Fax: (713) 743-9860; E-mail: [TALedoux@uh.edu](mailto:TALedoux@uh.edu)

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pediatric obesity program described elsewhere.<sup>16</sup> Five health advisors (HAs) who were health promotion specialists from a Medicaid health plan serving 4 clinics with predominantly low-income minority patients conducted *Helping HAND* sessions. Families of overweight or obese children 5–8 years of age, referred by self or physician, were recruited. The Institutional Review Board at Baylor College of Medicine approved all protocols. A total of 40 families enrolled; half immediately received the intervention and half (wait list control group) received the intervention 6 months later. Families (child and at least 1 parent) met with HAs monthly to select goals from a menu (ie, eat more fruit, eat more vegetables, drink more water, drink less sweetened beverages, choose healthy snacks, be more active, watch less television) and develop a plan. Sessions and materials were offered in English or Spanish (3 of 5 HAs were bilingual). Targeted outcomes included anthropometrics (measured by trained technicians), diet (parent-assisted 24-hour dietary recall), physical activity (PA) (using an accelerometer), and television viewing (parent report) behaviors, and were collected at baseline and immediately after intervention. This pilot study was not powered to detect behavior changes; previously reported results showed no significant changes in most outcomes (except television viewing).<sup>16</sup> An inclusion criterion for this study was participation in  $\geq 2$  sessions from either the intervention or control group.

### Study Sample

Table 1 presents participant characteristics. All sessions were audio recorded (169 sessions total). The researchers selected 11 audio files (6.5%) from families who attended < 2 sessions as training files, and 5 (3%) were of poor quality. The remaining 153 audio files of sessions with 30 families were available for analysis; 14 families had 6 sessions, 8 families had 5, 6 had 4, 1 had 3, and 1 had 2.

### Health Advisors

The HAs underwent over 20 hours of training, which included PCC training

**Table 1.** Characteristics of Participants for *Helping HAND*,<sup>a</sup> a Patient-Centered Intervention for Reducing Child Obesity (n = 30)

<b>Age, y (mean [SD])</b>	
Parent	34.4 (7.5)
Child	6.8 (1.0)
<b>Female gender (n [%])</b>	
Parent	30 (100)
Child	14 (83)
<b>Race (n [% of sample])</b>	
Hispanic	25 (83)
African American	4 (13)
White	1 (4)
<b>Language (n [% of sample])</b>	
English	71 (42)
Spanish	98 (58)

<sup>a</sup>*Helping HAND* indicates *Helping Healthy Activity and Nutrition Directions*.

by a licensed psychologist with a focus on active listening, reflective questioning (structured open questions rather than closed questions), and exploring alternatives with family input. The HAs practiced these communication skills and received feedback from trainers. Health Advisors had a bachelor's (80%) or master's (20%) degree and an average of 7.4 years of experience as certified health educators (SD, 9.91 years; range, 24 years).

### Instrument Development

The PCCCS was adapted from a validated Motivational Interviewing (MI) coding system, the MI Treatment Integrity (MITI) (with permission from the authors<sup>17</sup>). Motivational Interviewing, originally employed in the addiction treatment field, is a PCC style used to motivate ambivalent individuals to change.<sup>18</sup> It has motivated adults to change diet and PA behaviors,<sup>18,19</sup> and there is evidence of its feasibility in pediatric obesity treatment.<sup>20</sup> Motivational Interviewing was not used in *Helping HAND* because participants were already motivated to change, as evidenced by self-referral or voluntary compliance with physician referral. Components of the MITI that were consistent with a broader PCC approach (eg, reflection, closed-ended questions) were

the foundation for the PCCCS. Motivational Interviewing-specific components of the MITI were not used (eg, MI-adherent and non-MI adherent categories). The authors based adaptations of the MITI on Person-Centered Theory,<sup>5</sup> the Expert Committee recommendations for PCC,<sup>4,11</sup> review of a sub-sample of audio files by co-investigators for common communication techniques employed by the HAs, and feedback from an expert panel of child obesity prevention researchers. Final revisions were made during coder training.

### Patient-Centered Communication Coding System

The PCCCS included positive (broad or structured open-ended questions, reflection, paraphrasing, solicited advice, and affirming) and negative (closed-ended questions, interruption, leaving insufficient time for patient to respond, inattention, instruction, and unsolicited advice)<sup>5</sup> PCC behaviors (Table 2). Positive PCC behaviors reflect ideal therapist conditions that support patient change (ie, genuineness, empathy, and unconditional positive regard), whereas negative PCC behaviors detract from these. The researchers selected these behaviors based on theory and HA training.<sup>5,11,16</sup> Scores on global dimensions of "empathy," "directiveness," "autonomy/support," and "collaboration" defined the overall session communication style.

Codings were conducted on 20-minute audio recording segments (random selection of start minutes) using Total Recorder 7.1 (High Criteria, Inc, Ontario, Canada, 2009). The PCCCS required 2 passes (speaking time, part of MITI, was not a variable desired for this study). On the first pass, the coder listened to the entire segment without stopping and rated global codes on a scale from 1 (the HA infused little to any PCC quality into the session) to 5 (the HA used a considerable amount of PCC quality). On the second pass, coders counted and coded HA PCC utterances; patient utterances were not coded.

### Procedures

Three coders (1 postdoctoral fellow, 1 graduate research coordinator, and 1

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