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Predicting Parent Engagement in Family-Based Childhood Obesity Prevention and Control Programs

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UNIVERSITY OF CALIFORNIA, SAN DIEGO

SAN DIEGO STATE UNIVERSITY

Predicting Parent Engagement in Family-Based Childhood Obesity Prevention and  
Control Programs

A dissertation submitted in partial satisfaction of the  
Requirements for the degree Doctor of Philosophy

in

Public Health (Health Behavior)

by

Emily A. Schmied

Committee in charge:

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2015

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This Dissertation of Emily A. Schmied is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Chair

University of California, San Diego  
San Diego State University

2015

DEDICATION

To my Mom & Dad

EPIGRAPH

*Don't worry that children never listen to you; worry that they are always watching  
you.*

-Robert Fulghum

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## LIST OF ABBREVIATIONS

AIC, Akaike Information Criteria

BIC, Bayesian Information Criteria

BMI, body mass index

CA, California

CA-CORD, Imperial County, California childhood obesity research demonstration project

CDC, Center for Disease Control and Prevention

CSDSP, Clinicas de Salud del Pueblo, Inc.

CHW, community health worker

CI, Confidence Interval

FWP, Family Wellness Program

HBM, Health Belief Model

IBACH, Institute for Behavioral and Community Health

OR, Odds Ratio

PES, Parent Engagement Study

PEM, Parent Engagement Model

PHQ, Patient Health Questionnaire

PMI, Patient Motivation Inventory

SDSU, San Diego State University

TTM, Transtheoretical Model

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After almost of decade of studying the influences of parenting and social support, I can now recognize the extent to which I owe my success to my parents and family. Mom and Dad, I'll never forget the day when, at six years old, you taught me about SMART goal setting, or your frequent reminders throughout my childhood that the keys to success are advance planning, hard work, leadership, and humility. My work ethic and obsession with always asking "Why?" are a direct result of your

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Schmied, E.A. & Madanat, H. (2015). General program planning in public health. In Madanat, Ayala & Arredondo, *Introduction to Health Promotion and Behavioral Science in Public Health*. San Diego, CA: Cengage Publishing.

Schmied, E.A., Padilla, G., Thomsen, C., Hiller Lauby, M., Harris, E., & Taylor, M.K. (2015). Sex Differences in Coping Strategies in Military Survival School. *Journal of Anxiety Disorders*, 29, 7-13.

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#### PUBLISHED ABSTRACTS

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Schmied, E.A., Parada, H., Madanat, H., Horton, L., & Ayala, G.X. (2012). Psychosocial Correlates of Behavioral Strategies for Healthy Eating Among Latinas in Imperial County, California. *Annals of Behavioral Medicine*, 43, S189.

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Rauh, M., Macera, C., Schmied, E.A., Han, P., Trone, D., & Shaffer, R. (2008). Prevalence and Correlates of Menstrual Irregularity Among Female Marine Corps Recruits. *Medicine and Science in Sports and Exercise*, 40(5) S232.

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Schmied, E.A., Parada, H., Madanat, H., Horton, L., & Ayala, G.X. (2012, March). Psychosocial Correlates of Behavioral Strategies for Healthy Eating Among Latinas in Imperial County, California. *Oral presentation at the San Diego State University Student Research Symposium, San Diego, CA.*

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(Faculty evaluation rating: 4.2/5)

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students (Faculty evaluation rating: 4.2/5)

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Guest lecturer, PH700F Women's Health Studies, Spring 2013, 30 students

Guest lecturer, PH862 Advanced Theoretical Foundations of Health Promotion & Behavioral Science, Fall 2012, 6 students

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Guest lecturer, PH700F Women's Health Studies, Spring 2012, 30 students

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## **ABSTRACT OF THE DISSERTATION**

Predicting Parent Engagement in Family-Based Childhood Obesity Prevention and Control Programs

by

Emily A. Schmied

Doctor of Philosophy in Public Health (Health Behavior)

University of California, San Diego, 2015

San Diego State University, 2015

Professor Hala Madanat, Chair

**Background:** Research suggests family-based programs for the prevention and control of childhood obesity can significantly reduce child body mass index and increase healthy behaviors; yet, low parent engagement frequently hinders the implementation of these programs. This dissertation examined factors affecting parent engagement in a family-based childhood obesity prevention and control program conducted in Imperial County, CA.

**Methods:** This dissertation study was ancillary to a multi-sector, multi-component childhood obesity prevention and control demonstration study named *Our Choice, Nuestra Opcion*. The ancillary study used a prospective, mixed-methods approach to examine parent engagement in one component of Our Choice, a Family Wellness

Program which included 9 healthy lifestyle workshops and 8 physical activity workshops led by community health workers. Self-report surveys were administered to 128 parents assigned to the Family Wellness program at baseline, or prior to the start of intervention activities. The survey assessed hypothesized predictors of engagement including readiness to change, perceived relevance of the intervention, and family functioning. Anthropometric data (height and weight) and sociodemographic characteristics of both the parent and child were also collected at baseline. Attendance was recorded throughout the duration of the Family Wellness Program. A sub-set of parents (n=22) were interviewed following the scheduled completion of the Family Wellness program to assess their experiences in the program and to identify factors that influenced their level of engagement.

**Results:** Results of quantitative analyses indicate parents' readiness to change their own health behaviors and their weight-related parenting strategies was the strongest predictor of their engagement in the Family Wellness Program. Child behavioral health issues also played a role in parent engagement. Qualitative analysis of interview data showed that parent engagement may also be influenced by the level of support and enthusiasm received from the participating child.

**Conclusions:** This study elucidated the experiences of parents enrolled in family-based childhood obesity prevention and control programs. Results indicate that engagement may be improved by targeting parents' readiness to make changes during recruitment and early in the intervention. Also, parent engagement may be improved by implementing strategies to improve the participating child's attitudes towards the

program. Overall, this dissertation has identified several potentially modifiable influences on engagement.

## INTRODCUTION

The effects of childhood obesity are severe and enduring. Not only does excess weight increase the risk of adverse health outcomes during childhood, but obese children are substantially more likely to develop serious, chronic conditions in adulthood (CDC, 2013; Maffeis, Pietrobello, Grezzani, Provera, & Tato, 2001; Reilly & Kelly, 2011). For example, obese children are more likely to have high cholesterol, high blood pressure, prediabetes, and low self-esteem compared to their healthy weight peers (Freedman, Zuguo, Srinivasan, Berenson, & Dietz, 2007; Li, Ford, Zhao, & Mokdad, 2009; Wang, Wild, Kipp, Kuhle, & Veuglers, 2009). Also, in a large, longitudinal study of Danish school children, a linear relationship was observed between weight in childhood and risk of coronary heart disease in adulthood (Baker, Olsen, & Sorensen, 2007). Furthermore, increased mortality rates have been observed among adults who were overweight or obese as children (Reilly & Kelly, 2011; Franks, et al., 2010). In view of the serious consequences of childhood obesity, there is a critical need for effective prevention, control, and treatment programs.

While a variety of childhood obesity intervention designs have been tested, evidence suggests family-based interventions that target parents as the agents of change may be the most effective at preventing and controlling childhood overweight and obesity (Epstein, Valoski, Wing, & McCurley, 1994; Golan & Crow, 2004; Golan, Kaufman, & Shahar, 2006; Lindsay, Sussner, Kim, & Gortmaker, 2006; Luttikhuis, 2009; Kalarchian et al., 2009). These interventions often achieve success by providing parents with the knowledge and skills required to establish a home environment and



family structure that are conducive to health (Golan, et al, 2006; Lindsay, et al, 2006). Numerous studies and reviews of childhood obesity interventions that include a family component support the notion that family-based designs can yield significant reductions in body mass index (BMI) z-score or percentile, or can increase engagement in healthy weight-related behaviors (Sung-Chang, Sung, Zhao, & Brownson, 2013; Heinberg, et al, 2010; McLean, Griffin, Toney, & Hardeman, 2003). For instance, a 2013 review of 15 randomized controlled trials of family-based interventions reported that 80% showed treatment effects (Sung-Chang, et al, 2013). However, while many family-based childhood obesity programs have reported significant effects, a large number are not successful (Kamath, et al., 2008; Stice, Shaw, & Marti, 2006; Luttikhuis et al., 2009). Given the evidence that family-based interventions can significantly reduce childhood obesity, it is critical to identify factors to improve the efficacy of these programs.

Parent engagement is one factor that can affect the outcomes of family-based childhood obesity treatment interventions, namely changes in child BMI. Low parent engagement in family-based programs can decrease the likelihood of change in child BMI by reducing intervention dose received by parents and children, thereby reducing implementation fidelity (Linnan & Steckler, 2002; Durlak & DuPre, 2008). Engagement encompasses two fundamental constructs: attendance at and active participation in program activities (Staudt, 2007; Prinz & Miller 1991; Kitzmann & Beech, 2011). Overall study retention and attendance at planned intervention activities, the metrics typically used to assess engagement, are often low for childhood obesity interventions (Ingoldsby, 2010; Skelton & Beech, 2011; Sung-Chang, Sung,

Zhao, & Brownson, 2013; Luttikhuis et al., 2009). For instance, a review of 15 family-based childhood obesity treatment studies with a median intervention period of 14.5 weeks (range=4-78 weeks) found that half had attrition rates over 20% (Sung-Chang et al, 2013). Additionally, reported mean attendance rates in family-based prevention and control programs have ranged from 59% to 85% for those that require travel to program activities (Klitzman, Armstrong, & Janicke, 2015; Theim et al., 2012; Reubel, Heelan, Bartee & Foster, 2011; Jensen et al., 2012). Though these factors are infrequently examined as predictors of study outcomes, the available evidence indicates a significant relationship between attendance rates and change in child BMI (Kalarchian et al., 2009; Jelalian et al., 2008; Theim et al., 2012).

Another facet of parent engagement that can affect study outcomes in family-based interventions is active participation, or the parents' independent use of skills learned and personal investment in the intervention (Staudt, 2007). Like attendance, parental active participation is infrequently examined as a predictor of study outcomes (Faith et al., 2012), but some research suggests it can predict child behavior and BMI percentile change. Several reports from family-based interventions have demonstrated a relationship between parent adherence to intervention protocol, including increased parent physical activity, self-monitoring and behavioral modelling, and child's weight or BMI change up to 24-months post-intervention (Boutelle, Cafri, & Crow, 2012; Kirschenbaum, Germann, & Rich, 2005; Steele, Steele, & Hunter, 2009; Wrotniak, Epstein, Paluch, & Roemmich, 2005). Furthermore, one study showed that parent involvement during intervention activities, including completion of assigned weekly

goals and monitoring activities, was significantly inversely associated with child weight loss at the conclusion of a 12-week intervention (Heinberg et al., 2010).

The importance of parent engagement is apparent, yet the magnitude of the effect of parent engagement on study outcomes, such as the child's behavior or BMI, remains unclear. Moreover, information regarding predictors of engagement is limited as prior examinations have largely consisted of retrospective analyses of study data collected for a purpose other than predicting engagement. Additionally, previous examinations of parent engagement have largely been conducted in childhood obesity treatment interventions where the participating children already meet criteria for overweight and obesity. Few studies have examined engagement in prevention and control interventions in which families with children of healthy weight are asked to participate. Therefore, the goal of this dissertation is to prospectively examine factors predicting parent engagement in an ongoing childhood obesity prevention and control intervention.

We conducted a prospective examination of parent engagement in a study ancillary to the Imperial County, California, Childhood Obesity Research Demonstration study (CA-CORD). CA-CORD is one of three CORD studies funded by the Centers for Disease Control and Prevention (CDC) to test the effectiveness of multi-sector, multi-level strategies to prevent and control obesity among children (Ayala et al., 2015). CA-CORD participants include 1183 children 2-11 years old and a primary caregiver (either parent or legal guardian) living in Imperial County, California. The ancillary parent engagement study was conducted exclusively in the Family Wellness Program component of CA-CORD because it is the only intervention

component that requires family attendance (see Chapters 2 and 3 for a full description of study methods). One-hundred twenty-eight CA-CORD parents participated in the ancillary study.

The design of the parent engagement study was guided by a comprehensive conceptual model developed as part of this dissertation named the Parent Engagement Model (PEM; Chapter 1). The PEM specifies numerous parent characteristics that could influence changes in the child's health behaviors and weight status, via the mediator of parent engagement in interventions. The PEM is an adaptation of two similar models proposed, but not empirically tested, for examining parent engagement in community-based adolescent obesity interventions (Grow et al., 2013), and in interventions for child behavioral issues (Staudt, 2007). It is also theoretically driven; the constructs specified in the PEM are informed by the Health Belief Model (Hochbaum, 1958) and the Transtheoretical Model (Prochaska & Diclemente, 1983). The PEM was developed not only to inform the methodology of the parent engagement study, but to provide other researchers with a guide for the prospective assessment of engagement.

The parent engagement study followed an explanatory sequential approach to test the PEM in which quantitative analyses were followed by qualitative analyses to give context to the quantitative results. Using multi-variable modelling, numerous parent and child characteristics specified in the PEM were examined as predictors of parent attendance (a proxy for engagement) at scheduled intervention activities (Chapter 2). It was hypothesized that parents' perceived susceptibility, perceived

severity, perceived barriers, self-efficacy, and readiness to change, as well as child age, BMI, and history of behavioral problems would each relate to parent engagement.

While it is critical to identify predictors of low parent engagement, without understanding how and why these factors affect engagement it is difficult to develop strategies to overcome them. In fact, the most recent Cochrane review of childhood obesity interventions identified a pressing need for more qualitative research to illustrate participant perspectives regarding why childhood obesity interventions are or are not successful (Luttikhuis et al., 2009). Therefore, qualitative interviews were conducted in the parent engagement study with CA-CORD parent participants to better understand their experiences in the intervention and to compare factors influencing engagement among parents who did and did not attend a majority of program activities (Chapter 3).

In summary, the goal of this dissertation was to examine factors predicting parent engagement in a family-based childhood obesity prevention and control intervention. The study was driven by several objectives, including: (1) to develop a conceptual model for understanding parent engagement in childhood obesity and control interventions (Chapter 1), (2) to identify specific parent and child characteristics that predict parent engagement in a family-based childhood obesity program (Chapter 2), and (3) to qualitatively compare factors influencing engagement among parents who did and did not attend a majority of program activities (Chapter 3). Results of this work will elucidate the reasons for low parent engagement, and will provide researchers with a better understanding of how to assess predictive factors and

what types of implementation techniques might improve engagement during the intervention.

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## **CHAPTER 1**

Understanding the role of parent engagement in family-based childhood obesity  
interventions: The Parent Engagement Model

## ABSTRACT

Evidence suggests that family-based interventions targeting parents and children may be the most effective at preventing and controlling childhood overweight and obesity. However, low parent engagement, defined as low attendance and participation, can reduce the success of these programs. The objective of this article is to describe how a comprehensive, theoretically driven conceptual model for the assessment of parent engagement is being tested. This Parent Engagement Model (PEM) is being tested among a subsample (n=128; 98% female) of caretakers of children ages 2-11 enrolled in one segment of a large, multi-sector, multi-level childhood obesity prevention and control intervention in Imperial County, California. Hypothesized predictors of engagement are assessed prior to intervention exposure via a quantitative survey, and include parents' perceived relevance of the intervention, readiness to change, family functioning, parent depression, and parent and child demographics. Measures of parent engagement include attendance at and active participation in program activities, assessed via attendance records and post-intervention interviews, respectively. Study outcomes include child behavior and body mass index change. Final study results will elucidate underlying causes of low parent engagement, and this information can be used to develop strategies to improve engagement in future interventions.

### Significance

Engaging parents in family-based childhood obesity interventions is a persistent problem in the field, as indicated by low attendance and participation rates. Unfortunately, because few studies have prospectively examined predictors of parent

engagement in such programs, little information is available regarding how to increase engagement. This study proposes a comprehensive conceptual model for the assessment of parent engagement in childhood obesity interventions, and describes how it is being tested in a large, ongoing childhood obesity prevention and control intervention. This study provides researchers with a guide for assessing parent engagement and may identify potentially modifiable predictors of engagement.

## INTRODUCTION

Childhood obesity is a leading public health issue with enduring health consequences (Reilly & Kelly, 2011). Evidence suggests that family-based interventions targeting parents and children may be the most effective at preventing and controlling childhood overweight and obesity (Epstein, Valoski, Wing, & McCurley, 1994; Luttikhuis et al., 2009; Kalarchian et al., 2009). Family-based interventions provide parents with the knowledge and skills to establish a home environment that is conducive to health. However, given the parents' role as the agents of change, observed changes in BMI z-score or percentile are affected by the extent to which parents engage in these interventions (Kalarchian et al., 2009; Jelalian et al., 2008; Theim et al., 2012)

Engagement encompasses two constructs: intervention attendance and active participation (Staudt, 2007; Kitzmann & Beech, 2011). Intervention attendance has been associated with changes in child weight status (Kalarchian et al., 2009; Jelalian et al., 2008; Theim et al., 2012). However, attendance is often low in family-based childhood obesity interventions, ranging from 59% to 85% (Klitzman, Armstrong, & Janicke, 2015; Theim et al., 2012; Janicke, Jensen, Aylward, & Steele, 2012).

Active participation, or parents' independent use of skills learned and personal investment in the intervention, is another facet of engagement. Although infrequently examined as a predictor of study outcomes (Faith et al., 2012), research suggests that active participation can predict child behavior and BMI percentile change (Heinberg et al., 2010). Studies have demonstrated a relationship between active participation, operationalized as increased parent physical activity, behavioral modelling, or self-

monitoring and child's weight or BMI change (Boutelle, Cafri, & Crow, 2012; Kirschenbaum, Germann, & Rich, 2005; Steele, Steele, & Hunter, 2009; Wrotniak, Epstein, Paluch, & Roemmich, 2005).

The importance of parent engagement to intervention dose received, implementation fidelity, and effects on weight status is clear (Linnan & Steckler, 2002; Durlak & DuPre, 2008). However, information regarding predictors of parent engagement is limited. This paper describes the development of the Parent Engagement Model, a conceptual model for understanding parent engagement in childhood obesity and control interventions. This paper also describes how the PEM will be tested in one segment of a large, multi-sector, multi-level intervention to prevent and control childhood obesity (Ayala et al., 2015).

#### *Parent Engagement Model (PEM)*

The PEM specifies parent characteristics that could influence changes in the child's health behaviors and weight status, via parent engagement in interventions (see Figure 1). The model is an adaptation of two similar models proposed for examining engagement in interventions for child behavioral issues (Staudt, 2007) and community-based adolescent obesity interventions (Grow et al., 2013). PEM constructs are largely informed by the Health Belief Model (HBM; Hochbaum, 1958; see Table 1). Consequently, variables that correspond to HBM constructs are hypothesized to predict parent engagement, including *perceived susceptibility*, *perceived severity*, *perceived barriers*, *self-efficacy*, and *modifying factors* (i.e. personal characteristics). Additionally, *readiness to change* from the Transtheoretical Model (Prochaska & Diclemente, 1983) is incorporated.

In the HBM, perceived susceptibility and severity indicate an individual's judgment of the threat a disease poses to them (Hochbaum, 1958). In family-based interventions it is the parent's judgment of how much of a threat the disease is to the child that predicts their behavior. Many parents underestimate their child's weight (Lundahl, Kidwell, & Nelson, 2014) and thus may not acknowledge the risk to their child's health. This lack of perceived susceptibility and severity, often labelled "perceived relevance," is related to low engagement in childhood obesity interventions (Braet, Jeannin, Mels, Moens, & Van Winckel, 2010).

In family-based interventions, both parent and child need to attend the program, but logistical and psychosocial factors can act as barriers (Skelton & Beech, 2011; Grow et al., 2013). One qualitative study of parents who dropped out of an intervention identified three barriers to completion: logistical barriers, organizational barriers (i.e., clinic environment), and dissatisfaction with the content (Kitscha et al., 2009). Similarly, a review of three childhood obesity interventions found parents dropped out due to the time commitment and a lack of connection to the educational content (Brennan, Walkley, & Wilks, 2012).

Psychosocial factors can also be a barrier to parent engagement. Families with higher stress, and lower levels of functioning, comprised of cohesion and communication, are less likely to engage in childhood obesity interventions (Williams et al., 2010; Brennan et al., 2012). Another related barrier is the child's willingness to attend program activities (Grow et al., 2013). Additionally, symptoms of depression among both parents and children have been associated with higher drop-out rates and poorer weight control (Brennan et al., 2012; Jensen et al., 2012; Zeller et al., 2004).



Self-efficacy and readiness to change may also predict parent engagement. Self-efficacy has been shown to predict both treatment completion and study outcomes in family-based obesity interventions (Gunnarsdottir, Njardvik, Olafsdotti, Craighead, & Bjarnason, 2011). Several studies have identified readiness to change, often conceptualized as motivation to participate, as a predictor of attrition in family-based interventions for obesity and mental health (Braet et al., 2010; Gunnarsdotti et al., 2011).

Finally, personal characteristics of the parent and child are specified as modifying factors of engagement in the PEM model. Parent and child's age, ethnicity, and BMI, as well as the family's socioeconomic status and parent's marital status, have been shown to predict parent engagement (Jelalian et al., 2008; Braet et al., 2010; Zeller et al., 2004).

## METHODS

The PEM will be tested as part of a parent engagement study that is ancillary to the Imperial County, California, Childhood Obesity Research Demonstration study (CA-CORD).

### *Intervention Description*

CA-CORD is one of three CORD studies funded by the Centers for Disease Control and Prevention (CDC) to test the effectiveness of multi-sector, multi-level strategies to prevent and control childhood obesity (Ayala et al., 2015). Participants of CA-CORD include 1186 children 2-11 years old and a primary caregiver (parent or guardian) living in Imperial County, CA. CA-CORD includes intervention activities in the following sectors: health care, early care and education centers, schools,

recreation organizations, restaurants, and families (see Ayala, 2015 for details). CA-CORD strives to prevent and control childhood obesity by modifying four behaviors: fruit and vegetable consumption, physical activity, water consumption, quality sleep.

The PEM will be tested in an ancillary study in the Family Wellness Program (FWP) component of CA-CORD. Families who visit participating clinics during the CA-CORD recruitment period are referred to the FWP if at least one child meet criteria for overweight or obesity (BMI percentile >85). The FWP is led by clinic-employed community health workers and includes a series of nine healthy lifestyle workshops, eight physical activity classes, and four motivational interviewing phone calls. While parents are encouraged to complete all components of the FWP, they can decline to attend the physical activity classes. Among harder-to-reach families, community health workers conducted home visits to maximize dose received. The healthy lifestyle workshops were adapted from a previous evidence-based intervention (Ayala et al., 2015b) and are designed to teach parents and children the skills needed to overcome common barriers to adopting healthy lifestyle behaviors, including social and structural barriers in the home and community environments. Parents and children receive separate instruction for the majority of the workshops. The physical activity classes provide families with an opportunity to be active together and teach family-friendly exercise activities that can be performed at home. Motivational phone calls occur quarterly with caretakers who participated in the lifestyle workshops and provide encouragement for caretakers to maintain healthy behaviors.

### *Setting*

Imperial County, CA is a region along the US-Mexico border. It has approximately 175,000 residents, of which 81% are Mexican-origin (Census, 2015). The region has high rates of poverty (23%) and childhood obesity (47%; Babey, Wolstein, Diamant, Bloom, & Goldstein, 2012).

#### *Recruitment of CA-CORD participants into parent engagement study*

CA-CORD participants enrolled in the FWP are recruited for the ancillary study in person during CA-CORD enrollment or via mail following enrollment but before the start of the FWP. All study materials are available in English and Spanish.

#### *Study design and procedures*

The ancillary study follows an explanatory sequential approach in which quantitative analyses are followed by qualitative analyses to give context to the results. Assessments are completed at four time points throughout the implementation and evaluation phases of CA-CORD (see Table 1). Two assessments are collected specifically for the ancillary study and the rest for CA-CORD. At baseline, or before the start of intervention activities, participants complete two assessments measuring the hypothesized predictors of engagement specified in the PEM: a staff-administered, close-ended interview for CA-CORD, and a self-report, quantitative survey for the ancillary study. Child and parent BMI are also collected for CA-CORD at baseline.

Engagement is measured via attendance records and telephone logs and two staff-administered interviews assess active engagement (see Measures). The first interview is conducted exclusively for the ancillary study within one month of the scheduled completion of the workshops. The second interview assessing parent

engagement is a close-ended, 12-month post-baseline interview for CA-CORD. Study outcomes include child BMI z-score and parent-reported child obesity-related health behaviors, assessed at baseline and in the CA-CORD 12-month post-baseline interview. Data collection is ongoing. Study procedures are approved by the SDSU Institutional Review Board.

## MEASURES

### *Baseline measures: Covariates*

*Parent and child demographic characteristics.* The following characteristics are assessed among parents: age, gender, race, ethnicity, marital status, education, income. Child characteristics include age, gender, and ethnicity.

### *Baseline measures: Predictors of parent engagement*

*Parent and child BMI.* CA-CORD staff collect anthropometric measurements of parents and children, including height, weight, and waist circumference. For parents, BMI classification is based on CDC guidelines (CDC, 2015): underweight (<18.5), normal weight (18.5-24.9), overweight (25.0-29.9) and obese (30+). For children, BMI z-scores are computed (Must & Anderson, 2006).

*Parent and child behavioral health issues.* Parents' depression and anxiety symptoms are assessed with the 4-item Patient Health Questionnaire (Kroenke, Spitzer, Williams, & Lowe, 2009). For children, parents report if their child ever received a diagnosis for any of the following: depression, anxiety, attention deficit hyperactivity disorder.

*Parent perception of child weight.* Parent perception of child weight is assessed with a figure rating scale (Kakeshita, Silva, Zanatta, & Almeida, 2009). Parents select an image of a silhouette they believe corresponds to their child's current figure, then select the silhouette they believe their child should look like to identify body image discrepancies.

*Perceived relevance, readiness to change, and self-efficacy.* A 20-item modified Parent Motivation Inventory (Nock & Photos, 2006) assesses perceived relevance of the intervention, readiness to change, and self-efficacy. Originally developed for behavioral health interventions, the scale was modified for this study by omitting items not relevant to obesity interventions, adding items specific to childhood obesity, and rewording existing items as needed.

*Perceived barriers.* Perceived barriers are assessed with a 5-item scale based on the Barriers to Treatment Participation Scale (Kadzin, Holland, & Crowley, 1997) and other research (Kitscha et al., 2009; Brennan et al., 2012). The scale assesses parental concern over potential barriers including time, transportation and family support.

*Family functioning.* Family functioning is measured with a 3-item sub-scale from the third version of the Family Adaptation and Cohesion Scales (Olson, 1986). The scale includes items assessing parental feelings about the family spending time together.

### *Measures of parent engagement*

*Attendance records and phone logs.* Community health workers record family attendance at workshops and phone call completion. A sum total of completed workshops and phone calls will be computed for quantitative analyses of attendance. Physical activity workshop attendance will be examined separately as it was not described to participants as mandatory to their overall participation.

*Active participation.* Active participation, or use of skills learned during the intervention, is qualitatively assessed via the interview conducted within one month of the scheduled conclusion of the FWP. The semi-structured interview guide includes questions regarding parent use of skills outside the intervention, and their overall intervention satisfaction. Additionally, the interview includes a post-hoc assessment of several hypothesized predictors of engagement including barriers to participating.

Active participation is quantitatively assessed in the 12-month post-baseline CA-CORD close-ended interview. Parents are asked to report the frequency with which they engage in several obesity-related behaviors, including physical activity and fruit and vegetable consumption.

### *Outcome measures: CA-CORD 12-month Child Outcomes*

*Child behavior change.* Frequency of engaging in obesity-related behaviors (i.e. fruit, vegetable, and water consumption, physical activity, sleep) is assessed via parent report at baseline and at 12-month post-baseline; change from baseline to one year will be computed.

*Child BMI.* Change in BMI z-score from baseline to one year will be computed. Procedures to account for normal growth trajectories will be followed.

## ANALYSES

Parent engagement comprises distinct constructs that are assessed in this study with distinct measures at different time points. Specifically, attendance is assessed quantitatively during the intervention, and active participation is assessed months after the intervention using qualitative and quantitative measures. Therefore, PEM will be quantitatively evaluated with two mediational models separately examining attendance and active participation as mediators between the hypothesized parent and child characteristics and change in child behaviors and BMI z-score. In addition to the quantitative analysis, qualitative analysis of interview data will be conducted to further examine predictors of parent engagement and the role of engagement in child outcomes. Interview transcripts will be coded by two independent reviewers using the PEM as a guide for relevant codes. Emergent themes and supporting quotations regarding parent engagement will be extracted from the transcripts to provide contextual information for interpretation of the quantitative models.

## DISCUSSION

Parents play a dual role in family-based childhood obesity prevention and control interventions. They are expected to change their own behaviors, and they also become responsible for implementing and sustaining the intervention within their homes via behavioral modelling, parenting, and controlling the home environment. Thus, parent engagement is critical to intervention success. Yet to our knowledge, no

prior study has prospectively examined such a broad range of predictors of parent engagement intervention on attendance, participation and child weight status.

While there are many strengths of this study, including the mixed-methods and prospective design, there is an important limitation regarding the measurement of engagement. This study assesses active participation by asking about parents' use of the skills learned in the intervention in follow-up interviews; thus the data may be subject to recall bias or social desirability. Future studies should include more comprehensive assessments of skill use, such as direct observation (Heinberg et al., 2010). Also, this study indirectly assesses the other aspect of active participation, personal investment, by measuring related factors before the intervention (i.e. perceived relevance) and qualitatively assessing satisfaction in post-intervention interviews. Parent engagement research from other fields indicates this emotional investment may be a stronger predictor of intervention outcomes than attendance (Staudt, 2007; Ingoldsby, 2010). Therefore, future studies of parent engagement in childhood obesity interventions should work to improve measurement of this construct and compare the relative contribution of attendance versus active participation to child health behavior and weight changes.

Study results will add to the literature in numerous ways. Importantly, many constructs in this study are potentially modifiable, including parents' perceived relevance of obesity programs and readiness to make weight-related parenting changes. By identifying constructs most strongly relate to parent engagement, implementation can be improved.



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Chapter 1 is currently being prepared for submission for the publication of the material. Co-authors include Dr. Hala Madanat, Dr. Emmeline Chuang, Dr. Guadalupe X. Ayala, Dr. Ruth Patterson, Dr. Kerri Boutelle, and Dr. David Strong. The dissertation author was the primary investigator and author of this material.

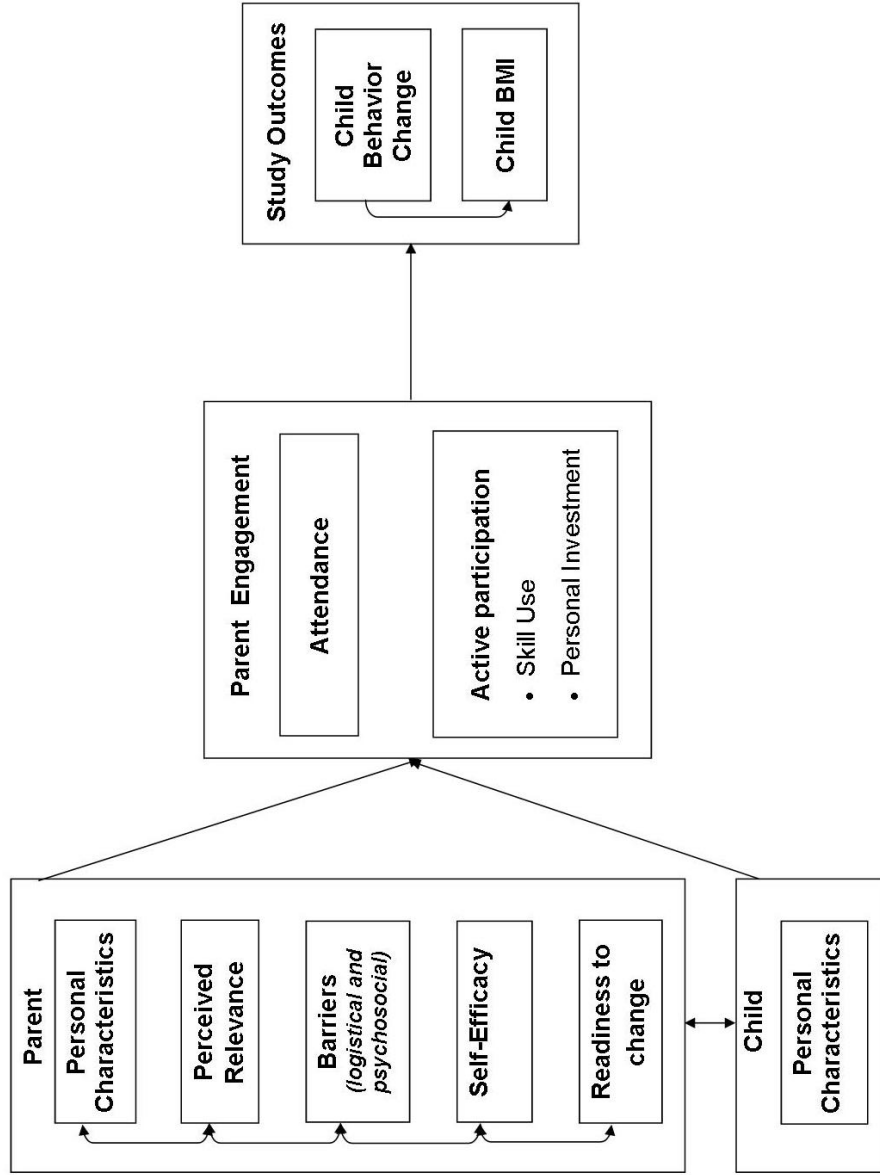


Figure 1.1. Parent Engagement Model

Table 1.1. Parent Engagement Model Constructs and Description

PEM Model Construct	Description	Measure (subscale, if applicable)	Theory origin (construct)	Time of Measure
<b>Parent</b>				
<b>Personal characteristics</b>	<ul style="list-style-type: none"> <li>• Age</li> <li>• Gender</li> <li>• Marital status</li> <li>• Education</li> <li>• BMI</li> <li>• Socio-economic status</li> <li>• Depression symptoms</li> <li>• Anxiety symptoms</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD baseline interview</li> <li>• CA-CORD anthropometric assessment</li> <li>• PEM baseline questionnaire</li> </ul>	HBM (modifying factors)	T1
<b>Perceived Relevance</b>	<ul style="list-style-type: none"> <li>• Parent's perception of child's weight status</li> <li>• Parent's perception of severity of childhood obesity</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD baseline interview</li> <li>• PEM baseline questionnaire</li> </ul>	HBM (perceived susceptibility/severity)	T1
<b>Barriers: Logistical</b>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Time/Scheduling</li> </ul>	<ul style="list-style-type: none"> <li>• PEM baseline questionnaire</li> <li>• PEM follow-up interview</li> </ul>	HBM (perceived barriers)	T1, T3
<b>Barriers: Psychosocial</b>	<ul style="list-style-type: none"> <li>• Child's willingness to attend Family Wellness Program</li> <li>• Family/spousal support for intervention</li> <li>• Family functioning</li> </ul>	<ul style="list-style-type: none"> <li>• PEM baseline questionnaire</li> <li>• PEM follow-up interview</li> </ul>	HBM (self-efficacy)	T1
<b>Readiness to</b>	<ul style="list-style-type: none"> <li>• Confidence to learn and use new skills</li> <li>• Motivation to change parenting behaviors</li> <li>• Motivation to participate in intervention</li> </ul>	<ul style="list-style-type: none"> <li>• PEM baseline questionnaire</li> </ul>	TTM (readiness to	T1

Table 1.1. Parent Engagement Model Constructs and Description, Continued

PEM Model Construct	Description	Measure (subscale, if applicable)	Theory origin (construct)	Time of Measure
<b>Child characteristics</b>	<ul style="list-style-type: none"> <li>• Age</li> <li>• Gender</li> <li>• BMI</li> <li>• Ethnicity</li> <li>• Behavioral health diagnoses (depression, anxiety, sleep disorder, ADHD)</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD baseline interview</li> </ul>	HBM (modifying factors)	T1
<b>Parent engagement</b>				
Attendance	<ul style="list-style-type: none"> <li>• Number of family workshops attended</li> <li>• Number of motivational interviewing phone calls completed</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD workshop attendance records and phone logs</li> </ul>		T2
Active participation	<ul style="list-style-type: none"> <li>• Use of skills learned in workshops (e.g., parenting strategies, dietary and physical activity behaviors)</li> <li>• Satisfaction and enthusiasm with intervention</li> </ul>	<ul style="list-style-type: none"> <li>• PEM follow-up interview</li> <li>• CA-CORD 12-month post-baseline</li> </ul>		T3 T4 T3
<b>Study Outcomes</b>				
Child behavior change	<ul style="list-style-type: none"> <li>• Parent-reported weight-related behaviors (e.g., physical activity, fruit and vegetable consumption)</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD 12-month post-baseline</li> </ul>		$\Delta$ T1-T4
Child weight	<ul style="list-style-type: none"> <li>• BMI (change in z-score examined in analysis)</li> </ul>	<ul style="list-style-type: none"> <li>• CA-CORD one year post-baseline anthropometric assessment</li> </ul>		$\Delta$ T1-T4

Abbreviations: PEM: Parent Engagement Model; HBM: Health Belief Model; TTM: Transtheoretical Model; BMI: body mass index; CA-CORD Imperial County, CA Childhood Obesity Research Demonstration project; T1: baseline; T2: during Family Wellness Program; T3: 1-month following Family Wellness Program; T4: 12-months post-baseline

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## **CHAPTER 2**

Factors predicting parent engagement in a family-based childhood obesity prevention  
and control program

## ABSTRACT

Purpose: To evaluate predictors of parent attendance in a family-based childhood obesity prevention and control intervention. Setting: Imperial County, California. Subjects: 128 adult caretakers of children ages 2-11 (98% female, mean age: 35.3). Measures: Anthropometric, sociodemographic, and psychosocial variables were assessed prior to the start of intervention activities. Parent attendance at planned intervention activities was recorded throughout the intervention. Analysis: Zero-inflated Poisson regression was used to determine predictors of both non-attendance, and degree of attendance. Results: In multivariable analysis, parents' readiness to make behavioral and parenting changes was the strongest predictor of non-attendance at planned program activities (OR=0.35,  $p<.05$ ), followed by receipt of federal food assistance (OR=0.27,  $p<.05$ ). Child history of mental health issues was the sole predictor of degree of attendance (RR=1.28,  $p<.05$ ). Conclusions: In this study, parents' readiness to change predicted engagement. If at the start of interventions researchers included material designed to increase readiness to change, engagement and may be improved. Also, the results indicate that parents enrolling in childhood obesity prevention and control programs may be more likely to have children with mental health issues and may be seeking more general information about health and parenting.

## PURPOSE

The effects of childhood obesity are serious and enduring. Overweight and obese children are more likely to have high cholesterol, high blood pressure, prediabetes, and low self-esteem compared to their healthy weight peers (Freedman, Zuguo, Srinivasan, Berenson, & Dietz, 2007; Li, Ford, Zhao, & Mokdad, 2009; Wang, Wild, Kipp, Kuhle, & Veuglers, 2009). Additionally, research suggests overweight and obese children are substantially more likely to develop serious, chronic conditions in adulthood, and are at increased risk for premature mortality (Baker, Olsen, & Sorensen, 2007; Kitahara, Gamborg, Berrington de Gonzales, Sorensen, & Baker, 2013; Maffei, Pietrobello, Grezzani, Provera, & Tato, 2001; Reilly & Kelly, 2011). Considering the stagnant rates of childhood obesity in the U.S. and its severe consequences, there is a critical need for effective prevention, control, and treatment programs.

Family-based interventions that target the parents as agents of change have been found to be effective at preventing and controlling childhood overweight and obesity (Epstein, Valoski, Wing, & McCurley, 1994; Luttikhuis et al., 2009; Kalarchian et al., 2009). However, the implementation and efficacy of these programs is often hindered by low parent engagement. Specifically, researchers often report parent attendance at less than two thirds of program activities and a recent review of 23 studies found a mean attrition rate of 41% (Dhaliwal et al., 2014). Of great concern is the effect of parent engagement on program efficacy; emerging research shows a direct relationship between parent engagement and child BMI and weight-related behaviors (Kalarchian et al., 2009; Jelalian et al., 2008; Theim et al., 2012).

To improve parent engagement in family-based childhood obesity programs it is crucial to determine the factors that affect it. To improve parent engagement in family-based childhood obesity programs it is crucial to determine the factors that affect it. A Parent Engagement Model (PEM) has recently been proposed specifying a number of hypothesized predictors of engagement (Schmied et al., under review). The model, which is an adaptation of two other models proposed for examining engagement in interventions for child behavioral issues (Staudt, 2007) and community-based adolescent obesity interventions (Grow et al., 2013), is grounded in health behavior theory. Specifically, the PEM specifies that variables corresponding to the following constructs of the Health Belief Model (Hochbaum, 1958) and Transtheoretical Model (Prochaska & Diclemente, 1983) predict parent engagement: perceived barriers, perceived susceptibility, perceived severity, modifying factors, and readiness to change.

Research suggests parents enrolled in family-based interventions experience many logistical and psychosocial barriers to engagement (Grow et al., 2013; Skelton & Beech, 2011; Bishop, Irby, & Skelton, 2015). Logistical barriers include scheduling conflicts, competing priorities, and transportation issues (Brennan, Walkley, & Wilks, 2012; Grow et al., 2013; Klitzman, Armstrong, & Janicke, 2015). Psychosocial barriers include stress, family functioning, and family structure. For instance, research suggests that parents who experience symptoms of behavioral health issues, such as depression, may be less likely to engage in treatment or prevention programs for their child (Braden et al., 2015; Janicke, Finney, & Riley, 2001). Additionally, research indicates that families with a higher degree of functioning and with a two-parent

structure are more likely to engage (Klitzman, Armstrong, & Janicke, 2015; Williams et al., 2010; Kitzman-Ulrich; Brennan, Walkley, & Wilks, 2012; Junnilla et al, 2012).

Other factors that may influence engagement in childhood obesity programs are how relevant the parent believes the program is and how ready they are to make behavioral and parenting changes (Braet, Jeannin, Mels, Moens, & Van Winckel, 2010; Dhingra, Brennan, & Walkley, 2011). A parent's perceived relevance is affected by how susceptible they believe their child is to the disease and how severe they believe the disease and the outcomes associated with it are. Thus, parents who do not believe their child is overweight and/or in need of intervention are more likely to drop out (Dhingra, Brennan, & Walkley, 2011). Moreover, parents who exhibit high degrees of motivation to participate and readiness to make behavioral changes are often more likely to engage in the program (Braet, Jeannin, Mels, Moens, & Van Winckel, 2010; Gunnarsdotti et al., 2011; Story et al., 2002).

The study of parent engagement is further complicated by the involvement of another factor- the participating child. Previous research suggests parents with older children are less likely to engage in programs (Dhaliwal et al., 2014; Braet, Jeannin, Mels, Moens, & Van Winckel, 2010). Also, several studies have documented a relationship between child behavioral health issues, such as depression, and parent engagement. Specifically, greater child depression is associated with lower family attendance at program activities (Brennan et al., 2012; Jensen et al., 2012; Zeller et al., 2004). Finally, some evidence suggests that the child's baseline weight may relate to parent participation, though the results have been inconsistent (Dhaliwal et al., 2014; Braet, Jeannin, Mels, Moens, & Van Winckel, 2010).

To improve parent engagement in family-based childhood obesity programs it is crucial to determine the factors that affect it. Previous research has identified many potential predictors, but few comprehensive, prospective examinations have been conducted. This study uses a conceptual model of parent engagement to prospectively examine a wide array of influences on parent engagement in a family-based childhood obesity prevention and control intervention recently conducted in Imperial County, California. We hypothesized that both parent and child factors would predict parent engagement.

## METHODS

### **Study Design**

This study used a prospective, longitudinal design to examine anthropometric, sociodemographic, and psychosocial predictors of parent attendance. Data was collected as part of the Imperial County, California, Childhood Obesity Research Demonstration study (CA-CORD), and an ancillary parent engagement study. CA-CORD was funded by the Centers for Disease Control and Prevention to test the effectiveness of multi-sector, multi-level strategies to prevent and control childhood obesity (Ayala et al., 2015). CA-CORD will be called “Our Choice” herein due to the tagline used to promote it within the priority population: “Our Choice . . . is to be healthy” (“*Nuestra opcion . . . es ser saludables*” in Spanish). Survey and anthropometric data was collected from participating parents and children by trained study staff at baseline, or prior to the start of intervention activities, and parent attendance at planned intervention activities was recorded throughout the intervention

by study staff. All recruitment, consent, and measurement materials were approved by the SDSU Institutional Review Board and were available in English and Spanish.

### **Intervention Design**

Our Choice was conducted in Imperial County, CA between January 2014 and June 2015. The study implemented interventions in six sectors: 1) health care, 2) early care and education centers, 3) schools, 4) community recreation organizations, 5) restaurants, and 6) families. The objective of Our Choice was to prevent and control childhood obesity by improving four weight-related behaviors, including fruit and vegetable consumption, water consumption, physical activity, and quality sleep. It was designed and implemented via a partnership between San Diego State University (SDSU), the SDSU Research Foundation's Institute for Behavioral and Community Health, *Clínicas de Salud Del Pueblo*, Inc., and the Imperial County Public Health Department. Our Choice used a 2x2 design, with three intervention arms and one control group.

Many of the intervention strategies in Our Choice were implemented at the organizational, policy, and environmental level and therefore did not require parent attendance. Therefore, the ancillary parent engagement study was conducted specifically to examine predictors of engagement in the family-based component of Our Choice, called the Family Wellness Program. The full design of the Our Choice study including intervention activities in other sectors is described elsewhere (see Ayala et al, 2015). The Family Wellness Program included a series of nine healthy lifestyle workshops held over the course of six weeks in small group settings (5-10 family per class). The workshops were led by trained community health workers

employed by participating health care clinics. The evidence-based workshop curriculum (Ayala et al., 2014) was planned to encourage both parents and children to adopting healthy lifestyle behaviors by teaching them to navigate common obstacles, such as social and structural barriers at home and in the community. The majority of workshop content included separate activities for parents and children, though several joint activities were also conducted.

Parents and children enrolled in the Family Wellness Program were also invited to attend a series of eight physical activity classes during the same six-week period as the healthy lifestyle workshops. The physical activity classes taught families activities that they could perform together and in their own homes. Finally, parents received motivational interviewing phone calls at the start of the Family Wellness Program and at quarterly intervals for the following year, to encourage attendance at workshops and the continued use of the skills learned during the program.

### **Sample**

Participants of Our Choice include 1,186 children ages 2-11 and a primary caregiver (either parent or legal guardian) living in Imperial County, CA. Participants were recruited at school and community events and through the participating health care clinics. Exclusion criteria included: child BMI <5<sup>th</sup> percentile; family plans to move within next 2.5 years; child is a foster child; child as one of several health conditions including, but not limited to, chest pain during physical activity, loses balance because of dizziness or loses consciousness, physical disability or psychological disorder that would hinder participation in intervention activities.



Due to the 2x2 design of Our Choice, one half of families was assigned to the Family Wellness Program and was eligible to participate in the ancillary parent engagement study (430 families, 526 children). Our Choice parent participants enrolled in the Family Wellness Program were recruited for the ancillary study either in person during the initial Our Choice enrollment appointment or via regular mail within one month after enrollment but before the start of the FWP. In total, 128 of the 430 families (29.8%) agreed to participate in the ancillary study. A large majority (98.4%) were female and Hispanic (97.6%), with a mean age of 35.3 (Standard Deviation [SD] =8.4). Additional details of the sample are described in Table 1 and in the Results section.

### **Setting**

Imperial County, CA lies along the US-Mexico border. A majority (81.8%) of the 175,000 residents identifies as Hispanic or Latino and 74.5% report that English is not their native language (Census, 2015). The region has poverty (county=23% versus state=14%) and childhood obesity (47% county vs 38% state) rates that exceed state and national averages (Census, 2015; Babey, Wolstein, Diamant, Bloom, & Goldstein, 2012).

### **Measures**

At baseline, parents completed two assessments measuring hypothesized predictors of engagement. The first assessment was a close-ended interview administered by study staff as part of the Our Choice assessment. The second was a quantitative, self-report survey developed specifically for the ancillary engagement study. Both measures were professionally translated and evaluated by bilingual staff to

ensure linguistic and conceptual equivalence (Sperber et al., 1994). Anthropometric measurements, including height and weight, were also collected at baseline by study staff. Outcome data included attendance records for the nine healthy lifestyle workshops included in the Family Wellness Program; attendance was recorded at each planned workshop by study staff.

***Baseline measures: Predictors of parent engagement***

*Parent and child sociodemographic characteristics.* The following characteristics were assessed for parents: age, gender, ethnicity (Hispanic, non-Hispanic white, other), marital status (married versus unmarried/separated/divorced), education (less than or equal to 6<sup>th</sup> grade, 7-11 grade, and 12 grade or higher). Additionally, socioeconomic status was assessed by collecting information about family enrollment in the public food assistance programs Electronic Benefits Transfer (EBT) and Supplemental Nutrition Assistance Program (SNAP). Child characteristics assessed included age and gender.

*Parent and child BMI.* Trained CA-CORD study staff measured parent's and children's height (cm), weight (kg), and waist circumference. Height and weight were used to compute body mass index (BMI). For parents, raw BMI score was used for analyses. For children, BMI percentage was reported and BMI z-score was used in regression analyses (Must & Anderson, 2006).

*Perceived relevance and readiness to change.* A modified version of the 25-item Parent Motivation Inventory (PMI; Nock & Photos, 2006) measured parents' perceived relevance of the intervention and their readiness to make changes to their own health behaviors and parenting strategies related to weight. The PMI was

originally developed to assess parent motivations for participating in behavioral health programs and was modified in three ways for use in obesity-related programs for the current study. Modifications included: 1) removing nine items not relevant to obesity items (i.e., *I am motivated to work with a therapist for one hour each week in order to change my own behavior*), 2) adding four items specific to childhood obesity derived from existing parent engagement literature (i.e. *I am concerned about my child's current weight*), 3) rephrasing 17 items specific to behavioral health (i.e. *I am motivated to practice the techniques I will learn in session at home with my child*) to fit obesity programs (i.e. *I am motivated the techniques I will learn in Our Choice at home with my child*). The revised scale included 20 Likert-type items with response options ranging from 1 (strongly disagree) to 5 (strongly agree). The factor structure of the modified scale was assessed via exploratory factor analysis with promax rotation, and polychoric correlations were used to accommodate the ordinal data. A 2-factor structure which accounted for 63% of the variance was identified. The factors were largely consistent with the underlying original structure of the PMI and were named Perceived Relevance ( $\alpha = .92$ ) and Readiness to Change ( $\alpha = .92$ ). Mean item scores from the two subscales were computed for analysis, higher scores indicate more perceived relevance and readiness.

*Perceived barriers.* Perceived barriers to participation were assessed with a 4-item scale based on the Barriers to Treatment Participation Scale (Kadzin, Holland, & Crowley, 1997) and other parent engagement research (Skelton & Beech, 2011; Kitscha, Brunet, Farmer, & Mager, 2009; Canuto, Spagnoletti, McDermott, & Cargo, 2013; Brennan, Walkey, & Wilks, 2012). Parents were asked how much of a problem

they thought four potential barriers may be for them: time, transportation, child's willingness to participate, and overall family support to participate. Response options ranged from 1 (not a problem) to 4 (serious problem). A sum total was computed for analysis; higher scores indicated more barriers.

*Family functioning.* Family functioning was measured with a 3-item abbreviated sub-scale from the third version of the Family Adaptation and Cohesion Scales (Olson, 1996; Ta, Holck, & Gee, 2009). The scale included items assessing parental feelings about the family spending time together such as "My family members like to spend time with each other." Response options ranged from 1 (strongly disagree) to 4 (strongly agree); item scores were summed for analysis with higher scores indicating greater perceived family functioning ( $\alpha=.940$ ).

*Behavioral health issues (parent).* Symptoms of parent depression and anxiety were assessed with the 4-item version of the Patient Health Questionnaire (PHQ-4; Kroenke, Spitzer, Williams, & Lowe, 2009). Parents were asked how often in the past two weeks they felt bothered by various symptoms such as "feeling nervous, anxious or on edge." Items were scored on a 4-point scale (1=not at all to 4= nearly every day), and scores were summed to compute a total score for the analysis ( $\alpha=.90$ ).

*Behavioral health issues (child).* Parents reported (yes or no) if their child had ever received a diagnosis from a physician for any of the following behavioral health disorders: depression, anxiety, and attention deficit hyperactivity disorder. For analysis, responses were dichotomized into "none" and "1 or more."

*Parent perception of child weight.* Parent perception of child weight was assessed with a figure rating scale (Kakeshita, Silva, Zanatta, & Almeida, 2009).

Parents selected an image of a silhouette they believed corresponded to their child's current figure and then selected the silhouette they believed their child should look like to identify potential body image discrepancies.

### ***Measures of Parent Engagement***

*Parent engagement* was assessed with attendance records taken during planned healthy lifestyle workshops; participants could attend a maximum of 9 workshops.

## ANALYSIS

Descriptive statistics including means and frequencies were computed to assess distribution of all study variables. Normality tests revealed attendance was not normally distributed (Shapiro-Wilk  $p < .05$ ), therefore Poisson regression was used to examine predictors of attendance. More specifically, the fit of four regression models were compared: Poisson, negative binomial, zero-inflated Poisson, and zero-inflated negative binomial. Model fit was compared by examining the Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC) and log-likelihood values, and computing the Vuong test. Also, the zero-inflated models were tested for overdispersion using the scaled Pearson chi-square. Odds ratios (OR), incident risk ratios, 95% confidence intervals (95% CI) and  $p$ -values are reported for the analyses. All statistical analyses were conducted using the GENMOD procedure in SAS Studio.

## RESULTS

Table 1 presents participants' baseline characteristics, stratified by parent and child BMI classification. Table 2 shows the model fit characteristics between the four regression models computed. The zero-inflated Poisson showed better fit than the Poisson based on standard fit indices shown and the Vuong test ( $p = .002$ ). There were

almost no differences between the zero-inflated Poisson and zero-inflated negative binomial models in terms of fit indices, but the lack of evidence of overdispersion ( $p > .05$ ) indicated the zero-inflated Poisson model may be better suited for the data. Therefore, a zero-inflated Poisson model was used to examine predictors of parent attendance.

Regression results are shown in Table 3. The zero-inflated Poisson regression computes two models; one examining predictors of zero-values, or non-attendance in this case via a logistic model, and a second Poisson model examining predictors of degree of attendance among attenders. Two variables significantly predicted non-attendance: parent readiness to change and enrollment in EBT/SNAP, a federal food assistance program. Specifically, parents with a lower level of readiness to change were more likely to attend no workshops ( $OR=0.35, p < .05$ ), and parents enrolled in EBT were also more likely to attend no workshops ( $OR=0.27, p < .05$ ). In the Poisson model, only child history of behavioral health issues significantly predicted degree of attendance. Parents with children with behavioral health issues attended more workshops than those parents whose children with no history of behavioral health issues ( $RR=1.28, p < .05$ ).

## DISCUSSION

This study examined the relationship between numerous sociodemographic, anthropometric, and psychosocial factors on parent engagement in a family-based childhood obesity prevention and control program. The results indicate parents' readiness to make behavioral and parenting changes was the strongest predictor of attendance at planned program activities, over and above child weight status. This

finding is critical because readiness to change is potentially modifiable. If at the start of interventions researchers included material designed to increase readiness to change, attendance and may be improved.

Additionally, parents in this study who were enrolled in federal food assistance programs were significantly less likely to attend any workshops than those who were not enrolled. This is consistent with previous literature showing that socio-economic status is inversely related to participation in childhood obesity programs (Israel, Silverman, & Solotar, 1986; Williams, et al, 2010; Zeller et al., 2004). Parents with lower socio-economic status may experience difficulties attending programs due to shift work, competing priorities, or general stress. Although the *Our Choice* study did provide childcare and offered classes at a variety of times to accommodate parents who experience these barriers, it is likely that parents still faced difficulties balancing their daily responsibilities with their program attendance. Future studies should continue to make efforts to reach these at-risk groups, possibly by exploring the use of *m*health or tele-health methods to minimize participant time and travel commitments (Klitzman, Armstrong, & Janicke, 2015; Tate et al., 2013).

The results of this study also show that the behavioral health of the participating children may determine level of parent engagement. Interestingly and in contrast with previous literature, in this study having a child with a physician-diagnosed behavioral health disorder was associated with greater parent attendance. There are several possible reasons for this result. Research suggests utilization of children's health care services is influenced most strongly by past utilization of services (Janicke, Finney, & Riley, 2001); thus, parents of children with pre-existing

health issues of any type may be more likely in general to participate in future health programs. Further, parents who enrolled in this intervention may have been seeking general information about parenting and family health based on their previous experiences dealing with their child's health issues.

This study has several noteworthy strengths. The first is the prospective design based on a theoretically-based conceptual model. Many previous studies examining parent engagement in childhood obesity programs have done so using retrospective analyses with no theoretical foundation. Also, this study assessed a wide variety of evidence-based predictors of engagement, including both parent and child factors. Examining a comprehensive array of factors from multiple family members allows researchers to understand more completely the variety of factors affecting engagement. Despite the strengths of this study, several limitations must be considered when interpreting the results. Specifically, the relatively small, homogenous sample may limit generalizability. However, participants in this study represent a population with higher than average socioeconomic barriers to health (Census, 2015) and rates of childhood obesity (Babey et al., 2012) and therefore these results provide valuable information on how to reach similarly at-risk groups. Finally, this study uses attendance the sole measure of engagement. While attendance is an important and objective measure of engagement, the research shows that the construct of engagement encompasses both attendance at and active participation in program activities (Staudt, 2007).

***Implications and recommendations:***



The results of this study suggest that parent attendance in family-based childhood obesity interventions may be influenced by parent's baseline levels of readiness to change, a potentially modifiable factor. By assessing and addressing parental readiness to change at the start of an intervention, researchers and clinicians may be able to improve engagement, and in turn, study outcomes. An additional predictor of engagement in this study was child behavioral health issues. Future childhood obesity interventions should continue to explore the effect of child psychopathology on participation in and outcomes of family-based programs.

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Table 2.1 Participant Characteristics

Parent (N=128)	N (%) or Mean (SD)
Age	35.34 (8.42)
Sex, Female	126 (98.4%)
Marital Status, Married	94 (73.4%)
Ethnicity, Hispanic	124 (97.6%)
Education, $\geq$ High school diploma	77 (60.2%)
Employed	43 (33.6%)
Public Food Assistance, Yes	98 (76.6%)
Poverty, Above	28 (21.9%)
Healthy weight (BMI<25)	21 (16.4%)
Family Functioning (Range: 3-12)	10.79 (2.23)
PHQ-4 Score (Range: 0-12)	2.29 (2.95)
Perceived relevance (Range: 0-5)	3.26 (1.12)
Readiness to change (Range: 0-5)	4.32 (0.55)
Perceived barriers (Range: 4-20)	5.84 (2.06)
Perception of child weight, Underestimated	79 (61.7%)
<i>Child (N=128)</i>	
Age	6.82 (2.91)
Sex, Female	64 (20.0%)
Healthy Weight (BMI percentile<85%)	78 (60.9%)
Behavioral Health Issues (1+)	21 (16.4%)

SD, Standard deviation; PHQ, Patient Health Questionnaire; BMI, body mass index

Table 2.2 Model Fit Characteristics

Model	Log-likelihood	AIC	BIC
Poisson	-362.39	752.78	791.69
Negative Binomial	-320.02	670.05	711.74
Zero-inflated Poisson	-256.83	573.67	657.05
Zero-inflated Negative Binomial	-257.04	576.08	662.23

AIC, Akaike's Information Criteria; BIC, Bayesian Information Criteria

Table 2.3 Zero-Inflated Poisson Model for Number of Parent Workshops Attended

	Logistic			Poisson		
	OR	95% CI	<i>p</i>	RR	95% CI	<i>p</i>
<i>Parent</i>						
Age	0.96	-0.11, 0.05	0.43	1.00	0.99, 1.01	0.95
BMI	0.97	-0.11, 0.055	0.53	1.00	0.99, 1.02	0.54
Married	0.58	-1.69, 0.63	0.37	1.05	0.84, 1.29	0.68
EBT	0.27	-2.5, -0.05	0.04	0.99	0.84, 1.21	0.92
PHQ-4	1.13	-0.06, 0.32	0.19	1.01	0.97, 1.05	0.67
Barriers	1.19	-0.06, 0.41	0.15	1.03	0.98, 1.07	0.22
Perceived Relevance	1.27	-0.43, 0.93	0.48	0.95	0.87, 1.04	0.29
Readiness to Change	0.35	-1.96, -0.14	0.02	1.06	0.92, 1.22	0.40
Family Functioning	1.08	-0.19, 0.34	0.57	1.03	0.98, 1.08	0.18
Underestimate Body Size	0.67	-1.5, 0.67	0.46	0.96	0.80, 1.15	0.66
<i>Child</i>						
Age	0.97	-0.22, 0.16	0.77	0.99	0.97, 1.03	0.73
BMI	1.29	-0.17, 0.68	0.24	1.03	0.96, 1.12	0.41
Behavioral Health Issues (1+)	2.22	-0.74, 2.34	0.31	1.28	0.63, 0.97	0.02

OR, Odds Ratio; 95%CI, 95% Confidence interval; RR, rate ratio; BMI, body mass index

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## **CHAPTER 3**

A qualitative examination of parent engagement in a family-based childhood obesity  
intervention

## ABSTRACT

Parent engagement is critical to the implementation of family-based childhood obesity prevention and control programs. However, low levels of parent engagement are frequently reported as barriers to implementation. The purpose of this qualitative study was to compare factors influencing engagement in a family-based childhood obesity prevention and control program among parents who did and did not attend a majority of program activities. Twenty-two parents (100% female) enrolled in a family-based childhood obesity prevention and control program were interviewed following the scheduled conclusion of program activities. The semi-structured interviews were guided by the Health Belief Model and Transtheoretical Model. Parents indicated their levels of engagement were influenced by the level of support and enthusiasm received from the participating child, and also their expectations regarding program outcomes. Parents also reported a high degree of satisfaction with the intervention content and staff. This study adds to emergent literature regarding the experiences of parents enrolled in family-based childhood obesity prevention and control programs. Study findings indicate potential targets for intervention for improving engagement.

## INTRODUCTION

Parent engagement, or attendance at and active participation in planned program activities (Staudt, 2007; Kitzmann & Beech, 2011), is critical to the implementation of family-based childhood obesity prevention and weight control programs. However, low levels of parent engagement are frequently reported as barriers to implementation. For example, it is not uncommon for family-based childhood obesity programs to report parent attendance at less than two-thirds of program activities (Brennan, Walkley, & Wilks, 2012; Pearson, Irwin, Burke & Shapiro, 2013; Klitzman, Armstrong, & Janicke, 2015; Jensen, Aylward, & Steele, 2012). Moreover, low engagement can threaten internal validity, leading to Type III error). To develop strategies to improve parent engagement, it is important to first identify the barriers and facilitators of engagement.

Emerging research suggests that parent engagement in family-based childhood obesity interventions is influenced by a variety of social and psychological factors. Several studies have documented an inverse relationship between family income and engagement (Alf et al., 2012; Williams et al., 2010; Zeller et al., 2004). Family dynamics have also been shown to relate to engagement: such that families with higher levels of functioning and less stress are more likely to engage, as are two-parent households (Klitzman, Armstrong, & Janicke, 2015; Williams et al., 2010; Kitzman-Ulrich et al., 2012; Brennan, Walkley, & Wilks, 2012; Junnilla et al., 2012). Similarly, behavioral health problems such as depression among participating parents or their children are predictive of reduced engagement (Zeller et al., 2004; Jensen, Aylward, & Steele, 2012).

Parent perceptions of their child's health and degree of readiness to change prior to program initiation have also been shown to relate to engagement in childhood obesity programs. Parents who do not believe their child requires intervention are more likely to end their participation prematurely (Dhingra, Brennan, & Walkley, 2011). This is particularly problematic considering approximately half of all parents underestimate their child's weight status (Lundhal, Kidwell, & Nelson, 2013). Additionally, parents who are not ready or are less motivated to change their own health or parenting behaviors at the start of the program are less likely to complete program activities (Braet, Jeannin, Mels, Moens, & Van Winckel, 2010; Story et al., 2002).

Although several potential predictors of low parent engagement have been identified, much of this research consists of quantitative survey-based studies that provide only a limited view of how and why these factors affect engagement. A more nuanced understanding of factors that influence parents' level of engagement is critical to improve program efficacy. To better understand the experiences of parents in family- and/or community-based childhood obesity programs, researchers have begun to investigate contextual factors affecting engagement using qualitative methods (Grow et al., 2013; Moore & Bailey, 2013; Stewart, Chapple, Hughes, Poustie, & Reilly, 2007). Parents interviewed regarding motivators and barriers to completing a family-based community intervention described being motivated to complete the program to "break the cycle" of obesity in their family (Moore & Bailey, 2013). They also described specific aspects of the program they were unable to maintain at home, such as abstaining from eating junk food in front of their child. In another study,

parents who dropped out of an intervention described specific competing priorities that hindered program completion (e.g., work schedules or other activities; Grow et al., 2013). These studies help to identify targets for improving engagement in a way that previous quantitative efforts have not (Stewart et al., 2007).

The information derived from qualitative investigations of parent engagement provides invaluable insight into the experiences of parents in family-based childhood obesity programs, yet very few have been conducted. This study addresses this gap by qualitatively exploring factors affecting parent engagement, a potential mediator of program efficacy, among 22 parents enrolled in a family-based childhood obesity prevention and control program. Study findings will add to emergent literature that seeks to broaden our understanding of why parents do or do not engage in family-based programs.

## METHODS

Data for this study were drawn from attendance records and semi-structured interviews conducted with twenty-two parents enrolled in the Imperial County, California, Childhood Obesity Research Demonstration study (CA-CORD), herein referred to as “Our Choice” due to its tagline: “Our Choice . . . is to be healthy” (“Nuestra opcion . . . es ser saludables” in Spanish). The interviews were conducted as part of an ancillary study examining parent engagement in one component of Our Choice, the Family Wellness Program. Our Choice is a multi-sector, multi-level childhood obesity prevention and control intervention funded by the Centers for Disease Control and Prevention and conducted as a partnership between San Diego State University, the Institute for Behavioral and Community Health, *Clínicas de*

*Salud Del Pueblo*, Inc. (CDSDP), and the Imperial County Public Health Department. The full study design is published elsewhere (Ayala et al., 2015).

The Family Wellness Program (FWP) was the family-based component of the Obesity Care Model implemented by CDSDP, the healthcare component of the Our Choice intervention. The FWP required parent and child attendance and targeted the family as the agent of change. A total of 430 families were assigned to receive the FWP. The FWP consisted of a series of nine behavior change workshops and eight physical activity workshops conducted on a weekly or bi-weekly basis. Families also received quarterly motivational telephone calls and monthly newsletters over the course of their first year of involvement in Our Choice (not discussed here). All workshops were led by trained community health workers (CHWs). The evidence-based workshops were conducted in small group settings of 5-10 families and were designed to teach strategies for adopting healthy behaviors. During each workshop, parents viewed a 12-minute video depicting a typical family trying to make healthy lifestyle changes (Ayala et al., 2014). While both parents and children were asked to attend, each participated in separate activities for a portion of each workshop. In the physical activity workshops, parents and children completed family-friendly exercises to learn ways to be active together.

#### *Setting and Participants*

Our Choice was conducted in the US-Mexico border region of Imperial County, CA. Imperial County is a region characterized by higher-than average poverty (county=23% versus state=14%) and childhood obesity (47% county vs 38% state; Babey, Wolstein, Diamant, Bloom, & Goldstein, 2012). A majority of residents



(81.8%) are Hispanic or Latino and speak English as a second language (74.5%; Census, 2015). Primary caregivers and up to 2 children in their household were eligible to participate in Our Choice based on the following criteria: children aged 2-11, child BMI percentile above 5%, family has no plans to move within 2.5 years, or the child has no health conditions that would preclude him/her from participating in physical activities.

#### *Recruitment for Ancillary Study*

Because the aim of this study was to examine and compare factors influencing engagement between parents with high and low levels of engagement purposeful sampling was used to ensure that parents with different levels of engagement were represented in the interviews. Participants who attended less than two-thirds of the educational workshops (6) were labeled “low engagement” participants and those who attended two-thirds or more were labeled “high engagement” participants. This classification was based on previous parent engagement literature (Braet et al, 2010; Coatsworth, Duncan, Pantin, & Szapocznik, 2006; Williams et al., 2010). Parents were either recruited at the Our Choice enrollment appointment or at the conclusion of their assigned FWP cycle by study staff. Interview transcripts were reviewed during data collection and recruitment ceased once saturation was reached. The final sample included 22 parents; approximately half (n=12) were classified as high engagement, and the other half (n=10) were classified as low engagement.

#### *Procedure*

Within one month of the scheduled conclusion of each family’s FWP cycle, parents were contacted via phone to schedule an interview. Parents could complete the

interviews in person or via telephone, and in English or Spanish. Trained, bi-lingual study staff conducted all interviews. Interviews lasted approximately 15 minutes and participants received a \$20 incentive for their participation. Interviews were conducted between June 2014 and November 2014. All study procedures and measures were approved by the San Diego State University Institutional Review Board.

### *Measures*

#### *Interview Guide*

Informed by constructs from the Health Belief Model (Hochbaum, 1958) and by previous research on parent engagement in family-based childhood obesity programs, the interview questions were designed to assess three overarching constructs: 1) preliminary motivations to participate in Our Choice were assessed to identify parents' perceived benefits and relevance of the program to parents and their families, 2) barriers and facilitators to attending the FWP workshops, and 3) parents' satisfaction with the structure and content of the FWP. Participants who did not attend any FWP workshops were not asked questions regarding satisfaction. The interview guide included 11 open-ended questions and several probes were used to expound upon themes that emerged in the initial answer. For example, the question, "Why did you first decide to join the Our Choice program?" may have been followed by the probe, "What did you think you would get out of participating?"

#### *Attendance*

FWP attendance was used as a proxy measure of engagement. For analysis purposes, interview transcripts were divided into two groups following the initial coding (see Analysis section).

## *Analysis*

### *Transcription and Translation*

All audio-recordings of interviews were transcribed verbatim and back-translated by trained, bilingual staff. A 20% sample of audio-recordings was independently transcribed by two staff and examined for consistency. A certified translator then translated all Spanish-language transcripts into English, while cross-checking the audio files to ensure the accuracy of the original transcription.

### *Coding and Analysis*

Once the transcription and translation were completed, the English-language transcripts were uploaded into NVivo 10 (QSR International) for coding and analysis. A multi-step approach was followed to conduct the analysis (Pope, Ziebland, & Mays, 2000). First, the lead author reviewed all transcripts to gain familiarity with the data. Then a code book was developed specifying overarching constructs addressed in the interview guide, and emergent supporting themes under each construct. The codebook was updated and finalized through an iterative review process between investigators. Next, all transcripts were content analyzed in English by one coder (EAS) using open coding. A second coder (EC) then coded a 25% sample of the transcripts using the codebook as a guide. The coding scheme was finalized via a consensus meeting with a third investigator (HM). Additionally, a 10% sample of transcripts were coded in Spanish by a bilingual research assistant (KO) and compared to the English coded transcripts to ensure cross-cultural compatibility of the codebook. Finally, transcripts were sorted by FWP engagement status and reviewed for patterns across the two groups.

## RESULTS

A majority of parents chose to complete the interview over the phone (68.2%) and in Spanish (86.4%). The demographic characteristics of parents and their children are shown in Table 1. There were no significant differences in parent or child characteristics between the high and low engagement groups (data not shown).

The themes observed in the interview data were organized under the three overarching constructs assessed in the interview guide: 1) motivation to participate in Our Choice, 2) barriers and facilitators to attending the FWP, and 3) satisfaction with the structure and content of the FWP.

### ***Motivation to Participate***

Two topics emerged within this theme: belief that the child(ren) would benefit from participating, and a belief that the child(ren) would benefit indirectly as a result of the parents' participation. Parents of low engagement reported joining the program out of a desire for their child to get help for an existing health issue, such as obesity. These parents viewed Our Choice as a treatment program. For example, one parent stated that she joined Our Choice *“Because I want my daughter to be healthier . . . it’s because my daughter is overweight. And her lab tests showed fatty liver. So what I want is for her to learn how to eat better and to do physical activity.”*

High engagement parents also reported joining to improve their child(ren)'s health, but perceived the program as an opportunity to learn to help their children become healthier. These parents wanted to learn to become healthy role models or help their children become healthier via improved parenting. Moreover, they frequently acknowledged that they may personally benefit from the program due to

personal health issues. One parent said she joined the program because, *“As a mom, I think I thought about that, I thought about them, about how to form good habits, and how to be a better mom, just be a better guide for them, for me.”*

### ***Barriers to Attending Family Wellness Program Workshops***

The two subthemes most often noted under barriers to attending included scheduling conflicts and lack of family support to attend. Scheduling difficulties were reported by both engagement groups, but more commonly by parents with low engagement. When asked what made it difficult for them to attend the FWP, many low engaged parents reported difficulties fitting in the classes amid competing work, school, and parenting commitments. Several parents were enrolled in educational courses that did not allow them to attend: *“Since they (the kids) went to school in the morning, when they got back from school I’d go to school, so we were not able to attend.”* Other parents indicated that they had unforeseen schedule changes: *“It started getting hard for me when I started working, and when work comes, you know one has to work because my husband is the sole provider and sometimes it’s just not enough. And that’s when I stopped attending.”*

Lack of family support to attend the FWP was also reported by both groups, though more commonly by parents with high engagement. Several parents reported that their family members objected to them joining or attending the workshops. For example, when asked what her family members said when she joined the program, one parent said, *“Oh they told me: No, why are you going, you are going to waste your time.”* Other parents described instances when family members complained about lifestyle changes they were making due to the program, *“My daughter said: Oh mom,*

*vegetables again! No look honey, we are going to eat like this, it's for our own good. And she got used to it . . .”*

### ***Facilitators to Attending the FWP***

Family support to attend emerged as a key facilitator to attending the FWP among both high and low engagement groups; however there were differences in the types and sources of support reported by each group. Low engaged parents described receiving general encouragement from family members to attend the workshops, but rarely from the enrolled children. When asked how supportive her family was of her attending one parent said, *“Very supportive, they did provide support. Cheering me up to do it, that we should do it for health’s sake, so the child would be better.”*

The parents who were highly engaged in the FWP received support from various family members, but also described receiving overt support specifically from their children who showed enthusiasm towards the program. One single mother said, *“The girls liked the workshops very much. They always told me: When is it going to be workshop day?”* These parents also described instances in which the children encouraged them to make behavior changes, such as eating healthier: *“I can tell you they were the ones that also encouraged me more to get a better diet, they are the ones that have always said: No, you can’t eat this.”* Another described her children’s reactions when she began purchasing healthier food, *“Before I used to get more chips and cookies, and now I buy more fruits and vegetables and my kids love the fruits and vegetables and they enjoy eating it, so they don’t give me a hard time.”*

### ***Satisfaction with the Family Wellness Program***

The most common themes identified by parents who attended any workshop (including both low and high engaged parents), were satisfaction with the program content and the CHWs. Several participants described being pleasantly surprised by the workshop content, in that they initially thought it might be either too simplistic or extreme but ended up learning new information and feasible techniques for behavior change. One participant said, *“I thought we were just going to go like: Ok, you have to eat only fruits and vegetables and cut everything out, just one way like that. And it was not like that . . . because they are explaining to you and they are telling you to stop drinking soda little by little or stop eating out.”* Additionally, many participants reported liking the videos shown during the workshops because they felt they could relate to the family in the video: *“I saw myself reflected in those videos. How we don’t realize what we are eating, what is harmful for us, what children eat . . . I mean, how over the course of time they realize their mistake and that’s when they achieve a healthy diet, which was what happened to me.”*

Parents also reported a high degree of satisfaction with the CHWs who led the workshops. They spoke of the CHWs’ competence in explaining the subject matter. One parent even said she felt the CHW’s teaching style inspired her child to keep attending, *“The young lady (CHW) sparked my children’s interest in staying, in attending again. In other words, she explained to them very well and they talked and responded.”* Also, several parents said that the CHWs made them feel confident and comfortable. One parent stated, *“She (the CHW) was helpful to me because she taught us . . . she gave us the confidence to ask things we didn’t know.”* Finally, the parents felt they could relate to the CHW’s because they experienced similar struggles to

change their weight-related behaviors. One parent said, “*Some things they talked about their own life in order for you not to see it as if ‘I’m telling you to do this, but as I do it like this and it works for me so you can do it.’*”

## DISCUSSION

The results of this qualitative study of parent engagement complement existing quantitative research by elucidating the processes through which parents did or did not engage in a family-based childhood obesity prevention and control program, Our Choice. In this study parents described their initial motivations for participating in Our Choice. Highly engaged parents reported being motivated by a desire to learn parenting techniques and how to improve their own health, in part to serve as role models to their children. This is consistent with previous literature (Grow et al., 2013) and indicates that during recruitment and implementation of interventions, researchers and practitioners should emphasize the potential benefits to both the parents and the children. Also consistent with previous research was the parents’ high degree of readiness to change, indicated by their desire to learn new techniques and adopt new behaviors (Braet et al., 2010). Conversely, low engaged parents described their decision to enroll solely as a means of treating their child’s preexisting medical conditions. Parents who viewed the program as treatment for their child may have been unready to make changes to their own behaviors. Future interventions should develop strategies to improve parental readiness for change from the start of the program.

In terms of barriers and facilitators of engagement following enrollment, both groups of parents described the strong influence of family dynamics. Highly engaged



parents recounted many instances in which their child's overt enthusiasm towards the program helped them attend the workshops and practice newly learned healthy behaviors, such as eating fruits and vegetables. Similarly, parents reported that criticism about the program from their children or other family members sometimes made it more difficult to engage. The relationship between family functioning and engagement in family-based health programs is well documented (Kitzmann & Beech, 2011; Williams et al., 2010; Kitzman-Ulrich et al., 2010 Brennan, Walkley, & Wilks, 2012). However, this study provides a clearer picture of ways in which various family members affect the participating parent's level of engagement. Specifically, these results underscore the importance of the participating child's willingness to attend the program and make changes as an important influence on the parent. Future family-based obesity programs should continue to incorporate principles from family systems theories to equip parents with the parenting and communication skills to manage their child's behaviors (Kitzman-Ulrich et al., 2010). Further, as mentioned previously, developing strategies to gain buy-in from both the parent and child during recruitment and implementation may improve parent engagement.

Two emergent themes from the parent interviews who attended any of the family workshops provided insight into the specific aspects of the intervention they were most satisfied with. Intervention content and staff were relevant to the parents. They liked seeing themselves reflected in the family shown in the videos, and they were able to relate to the CHWs who provided personal anecdotes about having to change their own behaviors to improve their health or weight. These findings highlight the importance of tailoring and pilot testing intervention materials, and support CHW

involvement in program delivery (Messias et al., 2013; Viswanathan et al., 2009). Though the parents described many reasons why the intervention may be successful, when asked for suggestions on how to improve the program or for examples of what they disliked about the program, very few parents provided responses. The lack of feedback is problematic because research suggests that dissatisfaction may be an important predictor of engagement and study outcomes (Skelton, Irby, & Geiger, 2014). Thus, future programs should encourage participants to provide both negative and positive feedback, possibly via anonymous survey methods.

Several limitations of this study must be noted. Although parents were interviewed within 4 weeks of the completion of the family workshops, recall bias may have been an issue, particularly when parents were asked to recall specific details about the first workshops in the workshop cycle. Parents may have also felt uncomfortable providing negative feedback to the interviewers (i.e. social desirability bias), though the study protocol did ensure that interviewers had no prior contact or relationships with them. Additionally, the parents were all female and predominantly Hispanic; therefore the results may not generalize to other populations or other types of programs. However, a recent qualitative study of immigrant Latino parents participating in a similarly structured intervention for youth substance abuse documented barriers and facilitators to program attendance akin to those found in our study (Garcia-Huidobro et al., 2015). Finally, only parents were interviewed for this study. Given the reported impact of the child's willingness to participate on parent engagement shown in this study, future research should interview children.

## CONCLUSIONS

The parent interviews provided crucial contextual information about factors that helped or hindered parent engagement in a family-based childhood obesity program. The results confirm the importance of family functioning and readiness to change to parental engagement. Future programs should consider developing strategies to engage all family members, including those who are participating and those who are not, to increase the support received by the primary parent. Additionally, an effort should be made to increase parent's readiness to make parenting or behavior changes at the start of the intervention. Though these findings highlight important targets for intervention, much is still unknown about the mechanisms through which parents engage in childhood obesity programs, and how their engagement influences program outcomes. In the future, more programs should incorporate qualitative methods into the evaluation design to further expand our understanding of how and why these programs are or are not successful (Luttikhuis et al., 2009).

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Chapter 3 is currently being prepared for submission for the publication of the material. Co-authors include Dr. Hala Madanat, Dr. Emmeline Chuang, and Dr. Guadalupe X. Ayala. The dissertation author was the primary investigator and author of this material.

Table 3.1. Characteristics of interviewed parents and their children

	All parents (N=22)	High engagement (n=12)	Low engagement (n=10)
<i>Parent characteristics</i>	N (%) or Mean (SD)		
<i>Ethnicity</i>			
Hispanic	22 (100%)	11 (100%)	11 (100%)
<i>Marital Status</i>			
Married	18 (81.8%)	10 (83.3%)	8 (80.0%)
Receipt of public food assistance	21 (95.5%)	11 (91.7%)	10 (100.0%)
<i>BMI status</i>			
Overweight/Obese	18 (81.8%)	10 (83.3%)	8 (80.0%)
Age (Mean [SD])	34.8 (6.3)	34.5 (6.80)	35.3 (5.92)
<i>Education</i>			
High school diploma or higher	11 (50.0%)	8 (66.7%)	3 (30.0%)
<i>Child characteristics</i>			
<i>Sex</i>			
Male	10 (45.5%)	4 (33.3%)	6 (60.0%)
<i>BMI status</i>			
Overweight/Obese	10 (45.5%)	6 (50.0%)	4 (40.0%)
Age (Mean [SD])	5.9 (2.5)	6.5 (1.88)	5.1 (2.99)

Table 3.2. Constructs, themes, and supporting quotations of factors affecting parent engagement

Constructs and sub-themes	Supporting Quotations
<b>Motivation to Participate</b>	
Indirect benefit to child/direct benefit to parent	<p><i>“Look, it’s like my husband, my son, and I, we have obesity problems, that’s why it (Our Choice) did, it did catch my attention and all . . . But I did want to get informed, more information because the truth is, it is important for me. And that my children know too.”</i></p>
Direct benefit to child	<p><i>“(I enrolled) Because my daughter, she was told her was pre-diabetic, that’s why, in fact that’s why they referred us to Our Choice for her, because her insulin level was high.”</i></p>
<b>Barriers and Facilitators</b>	
Logistical barriers	<p><i>“I couldn’t attend because of a conflict in my school schedule, so I couldn’t make it. And by the time I got out, there were only one or two (classes) left so I couldn’t attend.”</i></p>
Family support as a barrier	<p><i>“Oh they told me: No, why are you going, you are going to waste your time. And I told them: No, I’m not going to waste my time, I’m going to learn something new about nutrition.”</i></p>

Table 3.2. Constructs, themes, and supporting quotations of factors affecting parent engagement (continued)

Constructs and sub-themes	Supporting Quotations
Family support as a barrier	<p><i>“My daughter said: Oh mom, vegetables again! No look honey, we are going to eat like this, it’s for our own good. And she got used to it . . . she did get used to it and she liked it; she liked it, she feels thinner.”</i></p>
Family support as a facilitator	<p><i>“They (the girls) were always supporting me, because they are always the ones that were rushing me and asking me what day it was going to be, how many days were left, and things like that.”</i></p> <p><i>“I can tell you they were the ones that also encouraged me more to get a better diet, they are the ones that have always said: No, you can’t eat this. . . . In the beginning I did feel sort of uncomfortable, I didn’t feel uncomfortable, but I was embarrassed, but oh, in confidence with my children, and watching my children so happy doing it, and they were delighted that I did it, so I put more effort into it.”</i></p>

Table 3.2. Constructs, themes, and supporting quotations of factors affecting parent engagement (continued)

Constructs and sub-themes	Supporting Quotations
Satisfaction	
Relevance of materials	<p><i>“How the family (in the video) started, they didn’t realize what they were eating. As in my case, I saw myself reflected in those videos. How we don’t realize what we are eating, what is harmful for us, what children eat . . . I mean, how over the course of time they (the family in the video) realize their mistake and that’s when they achieve a healthy diet, which was what happened to me.”</i></p> <p><i>“The videos did help me a lot because that’s where we see that we are wrong, because of what we are doing wrong.”</i></p>
CHWs	<p><i>“Somethings they (the CHWs) talked about their own life in order not to, I think this is for you not to see it as if I’m telling you to do this, but as I do it like this and it works for me so you can do it.”</i></p>



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## DISCUSSION

This dissertation examined parent engagement among 128 parents participating in a family-based childhood obesity prevention and control intervention. The study included three components: 1) the development of a conceptual model for predicting engagement and explaining the effect of engagement on study outcomes, 2) a quantitative examination of predictors of parent engagement, and 3) a qualitative examination of the facilitators and barriers to engagement experienced by parents enrolled the intervention. Taken together, this body of work elucidates the experiences of parents enrolled in family-based childhood obesity interventions. Study results have important implications for future research in this area.

### **Summary of Findings and Recommendations**

#### *Chapter 1: Understanding the role of parent engagement in family-based childhood obesity interventions: The Parent Engagement Model*

Chapter 1 described the development and assessment of a conceptual model for understanding parent engagement in childhood obesity and control interventions, named the Parent Engagement Model (PEM). A review of the literature regarding parent engagement in family-based programs for childhood obesity and other health issues revealed that numerous sociodemographic, psychosocial, and anthropometric factors may affect engagement. Additionally, it was found that the Health Belief Model (Hochbaum, 1958), with an addition from the Transtheoretical Model (Prochaska, 1983), may provide an appropriate theoretical framework for examining parent engagement.

The work described in Chapter 1 will benefit the field in several ways. First, it proposes that parent engagement is the mechanism through which child BMI and behavior change occurs in family-based childhood obesity programs. This is a novel proposition, as many family-based programs do not measure or report the degree of parent engagement, and fewer examine its relationship to child outcomes. Second, it identifies a broad array of potential influences on engagement that researchers should consider when developing intervention components, and implementation and evaluation strategies. Finally, it provides instruction for how to test the Parent Engagement Model, including specifying specific measurement methods and tools. Future research can use the Parent Engagement Model and the example of how it is being tested in Our Choice to guide their assessments of parent engagement.

*Chapter 2: Factors predicting parent engagement in a family-based childhood obesity prevention and control program*

Chapter 2 tested the first step in the Parent Engagement Model by examining the relationship between numerous sociodemographic, anthropometric, and psychosocial factors on parent engagement. The results indicate parents' readiness to make behavioral and parenting changes was the strongest predictor of attendance at planned program activities. This finding is significant because readiness to change is potentially modifiable. Engagement may improve if at the start of interventions researchers used strategies to increase readiness to change. Parent and child behavioral health also showed a trend towards significance. Future childhood obesity interventions should continue to explore the effect of parent and child psychopathology on participation in and outcomes of family-based programs.

Though the results of Chapter 2 pinpoint potential predictors of engagement, the results here and in Chapter 3 also suggest that the Parent Engagement Model may need to be modified. Specifically, the families' past experiences with the health care system or other interventions, and the child's history of health issues (both weight-related and not) may influence participation and attitudes. Also, as noted in Chapter 3 (see below), parent motivation for participating and expectations regarding program content and outcomes may need to be included in the model.

It is important to note that an alternative explanation for the poor fit of the Parent Engagement Model in this study could be due to the study population in which it was tested for this dissertation. The model was primarily based on results from previous treatment interventions including overweight and obese children, but not all children in this study were overweight and obese as Our Choice was a prevention and control intervention. Therefore, it is possible that there are difference processes that affect engagement among parents of children who are already overweight/obese, and those with healthy weight children.

To explore whether the predictors of engagement differ by child baseline weight classification, additional exploratory analyses were completed (see Appendices 8-10). Specifically, three separate zero-inflated Poisson regression models were run for with the following sub-groups: parents with healthy weight children (BMI percentile < 85; n=78); parents with overweight/obese children (BMI percentile  $\leq$  85; n=50); parents who are overweight/obese (BMI  $\geq$  25; n=107). A separate model including parents who are at a healthy weight (BMI < 25; n=21) was not run due the insufficient sample size. The results of the exploratory analysis indicate that, as in the

full sample reported in Chapter 2, parent readiness to change is a strong predictor of engagement, as well as child mental health issues. However, several differences emerged in the exploratory models. Family functioning predicted degree of engagement among parents of healthy weight children and among overweight/obese parents ( $p < 0.05$ ). Also, among overweight/obese parents, a higher degree of perceived barriers to participating at baseline was associated with an increased risk of non-attendance ( $p < 0.05$ ). These additional models suggest that future studies should continue to explore the different processes through which parents engage in prevention and control programs versus treatment programs.

*Chapter 3: A qualitative examination of parent engagement in a family-based childhood obesity intervention*

Chapter 3 qualitatively explored factors affecting parent engagement among twenty-two parents enrolled in a family-based childhood obesity prevention and control program. The results of the qualitative analysis complement extant quantitative research, including the results of Chapter 2 in this dissertation. For instance, highly engaged parents described higher degrees of readiness to change and an expectation that they would be asked to make changes, as indicated by their desire to learn new techniques and adopt new parenting and health behaviors. Additionally, aspects of family dynamics influenced engagement, specifically the child's enthusiasm towards the program and adopting health behavior changes.

Importantly, the results of Chapter 3 highlight potential targets for intervention that both echo and expand upon those identified in Chapter 2. Echoing the findings of Chapter 2, these results indicate that increasing parent's readiness to make behavioral

and parenting changes at the start of an intervention may improve their engagement. In contrast to Chapter 2, which did not find family functioning and expectations regarding family support predictive of engagement, the results of Chapter 3 indicate family support does influence engagement. This indicates that the measure of family functioning used on the baseline survey may have not captured the aspect of family functioning that influences engagement and/or that parents were inaccurate in judging how supportive their children and family members would be of their participation. Regardless, future programs should develop strategies to engage all family members to increase the support received by the participating parent and child(ren).

Another unique point of intervention that emerged from the results of Chapter 3 was parents' motivations for participating in the intervention. Qualitative analyses identified distinct differences in motivations between high and low engagers, with highly engaged parents expressing interest in improving their own health as well as their child's. This finding is consistent with previous literature (Grow et al., 2013), and indicates that during recruitment and implementation interventions should emphasize the potential benefits to both the parents and the children.

## **Conclusion**

While this dissertation adds a great deal to the existing body of literature regarding parent engagement, the results also highlight several areas that require further exploration. This study focused largely on pre-existing characteristics and motivation-related factors at baseline before parents began their participation in the family intervention. Research suggests, including the results of Chapter 3 here, that engagement is also influenced by the parent and children's experiences in the program



after it has already started, including their dissatisfaction with the program and their ability to relate to and understand the program content (Brennan, Walkley, & Wilks, 2012). Similarly, research also suggests that when parents' initial expectations of the program's services or scope are not met, they are apt to end their participation prematurely (Dhaliwal, 2014; Barlow & Ohlemeyer 2006). Consequently, future interventions should assess both the parent and the child's satisfaction with the intervention content and scope throughout the program, and parent expectations regarding the content and expected program outcomes at the start of the program. This is doubly important considering family satisfaction with program materials has also been shown to predict behavior changes in previous family-based interventions (Schmied et al., 2015). Additionally, research suggests the temperament of the participating child and the specific relationship between the participating parent and child may affect child weight-related behaviors (Anzman-Frasca, Stifter, & Birch, 2011; Zeller, Boles, & Reiter-Purtill, 2008) and potentially program engagement; future research should assess the effect of child temperament on parent engagement.

Future research should also continue to develop and refine methods for assessing engagement. This study quantitatively assessed engagement via attendance records, and qualitatively assessed active engagement, the other component of engagement, by querying parents about their skill use in post-intervention interviews. Parents' personal investment in the intervention, the other component of active engagement, was not directly assessed in this study. Because research suggests that parents' personal investment in interventions may be a better overall indicator of engagement than attendance, future studies should work to improve measurement of

this construct and compare the relative contribution of attendance versus active participation to child health behavior and weight changes (Staudt, 2007; Ingoldsby, 2010).

More research should also be done to improve the measurement of factors that may be predictive of engagement, such as perceived relevance of the intervention and self-efficacy for making changes to weight-related parenting strategies. In this dissertation, a pre-existing parent motivation scale was adapted for use in childhood obesity programs, and was hypothesized to demonstrate a three-factor structure assessing perceived relevance, readiness to change, and self-efficacy (Nock & Photos, 2006). Examination of the psychometric properties of the modified scale supported a 2-factor structure, consisting of constructs corresponding to perceived relevance and readiness to change. More research is needed not only to validate this modified tool, but also to determine if self-efficacy is a distinct construct predictive of parent engagement.

Finally, more research is needed to differentiate the influences on parent engagement between treatment and prevention and control interventions. This dissertation examined engagement in a prevention and control intervention using a conceptual model largely derived from treatment-focused programs. Because the intervention goals, strategies, and messages may differ across these two designs it is likely that different factors affect parent engagement, and thus different techniques are needed to increase engagement.

Parent engagement in family-based programs is complicated by a multitude of internal and external factors at various levels of influence. This dissertation has

identified several targets for intervention for improving parent engagement. However, the results also underscore the need for continued research in this field; future interventions must continue to develop and test strategies for minimizing barriers to participation.

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## APPENDICES

### APPENDIX 1. Parent Engagement Study Consent Form (English)



#### Parent Satisfaction Survey Parent Permission and Informed Consent Form

Some of the families who are in this study (300 families) will be asked to complete the Parent Satisfaction Survey. The families asked to do this are those who agree to participate in the Our Choice activities and have been selected to attend the Our Choice family workshops. Some of these families (about 72 families) may also be asked to participate in a group discussion after the workshops. You can choose to participate in either the survey or the discussion group if you like.

#### Description of the Study:

**Survey:** You will be asked to complete one survey that will last about 10 to 20 minutes. The survey asks questions about your thoughts of your child's health, the Our Choice study activities, such as the family workshops, and you and your family's wellbeing. You can complete the survey today, take the survey home and mail it back, or schedule a time to do the survey by phone.

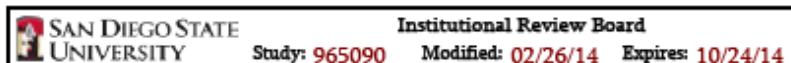
**Discussion Group:** You will be asked to participate in a discussion group with other Our Choice parents to share what you thought about the family workshops. This will happen about a month after the workshops. You will be invited to participate in the discussion group by the community health worker during the last 2 weeks of the workshops, or by an invitation in the mail or a phone call from an Our Choice staff member. The discussion will last about 45 minutes and will be audio recorded so we can report exactly what you say. Nine groups with no more than 8 parents will be scheduled over the next several months. We will be seeking volunteers to participate in the discussion groups until all 72 openings have been filled.

**Incentives to Participate:** Each family that completes the survey will receive a gift card for \$10. Each family that participates in the discussion group will receive a \$20 gift card.

**Voluntary Participation:** Taking part in this study is completely up to you. Your decision whether or not to participate will not affect your participation in the Our Choice project or your relationship with San Diego State University, the San Diego State University Research Foundation, the Imperial County Public Health Department, or *Clinicas de Salud del Pueblo, Inc.* If you decide to participate, you are free to withdraw your consent and stop your participation at any time and for any reason without penalty. If you decide not to participate in the Parent Satisfaction Survey, you can still participate in the other Our Choice study activities and the focus group.

**Possible Risks and Benefits:** You may feel uncomfortable or embarrassed by some questions on the survey or in the discussion group. You have the right to skip any questions that you do not wish to answer, or to stop your participation completely. There are no direct benefits to you or your child for completing the survey or the discussion group, but your participation will help us to understand what can affect children's health.

**Privacy:** We will not ask for your name on the survey. Instead, your family's Our Choice number will be printed on the survey. The discussion groups will be audio recorded. Only Our Choice staff will hear the recording and it will be saved on computers that are protected by passwords. Once the recording has been typed out, it will be destroyed. In the discussion group, all group members will be asked to keep what everyone says private, but this cannot be guaranteed. The survey and



discussion group results may be used in written reports or papers, but the reports will never have information that can identify you, your child, or your family.

**Consent to Participate:** The Institutional Review Board at San Diego State University approved this consent and stamped it below. The investigators are responsible for renewing the consent form, which must be reviewed every year and expires on the date shown on the stamp.

Your signature below means that you have read the information on this form and have had a chance to ask questions about the study. Your signature and a "yes" response on the Parent Satisfaction Survey section means that you agree to take the survey and that you understand you have the right to change your mind and withdraw your consent to participate at any time. Your signature and a "yes" response on the Discussion Group section indicates that you understand that you will be contacted about a month after the family workshops to participate in a discussion group. You have been given a copy of this consent form. You have been told by that by signing this consent form you are not giving up any of your legal rights.

For office use only: Participant ID# \_\_\_\_\_ Contact Preference:  Phone  Mail

**Parent Satisfaction Survey  
Parent Consent Form**

Please check one of the choices below to show whether you would like to participate in the survey:

- YES, I consent to participate in the survey.  
 NO, I do not consent to participate in the survey.

**Parent Discussion Group  
Parent Consent Form**

Please check one of the choices below to show whether you would like to participate in the discussion group:

- YES, I consent to be contacted about participating in the discussion group.  
 NO, I do not consent to be contacted about participating in the discussion group.


**IMPORTANT: Please complete this form even if you are not able to or do not want to participate.**

\_\_\_\_\_  
Signature of Participating Adult/  
Parent Guardian of Child Participant

\_\_\_\_/\_\_\_\_/\_\_\_\_\_  
m m / d d / y y y y  
Today's Date

\_\_\_\_\_  
Signature of Study Representative  
(For office use)

\_\_\_\_/\_\_\_\_/\_\_\_\_\_  
m m / d d / y y y y  
Today's Date

 SAN DIEGO STATE UNIVERSITY	Institutional Review Board		
	Study: 965090	Modified: 02/26/14	Expires: 10/24/14



## APPENDIX 2. Parent Engagement Study Consent Form (Spanish)



**Encuesta de satisfacción de los padres de Nuestra Opción**  
**Formulario de consentimiento informado y permiso de los**  
**padres**

A algunas de las familias que están en este estudio (300 familias) se les pedirá completar la Encuesta de satisfacción de los padres. A las familias que se les pida hacer esto son aquellas que están de acuerdo en participar en las actividades de Nuestra Opción y han sido seleccionadas para asistir a los talleres familiares de Nuestra Opción. A algunas de estas familias (aproximadamente 72 familias) quizá también se les pida participar en un grupo de discusión después de los talleres. Puede elegir participar en la encuesta o en el grupo de discusión si usted desea.

**Descripción del estudio:**

**Encuesta:** Se le pedirá completar una encuesta que durará aproximadamente de 10 a 20 minutos. La encuesta tiene preguntas acerca de su opinión sobre la salud de su niño, las actividades del estudio Nuestra Opción, tales como los talleres familiares, y el bienestar de usted y de su familia. Puede completar la encuesta hoy, llevarse la encuesta a casa y devolverla por correo, o programar una fecha para contestar la encuesta por teléfono.

**Grupo de discusión:** Se le pedirá participar en un grupo de discusión con otros padres de Nuestra Opción para compartir su opinión acerca de los talleres familiares. Esto ocurrirá aproximadamente un mes después de los talleres. Se le invitará a participar en el grupo de discusión por medio de la promotora durante las últimas 2 semanas de los talleres, o por medio de una invitación por correo o una llamada telefónica de un miembro del personal de Nuestra Opción. La discusión durará aproximadamente 45 minutos y se grabará el audio para que podamos reportar exactamente lo que usted diga. Durante los próximos meses se programarán nueve grupos con no más de 8 padres. Estaremos buscando voluntarios para participar en los grupos de discusión hasta que se llenen todas las 72 vacantes.

**Incentivos para participar:** Cada familia que complete la encuesta recibirá una tarjeta de regalo de \$10. Cada familia que participe en el grupo de discusión recibirá una tarjeta de regalo de \$20.

**Participación voluntaria:** Participar en este estudio es una decisión completamente suya. Su decisión de participar o no, no afectará su participación en el proyecto Nuestra Opción o su relación con la Universidad Estatal de San Diego, la Fundación de Investigación de la Universidad Estatal de San Diego, el Departamento de Salud Pública del Condado de Imperial, o Clínicas de Salud del Pueblo, Inc. Si usted decide participar, tiene la libertad de retirar su consentimiento y dejar de participar en cualquier momento y por cualquier motivo sin ninguna multa. Si usted decide no participar en la Encuesta de satisfacción de los padres, usted todavía puede participar en las otras actividades del estudio Nuestra Opción y en el grupo de discusión.

**Posibles riesgos y beneficios:** Quizá se sienta incómodo o avergonzado por algunas preguntas en la encuesta o en el grupo de discusión. Tiene el derecho de saltarse cualquier pregunta que no desee contestar, o suspender su participación completamente. No hay beneficios directos para usted o para su niño por completar la encuesta o el grupo de discusión, pero su participación nos ayudará a entender lo que puede afectar la salud de los niños.

**Privacidad:** No le pediremos su nombre en la encuesta. En lugar de eso, se imprimirá en la encuesta el número de su familia de Nuestra Opción. Se grabará el audio de los grupos de discusión. Solo personal de Nuestra Opción escuchará la grabación y se guardará en computadoras protegidas por contraseñas. Una vez que se haya transcrito la grabación, esta se destruirá. En el grupo de discusión, a todos los miembros del grupo se les pedirá no comentar lo que digan los demás, pero esto no se puede garantizar. Los resultados de la encuesta y del grupo de discusión quizá se usen en reportes o trabajos escritos, pero los reportes nunca tendrán información que pueda identificarlo a usted, a su niño o su familia.

**Consentimiento para participar:** La Mesa Directiva de Revisión Institucional de la Universidad Estatal de San Diego aprobó este formulario de consentimiento como lo indica el sello abajo. Los investigadores son responsables de renovar el formulario de consentimiento, el cual debe revisarse cada año y se vence en la fecha que aparece en el sello.

Su firma abajo indica que usted ha leído la información en este formulario y que ha tenido la oportunidad de hacer preguntas acerca del estudio. Su firma y una respuesta "Sí" en la sección de la Encuesta de satisfacción de los padres indican que usted está de acuerdo en contestar la encuesta y que entiende que usted tiene el derecho de cambiar de opinión y de retirar su consentimiento para participar en cualquier momento. Su firma y una respuesta "Sí" en la sección del Grupo de Discusión indican que usted entiende que se le contactará dentro de 4 a 6 meses a partir de ahora para participar en un grupo de discusión. Se le ha dado una copia de este formulario de consentimiento. Se le ha informado que al firmar este formulario de consentimiento, usted no está renunciando a ninguno de sus derechos legales.

For office use only: Participant ID# \_\_\_\_\_ Contact Preference:  Phone  Mail

**Encuesta de satisfacción de los padres  
Formulario de consentimiento de los padres**

Por favor marque una de las opciones a continuación para indicar si a usted le gustaría participar en la encuesta:

SÍ, doy mi consentimiento para participar en la encuesta.

NO, no doy mi consentimiento para participar en la encuesta.

**Grupo de discusión para padres  
Formulario de consentimiento de los padres**

Por favor marque una de las opciones a continuación para indicar si a usted le gustaría participar en el grupo de discusión:

SÍ, doy mi consentimiento para que me contacten sobre participar en el grupo de discusión.

NO, no doy mi consentimiento para que me contacten sobre participar en el grupo de discusión.

**IMPORTANTE: Por favor complete este formulario aunque no pueda o no quiera participar.**

\_\_\_\_\_  
Firma del adulto participante/  
Padre/tutor del niño participante

\_\_ / \_\_ / \_\_ \_\_ \_\_ \_\_  
m m / d d / a a a a  
Fecha de hoy

\_\_\_\_\_  
Firma del representante del estudio  
(For office use)

\_\_ / \_\_ / \_\_ \_\_ \_\_ \_\_  
m m / d d / a a a a  
Fecha de hoy



## APPENDIX 3. Parent Engagement Study mailed survey invitation (English)



Dear *Our Choice* Parent,

The *Our Choice* study would like to invite you to take a short survey. The survey will ask questions about your thoughts about your child's health, your family's health, and your feelings about the *Our Choice* study activities. The survey will take 10 to 20 minutes, and you will receive a \$10 gift card after we get your completed survey.

Here is more information about the survey:

- **The survey is voluntary.** If you do not want to take the survey, it will not harm your participation in *Our Choice* and you can still go to the *Our Choice* events. Also, if you choose to take the survey, you can skip any questions that you do not understand, or that you do not want to answer.
- **The survey is private.** We will not ask for your name on the survey. Instead, your family's *Our Choice* number has been printed on the survey. The survey results may be used in written reports or papers, but the reports will never have information that can identify you, your child, or your family.

The survey is in this packet. There are 2 ways you can take it; you can take it on your own and send it to us in the mail, or you can take it over the phone. **To take it on your own**, please follow the instructions for how to do it on the next page. If you would like **to take it over the phone**, please call, 619-594-3568 to talk to an *Our Choice* staff member.

Remember, taking the survey is completely up to you. If you have any questions, please call 619-594-3568. Please keep this letter for your records.

Thank you for your time!

Sincerely,

The *Our Choice* Team



## Survey Instructions

Please follow these instructions to complete the survey and return it by mail:

**Step 1- Read the instructions** at the top of each section of the survey (there are 4 sections).

### **Step 2- Mark your answers**

Read each question and pick the answer that most closely represents your thoughts. **Choose only one answer for each question.**

Use a pen or pencil to mark your answer to each question with an "X" or a "✓" inside the box. If you do not want to answer a question, just skip it and move on to the next one. Here are two examples of how to mark your answers:



Each section of the survey is different, so please read the instructions closely.

### **Step 3- Return the survey**

Once you have finished the survey, fold it and place it into the envelope provided. We put a stamp on the envelope for you so you do not need to use your own stamp to return the survey. Seal the envelope and place it in the mail.

### **Step 4- Wait for your gift card**

We will deliver your \$10 gift card in-person within one month after you take the survey.

If you have questions about the survey or would like to take it over the phone, please call 619-594-3568.

## APPENDIX 4. Parent Engagement Study mailed survey invitation (Spanish)



Estimado padre de familia de *Nuestra Opción*,

Al estudio *Nuestra Opción* le gustaría invitarle a contestar una breve encuesta. La encuesta tiene preguntas acerca de su opinión sobre la salud de su niño, de su familia, y de su sentir acerca de las actividades del estudio *Nuestra Opción*. La encuesta durará de 10 a 20 minutos aproximadamente, y usted recibirá una tarjeta de regalo de \$10 después de que obtengamos su encuesta completa.

Aquí algo de información adicional acerca de la encuesta:

- **La encuesta es voluntaria.** Si usted no quiere contestar la encuesta, no dañará su participación en *Nuestra Opción* y usted aún puede asistir a los eventos de *Nuestra Opción*. Además, si decide contestar la encuesta, puede saltarse cualquier pregunta que no entienda o que no quiera contestar.
- **La encuesta es confidencial.** No le pediremos su nombre en la encuesta. En vez de eso, se ha impreso en la encuesta el número de su familia de *Nuestra Opción*. Los resultados de la encuesta quizá se usen en reportes o trabajos escritos, pero los reportes nunca tendrán información que pueda identificarlo a usted, a su niño, o a su familia.

La encuesta se encuentra en este paquete. Hay 2 maneras en que puede contestarla; puede contestarla por su cuenta y enviárnosla por correo, o puede contestarla por teléfono. **Para contestarla por su cuenta**, por favor siga las instrucciones de cómo hacerlo en la siguiente página. Si le gustaría **contestarla por teléfono**, por favor llame al 619-594-3568 para hablar con un miembro del personal de *Nuestra Opción*.

Recuerde, contestar la encuesta es decisión completamente suya. Si tiene alguna pregunta, por favor llame al 619-594-3568. Por favor conserve esta carta para sus archivos.

¡Muchas gracias por su tiempo!

Atentamente,

Equipo *Nuestra Opción*



### Instrucciones para la encuesta

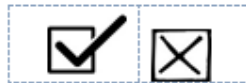
Por favor siga estas instrucciones para contestar la encuesta y devolverla por correo:

**Paso 1- Lea las instrucciones** en la parte inicial de cada sección de la encuesta (hay 4 secciones).

#### **Paso 2- Marque sus respuestas**

Lea cada pregunta y escoja la respuesta que mejor represente su opinión. **Escoja solamente una respuesta para cada pregunta.**

Use pluma o lápiz para marcar su respuesta para cada pregunta con una "X" o una "✓" en la casilla. Si usted no quiere contestar una pregunta, simplemente sáltela y pase a la siguiente. Aquí le damos dos ejemplos de cómo marcar sus respuestas:



Cada sección de la encuesta es diferente, así que por favor lea las instrucciones con detenimiento.

#### **Paso 3- Devuelva la encuesta**

Una vez que haya terminado de contestar la encuesta, dóblela y póngala en el sobre que le hemos proporcionado. Le pusimos timbre o estampilla al sobre para que no tenga que usar su propio timbre para devolver la encuesta. Selle el sobre y deposítelo en el correo.

#### **Paso 4- Espere su tarjeta de regalo**

Le entregaremos personalmente su tarjeta de regalo de \$10 dentro de un mes después de haber contestado la encuesta.

Si tiene alguna pregunta sobre la encuesta o le gustaría contestarla por teléfono, por favor llame al 619-594-3568.

## APPENDIX 5. Parent Engagement Study Survey (English)



PID: \_\_\_\_\_

CID: \_\_\_\_\_

1. We want to know more about what you think about your child's health behaviors and about you as a parent. Please read each statement below and check the box that best fits how much you agree or disagree with each statement. Please only check one box for each survey item.

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
a) I am concerned about my child's current weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I am concerned about my child being overweight as a teenager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I am concerned about my child being overweight as an adult	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I believe my child is currently overweight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) My child's health behaviors have to improve soon (behaviors like healthy eating, drinking water, exercising, and sleeping)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) I would like my child's health behaviors to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) My child will experience many challenges in life if s/he is overweight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) My family will experience many challenges if my child is overweight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) It is very important for the well-being of my child that s/he changes his/her health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) I am motivated to change the way I reward and punish my child if it will lead to improvements in my child's health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) I am willing to work on changing my own behaviors to help manage my child's health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) I am motivated to practice the strategies I will learn in <i>Our Choice</i> at home with my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Participation in the <i>Our Choice</i> program is a top priority in my schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) I look forward to learning new strategies for managing my child's health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) I am willing to try new parenting strategies even if I think they might not work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p) I think the benefits of the <i>Our Choice</i> program are greater than the costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q) I am confident that I can fully participate in the <i>Our Choice</i> program by attending all program activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r) I believe that I am capable of learning the skills I need to change my child's health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s) I believe that changing my own health behaviors can improve my child's health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t) I believe that I can learn to change my child's health behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



PID: \_\_\_\_\_ CID: \_\_\_\_\_

2. These questions ask about things that might make it hard for you to attend *Our Choice* events, like the Wellness Workshops. Please check the box that best fits how much of a problem you think these issues might be for you. Please only check one box for each survey item.

<b>How much of a problem</b> do you think this will be . . . ?	Not at all a problem	Small problem	Moderate problem	Serious problem
a) How willing your child is to attend the <i>Our Choice</i> events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Finding the time to attend the <i>Our Choice</i> events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Finding transportation to the <i>Our Choice</i> events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Gaining support from your spouse or other family members to attend the <i>Our Choice</i> events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Is there anything else that may make it hard for you to attend <i>Our Choice</i> events? If so, please describe your concerns.				

3. Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly everyday
a) Feeling nervous, anxious or on edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Not being able to stop or control worrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Little interest or pleasure in doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Feeling down, depressed, or hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Please describe your family. After reading each statement below, check the box that best fits how much you agree or disagree with each statement. Please only check one box for each survey item.

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
a) My family members feel very close to each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Family togetherness is very important to our family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) My family members like to spend time with each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## APPENDIX 6. Parent Engagement Study Survey (Spanish)



PID: \_\_\_\_\_ CID: \_\_\_\_\_

1. Queremos saber más acerca de lo que piensa sobre los comportamientos de salud de su hijo y sobre usted como padre. Por favor lea cada declaración a continuación y marque la casilla que mejor represente qué tan de acuerdo o en desacuerdo está con cada declaración. Marque solo una casilla por cada pregunta de la encuesta.

	Totalmente en desacuerdo	En desacuerdo	Ni en desacuerdo ni de acuerdo	De acuerdo	Totalmente de acuerdo
a) Estoy preocupado por el peso actual de mi hijo.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Estoy preocupado por si mi hijo tuviera sobrepeso de adolescente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Estoy preocupado por si mi hijo tuviera sobrepeso de adulto	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Creo que mi hijo actualmente tiene sobrepeso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Los comportamientos de salud de mi hijo tienen que mejorar pronto (comportamientos como comer saludable, tomar agua, hacer ejercicio, y dormir)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Me gustaría que cambiaran los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Mi hijo va a afrontar muchas dificultades en la vida si tiene sobrepeso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Mi familia va a afrontar muchas dificultades si mi hijo tiene sobrepeso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Es muy importante para el bienestar de mi hijo que él cambie sus comportamientos de salud	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Estoy motivado a cambiar la manera en que premio y castigo a mi hijo si esto conduce a mejoras en la salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Estoy dispuesto a trabajar para cambiar mis propios comportamientos para ayudar a manejar los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Estoy motivado a practicar en casa con mi hijo las técnicas que aprenderé en <i>Nuestra Opción</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) La participación en el programa <i>Nuestra Opción</i> es una prioridad en mi horario	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Me dará mucho gusto aprender nuevas técnicas para manejar los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) Estoy dispuesto a probar nuevas técnicas para padres aun cuando piense que no podrían funcionar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p) Creo que los beneficios del programa <i>Nuestra Opción</i> son mayores que los costos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q) Tengo la confianza de que puedo participar completamente en el programa <i>Nuestra Opción</i> al asistir a todas las actividades del programa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r) Creo que soy capaz de aprender las habilidades que necesito para cambiar los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

s) Creo que cambiar mis propios comportamientos de salud puede mejorar los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t) Creo que puedo aprender a cambiar los comportamientos de salud de mi hijo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Estas preguntas tratan sobre cosas que podrían dificultarle asistir a los eventos de *Nuestra Opción*, como los Talleres de bienestar. Por favor marque la casilla que mejor represente qué tanto problema crea usted que puedan ser estas cuestiones para usted. Marque solo una casilla por cada pregunta de la encuesta.

¿Qué tanto problema cree que será esto...?	Ningún problema	Pequeño problema	Problema moderado	Problema serio
a) La voluntad de su hijo para asistir a los eventos de <i>Nuestra Opción</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Encontrar el tiempo para asistir a los eventos de <i>Nuestra Opción</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Encontrar transportación para ir a los eventos de <i>Nuestra Opción</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Obtener apoyo de su esposo(a) o de otros familiares para asistir a los eventos de <i>Nuestra Opción</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) ¿Hay algo más que podría dificultarle asistir a los eventos de <i>Nuestra Opción</i> ? En caso afirmativo, por favor describa sus preocupaciones.				

3. A lo largo de las 2 últimas semanas, ¿qué tan frecuentemente le han molestado los siguientes problemas?

	Para nada	Algunos días	Más de la mitad de los días	Casi todos los días
a) Sentirse nervioso, ansioso o inquieto	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) No poder dejar de preocuparse o controlar el estar preocupado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Poco interés o placer en hacer las cosas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Sentirse triste, deprimido o sin esperanza	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Por favor describa a su familia. Después de leer cada declaración a continuación, marque la casilla que mejor represente qué tan de acuerdo o en desacuerdo está con cada declaración.

	Totalmente en desacuerdo	Algo en desacuerdo	Algo de acuerdo	Totalmente de acuerdo
a) Mis familiares se sienten muy unidos entre sí.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) La unión familiar es muy importante para nuestra familia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A mis familiares les gusta pasar tiempo juntos.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## APPENDIX 7. Parent Engagement Study interview guide (English)



**Our Choice Qualitative Data Collection  
Focus Groups with Parents Assigned to Attend  
Wellness Workshops  
Sample Script**

[Topic: Warm-up/ Motivations for participating in Our Choice]

1. What is the first thing you think of when I say the word, “family”? How about “health”? (Note to facilitator: this is your opportunity to make sure everyone says something. Call on people if necessary as not talking initially predicts lack of engagement/contributions to future questions.)
2. Why did you first decide to join the Our Choice program?
  - *Probes:*
    - What did you think **your family** would get out of participating?
    - What did you think **you** would get out of participating?
3. What did your family members say when you joined the Our Choice program?
  - *Probes:*
    - Did your family members say anything positive about your involvement?
    - Anything negative?
    - What did your children who are in the study say about it?
    - How about your other children?
    - What did your spouse say?
4. Was the Our Choice program what you expected?
  - *Probes:*
    - In what ways was it expected?
    - How is it different from what you expected?
    - Is there anything that happened that you did not expect?

[Topic: Satisfaction with intervention]

5. In general, what did you think about the Wellness and Physical Activity Workshops? (Note: If not sure, clarify the difference between the two workshops – Wellness were the classes and the physical activity ones were the exercise classes.)
  - *Probes:*
    - What did you like about the videos and activities?
    - Did you feel comfortable with what you were asked to do in the workshops? Why or why not?
6. In what ways, if any, was what you learned in the workshops relevant to you?
  - *Probes:*

- What about the workshops was relevant to your family?
7. What was the group atmosphere like in the workshops?
- *Probes:*
    - How comfortable did it seem like the parents were around each other?
8. Tell me about the Community Health Worker(s) that led the workshops.
- *Probes:*
    - In what ways was she/they helpful to you and your family?
    - In what ways could you relate to her/them?
9. Was there anything you did not like about the workshops?
- *Probes:*
    - Do you have recommendations for how these issues could be improved?
10. How were you able to use what you learned in the workshops in your home or your everyday life?
- *Probes:*
    - If you did use what you learned in the workshops in your home or your life, what did your family members say about it?
    - Did you share anything you learned in the workshop with other people? If yes, what did you share?

[Topic: Barriers to participating]

11. What made it hard for you to attend the Wellness Workshops or the Physical Activity Workshops?
- *Probes:*
    - How much of a problem did you have finding the time to attend?
    - What about finding transportation?
    - How supportive was your family when you told them you were coming to the workshops?
    - Is there anything Our Choice could have done differently to make it easier for you to attend the workshops?

[Topic: Closing comments]

12. What else did you do as part of the Our Choice program?
- *Probes:*
    - Did you attend community events?
    - Did you read any Our Choice newsletters?
    - Did you receive phone calls from a Community Health Worker?
      1. *Probes:* How helpful were these phone calls?
13. Do you have any other comments about your experiences in the workshops?

APPENDIX 8. Zero-inflated Poisson Model for Parent Workshop Attendance among Parents with Healthy Weight Children (n=78)

	Logistic			Poisson		
	OR	95% CI	<i>p</i>	RR	95% CI	<i>p</i>
<i>Parent</i>						
Age	0.92	-0.19, 0.04	0.19	0.99	0.98, 1.01	0.25
BMI	1.00	-0.11, 0.12	0.94	0.99	0.98, 1.02	0.98
Married	0.74	-1.95, 1.34	0.73	0.92	0.68, 1.24	0.59
Receipt of EBT/SNAP	0.31	-2.99, 0.67	0.21	1.08	0.86, 1.35	0.50
PHQ-4	1.42	0.03, 0.67	0.03	0.99	0.93, 1.05	0.67
Barriers	1.18	-0.15, 0.49	0.30	1.03	0.98, 1.08	0.14
Perceived Relevance	1.24	-0.87, 1.31	0.69	0.99	0.89, 1.09	0.81
Readiness to Change	0.24	-2.83, -0.05	0.04	1.02	0.86, 1.20	0.83
Family Functioning	1.11	-0.29, 0.51	0.59	1.13	1.06, 1.21	0.003
Underestimate Body Size	1.53	-1.13, 1.99	0.59	1.05	0.85, 1.29	0.68
<i>Child</i>						
Age	0.92	-0.34, 0.19	0.56	1.00	0.96, 1.05	0.84
Behavioral Health Issues (1+)	6.48	-1.24, 4.97	0.24	0.86	0.66, 1.11	0.24

OR, Odds Ratio; 95%CI, 95% Confidence interval; RR, rate ratio; BMI, body mass index

APPENDIX 9. Zero-inflated Poisson Model for Parent Workshop Attendance among Parents with Overweight/Obese Children (n=50)

	Logistic			Poisson		
	OR	95% CI	<i>p</i>	RR	95% CI	<i>p</i>
<i>Parent</i>						
Age	0.85	-0.34, 0.01	0.06	1.03	1.00, 1.06	0.03
BMI	0.99	-0.13, 0.12	0.96	1.01	0.99, 1.04	0.32
Married	0.17	-4.65, 1.12	0.23	1.43	0.95, 2.16	0.08
Receipt of EBT/SNAP	0.25	-3.34, 0.54	0.15	0.91	0.63, 1.32	0.62
PHQ-4	0.99	-0.31, 0.39	0.97	1.03	0.98, 1.08	0.19
Barriers	1.43	-0.23, 0.95	0.24	0.96	0.88, 1.12	0.94
Perceived Relevance	2.48	-0.67, 2.48	0.26	0.86	0.70, 1.05	0.13
Readiness to Change	0.12	-4.44, 0.24	0.07	1.35	0.96, 1.90	0.08
Family Functioning	1.49	-0.19, 0.98	0.18	0.97	0.92, 1.05	0.13
Underestimate Body Size	0.15	-4.21, 0.47	0.11	1.08	0.73, 1.60	0.69
<i>Child</i>						
Age	1.19	-0.21, 0.55	0.37	0.94	0.87, 1.01	0.09
Behavioral Health Issues (1+)	1.18	-2.25, 2.59	0.89	0.56	0.37, 0.84	0.005

OR, Odds Ratio; 95%CI, 95% Confidence interval; RR, rate ratio; BMI, body mass index

APPENDIX 10. Zero-inflated Poisson Model for Parent Workshop Attendance  
among Overweight/Obese Parents (n=107)

	Logistic			Poisson		
	OR	95% CI	<i>p</i>	RR	95% CI	<i>p</i>
<i>Parent</i>						
Age	0.90	-0.20, -0.01	0.04	0.99	0.98, 1.00	0.15
Married	0.41	-2.53, 0.74	0.28	1.01	0.77, 1.33	0.92
Receipt of EBT/SNAP	0.34	-2.49, 0.36	0.14	1.03	0.85, 1.25	0.74
PHQ-4	1.33	-0.03, 0.61	0.08	1.02	0.98, 1.07	0.32
Barriers	1.42	0.02, 0.69	0.03	1.03	0.97, 1.09	0.36
Perceived Relevance	1.79	-0.29, 1.46	0.19	0.97	0.88, 1.06	0.51
Readiness to Change	0.23	-2.67, -0.23	0.02	1.08	0.93, 1.25	0.32
Family Functioning	1.59	-0.05, 0.98	0.07	1.06	1.01, 1.11	0.009
Underestimate Body Size	0.71	-1.60, 0.93	0.60	1.01	0.84, 1.22	0.89
<i>Child</i>						
Age	0.93	-0.29, 0.16	0.54	1.00	0.96, 1.04	0.89
BMI	1.34	-0.19, 0.78	0.24	1.04	0.96, 1.13	0.30
Behavioral Health Issues (1+)	11.36	-0.26, 5.14	0.07	0.83	0.64, 1.06	0.13

OR, Odds Ratio; 95%CI, 95% Confidence interval; RR, rate ratio; BMI, body mass index