PROCESS AND DEVELOPMENT OF A CULTURALLY ADAPTED HEALTHY LIFESTYLE MANUAL FOR OVERWEIGHT AND OBESE LATINA WOMEN WITH BINGE EATING DISORDER

by

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ABSTRACT

PHOUTDAVONE PHIMPHASONE-BRADY. Process and development of a culturally adapted healthy lifestyle manual for overweight and obese Latina women with binge eating disorder. (Under the direction of DR. FARY M. CACHELIN).

Obesity remains one of the greatest public health threats in the 21st century, increasing the risk for many chronic illnesses, including Type 2 diabetes and CVD, with economic costs associated with treatments for obesity reaching $147 billion/year in 2008 for inpatient and outpatient treatments and prescription drugs. Despite an increase in prevention and intervention efforts to reduce the health and economic burden associated with obesity and binge eating in the past decade, treatments are still disproportionate among women and/or racial/ethnic minority groups. In particular, overweight and obese Latina women with binge eating disorder are less likely to seek and receive treatment for problematic eating behaviors and have a higher risk of chronic illnesses. Therefore, there is still a need to identify psycho- and sociocultural determinants that will influence treatment engagement and success among overweight and obese Latina women with binge eating disorder.

This study identified culturally appropriate modifications of an evidenced-based behavioral weight loss program, *The LEARN Program for Weight Management,10th Edition* (LEARN; Brownell, 2004). Through constant comparative analysis, participants (n = 20, M_{AGE} = 30, *SD* = 9.87, M_{BMI} = 34.40, *SD* = 6.64, $M_{\text{binge eating episodes}}$= 4, *SD* = 4.92) identified surface and deep level changes needed for the LEARN manual. Surface level changes included: redundancy of lesson content, positive remarks and critiques of content, need for culturally relevant examples, and structure of self-monitoring forms.

Deep level changes included a consideration of diversity factors, Latino health beliefs and expectations, environmental facilitators and barriers, cultural significance of food and physical activity, and unique individual factors (e.g., family dynamics, past experiences with health monitoring and chronic illness management, and responsibilities as a caregiver).

With cultural modifications, participants reported that the LEARN manual could be an effective and feasible method to address psychological and sociological factors associated with obesity and binge eating disorder. Suggestions to improve adherence to a healthy lifestyle manual are offered. In order to address health disparities and reduce the prevalence rates of obesity and binge eating disorder among Latina women, it is crucial that treatments emphasize a healthy lifestyle change approach while considering key cultural factors to more effectively recruit and retain this understudied and undertreated population.

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CHAPTER 1: INTRODUCTION

Obesity is considered one of the greatest public health threats in the 21st century (Centers for Disease Control and Prevention [CDC], 2014; Institute of Medicine [IOM], 2013). It is well documented that obesity increases the risk for certain chronic illnesses, such as cardiovascular disease (CVD), stroke, hypertension, type 2 diabetes, and certain cancers (CDC, 2014; IOM, 2013). In fact, obesity is one of the top leading cause of *preventable* deaths in the United States (Danaei et al., 2009; Roger et al., 2012). Moreover, the economic costs associated with obesity remain alarmingly high. In 2008, per capita medical spending for an individual with obesity was $1,429 higher than an individual with normal weight (Cohen & Dietz, 2009). The total medical costs of obesity reached $147 billion/year for services that include both inpatient and outpatient treatments, and prescriptive drugs (Cohen & Dietz, 2009). Given the significant health risks and medical costs associated with such a preventable disease, it is not surprising that prevention and intervention efforts have increased in the last decade.

The *Healthy People* is one initiative to improve the health of Americans by the end of the century (United States Department of Health and Human Services [DHHS], Healthy People 2020, 2014). Launched in 1990, priority areas to improve the nation's health included improvements in physical activity and fitness, nutrition, and diabetes and other chronic illness (CDC, 2009a; DHHS, Healthy People 2020, 2014). However, the prevalence of obesity among adults remained relatively stable between 2003 through 2012 (Ogden, Carroll, Kit, & Flegal, 2014), despite increased emphasis and interventions to reduce the public health burden of obesity.

More importantly, these high prevalence rate of obesity disproportionately affect women and/or racial/ethnic minority populations, with the highest increases in prevalence among Black and Latina women compared to White women (CDC, 2014). Overweight and obese (OW/OB) Latina women, in particular, are at risk for several reasons (Reyes-Rodriguez, Ramirez, Davis, Patrice, & Bulk, 2014; Yeh, Viladrich, Bruning, & Roye, 2009). First, they are at a higher risk for obesity than Latino men and White women (Yeh et al., 2009). Second, there are a number of resource-related barriers that influence their success at overcoming binge eating and managing their weight, such as lack of time and financial constraints, not meeting the recommended amount of physical activity levels, not consuming foods that are known to improve health, such as fruits and vegetables (FV), lack of health knowledge, and the cost of healthy foods (CDC, 2011; Frieden, Dietz, & Collins, 2010; Guerin, Bales, Sweet, & Fortier, 2012; Lindsay, Sussner, Greaney, & Peterson, 2009). Third, sociocultural determinants, for example, treatment seeking patterns (i.e., waiting until symptoms are severe or debilitating) and/or cultural values or beliefs (i.e., high need for privacy, perception of appearing weak) moderate OW/OB Latina women's ability to manage binge eating and their weight (Reyes-Rodriguez et al., 2014). Fourth, OW/OB Latina women who engage in binge eating or who have binge eating disorder (BED) are less likely to seek and receive healthcare services for disordered eating or problems with binge eating than the total US population (Cachelin, Phinney, Schug, Striegel-Moore, 2006; CDC, 2004; Regan, Cachelin, & Minnick, 2016; Shea et al., 2012). Therefore, OW/OB Latina women with BED or binge eating problems encounter individual and sociocultural challenges that interfere with their

ability to receive adequate and cost-effective care for both their eating problems and high weight status.

1.1 Rationale and Purpose of the Present study

To reduce the prevalence rates of BED and obesity among this high need population, it is imperative that health interventions are informed by and incorporate unique individual and sociocultural determinants that influence Latina women's development of BED and/or their weight status. Consideration of these factors could improve the reach and effectiveness of current available interventions as well as advance cost-effective interventions within this specific population (Barrera, Castro, Strycker, & Toobert, 2013).

According to the American Heart Association (Jensen et al., 2013; Jensen & Ryan, 2014), healthy lifestyle approaches are recommended to reduce high weight status and improve health behaviors (i.e., improvements in dietary intake and physical activity); however, these approaches do not address binge eating and psychopathology that is associated with BED (Tanofsky-Kraff et al., 2013). Thus, interventions for OW/OB Latina women with BED must emphasize both culturally congruent lifestyle changes while considering key cultural factors and experiences that can reduce the risk of binge eating. In addition, consideration of the psychosocial-cultural context of a particular intervention is important, as it will likely affect OW/OB Latina women's initial engagement and overall adherence to an intervention that promotes weight loss and addresses binge eating concerns. The aim and purpose of this project were:

Determine the need for culturally appropriate modifications of the LEARN manual from a qualitative perspective.

The research questions were:

1) What unique beliefs or contextual factors may impede or promote Latinas' ability to engage in healthy behaviors?

2) What cultural components should be considered and included in the culturally adapted LEARN program?

3) How feasible and relevant will it be to culturally adapt the LEARN manual?

CHAPTER 2: LITERATURE REVIEW

2.1 Binge Eating Disorder

BED is characterized by recurrent episodes of overeating in a discrete 2-hour period with a sense of a loss of control (American Psychiatric Association [APA], 2013). BED is associated with features such as marked distress, eating much more rapidly than normal, and feeling disgusted with oneself, depressed, or very guilty (APA, 2013). BED is distinct from other eating disorders like anorexia nervosa (AN) and bulimia nervosa (BN), as it is not associated with extreme restriction or compensatory behaviors (e.g., vomiting, laxatives, or excessive exercise) following a binge eating episode (APA, 2013; Striegel-Moore et al., 2001). Further, BED can occur among normal-weight, overweight, or obese individuals (Cachelin, Gil-Rivas, & Vela, 2014; Striegel-Moore & Franko, 2008; Wifley, Wilson, & Agras, 2003). Compared to participants without any eating disorder, obese participants with a lifetime diagnosis of BED had a higher prevalence of developing morbid obesity (OR 4.9; 95% CI: 2.2-11.0; Hudson, Hiripi, Pope, & Kessler, 2007).

While normal weight and obese individuals with BED demonstrate similar levels of eating pathology, dietary restraint and cognitive dysfunction may be the significant difference between normal-weight and obese individuals with BED (Carrad, Van der Linden, & Golay, 2012). That is, normal weight individuals with BED are more likely to engage in dietary restraint, such as skipping meals, eating less snacks or avoiding certain foods following a binge eating episode (Carrad et al., 2012; Goldschmidt et al., 2011). On the other hand, obese individuals diagnosed with BED have higher self-evaluations of body shape and weight concerns (Field et al., 2012; Wifley et al., 2003) and emotion

dysregulation (Gianini, White, & Masheb, 2013). Obese individuals with BED are also at a higher risk of developing other chronic illnesses (e.g., type 2 diabetes; Tanofsky-Kraff et al., 2013), and report higher rates of psychiatric comorbidity (e.g., depression and anxiety) compared to normal weight individuals with BED (Lin et al., 2013). Considering the increasing prevalence rates of obesity in the US (Ogden et al., 2014), it is not surprising that the prevalence rates of BED are increasing among OW/OB Black or African-American and Latina women (Grilo, Lozano, & Masheb, 2005; Smink, van Hoeken, & Hoek, 2012).

BN and BED among Latina women presents a significant health concern (Alegría et al., 2007; Cachelin et al., 2014). Lifetime prevalence rates of BN, BED, and any binge-eating observed among Latina women range from 2.3% to 7.7%, comparable to White women in the US (Alegría et al., 2007; Marques et al., 2011). In Latin America, the prevalence rate of BN is 1.16% and BED is 3.53% (Kolar, Mejía Rodriguez, Mebarak Chams, & Hoek, 2016), demonstrating that eating disorders among Latinas do not just occur within the US. Furthermore, obese and severely obese Latinas are approximately six times more like to report an eating disorder compared to normal weight Latinas (Alegria et al., 2007). Risk factors for the development of BED among OW/OB Latina women include both individual and sociocultural determinants. They report challenges with body dissatisfaction (Cachelin et al., 2014; Franko et al., 2012a; Thompson-Brenner et al., 2013), as the Latino culture places a significant emphasis on curvy figures, which is incongruent with the American culture's emphasis on thinness (Cachelin, Monreal, & Juarez, 2006; "Christi", 2008; Franko et al., 2012b; Swanson et al., 2012). Further, they often do not seek treatment for eating related problems and if they do, it is often done

privately without their family's involvement for fear of judgment and criticism (Shea et al., 2012).

2.2 Cognitive Behavioral Therapy for BED

The most researched and widely used treatment for BED is cognitive behavioral therapy (CBT; Wilson, Grilo, & Vitousek, 2007). According to CBT principles, psychopathology that is associated with BED is a significant negative concern with body shape and weight that influences maladaptive eating problems. Combined with a significant concern for weight control behaviors, maladaptive eating problems increase the risk of binge eating behaviors (Wilson et al., 2007). Treatment for BED from a CBT perspective focuses on identifying rigid, maladaptive cognitive and behavioral processes that facilitate dysfunctional eating behaviors. Such rigid thoughts and behaviors are changed with more flexible cognitive and behavioral processes that influence eating behaviors while alleviating excessive shape and weight concerns (Wilson et al., 2007).

CBT for BED is typically administered by a well-trained and experienced therapist with an advanced degree (Sysko and Walsh, 2008). However, a significant limitation is that this treatment is time consuming and may not be feasible for high-risk populations with limited resources and time. In response to these limitations, self-help manuals have been developed based on the principles of CBT to provide an alternative, more accessible treatment for obesity and in particular, address binge eating and disordered eating problems (Wilson & Zandberg, 2012). The purpose of self-help manuals is to provide education about the nature of binge eating problems and develop specific skills to overcome these problems (Wilson & Zandberg, 2012). The most widely used manual is *Overcoming Binge Eating* (Fairburn, 1995).

A full review of the effectiveness of the self-help treatment manual for BED is beyond the scope of this study; however, there is robust evidence that this self-help manual is an effective treatment for BED (Grilo, White, Gueorguieva, Barnes, & Masheb, 2013; Sysko & Walsh, 2008; Wilson et al., 2010). A guided self-help (gsh) version of CBT for BED (i.e., CBTgsh) can be an even more effective approach at maintaining motivation during the health behavior change process (Wilson & Zandberg, 2012). The gsh format uses nonspecialists to administer the intervention and provide minimal support to enhance motivation, correct any misinformation, and reinforce the importance of self-monitoring (Wilson & Zandberg, 2012). Furthermore, gsh lends itself to making health interventions accessible to minority populations who may not otherwise seek treatment for disordered eating (Cachelin et al., 2014; Franko et al., 2012a; Shea et al., 2012).

While CBTgsh can reduce binge eating frequency among normal weight or overweight women (Cachelin et al., 2014; Grilo & Masheb, 2005; Grilo, Masheb, Wilson, Gueorguieva, & White, 2011; Sysko & Walsh, 2008; Wilson et al., 2010), CBTgsh for BED does not yield large weight losses, which is a general critique and limitation of this form of treatment for obese women (Sysko & Walsh, 2008). Specifically, clinical trials have demonstrated that CBTgsh leads to reductions in binge eating but have only demonstrated modest reductions in weight loss and modest improvements in physical activity levels (Sysko & Walsh, 2008; Wilson & Zandberg, 2012), suggesting that more research is needed to determine specific treatment components that will promote weight loss and reduce binge eating in an overweight and obese population.

2.3 Healthy Lifestyle Interventions for Obesity

Healthy lifestyle (i.e., behavioral weight loss [BWL]) interventions are considered the gold standard for obesity (Ferster, Nurnberger, & Levitt, 1962; Jensen & Ryan, 2014). Ideally, interventions are approximately 6 months or longer, and include on-site, high intensity treatment in a group or individual format (i.e., greater than 14 sessions in 6 months; Jensen et al., 2013). General components of a comprehensive lifestyle intervention include self-monitoring of weight, dietary intake, and physical activity levels, portion control or reducing energy intake, and increasing physical activity levels (Jensen & Ryan, 2014). More intensive interventions also have incorporated behavioral skills such as stimulus control, stress management, and problem solving with the goal of increasing the individual's self-efficacy for long-term weight management and improvements in overall health (Harvey & Ogden, 2014; Wadden, Webb, Moran, & Bailer, 2012). Two of the most cited intensive lifestyle interventions are The Diabetes Prevention Program (DPP, 2000a; DPP Research Group, 2002b; 2004; Wadden et al., 2012) and the Look AHEAD (Action for Health Diabetes) trial (Look AHEAD Research Group, 2003; 2006).

In both the DPP study and the Look AHEAD trials, important components that led to significant improvements in weight loss and physical activity included realistic goal setting, positive reinforcement, improvements in self-monitoring skills and problem solving skills, and enhancements in self-efficacy that facilitated maintenance of weight loss. Participants in both large-scale trials lost at least 5% of body fat and reduced their risk for type 2 diabetes by 58%. These effects were also maintained at 3- and 8-year follow-up (Look AHEAD research group; 2014; Wadden et al., 2012). Clinical

implications demonstrate that overweight, obese, and severely obese participants can maintain a meaningful weight loss 8 years post treatment, experience a remission of diabetes, and improve their overall health status (Look AHEAD Research Group, 2014).

Translation studies also have been conducted in order to determine the most effective treatment components for short- and long-term weight loss (Appel et al., 2003; Foster-Schubert et al., 2012; Jakicic, Marcus, Lang, and Janney, 2008; Wing et al., 2011). Such studies have addressed sociocultural factors that are likely to affect healthy lifestyle interventions for overweight or obese Latino/as. Fauchner and Mobley (2010) initiated a pilot study to determine if a nutritional intervention aimed at portion control led to significant weight loss in a community of low-income Mexican-American women. Participants (n = 19) were randomized to either the standard care group or the intervention group with a duration of 20 weeks. The intervention group added culturally and economically congruent classes that focused on nutrition for the whole family, and quick, low-cost foods. Participants also learned to create portion-controlled plates, measured and prepared healthy foods, and shared personal challenges to adopting a new lifestyle approach to health. Most importantly, *promotoras de salud* (i.e., lay health advisors) were utilized. *Promotoras* are bilingual/bicultural women from the targeted community, trained to provide health education, basic health assessments, and diagnostic skills. *Promotoras* also understand and identify with community norms that impact health and are reflective of community values and culture, with the ultimate goal of establishing trust and credibility within the community (Barrera et al., 2013). Results revealed that Mexican-American women in the intervention lost more weight (6.57lbs) compared to the Mexican-American women in the standard care group (2.8lbs), albeit a nonsignificant

difference. However, Fauchner and Mobley (2010) highlighted that a culturally adapted lifestyle change intervention can be implemented within the community with the use of *promotoras* to facilitate weight loss.

Ockene and colleagues (2012) utilized a similar treatment format as Fauchner and Mobley (2012) with a less intensive, lower cost Diabetes Prevention Program (DPP) delivered to a community of low-income Latino/as who were at high risk of developing diabetes. Cultural tailoring of the intervention included: dietary advice based on Latino recipes; targeting cultural beliefs and attitudes towards management and prevention of diabetes through *novelas* (i.e., popular Spanish soap operas); and administering the intervention in Spanish by bicultural and bilingual individuals from the community. The intervention also utilized an experiential component by using an easy picture-based food guide, a supermarket tour, simple goal-setting and self-monitoring worksheets, healthy cooking methods, and a demonstration of portion sizes with real foods. Results revealed a modest but significant and clinically meaningful weight loss among the intervention participants (-2.5lbs) compared to the usual care participants (-0.63lbs).

In another cultural translation of the DPP study, Ruggiero, Oros, and Choi (2011) conducted a community-based participatory study in a Latino community by partnering with the community to tailor, implement, and evaluate the lifestyle intervention in 24 sessions, delivered in a group format by *promotoras*. Utilizing community-based participatory research (CBPR), these researchers engaged in regular community advisory board meetings with members from the community as project staff (participants $N = 69$, 92.8% female). They also culturally tailored and enhanced the DPP intervention by providing culturally specific information on diabetes risk, educational materials (e.g.,

recipe book), personalized self-monitoring worksheets, pedometers, and identified safe walking areas in the neighborhood. The intervention resulted in statistically significant improvements in body weight, waist circumference, and body fat, with 29% of the participants achieving a 5% weight loss and 20% of the participants achieving a 7% weight loss at 6 months; weight loss observed at 12 months consisted of 30% of the participants at 5% loss and 16% at 7% weight loss. Their results support the effectiveness of a culturally-translated, community-based lifestyle intervention to reduce the risk of diabetes and prevalence of obesity in this high-risk population (Ruggiero et al., 2011; Ruggiero, Castillo, Quinn, & Hochwert, 2012).

In order to increase the accessibility of the general DPP program, the *LEARN program for weight management* (Brownell, 2004) was developed as a self-help version of a BWL manual and based on cognitive behavioral therapy principles. The LEARN (lifestyle, exercise, attitudes, relationships, and nutrition) manual focuses on making gradual and moderate lifestyle changes to increase physical activity and improve nutritional health with the goal of reducing weight gain. The LEARN manual is comprised of 12 lessons covering various aspects of weight loss. Administered as a self-help, the program schedule is completed in 12 weeks where individuals complete each lesson per week. In addition, the nutritional guidance presented in the appendices of the LEARN manual is consistent with federal guidelines. The manual is structured with a progressive series of steps designed to address overeating, physical activity patterns, and psychosocial barriers that interfere with weight loss efforts in an additive manner while reviewing previous steps to facilitate mastery. At the end of each lesson, individuals are

required to complete a self-monitoring form to record their progress through each lesson and ensure that they have mastered each lesson.

The LEARN manual is frequently used by both patients and professionals; it is considered the manual of choice for a self-help BWL program to address obesity (Womble et al., 2004). Research has consistently demonstrated that the general LEARN manual was effective in reducing high weight status (Annesi, Mareno, & McEwen, 2016; Gardner et al., 2007). Further, dissemination and accessibility of the LEARN manual or a self-help BWL program can be improved by utilizing a guided self-help (gsh) format (Wilson & Zandberg, 2012).

Studies that have utilized the LEARN manual in a gsh format have shown that it can be effective in reducing both weight gain and binge eating among OW/OB individuals with BED. For example, Grilo and his colleagues (Grilo & Masheb, 2005; Grilo et al., 2011) examined the effectiveness of a BWLgsh, utilizing the LEARN manual, to address weight gain and binge eating compared to CBT for BED. In one study (Grilo et al., 2011), results demonstrated that CBT was superior in producing reductions from binge eating and BWL produced significantly greater weight losses during treatment when these interventions were administered in a sequential manner of CBT then BWL for OW/OB for BED. They also found that remission from binge eating was significantly associated with a higher percentage of weight loss, which was maintained at 12-months follow-up. However, in another study (Grilo & Masheb, 2005), CBTgsh produced higher remissions of binge eating compared to BWLgsh and BWL produced significantly higher cognitive restraint in binge eating compared to CBTgsh, although neither intervention led to clinically meaningful weight losses.

Taken together, these results demonstrate that the LEARN manual or another BWL program can be effective for OW/OB individuals with BED. Further, healthy lifestyle interventions need to be enhanced and made more effective by addressing other behavioral and psychological factors that lead to obesity, for example, binge eating, which is a common correlate of obesity (Tanofsky-Kraff et al., 2013). Accordingly, researchers in the eating disorders literature suggest that BED should be addressed prior to or concurrently with a lifestyle intervention for obesity (Cooper & Fairburn, 2001; Tanofsky-Kraff et al., 2013).

In addition, enhancements in health interventions for obesity and BED are especially important for overweight and obese Latina women because current interventions for BED do not adequately address the cultural and systematic barriers that influence the effectiveness of treatments among OW/OB Latina women. For example, Latina women reported that lack of health insurance, lack of bilingual services, and different help seeking patterns were barriers to seeking treatment (Reyes-Rodriguez et al., 2014). When they do seek professional help, they typically turn to their primary care providers who may try to address obesity and the associated complications but fail to recognize and treat any underlying binge eating problems (Cachelin & Striegel-Moore, 2006). Considering that OW/OB Latina women with BED acknowledge greater symptoms of eating pathology and stronger distress about body shape and weight concerns compared to White and African-American counterparts (Franko et al., 2012a), it is imperative for health interventions to be informed by the unique needs of OW/OB Latina women with BED.

In addition, OW/OB Latina women with BED are remain an understudied population within the eating disordered literature (Jennings, Kelly-Weeder, & Wolfe, 2015). To date, only one such study (Mama et al., 2015) found that a culturally adapted healthy lifestyle intervention can be a means to reduce binge eating among OW/OB Latina and African-American women by increasing physical activity levels and improvements in dietary habits. Although weight loss and maintenance were not specific outcomes, their study (Mama et al., 2015) suggests that a culturally adapted healthy lifestyle intervention to address binge eating can be effective in an ethnic minority population. Prior to examining the feasibility and effectiveness of a culturally adapted intervention, researchers often conducted a cultural adaptation phase where the researchers gathered Latino/as' perspectives, experiences, facilitators, and barriers on healthy lifestyle behaviors and unique issues that increase the risk of BED (e.g., Shea et al., 2012). The social and cultural context that influence Latina women's values and beliefs regarding healthy behaviors should be addressed and understood as these factors can influence the overall effectiveness of interventions (Barrera et al., 2013).

2.4 Cultural Adaptations of Interventions

Culture is the "belief systems and value orientations that influence customs, norms, practices … Inherent in this definition is the acknowledgement that all individuals are cultural beings and have a cultural, ethnic, and racial heritage" (APA, 2003, p. 380). Culture describes a way of living that is informed and influenced by the historical, economic, ecological, and political influences of a specific ethnic group (APA, 2003). Hence culture is a dynamic and multidimensional construct that not only includes universal experiences but also specific cultural constructs (APA, 2003). APA

recommends that psychologists use a "cultural lens" as a central focus of professional behavior and practice. In culture-centered practices, psychologists recognize and acknowledge the influence of the environment on the individual's behavioral and psychological development.

Considering that health knowledge and healthy behaviors develop from one's own cultural lens, behavioral health interventions and prevention programs must be congruent and salient with the individual's own cultural background. The intervention's congruence with the target population's cultural background is especially important for those who encounter both personal and systemic barriers that inhibit their ability to improve their health (Resnicow, Baranowski Ahluwalia, & Braithwaite, 1999). To consider and address the influence of one's cultural background on health interventions, a number of approaches can be taken to develop health programs that increase the appeal and acceptance of the intervention to the target population. Cultural adaptation of an evidenced-based intervention is one approach that is often discussed within the literature (Barrera, Castro, & Steiker, 2011; Wilson & Zandberg, 2012).

Cultural adaptations are the "systematic modification of an evidenced-based intervention (EBI) or intervention protocol to consider language, culture, and context that are compatible with the client's cultural patterns, meanings, and values" (Bernal, Jimenez-Chafey, & Domenech, Rodriguez, 2009, p. 362). Cultural adaptations lie between a top-down approach that views an original intervention's content as applicable to all groups and a bottom-up approach that emphasizes the culture-specific content consisting of the group's unique values, beliefs, traditions, and practices (Falicov, 2009).

The model of cultural adaptation integrates both "top-down" and "bottom-up" approaches that occur through a series of adaptation stages (Barrera et al., 2013).

The process of cultural adaptations of EBIs can occur in five stages: 1) information gathering, 2) preliminary adaptation design, 3) preliminary adaptation tests, 4) adaptation refinement, and 5) cultural adaptation trial (see Figure 1; Barrera et al., 2013). The first stage involves information gathering and determining whether an adaptation is necessary and if so, what intervention components should be modified (Barrera et al., 2013). The second stage is the preliminary adaptation design. This involves integrating information from the first stage to inform preliminary modifications of the original intervention. Core components of the intervention are not altered unless there is considerable evidence from stage 1 to suggest alterations. The second stage also involves conducting qualitative research to gather opinions and beliefs from potential participants and community experts on intervention materials and activities. The third stage is the preliminary adaptation testing which involves conducting a pilot study to assess the efficacy of the preliminary version of the adapted EBI. During the intervention process and outcome, participants and intervention staff further refine the preliminary adapted intervention by assessing implementation difficulties, challenges with program content or activities, satisfaction with the intervention elements or components, including cultural features, and overall suggestions for improvements. The fourth stage includes adaptation refinement and using information and feedback from the third stage to further revise the intervention. The fifth stage involves conducting a randomized controlled trial of the revised intervention procedure to determine whether the adaptation had the

predicted outcomes. In-depth interviews of participants and interventionists can also be conducted to inform further modifications (Barrera et al., 2013).

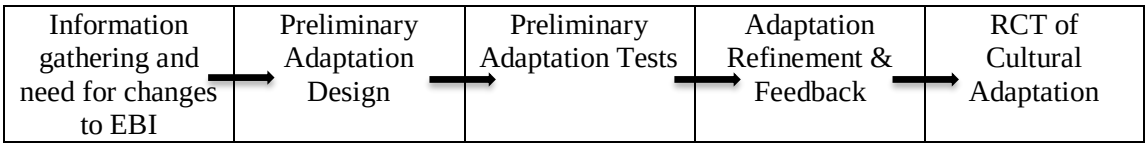

Figure 1: Process of Cultural Adaptations Of Evidence-based Interventions

Cultural adaptations of the components of the EBIs can be organized and understood as "surface level" changes to "deep level" changes (Barrera et al., 2013; Huey, Tilley, Jones, & Smith, 2014; Okamoto, Kulis, Marsiglia, Steiker, & Dustman, 2014). Surface level changes are used to increase the acceptability of the intervention by modifying superficial components to appeal to the group's cultural preferences. This includes translating intervention materials and content to the specific group's native language, the inclusion of cultural-specific foods, or working with culturally congruent staff to deliver the intervention. Deep level changes address cultural values and traditions that influence treatment adherence and outcome or the group's illness perceptions and treatment beliefs. This might involve integrating or acknowledging traditional healing practices, and a consideration of cultural values in the intervention design or implementation (Barrera et al., 2013; Huey et al., 2014; Okamoto et al., 2014).

The inclusion of the specific ethnic group norms, values, and beliefs is an important one to consider as health knowledge developed within one's cultural context will influence adherence, engagement, and overall success of the health intervention. For example, traditional Latino cultural beliefs on gender role identities can impact Latina women's ability to increase health-promoting behaviors (e.g., being physically active,

eating healthy foods; D'Alonzo, 2012; Gil & Vasquez, 1996). These specific beliefs (i.e., *marianismo*) emphasize the prioritization of family responsibilities over self-care and Latina women who strongly identified with *marianismo/marianista* beliefs were more likely to neglect their own needs over their family's needs (D'Alonzo, 2012; D'Alonzo & Sharma, 2010). More importantly, traditional Latino communities do not promote the idea of exercising for the sake of physical activity and improving health (Agne, Daubert, Munoz, Scarinci, & Cherrington, 2012). Latina women who do exercise are viewed as placing their needs over their family's needs and are breaking from tradition (Agne et al., 2012; Phelan, 2012; Shea et al., 2012).

While Latino culture also values women's physical appearances, food carries a significant cultural meaning with many celebrations and activities revolving around food. There is an expectation that everyone consumes large quantities or they risk insulting their family, friends, or the culture itself (Phelan, 2012; Shea et al., 2012). More acculturated Latina women who deny or refuse food from their parents or grandparents may be seen as disrespectful or unappreciative because food is considered sacred and should not be wasted (Phelan; 2012; Shea et al., 2012). The built environment and specific neighborhood factors also can increase the risk of binge eating among overweight and obese Latino/as. For example, 48% OB/OW participants who resided in neighborhoods that had up to 15 fast food restaurants were more likely to be binge eaters (Ledoux, Adamus-Leach, O'Connor, Mama, & Lee, 2015). Such studies illustrate that health knowledge, traditional gender roles, and the cultural significance and environmental accessibility of food are constructed within one's cultural background, which will influence Latina women's ability to engage in healthy behaviors and reduce

binge eating. Moreover, if these culturally specific factors that are known to influence engagement and success in a health intervention are discussed through cultural adaptations, Latina women report feeling eager and motivated to begin such a program (Agne et al., 2012; Shea et al., 2012).

As noted earlier, the social and cultural constructed meanings of health behavior change in Latino culture must be considered and addressed, as this will impact the effectiveness and reach of health interventions specifically for Latina women. Culturally enhanced interventions are associated with more positive intervention outcomes and culturally appropriate health education materials are more effective than general health education materials (Harvey & Ogden, 2014; Hawthorne et al., 2010; Reyes-Rodriguez et al., 2016). The interventions for obesity and BED that have been cited in this review have already undergone a rigorous cultural adaptation process where they gathered Latino/a participants' perspectives, experiences, and barriers to reducing binge eating (i.e., Cachelin et al., 2014; Shea et al., 2012) and adopting a healthy lifestyle intervention (i.e., Ruggiero et al., 2011). *However, more research on cultural adaptations of healthy lifestyle interventions that also address binge eating are needed as this research trails behind literature on culturally adapted psychotherapies for mental health concerns (Barrera et al., 2013). We have yet to develop an effective culturally adapted lifestyle intervention for Latinas with BED that promotes weight loss and maintenance as a research outcome while addressing binge eating as a core component.*

2.5 Summary and Scope of the Present Study

This review highlighted the existing evidence on the effectiveness of healthy lifestyle interventions (i.e., BWL programs) for obesity. The most effective components

are a comprehensive lifestyle approach that focuses on self-monitoring of weight, dietary intake and physical activity levels, and portion control (Jensen & Ryan, 2014). Such programs are intense with a treatment duration of ≥ 6 months or more (Jensen & Ryan, 2014). Culturally adapted versions of these healthy lifestyle interventions include: dietary advice on Latino recipes; targeting cultural beliefs and attitudes on prevention of chronic illness through *novelas*; incorporating *promotoras* to administer the intervention in Spanish by bicultural and bilingual individuals from the community (Fauchner & Mobley, 2012; Ockene et al., 2012). Also, the Latino community was included in a CBPR approach to address sociocultural factors that influence the effectiveness and sustainability of a culturally adapted healthy lifestyle intervention (Ruggiero et al., 2011).

However, general and culturally adapted healthy lifestyle interventions do not address other factors that are related to obesity, for example, binge eating and associated psychopathology (Teixeira et al., 2010). In addition, CBTgsh treatment for BED is effective in reducing binge eating but there is a lack of consistent evidence that demonstrates that this treatment yields clinically significant weight loss (Grilo et al., 2011). Further, there are few studies that have explored the feasibility of a culturally adapted healthy lifestyle intervention that promotes weight loss and addresses binge eating. Only one study to date (Mama et al., 2015) demonstrated that a culturally adapted healthy lifestyle intervention can be effective as a means of reducing BED and subthreshold BED, through improvements in dietary habits and increase in physical activity, among OW/OB Latina and African-American women. Thus, there is still a need to identify specific components of a culturally adapted healthy lifestyle intervention for OW/OB Latina women with BED that promotes weight loss and maintenance while also

targeting binge eating as a core component. This is especially important since Latina women with BED represent an understudied population in the eating disorders literature (Jennings et al., 2015).

Culturally adapted healthy lifestyle interventions should also consider the impact of the broader and contextual environment on the success of an intervention, given that health beliefs and behaviors are constructed within one's cultural and contextual environment (Barrera et al., 2013). Therefore, this study is theoretically informed by the ecological model of health behavior that emphasize the role of the environment and policy on behavior while considering and incorporating social and psychology influences (Sallis, Owen, & Fisher, 2008). Ecological models explicitly discuss the synergistic effect of multiple influences on health behavior change and outcome. For example, intrapersonal (biological, psychological), interpersonal (social, cultural), and organizational, community, physical environment, and policy both directly and indirectly influences one's development of their health or how they conceptualize health behaviors. According to the ecological model, behavior change is maximized when: 1) environment and policies support health promoting choices, 2) there is a strong norm and social support for health promoting factors, and 3) individuals can be mobilized and motivated to make health inducing choices (see Figure 2; Sallis et al., 2008).

Accordingly, the purpose of this study was to determine the need for culturally appropriate modifications of the LEARN manual (Brownell, 2004). As noted previously, the LEARN manual is considered the manual of choice for a self-help BWL program to address obesity (Womble et al., 2004), which is the self-help version of the Diabetes Prevention Program (Wadden et al., 2012). Research consistently has shown that the

general version of the LEARN manual can promote weight loss (Annesi et al., 2016; Forman et al., 2013; Gardner et al., 2007) and the components of the DPP program have shown to be effective in reducing obesity and diabetes when it is culturally adapted for a Latino population (e.g., Ockene et al., 2012). Therefore, the LEARN manual can be a successful healthy lifestyle manual for OW/OB Latinas; however, the original form of this manual may not be sensitive to Latinas' unique sociocultural experiences that increase the risk for obesity and BED. As such, the aim of this study was to qualitatively determine culturally appropriate modifications for the LEARN manual. This project followed the first two stages of the cultural adaptation process: 1) information gathering and 2) preliminary adaptation design (Barrera et al., 2013). The research questions were:

1) What unique beliefs or contextual factors may impede or promote Latinas' ability to engage in healthy behaviors?
2) What cultural components should be considered and included in the culturally adapted LEARN program or similar healthy lifestyle program?
3) How feasible and relevant will it be to culturally adapt the LEARN manual?

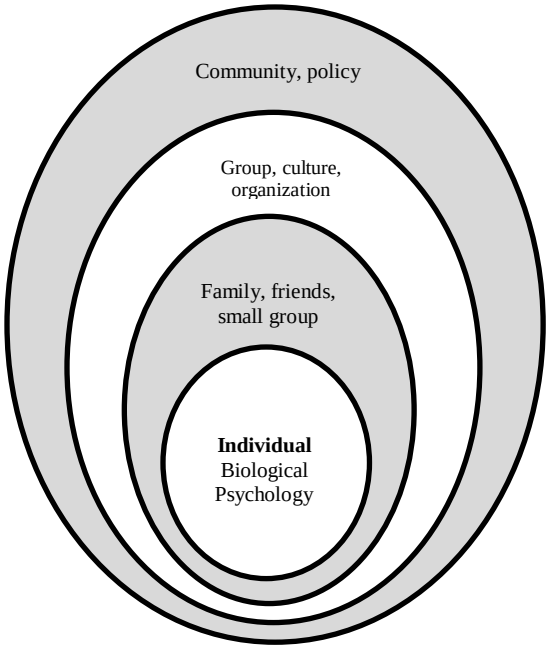

Figure 2: Illustration of Ecological Model of Health Behaviors (Sallis et al., 2008)

CHAPTER 3: METHODS

3.1 Overview of Research Design, Participant Recruitment, and Screening

The purpose of this study was to determine the need for cultural modifications of the LEARN manual. The present study followed previous research design and methodology (Cachelin et al., 2014b; Shea et al., 2012) to identify needed cultural adaptions of the LEARN manual. The Institutional Review Board of UNC Charlotte (UNCC) campus approved this study.

Participants were recruited from the UNCC campus, local communities, and a network of Latina lay health workers (i.e., *promotoras*). Flyers were displayed on campus, community events, and during training meetings for the *promotoras*. In addition, participants who did not meet eligibility criteria but expressed interest in future studies through the Women's Health Project Lab at UNCC were contacted to assess interest and initial eligibility for the present study.

Recruitment materials asked Latinas to volunteer in a study that focused on challenges with overeating and starting exercise. Interested participants called the number provided on the flyer and engaged in a pre-screen phone interview to determine eligibility criteria: self-identified as Latina, female, between the ages of 18-55, Body Mass Index $\geq 26 \leq 40$, English-speaking and/or bilingual. Body Mass Index (BMI) was calculated by participants' self-reported height and weight. Participants who met eligibility criteria were invited to attend a focus group that explored the need for cultural modifications of the LEARN manual. Individual interviews (n = 3) were conducted to serve as final check of the consistency of categories during the data collection and analysis process (described below).

A total of 50 participants were prescreened and eligible for the current study. Of this group of eligible participants, a total of 40 eligible participants were prescreened from the UNCC campus or contacted from a pool of participants interested in ongoing studies through the Women's Health Project Lab at UNCC; a total of 10 participants were recruited from the network of *promotoras*. Of the participants who were eligible and agreed to attend a focus group (n = 31), a final total of 17 (85%) participants attended a focus group and three (15%) completed an individual interview via phone. Attrition in the present study was due to scheduling conflicts, length of the manual, and non-response when attempting to schedule the focus groups.

Participants were between the ages of 19 and 48 (*M*age = 30, *SD* = 9.87) and reported binge eating frequency on average of 4 episodes (*SD* = 4.9) over the past two weeks. Of these episodes, binge eating associated with a sense of loss of control was reported on average approximately 2 episodes (*SD* = 3.1) over the past two weeks. See Table 1 for additional demographic information.

3.2 Research Team

The focus groups were facilitated by a team of multiethnic women. This author (Asian American) was the primary facilitator of the focus groups and interviews. This author also transcribed the individual interviews. Doctoral level students (African American and European American) and undergraduate level research assistants (European American and African American) served as note takers during the focus groups and transcribed the focus groups. The codebook was developed by this author and it was reviewed by two doctoral level students (Mexican-Italian American and European

American). Inter-rater reliability was established by this author and a trained doctoral level student (Mexican-Italian American).

3.3 Procedure

Prior to attending their scheduled focus group or individual interview, participants (n = 20) received a copy of the LEARN manual and a list of questions to consider while reviewing the manual. Participants had 15 days to review the manual. Participants were then invited to attend a 2-hour focus group at the Department of Psychology at UNCC (2 focus groups), or private rooms for public use in community centers (6 focus groups). Individual interviews (n = 3) were conducted via phone, which is an effective alternative method for gathering experiences and insights of the target population (Lindlof & Taylor, 2010; Sturges & Hanrahan, 2004). Participants were compensated $50 in gift cards for reading the manual and attending the focus group. Participants needed to complete both parts in order to receive compensation. They also kept the manual for their own use.

This author, who has extensive experience in facilitating focus groups and was involved in two previous studies reviewed above and with similar methodology (Cachelin et al., 2014b; Shea et al., 2012), facilitated each focus group and interview. Graduate level and undergraduate level research assistants served as note takers to record detailed notes about the content of the discussion and note any remarkable behavioral responses (e.g., crying) that occurred during the focus group. The research staff also provided assistance in gathering informed consents and surveys, and helped monitor compensation for participation. After a brief discussion on the purpose of the study and guidelines of confidentiality, the focus groups and interviews addressed each specific component of the LEARN manual to determine what components required cultural adaptation.

Data collection occurred between March 2013 and April 2016. All focus groups were audio recorded and transcribed by the note taker of the focus group. Each individual interview was audio recorded and transcribed by this author. Participants' statements were minimally edited (i.e., changes in punctuation, removed "umms" and "uhs") for readability purposes. Given the multiethnic research team and the potential for bias throughout data collection, cleaning, and analyzing, procedures for ensuring trustworthiness of the data (i.e., inter-rater reliability and researcher reflexivity described below) were rigorously followed. Following the completion of each transcript, this author reviewed every transcript and compared it to the original audio recording to ensure that the transcript was an accurate representation of each focus group or interview. For Focus Group 1, this author and the note taker of that focus group encountered a technological issue and the audio recording could not be transcribed. Therefore, participants' statements from Focus Group 1 were interpreted through the lens of the note taker (i.e., an African-American doctoral level student) and may not be comparable to the feel and flow of the participants in that focus group. As a result, comments and experiences from Focus Group 1 were compared against each subsequent focus group and interview to ensure that their experiences were consistent and representative with the other participants in this study. As indicated in the results section, their experiences were consistent with other participants in the study and therefore, their responses were included for qualitative data analyses.

3.4 Focus Group and Interview Process

Each focus group and interview was semi-structured to gather participants' experiences with binge eating and weight management. After introductions and

confidentiality were discussed, each focus group and interview began with an ice-breaker ("What has been your health journey or process to becoming healthy?") for participants to share their personal experiences. This allowed for a richer exploration of factors that might affect adherence as well as unique cultural factors that should be considered and incorporated into the LEARN manual. The first hour of the focus group and interview explored participants' experiences with binge eating and weight management, with this author weaving in questions that were on the list provided (see Appendix E), if deemed relevant. The second hour focused specifically on their review of the lessons in the LEARN manual. As previously mentioned, The LEARN manual focuses on making gradual and moderate lifestyle changes with goals of improving high weight status. The LEARN manual includes 12 lessons that cover different aspects of weight loss where individuals complete each lesson per week in a self-help manner. The manual is structured with a series of steps designed to address eating and physical activity patterns in an additive manner while reviewing previous steps to facilitate mastery. Each lesson was briefly reviewed and critiqued to examine relevant content to address binge eating and weight management for the participants. Multiple focus groups of up to 5 participants per focus group was recommended to yield enough diversity throughout the focus groups and to reduce the likelihood that participants would feel uncomfortable sharing if the focus group was too large (Krueger, 1994; Onwuegbuzie et al., 2009). Multiple focus groups and interviews also allowed this author to assess whether data saturation was reached. Saturation refers to information and themes that occur frequently whereby the collection of more data does not provide additional insights or perspectives (Lincoln & Guba, 1985; Krueger, 1994; Onwuegbuzie et al., 2009; Corbin & Strauss, 2007).

3.5 Codebook Development and Ensuring Rigor

To develop the codebook, this author followed the framework identified from previous literature (DeCuir-Gunby et al., 2012; Hruschka et al., 2004; MacQueen et al., 1998; Miles & Huberman, 1984; Warren-Findlow, 2013) and consulted an expert in qualitative methods who recommended the following procedure (Jan Warren-Findlow, PhD, personal communication, June 22, 2015): 1) Focus Group 1 and 2 were analyzed by this author according to constant comparative method (this method is described below; Corbin & Glaser, 2007) to develop an initial codebook, including the code name and label, definition of the code, inclusion criteria, exclusion criteria, and relevant examples (Appendix G); and 2) this author and a second coder (i.e., AV) used the codebook to independently analyze Focus Group 3 for inter-rater reliability (IRR) and refinement of the codebook. IRR refers to the degree that a chunk of meaningful text is rated by multiple coders, with higher IRR indicating that the codebook is reliable for measurement for the content of the texts (Hruschka et al., 2004; MacQueen et al., 1998; Miles & Huberman, 1984). In the present study, IRR was determined at ≥ 0.80 according to standards set by Cicchetti (1994) and Miles and Huberman (1984). Cicchetti proposed the following reliability criteria: 0.75-1.00 = *excellent;* 0.60-0.74 = *good*; 0.40-0.59 = *fair*, and < 0.40 = *poor*. After an initial IRR of 0.37, indicating poor IRR, PPB and AV discussed discrepancies and issues related to the interpretation of the codebook until a consensus was reached. A third independent reviewer (BP) also coded a subsection of Focus Group 3 and provided further critiques and suggestions to refine the codebook.

Through a systematic and iterative process, the codebook was refined by the three independent reviewers until it was considered acceptable and complete (Figure 1). Then

PPB and AV re-coded Focus Group 3 with the refined codebook and achieved a second IRR score of 0.85, indicating excellent IRR.

To determine consistency of the codebook across focus groups and interviews, this author and AV coded 20% of Focus Group 5 and 20% of an individual interview; this IRR coding process commonly occurs within the literature (MacQueen et al., 1998; Lindlof & Taylor, 2002). IRR for Focus Group 5 was calculated at 0.92 and IRR for an individual interview was 0.83, both scores indicating excellent reliability. Subsequently, this author coded the remaining transcripts using the most updated codebook while engaging in minor refinements throughout the process (MacQueen et al., 1998; Warren-Findlow, PhD, personal communication, June 22, 2015).

3.6 Data Analysis

Qualitative data was managed using NVIVO Version 11.1.1 (QSR International, 2015). Data was analyzed using constant comparison method (CCM) to examine participants' experiences and facilitate meaning-making of the data through a systematic analysis. CCM has its roots in Grounded Theory Methodology (Glaser & Strauss, 1967). Utilizing CCM provides a systematic approach for identifying discrete categories that emerge from the data. The essence of CCM is: 1) systematic comparison of each meaningful unit of text assigned to a specific code with texts already assigned to that code to comprehensively understand the theoretical properties of that category; and 2) merge categories and their properties through the development of interpretative memos (Corbin & Glaser, 2007; Fram, 2013; Glaser & Strauss, 1967).

During the data analysis process, which occurred simultaneously with data collection, this author read each transcript from beginning to end to vicariously learn

from the participants' experiences prior to open coding (Corbin & Glaser, 2007). Engaging in this initial process reduces the likelihood of implicit bias by this author during the data analysis process and ensures that categories that are created are true to the data and participants' experiences (Corbin & Glaser, 2007). Through open coding and memo writing, the entire set of data was chunked into smaller meaningful parts. Each meaningful chunk was examined in-depth where a mental dialogue occurred between the data and this author during the development of the initial codebook to draw conclusions, generate new questions, make comparisons, hypotheses, and brain storm (Corbin & Glaser, 2007; Fram, 2013). This process stimulates further inquiry and areas for additional data collection and analysis.

Each meaningful chunk was then labeled with a tentative and descriptive code with each new chunk of data compared to the previous code. Engaging in this constant comparative process determines whether each new meaningful chunk should be labeled with a similar code or if a new code was needed. Once an initial set of discrete codes was developed, this set was compared between transcripts in a continual compare and contrast process, with the goal of identifying preliminary categories (i.e., axial coding). The goal of axial coding is to determine and examine any relationships among the codes, describe and define any patterns, and identify preliminary themes towards theory development.

The preliminary codes are further grouped by similarity and categories become finalized (Corbin & Glaser, 2007; Glaser & Strauss, 1967; Leech & Onwuegbuzie, 2007). These categories determined proposed modifications of the LEARN manual in this study. Categories for proposed modifications were organized into surface level changes, consistent with RQ3 or deep level changes, consistent with RQ1 and RQ2. As noted

earlier, surface level changes refer to components that increase the acceptability of an evidence-based intervention by changing superficial components, such as translation and language, the inclusion of cultural-specific foods, and working with culturally congruent staff to deliver the intervention. Deep level changes address cultural values and traditions that influence treatment adherence and outcome, which includes integrating or acknowledging traditional healing practices, and a consideration of cultural values in the intervention design or implementation (Barrera et al., 2013; Huey et al., 2014; Okamoto et al., 2014).

Table 1: Sample Demographics

	Total Sample (N=20)	Focus Groups Sample (N=17)	Individual Interviews (N=3)
Age*			
Mean	30	31	28
SD	9.87	10.51	6.45
BMI			
Mean	34.40	34.89	31.61
SD	6.64	7.02	3.24
BE episodes			
Mean	4	3.9	5.6
SD	4.9	4.3	2.1
BE w/ LOC			
Mean	1.85	1.6	2.7
SD	3.1	3.71	1.5
Marital Status (%)			
Single or Never Been Married	25%	18	67%
Married or Living as Married	70%	76	33%
Separated or Divorced	5%	6	0%
Children (%)			
No Children	50%	41%	100%
One child	5%	6%	0%
Two children	35%	41%	0%
Three Children	10%	12%	0%
Education			
Some high school	5%	6%	0%
High School Graduate	15%	12%	33%
Some College or 2 year degree	50%	59%	0%
College Graduate	15%	12%	33%
4+years College Degree	15%	12$	33%
Annual Household Income (%)			
Less than $25,000	25%	29%	0%

$25,000-$49,000	40%	35%	67%
$50,000-$99,000	15%	12%	33%
$100,000 or more	20%	29%	0%
Insurance Coverage			
Months Covered: Mean	38.5	34.8	59.3
SD	26.18	26.8	1.15
Generation Status			
First Generation (%)	68%	75%	33%
Second Generation (%)	32%	25%	67%

***Note*: ***One participant did not report age

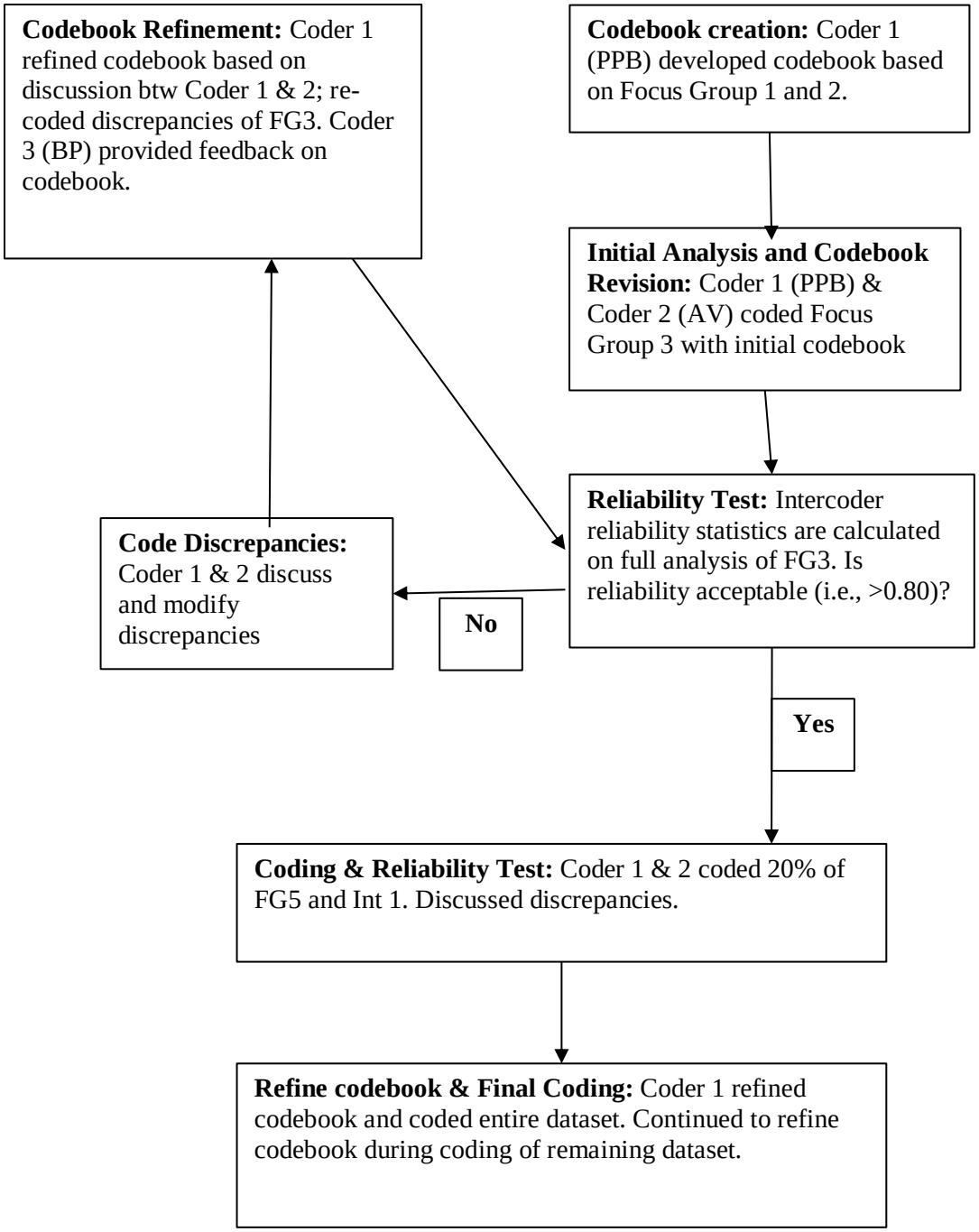

Figure 3: Process for Generating Intercoder Reliability adapted from Hruschka et al., 2004

CHAPTER 4: RESULTS

A total of 14 categories emerged across all three research questions. Each of these categories were reported and confirmed by all 20 participants (Table 2). Additional contextual information from a focus group or interview was added as brackets. Brief demographic information was provided next to each participant's responses to provide a richer context. In each response, participants' names, names of others, institutions, and any other identifiers were changed to ensure confidentiality. Categories that emerged were organized by the questions of interest in this study and surface level to deep level changes.

4.1 Research Question 1: What unique beliefs or contextual factors may impede or promote Latinas' ability to engage in health behaviors?

In following the ecological model of health behaviors, EBIs need to examine unique and relevant individual level factors that will both promote and interfere with Latinas' ability to change problematic health behaviors. That is, the intrapersonal factors (biological, psychological) will affect the success of an EBI as much as the interpersonal factors (community, organization) described above (Sallis et al., 2008). Determining a greater understanding of these unique beliefs or contextual factors among OW/OB Latinas who engage in excessive binge eating or meet criteria for BED is especially important, given the dearth of literature in the area of facilitators to manage their weight and reduce binge eating. Therefore, the categories that emerged are: 1) monitoring her health, 2) family dynamics and support, 3) caregiving role and motherly responsibilities, 4) facilitators to health management, and 5) barriers to health management. These categories ranged from surface level to deep level changes as they refer to the unique

cultural beliefs and values that these participants experienced, likely influencing their initial engagement and retention in an EBI, in this case, the general LEARN manual.

4.1.1 Monitoring of Her Health

Participants described different facets or experiences of how they monitored their eating behaviors and weight management strategies in the past. These different experiences of self-monitoring revealed problematic behaviors, helped them rule out certain diagnoses, or recognized that building in physical activity was more pressing than managing binge eating. Younger participants, in particular, discussed more positive aspects of self-monitoring, especially though the use of technology or appropriate apps.

> I actually love the tracking aspect, but I don't love that it's supposed to be something you should be writing down. Because when you're busy, especially when you're younger, just stopping and saying, "Oh let me take out my pencil."… It's just a little bit harder. But with [MyFitness Pal], I can scan this right now, I don't have to write a single word. (27 year-old from Puerto Rico in Focus Group 2)

> I've done it. I would do it a long time ago even before I had kids. Just because you know, I'd always read about keeping track of your calories and … so I would keep notebooks. I mean it was literally notebooks. And then I was so grateful when somebody told me myfitnesspal.com and that … changed the complete panorama for me. … Because that's the only place where I have found that there's so many foods that are logged in. So many products. I mean, even *arepas* which are typical for Venezuelans are in there. And so, you don't even have to do… I mean there were a few things that I did have to enter manually and then it's all already there… (47 year-old from Venezuela in Focus Group 6)

In particular, self-monitoring past health behaviors served as a means for them to rule out certain food allergies or diagnoses, rather than ignoring or denying that a problem exists, which often occurs in the Latino community (Reyes-Rodriguez et al., 2014).

> Every day cause I'm trying to figure out what was going on with me before. Like the rash and things cause I was eating food and all of a sudden, I was having these little red spots on my skin, even though I went to the dr. They didn't know what

> was going on. So I said, "Ok, they [the doctors] don't know…" So I just started logging what I was eating and all of that and I found out it was pork. I was eating a lot of pork that would cause me some type of rash. And the rashes have gone so it's fine so now it's another thing. Yeah… yeah. (45 year-old from Peru in Focus Group 6)

Among participants who endorsed a history of binge eating or who had previously formally been diagnosed with BED, self-monitoring was viewed as a new concept for them. Once they began the self-monitoring process, after seeking treatment for weight and eating concerns, they described feeling distressed by their problematic eating behaviors. In addition, they noticed that they tended to engage in restrictive forms of dieting and recognized their weakness for certain trigger foods.

> Most Latinas weren't brought up with people recording their diet. Caucasian people are more strict about their diets. (20 year-old from Mexico in Focus Group 1)

> I used it for about a week, then I was like this is stressful. I hate looking back over what I ate, like whatever, you just have those days when you can't contain yourself on that muffin. She's right, you really do start saying, "Oh should I eat this?" You don't want to deprive yourself, because everything's like, you know, keep portions. You don't want to say no completely. Cause then you're going to binge eat. (20 year-old from Peru in Focus Group 2)

> I stopped counting calories. I stopped exercising all together because my therapist wanted me to exercise for enjoyment. My therapist wanted me to eat for nurturing. I kind of have to like stop everything and start very slowly doing things. But yes, I started doing the same. I started reading a lot. But like I said, I started taking a totally different point of view, more like in the sense of -- more like in a mind-set then doing things. I started learning how to eat mindfully. And not really care about calories. And just really listen to your body and really think am I full or am I still hungry or should I eat now? Can I wait a little while longer? Things like that because I realized that I was totally disconnected with my hunger and fullness cues and no matter if I would count calories and kill myself at the gym, I would still end up binging and not controlling myself. (29 year-old from Paraguay in Focus Group 5)

Despite how tedious or detailed the process may be, participants believed that simple self-monitoring with clear and explicit instructions can be an effective and helpful method to monitor and promote their health.

> There's a woman that's doing that. It's calls the 21 day challenge. She gives you … how much you can eat whatever vegetable fruit desert whatever as long as it fits in the container, you can eat it. But she tells you what kind of food to eat. So that's like a weight loss system. It's easy -- that's easier than counting grams or points or [calories]. (29 year old from Ecuador in Focus Group 3)

> I know they say after a certain amount of time, you create a habit. And I've gone through that. And habits are hard to break. The bad ones so it's a little bit frustrating cause there have been times I've been very good, very diligent, very intentional… really making it work. But then I just fall off that horse and back to the bad habits or the not exercise or paying so much attention to what I eat. (47 year-old from Venezuela in Focus Group 6)

> Right and also maybe asking people to keep a food log. I hate food logs but I have done one before. When I did a boot camp a long time ago, I had to do one and I think they can be very eye opening if people are honest about it. Like hey, do a food log for three days, write down everything you eat and the approximate size and then review it or maybe even have people write down what they think they eat over the course of a day - few days. After that, keep a log and compare like, wow, I thought I was only eating a handful of chips but I'm eating a whole bag, oh wow, maybe something like that. (33 year-old from Mexico in Interview 1)

In sum, participants described various successes and challenges with self-monitoring their problematic eating behaviors. This self-awareness is particularly important for women with a history of BED, as they often engage in dietary restraint or compensatory behaviors as means of changing their shape and weight following a binge eating episode. For some participants, especially among those with a reported history of BED, self-monitoring became an obsessive and compulsive process. They did express that self-monitoring was an effective form of addressing problematic behaviors and they preferred a much more simplified and concrete approach with the inclusion of technology to easily facilitate this self-monitoring process. Self-monitoring from a simple, clear, and

explicit manner might also reduce the likelihood that self-monitoring will become an obsessive and compulsive process among participants who have a reported history of BED or participants who may not be formally diagnosed with BED.

4.1.2 Family Dynamics and Support

Given that Latino/as adhere to *familismo*, a cultural value that emphasizes obligation and connectedness to one's family members (Cueller, Arnold, & González, 2005), it is not surprising that the role of family dynamics and support were frequently discussed in this study. Since the LEARN manual only briefly discusses the influence of one's family on development of healthy lifestyle behaviors, it is especially important for a culturally adapted version of a healthy lifestyle manual to further expand on and acknowledge the potential impact of one's family members. Participants in this study specifically described certain family rituals and different family approaches in addressing problematic eating behaviors that could influence their engagement in an intervention that promotes weight loss and addresses binge eating. In relation to their family dynamics, participants described the different ways in which their family members became very involved in the process of managing their weight and eating behaviors.

> I just feel like they think that I can lose it really easily, but they're like – or they want me to take completely like change my eating habits. Like one day go from eating all green vegetables and water and then it's not like that fast it happens, that you can change that fast, so it's like day by day. So it's like that's what I mean like critical and they do it with the best intentions but sometimes it's just hard cause like they're good and supportive. And like my mom will go to the gym with me, she'll take – she'll let me use the car when I want to go to the gym, they'll take me over to the park and stuff like that, like activities. Like more about eating, like I don't think they really understand how hard it is to lose weight; so that's what I mean by critical. (21 year-old from Colombia in Interview 2)

> Well it's like I've always eaten this way. This is the way my mom cooked. This is the way my abuela cooked kind of like now you're a Miss Americanized know-it-all and you're a college graduate big know-it-all. It's kind of like eye roll. So I

> have definitely experienced that so I try not to shove it down people's throats so to speak, especially not my family, but I do care. I want them to be healthy. I want them to adopt some changes. Not that they eat a horrible diet. (33 year-old from Mexico in Interview 1)

> Because I realize -- I don't know what it is about grandmas, they want to serve you like a buffet. I don't know what it is. And I would tell her or whoever's house I'd be at, okay just very little and they're like why, and I'm like because I'm trying to watch my weight. I need to lose weight. I'm trying to get better. Sometimes they would be upset. (24 year-old from Honduras in Focus Group 5)

When family members were critical or made negative comments about their weight or binge eating behaviors, some participants, primarily older participants were less likely to internalize these comments and preferred to negotiate with their family members on strategies to improve their health behaviors as a family unit.

> My husband tells me I'm over weight and my doctor says that's not how you -- he says it's not about your weight it's not about that for him. She said she had a boyfriend that made her feel bad about herself, you know, how some people really -- they don't have self-confidence because they're over weight, but I don't have that problem. I don't care that he says that. (Age not reported from Mexico in Focus Group 4)

> My mom cooks a lot more vegetables. She cuts out – she cuts down on the rice and potatoes. She'll offer but at least now we can say, "No, thank you." Whereas before, you just – you're handed a plate with a mountain of food on it. Where now, she'll ask us to like serve ourselves and my father especially has become very pushy about eating healthier and, you know, less fat and getting leaner meats. And sometimes my mom will try to sneak in like sugar substitutes when she makes him tea or lemonade just to kind of try and help, little things here and there. And we also have animals now so we're more active and we walk a bit more. (31 year-old from Peru in Interview 3)

Further, engaging in a frank discussion with their family members seemed to be the most effective and important way to address negative critiques, with the goal of framing this negotiation process as a family endeavor to improve their overall health.

> Yeah…yeah…I mean it's hard, it is yeah, it is hard because it happens like weekly and ya know, and many days a week that I have to make decisions. Like for instance I told my husband if we really want to succeed, and I say we because it's not just me that's why I don't, I don't think it's uhh being selfish and I say we

> and he totally got it, like, "I got it." It's like if we want to be healthier ya know I have to make time for this and that. And falling can be related, it how do you say gravitating is the word, ya know we used to go out, we used to go out a lot, I'm not gonna lie about it. We used to, but we have to find places that are friendly for me and what I call friendly I have to have salad everywhere I go. (44 year-old from Venezuela in Focus Group 3)

> But for the most part, he's very supportive. He's kind of gotten to where he might—if I say I'm not supposed to have this and he sees me with it, he might say something but he might leave it at that because he kind of can't win with that because sometimes I really want him to be stern with it and sometimes I have already made up my mind that I'm going to eat it regardless. So um, but he's not a big sweets guy which is good. He's not into sugar at all really so that part's been okay, but then he will just come home with stuff from work sometimes or like come home with Bojangles' or something like that that I really like but I mean, he has to live his life, too. He's not—I wish he would do it with me but I know he won't. (33 year-old from Mexico in Interview 1)

In sum, participants expressed that they had been negatively affected by their family's involvement in their weight and managing their eating behaviors. Oftentimes, when family members critiqued their efforts, they tried not to internalize family's comments or reframed the message as a shared family responsibility, opening the conversation for their family to discuss the overall importance of managing their weight and binge eating behaviors together. Given the importance of family values and connectedness, participants believed that incorporating their family members into the process of addressing their weight and eating concerns was critical to their success. Therefore, a culturally adapted version of a healthy lifestyle manual must include an expanded section that specifically discusses the role of the family and how they might navigate negative critiques as well as how to involve the family in the process of managing their weight and binge eating behaviors.

4.1.3 Caregiving Role and Motherly Responsibilities

Similar to family dynamics and support, participants discussed the extent to which their role as a caregiver or a mother influenced their ability to manage their own health. While this is a traditional role and value among Latinos (*marianista)*, participants specifically discussed the stress and pressure they experienced from placing their family needs over their own. Further, when they made attempts to address their own problematic eating behaviors, they often felt guilty and struggled with balancing their needs and family's needs.

> And umm, it's being a new mom it was just I had a lot of activities going on before being a mom, and then adding being a mom was just stressful and tiring and the way that I kinda controlled my stress was with eating. (24 year-old from Mexico in Focus Group 2)

> I was going to say something that -- because in like in relationship, where the whole family is Latino, I think there's a lot of pressure with the women. Like they -- I very rarely see in a Latino family happening where the mom only cooks for herself. I think that would be super hard, like she has to cook one meal and everybody is going to eat that. Especially if they have kids, a lot of pressure falls into the woman because they have to take care of them. And actually, yes, I struggled a lot of with that because I babysit and that is the hardest thing when you're feeding the kids. You always want to reach or cut the peanut butter and jelly and eat the corners and -- just maybe channeling how to deal with those things. (29 year-old from Paraguay in Focus Group 5)

> But now, like me, family comes first. And I know that's a big mistake that we all fall into because I know I've heard it again, you have to make time for yourself. But unfortunately, your duties call, you know, your family's… so even though you try to schedule it, if something changes, like you said, last minute, well guess what, they come first. And then yes, you try to introduce new foods but if they don't like it, it's like ok, let me back off. I also understand, ya know, they're kids - I'm at a certain age… and I know you have to teach them since they're young on how to eat healthy and at the same time, you're just a kid once. Ya know, I can't be, "Oh no you guys you're gonna eat muesli and ya know, granola." So when it was just me, I would… I was better at it… (47 year-old from Venezuela in Focus Group 6)

Other participants believed that their role as the mother or "matriarch" of the family placed them in an especially unique position to not only manage their own health but also serve as the one who will establish health-promoting norms and behaviors within their family.

> So in my house it's different, they eat whatever I put on the table, so… You eat it because I'm like that so I wouldn't want to cook anything else. So they eat it. They eat very well. … Pretty much anything I put on the table. They don't eat a lot of canned or frozen foods. Everything has to be vegetables or meat that we have to prepare. Stuff like that. That's why I say we have to cook everything. (45 year-old from Peru in Focus Group 6)

> I'm the one doing it. I don't need to be told how to handle the family and those situations because I make simple swap outs, and as long as you know how to cook, they don't realize. They don't know it doesn't have less oil or that it's baked and not fried. It doesn't matter to them as much and I'm not worried that I'm hurting someone's feelings by declining because I'm the one cooking. I get their aspect and where they're coming from with their thing. I guess it just really, I could see why especially if they geared this towards older people, why would it really include that family aspect because especially if you're older, you're doing it. (27 year-old from Mexico in Focus Group 2)

> And at home, I would just buy my own stuff and cook for myself, and if my husband wanted to, I would cook for the both of us. That's what I would do. At first they didn't like it but then -- I mean -- they didn't have a choice but to get used to it. (24 year-old from Honduras in Focus Group 5)

In sum, participants described that their role as a caregiver or mother served as both a barrier and a facilitator to managing their weight and binge eating. That is, some participants expressed challenges as a mother that interfered with their own health, even when attempts were made to incorporate their family within the process. In contrast, other participants recognized their unique role as a mother to facilitate health behavior change for their entire family, thus reducing any guilt associated with changing their own health. Therefore, a culturally adapted healthy lifestyle intervention might begin with addressing problematic behaviors and associated guilt or distress that might arise in

response to placing their needs over their family's needs. In turn, the intervention could discuss strategies that could include the entire family and provide examples of how Latinas might community with their family on the importance of manage their weight and binge eating behaviors.

4.1.4 Facilitators to Health Management

In order to illustrate a greater understanding and experiences of health promoting factors among OW/OB Latina women who binge eat, this category was developed as a broad level category to comprehensively gather unique health-promoting factors. In other words, participants discussed several factors that were effective for them when they made attempts to manage their weight and binge eating concerns. Therefore, salient themes and subcategories that emerged were: 1) goal setting and planning, 2) creative strategies and activities, 3) family history of medical diagnoses or own medical diagnoses, and 4) supportive network or consistent support person. Each of these subcategories can be organized as surface level components that should be discussed in a culturally adapted healthy lifestyle manual to enhance Latinas' motivation to manage their weight and binge eating behaviors.

Goal setting and planning

Goal setting and planning was often discussed among the participants as behaviors or experiences that they deemed to be most helpful for them in targeting their weight and binge eating problems. Through their successful past experiences, they have learned that planning their behaviors improved their intrinsic motivation to engage in exercise and manage their eating, which is an area that could be emphasized for other Latinas in a culturally adapted healthy lifestyle manual. In particular, the culturally

adapted version of the LEARN manual might include examples and strategies discussed by participants in this study.

> I think if that will require a little bit of planning for my part. Of course, you know, if I eat a snack, you know, all of us have snack at home so I may take something to work. Usually it's a healthier alternative or a fruit or something like that. But I think it would be more planning, because really if I -- you know, during the weekend, I can probably cook, you know, for three days and have it in my fridge and storage containers and take it for lunch or dinner at work. I think it would be a little bit more like planning tips on how to do it, maybe have some recipes. Maybe Monday Tuesday Wednesday. Monday I'm going to make this, Tuesday I'm going to make this. (27 year-old from Puerto Rico in Focus Group 3)

> Something I did when I was starting, someone had told me that I should kind of like -- like I don't know piece of paper, a poster. And either write down or I could cut out pictures of what I want to do, what were my goals as far as losing weight or being physically active or things like that. So and I still have the poster. It's in my room. Basically I would cut out things like someone running. I want to -- well I want to try to incorporate running someday. I wanted, you know, weights or someone who looked like a personal trainer, fit, or how I wanted to look, basically or some type of healthy food as a reminder I should be eating healthy. That's what I did and I made sure I put it somewhere where I would see it every day. And that's -- so even though family would say whatever, that would be something that I would still look at every single day as reminder, these are your goals. Remember that. That's one of the things I did. (24 year-old from Honduras in Focus Group 5)

> Yeah. I pretty much plan my workouts Sunday. I already know what I'm doing for the week now and I'll talk to my friends, are you going to this, are you going to that? I'll think about my schedule, my work schedule and yeah, pretty much. (33 year-old from Mexico in Interview 1)

> I enjoy exercising, I make it a priority so I try to get at least those two or three hours. (Participant age not reported from Mexico in Focus Group 4)

Creative strategies and activities

In addition to pre-planning or goal setting, finding previous activities that they enjoyed was especially effective. They expressed that finding creative strategies or group-based exercise classes kept them motivated and engaged in managing their weight.

> Because Zumba, I like Zumba because it's a lot of dancing and I like dancing and that's why most people try to get hooked because it's fun. You don't feel like you're exercising so you stick with it and it works. I mean, I done everything.

> Most of my life I will start doing exercising and it will get boring after a while and stop, but Zumba, I've been able to stay with it because it fun. You don't feel like you're exercising. You don't feel like this is like a (inaudible). I don't have to do push ups. I can't do push ups or sit ups or anything. With this it's dancing with music and it's fun. They make it fun so usually stick up with it. (Age not reported from Mexico in Focus Group 4)

> Or if you're out walking, you can bring music with you or something that will just keep you going. Like ok…that's when I was younger. Of course I had my Walkman and I had to be creative of how I put it around my waist. Back then, there was nothing that was portable and I didn't have a watch and I had a tape in the Walkman. Well I knew I had walked an hour cause the tape had 30 minutes on one side and had 30 minutes on the other. So for 30 minutes… when I had the flip it over, ok I need to come back. So I would always take different routes but that's what kept me… so if somebody also takes music, like ok I don't know how… well time yourself. Once you get to this song, it's time to come back. Know that next time, you'll have to try to get to the other song and complete it before you come back. You know, something like that… (47 year-old from Venezuela in Focus Group 6)

Other strategies that helped Latinas stay motivated to engage in exercise or manage their binge eating behaviors were reminding themselves of the physiological and emotional benefits that they experience after engaging in physical activity. More importantly, engaging in positive self-talk or reminding themselves that their high weight status did not occur overnight were effective methods in enhancing their motivation.

> But I still have to do it for myself. I exercise twice a week, sometimes three times. I enjoy exercising, I make it a priority so I try to get at least those two or three hours. So those are my challenges. But exercising is not a problem. I make it a priority, and I enjoy doing it. It's a stress reliever also, because I have a lot of stress. Yeah, especially with taking care of a parent with Alzheimer's. (Age not reported from Mexico in Focus Group 4)

> And I'm still in that process. I'm still in the process of exercising and every time I start exercising and a start feeling like, "Oh I'm obsessing [about her weight] again." I need to like slow down and like go back to really check myself and why am I exercising, why am I eating, am I really obsessing? (29 year-old from Paraguay in Focus Group 5)

> I literally had to talk to myself. Either it was out loud or in my head saying… you didn't gain this weight overnight. You're definitely not gonna lose it overnight. So that obsession of me weighing myself every day, I was just hurting myself. I have

> to give it time. Maybe once a week, maybe every three days to see if I'm seeing any changes. And that's what I would do. And I left it on the floor in the bathroom, but I would just tell myself that I'm -- you just have to wait. Be patient. Because it's not realistic to think you're going to lose all that weight in a short amount of time. And since I would say that every day, it just became habit and then I just stopped. (24 year-old from Honduras in Focus Group 5)

Family history of medical diagnoses or their own physical health problems

Participants described that being aware of their family's medical history enhanced their motivation to manage their own health. Specifically, being involved in or witnessing their family members manage specific chronic diseases prompted them to engage in preventative efforts to manage their own health. In addition, participants described that seeing their weight at regular doctor's visits, albeit uncomfortable, or learning of their own pre-diabetic or diabetic status encouraged them to engage in weight management strategies.

> Because in my family there's diabetes. My mother, she had colon/rectal cancer. So that means, I have to take care of myself more since I am for one, female and I'm the oldest. So the doctors told me I really need to take care of myself because if anything, I'd be the one who would be able to get it. So that's when I realized okay I need to do something about it. (24 year-old from Honduras in Focus Group 5)

> I end up going to doctor because I had to go do a pap and they weigh you and I wasn't the type of person -- for one, I don't like going to doctors. Definitely hate going to do a pap, and I didn't like weighing myself. So I would try to avoid all of that. So first they weigh you and that was like a smack in the face. I think it's when you hit the wall and you have like a real eye opener that, that's when you realize you have to do something and change. What keeps me motivated right now is the fact that I have lost whatever certain amount of weight and that people around me are like, "Oh wow, you've done that, it is possible." Like yeah, it is possible. Stuff like that helps motivate me. (29 year-old from Paraguay in Focus Group 5)

> We have to have a diagnosis for you to do something about it, and it's typically until ya know you have diabetes that you, that you start doing what you were supposed to be doing. Knowing that your family suffers from that it, it's not enough to ya know take care of yourself until you're in that position. (39 year-old from Mexico in Focus Group 3)

> But I think once my dad kind of started going there more and then the doctors are telling him more, you know, starting out more like pre-diabetic and you need to lose weight, that's when he kind of took it a lot more seriously. And I was probably – I think I was in college so probably like the last ten, like maybe eight years or so. (33 year-old from Peru in Interview 3)

Supportive network or consistent support person

In addition to facilitators discussed this far, participants overwhelming responded that connecting to a consistent accountability person or engaging in a supportive network was imperative in reducing binge eating and managing their weight. In fact, this might be the primary facilitator for OW/OB Latina women to manage their weight and reduce excessive binge eating behaviors. Specifically, they expressed that engaging in a group-based or community-based intervention, whether that included their family or a group outside of their family, was more motivating and effective than participating in interventions alone.

> I think it'd be good. I think it would help keep you accountable. Like going to the gym, if I go to work on the machines, I'm going to go today, probably won't go tomorrow. But when I go to classes and people ask where I was if I don't go, it holds me accountable. They're going to ask me where I was and I don't want to lie or say I was too tired. So having someone helps hold you accountable. If it was in a group setting and you had someone else to rely on, even if it's just that you don't want to be embarrassed, or the one that's slacking, it helps you and it helps to motivate. (27 year-old from Puerto Rico in Focus Group 2)

> Previously I did study from here where they give you a book and you have a person that would -- we would talk like once a week and then she would kind of tell me -- kind of like you talked about I think you're ready for the next step, even if I wouldn't feel ready. She would be like, "I think you're ready for the next step. Let's try it for this next week and if you still don't feel ready, we can go back to the step before." And it worked really well. At least for me it worked really well. … Having somebody -- having one person I like. I don't know if I'm more of a sharing with everybody. I'm a very private person and I tend to -- I get embarrassed. I push myself a lot and I get embarrassed of sharing my failures. So that would be the hard part. I don't know if that would really motivate me to have a group. (29 year-old from Paraguay in Focus Group 5)

For a very short period of time and actually [another participant in the focus group] was apart of it. You can also have friends. So like your friends can and you're able to sync. Cause we had a fitbit and you were able to sync your fitbit… (47 year-old from Venezuela in Focus Group 6)

My daughter is my motivation because she just started doing certain types of exercises and she was having it on the schedule at home. She was saying, "Mom, my team, they each wanted to do this way of try this or try that or we're going to the gym together." And then the little one see us doing that, he said, "I wanna go too!" So I think it was just we motivate each other, somehow. (45 year-old from Peru in Focus Group 6)

I think that one of those things that are key is groups. I mean, like we were saying before. I mean having either a good friend, a neighbor, or just somebody that will motivate you. I remember there was a time when I was walking and it's like that I walked the most cause I had a very good friend. I mean we were very good about it. Like ya know, six in the morning. Either I was ringing her doorbell or she was ringing mine. I mean, we were holding ourselves accountable. (47 year-old from Venezuela in Focus Group 6)

Right, I would agree with that and I would also—it was really championing, having, doing it as a family or doing it with a group of ladies, do it together with someone else, with your friends, not necessarily saying that you have to try to go out and do on your own and really support each other in that way … Or bringing the whole thing home to your family and you all—everyone looking at it and doing it and getting on board with it in some way. (33 year-old from Mexico in Interview 1)

I can get in a community right now. People my age, ya know, people my profile … that wants to lose weight with me. And that encouraged me, it's like…if we can take that to ya know building more groups. Also like a church having five people [in a group treatment]…uh huh. (44 year-old from Venezuela from Focus Group 3)

I would tell them to be strong and look for support systems that could help them, maybe not in your family cause sometimes family can be a lot. Maybe like friends or someone to be friends that can help you. I guess like – cause trainers are expensive, but finding someone that could maybe like pay less money for that could help you like work out with your healthy eating and your exercise, what exactly to do with exercising. (21 year-old from Colombia in Interview 2)

I think I did Weight Watchers I did it with my sister and it was kind of easier to do it with if you have someone you can trust or doing things like that with. Again, she's not in the healthiest of states and it'll help me. Sometimes it's not even for me, it's just I'm trying to be that partner for her. (31 year-old from Peru in Interview 3)

In sum, participants described a number of health-promoting factors that ranged from individual level factors (i.e., goal setting and planning, helpful strategies and experiences) to community or group level factors (i.e., family health history, community support or group based activities) that were effective for OW/OB Latinas to reduce binge eating and weight. In particular, participants overwhelming responded that having a support or an accountability person during this process was the most effective for them. This suggests that a healthy lifestyle intervention that addresses binge eating might be more effective as a gsh format with a supporter or administered within the community with *promotoras*, as opposed to initiating change from pure self-help perspective.

4.1.5 Barriers to Health Management

Similar to the previous category, facilitators to health management, this category was developed as a broad level category to comprehensively understand unique factors that interfere with participants' success in weight management and reductions in binge eating. While participants were more likely to describe barriers than promoting factors, the most salient and unique factors that emerged fell into these deep level subcategories: 1) using food as a coping strategy, 2) life transitions that interfered with efforts, 3) perceived judgment from others, and 4) learning of current weight or health problems at doctor visits. Each of these subcategories represents an important component to include in the development of a healthy lifestyle manual for OW/OB Latinas with BED.

Using food as a coping strategy

Most of the participants expressed that at some point, they realized that they used food as a coping strategy to manage their emotions or stressful situations, which is a common experience among individuals with BED (APA, 2013). They also recognized

their weaknesses for particular foods, increasing their likelihood to engage in binge eating. In other interventions for BED (e.g., CBT), the role of food as an emotional coping strategy is often discussed and participants believed that discussing this unhelpful strategy and normalizing this process may be important to consider and include.

> Umm, I realized that that's like the emotional connection that with food when I'm stressed I eat and then I feel better. And it also helps me uhh keep going, cause like I don't get a lot of sleep so to compensate for not umm not sleeping I also eat more to kind of feel a little bit more energized. (24 year-old from Mexico Focus group 3)

> And stress, because stress -- too much stress and stress -- so it makes you fat because you circulate the hormone, cortisol when you are stressed and everybody has a lot of stress, so... A lot of people eat when they're stressed. Because like the stress I have with my mother [who is diagnosed with Alzheimer's disease], I've become an emotional eater sometimes and I never did that before, but it's the stress. (Age not reported from Mexico in Focus Group 3)

> Umm well…my problem uhh I think it's not over-eating, it's not eating enough. I've had that problem for a while now but umm, like looking back since we started reading this I tried to analyze how I've been eating throughout my entire life umm, and there were like a few years that I did go through like depression, so there was that emotional eating for that period of time. (20 year-old from Mexico Focus Group 3)

Life transitions that interfered with their efforts

Participants also discussed different transitions throughout their lives that interfered with their ability to manage their weight or reduce binge eating. Such transitions, often associated with increased distress, made it difficult to establish health-promoting routines, as it was not a primary concern for them until their eating behaviors became problematic or their weight was a significant concern for them. Transitions that were discussed included marriage, pregnancy, attending college, and moving within the US or to the US from another country, requiring most participants to establish new support systems.

> I'm from Cuba and a junior at UNCC. Was using weight watchers in FL but moved to NC and gained weight. Eventually lost the weight again, but has gained it back slowly over the past couple years. (31year-old from Cuba in Focus Group 1)

> I also noted that in here they talked a lot about having a buddy and how it's successful to have someone with you and working out with you. I thought it was good but I've been in Charlotte in a while and I have two friends in Charlotte. They're stick thin, they're not going to do this. They don't need to do this. But a way to actually help…maybe an online network. Somewhere where you could find buddies or people to help you with it. People with similar goals or aspirations, that would be more beneficial because it's referenced throughout here so much and I know it would be great to do these things with someone but I don't. So I already feel like I'm at a disadvantage because I don't have that extra support. (27 year-old from Puerto Rico in Focus Group 2)

> My problem I think had started once I had was on my first pregnancy, I took the you can't eat for two very seriously, and umm I didn't really think afterwards like you know you're not that bad. First of all, I didn't really pay attention to the weight gain that I got. In my first pregnancy, I gained eighty pounds and umm, and then after so it's like the reality was like, the baby came out but the eighty pounds kept it - stayed there. And that was like my over-eating, and just kinda been my pattern and I know it's bad and I try to break it but then it's like, "Oh you I got all these things going on." I'm like okay I'll just eat later. And then when I have time to eat I make up for the whole day that I didn't get to. (24 year-old from Mexico in Focus Group 3)

> But then I think it kind of later transitions more to binge eating disorder. And I start -- I got married and I started gaining a lot of weight and this is the heaviest I've been. (29 year-old from Paraguay in Focus Group 5)

> Like my problem is overeating like when I'm not at home because like I grew up like eating really healthy at home, so when I got to college I'm like all this food is there. I started eating it and indulging in it and that's when I gained weight. (21 year-old from Colombia in Interview 2)

Interestingly, this participant who had a self-reported history of BED discussed how the transition from being overweight to a socially preferred body type and size produced unintentional consequences that could lead a Latina to return to binge eating.

> Well, if you drop 100 pounds, you look like a different person. You're going to get different attention and sometimes, it can be negative, or make you feel bad, or you kind of have to get used to getting looked at more, or kind of have people ogling you, which can be uncomfortable. And get used to, if you're proud of your

> body -- as you should be, and you want to wear some stuff you couldn't wear before, but it draws other attention, or negative attention, or people think you're a certain way because you're wearing a shorter skirt than normal, but just because you're proud of your body. They don't really focus on things like that or how to deal with, your body does go through changes and your appearance goes through changes and unfortunately, people react and treat you differently. (31 year-old from Peru in Interview 3)

Perceived judgment from others

Perceived judgments from others outside of their family were noted to be significant barriers to managing their weight and binge eating. Among participants with a self-reported history of BED, they preferred not to share their treatment efforts for fear of being judged by others and cautioned other participants to include only individuals who would be supportive as they attempted to make changes in managing excessive binge eating or weight.

> So I don't know if you can address that in a book but don't be over -- don't be over sharing. Don't be like, "I lost 20 pounds so far!" because you're probably not going get the feedback that you're expecting. Just be careful who you talk to. Obviously celebrate with yourself but not everybody will have the same mind-set that you have. Maybe go to a friend who can be a little more objective that would say maybe if you wanted to lose a little bit of weight if you wanted to get a little bit healthy, what you're doing sounds like a great idea, or something like that. I definitely have to agree, because when I started, I didn't tell anybody. I did not tell anybody because I was like as soon as I say it, they're going to start [being critical]. (29 year-old from Paraguay Focus Group 5)

> Bought Zumba for my home, but everyone would watch me when I did it; Been big all my life, but I want to see what it feels like to be skinny; Comfortable in my skin, but dealt with insecurity and getting picked on in high school; Want to be skinny in my wedding dress. (25 year-old from Mexico in Focus Group 1)

> Like the gym is kind of intimidating to go by yourself. I feel intimidated because like I'm not as fit as every there, so like everybody is staring at you, so I prefer group activities because like there's more people like me. (21 year-old from Colombia in Interview 2)

Learning of their weight or health problems

A majority of participants expressed that certain health diagnoses or attending their doctor visits also served as de-motivating factors towards their efforts in managing their weight. As some participants discussed, visiting their doctor and learning their weight served as an initial barrier. It seemed that they preferred to avoid attending the doctor for fear of weighing themselves in front of others or learning that they might be diagnosed with a serious medical issue.

> Umm so for the last four years I started struggling with my weight and now I'm having uhh physical problems, health problems, where my knees start to hurt, my ankles start hurting. You know and so, ugh. Lots of changes. (39 year-old from Mexico in Focus Group 3)

> [Her sister] doesn't have will power. She starts and she doesn't keep up and she needs to change to lose whatever weight and she had high blood pressure and high cholesterol. That's not good. (Age not reported from Mexico in Focus Group 4)

> Stress break and all that, and then I reached 245 pounds in like two years. It's crazy. And I obviously, you know, your clothes start fitting tighter, but I guess since you look at yourself every day in the mirror, you don't really see it and then people don't tell you, so that doesn't help either. So when I had to go to the doctor I was like, "How did I let this happen?" So yeah, definitely. That was the real eye opener for me. (29 year-old from Paraguay in Focus Group 5)

> Plantar fasciitis. To step just on the floor. I'd wake up in the morning and just [pretends to yelp and wince in pain]. This is one of those things… and says that I need to stop working less… walking less. Cause a friend of mine, we were motivated to go and do a half marathon. "We're gonna do it! We're gonna do it!" And we just kept walking and walking and walking. (47 year-old from Venezuela in Focus Group 6)

In sum, participants described a number of barriers that negatively affected their efforts towards successful weight management and improvements in binge eating, though the most salient factors primarily included individual level factors, such as using food as a coping strategy, navigating different life transitions alone, or physical health problems and illnesses. They also recognized that judgments from other people outside of their family affected their efforts to reduce binge eating, with women with a self-report history

of BED cautioning others to carefully select whom they should include in their treatment efforts. As such, a culturally adapted intervention that focuses on managing weight and binge eating should consider these salient factors, as it may influence Latinas engagement and retention in treatment.

4.2 Research Question 2: What cultural components should be considered and included in a culturally adapted LEARN manual or similar healthy lifestyle program?

The following categories are considered deep level categories that need to be considered when adapting or modifying an evidence-based intervention (EBI), as health beliefs and behaviors are constructed within one's cultural context. Deep level changes refer to cultural values, norms, and traditions that will likely affect treatment adherence and outcome of an EBI. Changes to an EBI generally include integrating or considering traditional healing practices, cultural values, norms, or behaviors in the design or the implementation of the intervention (Barrera et al., 2013; Huey et al., 2014).

As noted previously, ecological models of health behavior emphasize the role of the environment and policy on behavior while considering and incorporating social and psychological influences (Sallis et al., 2008). Therefore, the following categories reflect the role of the built environment and the community that influences binge eating behavior among OW/OB Latina women. These categories are: 1) consideration of diversity in the LEARN manual, 2) Latino health beliefs, 3) environmental facilitators and barriers, and 4) cultural significance of food and physical activity.

4.2.1 Consideration of Diversity

Participants explicitly discussed their experiences interacting with other ethnic group norms and behaviors, an important consideration in the LEARN manual.

Participants expressed that the LEARN manual should consider both the role of Latino values on binge eating and weight management but also other ethnic groups' values. This was particularly salient, as many participants were raised in multiethnic neighborhoods in the US and/or currently live and function in multiethnic neighborhoods and environments.

> And with us – we've become very Americanized. So it's a big difference. That's why whenever I see these questions, I wasn't really raised traditionally, so I eat Mexican food, but…I don't have anything that would be relevant, basically, towards it. (19 year-old from Mexico in Focus Group 2)

> Right, outside of the Latino community like friends, White, Black, American, whatever the case and kind of getting a different exposure to like—oh, well that's how they eat or, oh, they don't—a meal is not a three hour event at every household and I've subscribed to a lot of health magazines like Women's Health, Shape, stuff like that. And I've learned a lot through that and also off the internet like finding the Whole30 diet, following different people and difference groups on Facebook that post a lot of stuff like that just to kind of educate myself. But yeah, I would say the mostly making friends outside of my community, non-Latino friends. (33 year-old from Mexico in Interview 1)

> Okay, so we grew up in a predominantly White and Black area. There weren't too many other Hispanics when I was growing up. We did learn Spanish first so we spoke Spanish at home. We also learned English but we spoke that at school, Spanish at home. We ate, you know, a lot of Peruvian food but my parents, you know, gave us, I guess, American-like names and involved us in things like Girl Scouts and reading programs and stuff. So they did try to – I don't know if there's a better word for assimilate – but they tried to assimilate us as best they could but still, you know, maintain the like language and the food culture and some of the music and such. (31 year-old from Peru in Interview 3)

As a result, they discussed the strategies that they have utilized to integrate healthy traditional Latino diets with more acculturated or "Americanized" diet. Through this process, they also identified alternative strategies to make traditional Latino dishes healthier.

> And so I said, "I'm never gonna be able to eat *flan* again." So I said, "Hmm, what if I make it with Splenda?" Ya know I was trying to see how, that's a traditional dish in like Venezuela. I was trying to see how can I make it healthier instead of

> giving it up for good, because for me I was giving it up for good. (44 year-old from Venezuela in Focus Group 3)

> I know there's a lot of I guess quinoa, you know, that can be one alternative too. We've always eaten quinoa. It's actually starting to be big in the U.S. now but we've always eaten it. (29 year-old from Ecuador in Focus Group 4)

When attempts were made to improve their families' diets or introduce healthier alternatives, participants experienced some resistance from their family members who preferred specific foods or preferred a traditional approach. They believed that introducing alternative foods into their family's diet should occur without their family's knowledge.

> But it's kind of like, and I try to like, ya know, substitute mash potatoes with cauliflower and it tastes really good. And I like it! And they're like, "No this is not the real thing." And substitute spaghetti with spaghetti squash and they ate it and then they're like, "Mom, can you make the real spaghetti?" (44 year-old from Venezuela in Focus Group 6)

> They just haven't tried [brown rice]. They can make the same meals with brown rice. (Age not reported from Mexico in Focus Group 4).

> Just give them, you know, just try to encourage to try it, you know, like alternatives and maybe put a recipe there. Okay you can do like a recipe for the brown rice. (29 year-old from Ecuador in Focus Group 4)

This participant's response, reflective of other participants' experiences, discussed both challenges and successes with integrating multiple ethnic food groups in their diets and how shared traditions and norms emerged from this process with her husband, who is a Caucasian male.

> For me, it was very different in the beginning. I mean, the things that I like to eat, there was rice. We eat a lot of rice. He didn't eat rice. … So when I start just cooking the way my mom taught me all that. He was like, "Oh this is different." … He pretty much adopted my culture and I adopted his culture. When we had the meals, we tried to balance. So Latino here, and other things are American but then we had more Italian here and there. (45 year-old from Peru in Focus Group 6)

In sum, participants believed it was important to not only consider traditional Latino values into the LEARN manual but also consider how those values have been shaped by interacting with other ethnic groups. In addition to being raised or currently residing in multiethnic neighborhoods and communities, almost half of the participants were married to non-Latino men. Thus, their experiences and preference to consider the influence of other ethnic groups stemmed from both intrapersonal and interpersonal determinants of health.

4.2.2 Latino Health Beliefs and Expectations

As noted previously, health knowledge and health behaviors are constructed from one's cultural lens and as a healthy lifestyle intervention, the LEARN manual should be congruent with the experiences of OW/OB Latina women with BED (Resnicow et al., 1999). The LEARN manual should specifically consider that OW/OB Latinas have encountered personal and systematic barriers that prevent them from receiving effective treatment for weight and eating concerns (Cachelin et al., 2006). Participants in this study discussed various Latino health beliefs and expectations that they have learned from their families and by extension, the Latino community. The most salient discussion was the expectation of a "quick fix" or fad diet as a solution to their shape and weight problems. Participants recognized that this knowledge was gained from the Latino community, and in turn, this belief was shared within their family.

> We are superstitious. [We learned that] if you eat past 6pm, you gain weight. If you drink water all day on a full moon, you lose weight. (48 year-old from Cuba in Focus Group 1)

> And then there's thing this like there's a diet when there's a full moon, you're not supposed to eat anything that day. It's like a full moon diet. I was like, "I never did it. That is so insane." And you lose like 2 or 3-kilos that day or something. Herbalife is very popular. It is very popular. And then here, I've heard a lot of

> cleanses. There is like apple cider cayenne pepper [cleanse]. (29 year-old from Paraguay in Focus Group 5)

> You do see some pills or something. But I feel like Americans are more geared towards exercising devices. But you never really see that in Spanish, you see more of, "Drop ten weeks with this." Like the tea or melt it off with you. That's not really realistic. (20 year-old from Peru in Focus Group 2)

> And I think in the Latina culture, there's still that idea of I just want to lose weight really quick and I'm just going to do a diet and that's it. There's still not that mentality of I want to make a life change. (29 year-old from Paraguay in Focus Group 5)

This participant's response, in particular, illustrated how health knowledge and beliefs may have developed or flourished throughout the Latino community.

> Like you know community in the beginning where it's like, it's not a miracle thing. And a lot of this [is] … cause I mean it's in our commercials. You know, it's like, "Buy this pill in two weeks, you'll lose thirty pounds." Like I mean something that [people are] constantly watching and a lot of people believe in … when I go to my mom's house they watch TV in Spanish … and they're like just showing you the people before and after … in like two, three weeks [you can lose weight]. So it's like, "Call now!" (39 year-old from Mexico in Focus Group 3)

While participants discussed their specific role as a caregiver or mother in RQ1, they discussed how the traditional role and beliefs as a mother and/or caretaker in the Latino community (i.e., *marianista* beliefs) can influence Latinas' help seeking attitudes or their confidence to address both general health problems and problems specific to weight and eating concerns.

> And I think that it's a problem in the Hispanic community. Being a mother we put ourselves last and everybody else first. Even, even those who are not our children or our husbands we still put them first before ourselves. I think it should be the other way around, we put ourselves first. (39 year-old from Mexico in Focus Group 3)

> Right and you're the caretaker for the whole house, not just the children. You take care of your husband, making sure everyone's fed and everyone's taken care of, maybe not always financially. Maybe that burden falls more on the man, the husband, but just kind of keeping the household going and even down to chores

> and things like that definitely typically falls more on the women in the traditional Latino family. (33 year-old from Mexico in Interview 1)

Relatedly, expectations from their husbands or the dynamic of a traditional Latino marital relationship were often discussed as a determinant of their overall health. Participants discussed certain standards and expectations established by their husbands, specifically the concern about appearing attractive to other men, if they were to embark on changing their shape and weight concerns on their own.

> And you're always going be dealing with that. I think that's something -- I definitely shouldn't put that in there. Latin men are very machismo. And very possessive. That doesn't go with me. (24 year-old from Honduras in Focus Group 5)

> But I don't know if that's something that people might want addressed is like, "How do I get my, you know, kind of machismo husband to respect that I'm trying to lose weight or better myself? Or how do I get him on track with me?" I know this does talk about is partnership and family but if you actually want to talk about, you know, hardheaded Latinos, kind of getting them to see your ways. And like I said, my parents, it took them a long time just to be like, "Oh, my health is important." So it might be harder just to try to hear it from your significant other or your sibling. I don't know if there's a way to add that in there. (31 year-old from Peru in Interview 3)

> No I think some – I don't think that all Latino men – some of them do like their women curvy. However, I think it's also many times when we were working with Latino women, A lot of them were saying, "I think it's because they don't want to be too attractive for other men." You know what I mean. So it's not necessarily that they like the curvy. It's more that they didn't want other men looking at them. "Don't be too attractive. Cause then others might eye you." Ya know, so it's kind of like ok that's not fair. Kind of like let's keep you chunky so no other men – I can eye other women but not you. (47 year-old from Venezuela in Focus Group 6)

Other salient health beliefs that will likely affect Latinas' shape and weight concerns is the pressure to achieve a certain body size and type within the Latino culture. Interestingly, participants not only discussed expectations and pressures that they experienced from their families and by extension, the Latino community, but also pressures that Latina mothers may place on their own children regarding a body size and

type, though participants in this study seemed to framed the message of adhering to a particular body size or addressing your weight is important for overall health (e.g., managing chronic illnesses).

> Right, if I think that I still am going to be attractive to men. I mean I'm married but I'm just saying, whether I'm you know, 15 pounds overweight or not then where's my—really, my incentive to lose the weight has to be intrinsic and has to come from within you know what I mean, or to maintain a healthy weight, especially if my families not constantly on me. Whereas, if I grew up in a household where everyone was obsessed with being skinny, then it might be a lot different. (33 year-old From Mexico in Interview 1)

> I know Latinas in general, they think if a child is slim, they think he's not healthy. They think they have to have meat on their bones. They have to be chunky. So that's another thing that you're going to have to [address]. (Age not reported from Mexico in Focus Group 4)

> But [my son] already had lunch like 2 or 3 hours ago so he's ok waiting 5 hours or when it's time so… ya know, he gained a little weight and we talked about that with my son. I say, "Listen, this is this. I am seeing a little *barriga* there. So you need to cut that little belly. Ya know, *barriga*, belly." So I don't like that. You're getting this and this and he said, "He understood that." I didn't say it in a bad way but I'm saying, healthy way and I gave him a lot of options and looking at videos about cholesterol and blood pressure (45 year-old from Peru in Focus Group 6)

Once participants recognized the influence of Latino health beliefs and norms and the psychological consequences associated with it, they often do not start the process of engaging in a healthy lifestyle change or address binge eating until trust and rapport is developed from "experts" or health professionals who recommend that they change or increase their awareness of the negative influence of Latino health beliefs. Participants who served as *promotoras* believed that it was especially important to develop trust to encourage other Latinas to address their weight and excessive binge eating.

> Yes, yes. And, and one of the huge things is trust. If they don't trust, it doesn't matter what good you're doing they're not…it, it's just not gonna happen. (39 year-old from Mexico in Focus Group 3)

> Yeah, cause like a lot of activities are, mainly the ones in our church doing activities it's her, me and my mother. Umm, so when anybody else wants to do an activity they always invite us to be there, cause if people see us there then they're gonna feel, yeah they'll have trust. People will be like, "Oh okay." They will have that trust to go there. (24 year-old from Mexico in Focus Group 3)

> But I see it like they come to you too. Like they get to know you and I believe in that part. I don't believe in chasing people and say, "You need to lose weight, you need to do that." But I believe in … they come, they and being stable like being ya know, they know they can get to you. Ya know, they know you're there. (44 year-old from Venezuela in Focus Group 3)

> Yeah, open seminars that, that works way better cause they get more comfortable. They have more trust with you, and then because of that, they are more interested in doing it than if you're just telling them, "Okay you gotta measure this, and you gotta take this, and you gotta do that." It's more like, you know like parents that don't really want to be more involved in that. Umm, so for my experience I say and umm…for us, we always kinda have to remind them. It's like, "Hey next week we are gonna meet at this time." But the day of, still send like a text or a call. It's like, "Don't forget to show up at this time." (24 year-old from Mexico in Focus Group 3)

In sum, participants described a number of Latino health beliefs that implicitly and explicitly influence their success in managing their weight and reducing binge eating. In particular, they discussed the expectation of a "fad diet" or quick fix to weight loss, traditional *marianista* beliefs and expectations from their husbands as well as Latino expectations for body size and shape. When they become aware of the negative influence of traditional norms and beliefs, strong trust and rapport needs to be developed by "experts" or health professionals who are encouraging them to consider the effect of traditional norms and beliefs on their eating and weight concerns. These beliefs seemed to be more of a bidirectional relationship such that participants were not only influenced by these health beliefs, norms, or expectations but they also served as the agents of reinforcing or establishing these norms on their children and families.

4.2.3 Environmental Facilitators or Barriers

As noted, the community, organizational, and social circles in which individuals operate should be important components to consider with respect to a person's health behaviors; multi-level interventions are proposed as the most effective in changing behavior (Sallis et al., 2008). In order for the LEARN manual to be comprehensive and optimize its reach and effectiveness with OW/OB Latinas with BED, the context in which an intervention will be administered should be considered, as it will affect how this population will engage with and adhere to a culturally adapted manual. In the present study, participants discussed several environmental and contextual factors that influenced their own health, including the lack of nearby health-promoting facilities since moving to the US, lack of and/or access to specific health education and information for the Latino community, and the lack of low-cost health-promoting resources. For example,

> Yeah, [how to be healthy on a budget] is not really talked about. What we do at the church that we're at, cause I'm a big couponer, like people know I coupon for everything. So people like they will tell me, they're like, "I can't afford to buy wheat bread, I can only buy white bread or brown rice." So for that, so like I started telling them [how to coupon] …cause usually Hispanics only buy at like Hispanics stores. You don't see them going to Harris Teeter. You don't see them going to…yeah, they don't leave their comfort zones. (24 year-old from Mexico In Focus Group 3)

> They don't have smart phones…So the calorie counting ya know would be, umm…techy, if you're not a techy then … for umm a lot of the Hispanic people they, they, ya know barely have the basic phone so if it's not smart then ya know the calorie counting won't work. Because you don't have a computer. You don't have a phone, ya know, you don't have a tablet. So how are you gonna keep you with calories? You would have to have a book. you would have to have all these kinds that it's just way too much work. (39 year-old from Mexico in Focus Group 3)

Participants discussed how the context of their neighborhood, with a predominately Latino population, presented a challenge in their effort to manage their

weight. Specifically, participants described a lack of nearby health promoting facilities, as well as lack of easy access to parks in their US neighborhoods.

> And for me, time but also convenience because there was a gym here. It was excellent. Why they closed it, I still don't know. Cause it's still closed … It took me forever to sign up and finally, I signed. And then closed like a month… well almost a year but that's when I got the best fit. Because I would drop off the kids and what not. It was so quick. I was even doing two different classes … I would stay and really into it. And then they decided to close and they basically told us, "Ok well, everyone that's here you can automatically be in this other gym…" but it was farther and then there started to be construction and you know, I don't want to put excuses but it was real excuses. I mean, it would take forever to get there. And if it's not conveniently located, then no. (47 year-old from Venezuela in Focus Group 6)

> But bringing like the same diet and meal that you, that you know, my parents grew up eating in Peru and you know, having – it wasn't like adapted to the lifestyle here. It was just kind of naturally brought in and you know, we weren't as active. Like we played outside. We always played sports and such, but we weren't walking as regular, I guess, as people in Peru. And they're more poor there so they probably aren't going to have a lot of extra snacks and, you know, living behind an ice cream shop and stuff like that like we did. (31 year-old from Peru in Interview 3)

In regards to a change in environment, many participants reported that immigrating and adapting to the fast pace of the US served as a significant challenge. In the following response, this participant discussed how the transition to the US, the realization that she may not have been as healthy in her home country as she previously believed, and pressure to acculturate to American norms likely facilitated her development of an eating disorder.

> When I came to the U.S, I tried as hard as I can to stay -- my -- the weight that I came and so I started exercising a lot, which before I didn't need to because I was walking enough. So I started exercising. But I started getting very obsessed with my weight and with my health and with exercising and with everything. And I developed an eating disorder. They -- they diagnosed me with ED-NOS. (29 year-old from Paraguay in Focus Group 5)

Further, the lack of access to health-related education and information for the Latino community served as significant barriers for them to optimize their health. All participants in this study recognized that an increase in education on obesity and comorbid medical and psychological conditions is still needed for the Latino community.

> And there's some that -- with all the work that there has been around the community in recent years, I think people are -- especially like -- I do know because I'm a volunteer at one of the clinics and most of the people that go there are Spanish speaking and at the clinics they really have made a good job in trying to educate people how to eat better. (29 year-old from Ecuador in Focus Group 4)

> We need more education too. We do have somebody who provides education in the community and I think she's probably the only one who's talking about the need to eat the whole wheat. I don't hear much, we don't talk much about it. (44 year-old from Venezuela in Focus Group 3)

> You don't want to get diabetes, you know. People -- other things that have diabetes and being overweight increases your chances and you can lose toes, fingers, you can lose your vision, you can have even kidney problems, like that, so you don't want to deal with that. You educate people about that, maybe they'll be more open to change. (Participant age not reported from Mexico in Focus Group 4)

In response to this lack of education or lack of access to nearby and affordable health-promoting facilities (e.g., gyms, parks, or health clinics), participants recognized the number of efforts that have been conducted at the community level, including culturally congruent grocery stores and the role of their church in promoting their health. Suggestions were also provided as to where increased efforts to disseminate health information could be most effective for the Latino community.

> But then I don't know this year but I remember in the past years, there's a lot of health fairs around the churches where they have a lot of like Spanish speaking congregation. They do those. You have to do it in like neighborhoods where there's going to be lots of Hispanics. (Participant age not reported from Mexico in Focus Group 4)

> I felt like as far as advertising for it, or getting people to voluntarily use it, just being mindful of where population is and where they go. Even for this study, I

> found out about it only because I was with kids at the doctor. I didn't have insurance at the time. And I don't go to college anymore. There would have been no way for me to even know about this. When you want a certain kind of population, sometimes you have to go a little bit further out into some of the more common…if you would have put it on a billboard at a grocery store I surely would have seen it. Even like a Bi-Lo, a Food Lion, Harris Teeter, Trader Joes. That's where I like to shop. I almost would feel that it would be a little stereotypical to go to just this kind of…a place that's just a Hispanic grocery store because I don't necessarily shop at Hispanic grocery stores. They make me nervous, they're not my quality of food. I wouldn't be there so I wouldn't ever know about this manual if that's where you're advertising. It's important to branch out where the information would be. So other people who wouldn't shop in those places could still find the information and benefit from it. (27 year-old from Puerto Rico in Focus Group 2)

In sum, many participants discussed the role of their community, the built environment, and organizations as determinants to their weight and shape and binge eating behaviors. In particular, they discussed the lack of health-promoting facilities within their neighborhoods and the lack of education on obesity and comorbid medical and psychiatric conditions within the Latino community. They also recognized acculturative challenges that they experienced when they moved to the US, serving as a significant determinant to not only the development of specific weight concerns but also significantly contributing to binge eating behaviors. Therefore, such factors must be considered as it will likely affect the reach and adherence of a culturally adapted version of the LEARN manual or other healthy lifestyle intervention.

4.2.4 Cultural Meaning of Food and Activity

For many cultures, food and physical activity or exercise, carry significant cultural meanings and definitions. This can influence Latinas' efforts when they attempt to address problematic behaviors that increase their risk of binge eating (Agne et al., 2012; Shea et al., 2012). Participants in the present study also discussed similar concerns, with younger and more acculturated participants expressing the belief that the

sociocultural significance of food and changing health behaviors is not just limited to Latino culture. Such meanings that were ascribed related to both overeating, denying food, and the types of exercises that participants engaged in to manage their weight concerns and eating behaviors.

> I think that umm…the problem with that would be that one of the cultural traditions is that we grew up eating rice and beans and tortillas, ya know, so that would be really hard for the Latinas to give up because it's a tradition … You have to have it. (39 year-old from Mexico in Focus Group 2)

> Like just trying to let them know like but they can't just make the portions smaller, and even that's gonna be a challenge. Like you tell a Mexican to slow down tortillas and it's like, "What do you mean, I gotta slow down tortillas?" (24 year-old from Mexico in Focus Group 2)

> Now I think I know another thing that even though eating back home is a whole lot healthier just because you're eating at home and a lot of things is fresh because everything else is more expensive. The only issue or the only problem I see is the that many times the way that I cook it. So I mean, it's healthier but there's a lot of frying. And like a lot of pork and there's a lot of things that here you won't even see like at the supermarket back home. It's like the pork rinds and ya know, *chicharrón* … it's very common. And so, to get away from that, it's kind of hard. And ya know, here if I eat a piece of meat, I try to trim off all the fat. Back home, it's like, "No, no, no, no! That adds all the flavor! Leave it!" And it's true, I mean, if you leave it and you try it and it's done well, it tastes good. (47 year-old from Venezuela in Focus Group 6)

> I think that is a cultural difference. If I say I'm full around my family or ya know, my grandparents, it can—and I haven't eaten a ton of food, it can almost be offensive. I feel like I have to make an excuse of why. "Oh, I ate a late lunch." or—I have to make an excuse of why I haven't eaten a whole ton of food but I'm full. Or they think, like you said, that I don't like their food or that I don't like the food. I would say something about, "It's okay, you can be like, it's okay to listen to your body and when you're full, you're full." And you shouldn't feel like you have to—because dinners can go on for hours. It's not like here where you eat, your family barely sits down and 20 minutes—this is like an event so it's okay to say you're full and that everything was wonderful and delicious but you're just—you've had enough. It's okay to say that and you shouldn't feel bad about it however you can word that. (33 year-old from Mexico in Interview 1)

Interestingly, some participants recognized that this significance of food and physical activity may no longer just apply to Latino culture but seems to be present

within all cultures, thus a recognition or acknowledgment of the commonalities of such challenges was important to them when adapting a healthy lifestyle intervention.

> I think it's other cultures, as well. I don't have too much experience but I mean, I've had African American friends and, you know, they have a mom and they make a bunch of soul food for holidays or just special occasions and it's just – you know, even people say, "I love my grandmama's this or that." And it's probably more of a – I don't know how to say it – like something more timely like probably losing as much But I think, you know, it's probably more of like grandmas and older moms that still kind of do that. And I think in some cultures, too, I mean, the mom is the source of food when they're a baby so maybe it just carries on that this is how I take care of my baby and provide for them and feed them, you know? Especially for stay-at-home moms. So I do think it's other cultures. I can't say all of them are or which ones, but I don't think we can be the only ones that do it [laugh]. (31 year-old from Peru in Interview 3).

For some participants, they recognized that their active lifestyles changed when they moved to the US. Specifically, they found themselves to be less physically active in the US, compared to their home countries. In addition, some participants indicated that their families were surprised to see the lack of activity and increased sedentary behaviors when they immigrated to the US.

> Because it wasn't -- because I realized a lot of things in this past three years. When I was living in my home country, technically I wasn't eating healthy. I was just younger and I had a better metabolism and the lifestyle required more movement, more walking. (29 year-old from Paraguay in Focus Group 5)

> And the other thing is we pretty much don't walk a lot. Like we walk in our countries. Because here we have a car. We are so spoiled here. (45 year-old from Peru in Focus Group 6)

> My parents telling me that like Columbia is really, really – like Columbia people are like really fit and skinny, like so when they come to America the culture shock to see so many overweight people and obese people. So like the eating healthy over there so I guess like that mentality comes with them of like you have to be like – my parents have a healthy mentality of about like you have to be healthy and skinny and things like that. But, I mean I feel like anybody that comes here can gain a little weight, like culture shock. I can't really help much there because I don't really remember that much about – I should, but I don't. (21 year-old from Columbia in Interview 2)

In sum, participants discussed the role and significance of food and engaging in different types of activities in the Latino community. This experience and perception seemed to vary depending on the amount of time in which the participant had resided in the US as well as their age. While they recognized that traditionally, food and engaging in physical activity carries a significant meaning in Latino culture, some participants expressed that the cultural significance of food is present within other ethnic cultures. Thus, a consideration of the meaning of food and activity levels as it relates to Latina women's ability to manage their weight should be considered in a culturally adapted healthy lifestyle manual.

4.3 Research Question 3: How feasible and relevant would it be to culturally adapt the LEARN manual?

The following categories referred to participants' overall critiques and responses about the LEARN manual. Specifically, participants were asked about their impressions of the LEARN manual. They were encouraged to identify content that could influence their initial engagement with the manual, both positively and negatively, as well as specific suggestions to improve the cultural relevancy of the LEARN manual. A total of four categories emerged that could affect participants' initial engagement and overall adherence to the general LEARN manual. Given the richness of and depth of the participants' responses that emerged from the data, subcategories emerged and were described below. In addition, the data represented suggested surface level changes to the LEARN manual that are aimed to improve initial engagement and adherence to the manual.

4.3.1 Redundancy or Repetitiveness of Lesson Content

Participants' responses about the redundancies or the repetitive nature of content discussed in the LEARN manual reflected both positive and negative reactions. As noted previously, the LEARN manual was designed as a progressive self-help, healthy lifestyle manual in which content from one lesson builds upon subsequent lessons. In addition, the LEARN manual is written at an 8th grade reading level for ease and readability. However, participants expressed that the redundancy or repetitiveness across the lessons would negatively affect their initial engagement and overall adherence.

> Thought it was redundant; saying the same things over and over. [The example on] pg. 59 talks about a companion, and then talks about it again and again in lesson 7. (20-year old from Mexico in Focus Group 1)

> Yeah, it's right there, "As I said earlier." It gets redundant. I just read it, I know what you said earlier, you don't have to keep telling me … It almost made me feel like it was dummied down for me. Ok, I told you before, you need to brush your teeth…etc. It was the same thing over and over. I feel like I'm reading so much because it's so big and I'm reading the same things over and over. It's not necessarily something I need to hear over and over. So that started to get to me. (27-year old from Puerto Rico in Focus Group 2)

> Like the information is really good but definitely has to be shorter. I thought the same thing like, "Oh this would be too much." (47-year old from Venezuela in Focus Group 6)

On the other hand, some participants believed that the repetition within each lesson would not affect their overall adherence to the manual. In fact, some participants were more likely to report positive remarks about the repetitive nature of it.

> Actually, I'd rather there have been repetition like you mentioned that is, is actually, I think it's good the repetition of the same rather than so much information. I mean, umm…so that it, it yes, too much information, summarize it yeah, make it easier. (44 year-old from Venezuela in Focus Group 3)

> I think for some things, [repetition] might be key. It's good to put it in a subtle way. Ya know, "just remember…" (45 year old from Peru in Focus Group 6)

> Well I don't – like – I mean I don't think so. They are going to be similar because it's about losing weight, but I don't think each one has – different goals. I don't think that. (31 year-old from Peru in Interview 3)

In sum, participants noted that the repetition of each lesson in the manual can be both a hindrance to overall adherence as well as remind participants of content from the previous lesson, which they found as a positive aspect of the manual. According to participants' responses, it is important to strike a balance between repeating or reiterating pertinent information while maintaining a positive tone to ensure that the manual does not read as if participants are "too dumb" with constant repetitions.

4.3.1 Positive Statements about the Manual

The LEARN manual was designed to progressively address and change maladaptive health behaviors that lead to high weight status and participants shared positive reactions to the manual that should be emphasized for treatment engagement. These reactions can be considered components that participants preferred to include in a culturally adapted version of a healthy lifestyle manual. Within this broad category, two subcategories emerged: positive remarks about content and positive remarks about organization.

Participants' reactions that corresponded to positive or supportive statements about the manual content included identifying helpful thoughts and behaviors that affect weight management and likelihood that they might engage in binge eating.

> Liked when the book talked about attitudes; Biggest enemy is my self-doubt/negative self-talk. (20-year old from Mexico in Focus Group 1)

> Diet vs. lifestyle [information] is really good. I'm aware of these things, but it's still a good reminder that there's always fad diets. It's good to know that this is not a fad diet, and those aren't going to work. You have to do this for the rest of your life. It's not something to do just now. When you go back to eating 5 cupcakes for breakfast, you'll gain all the weight back again. That was a good

> piece to include in there to remind people. If you're ready to do this, you have to know you have to change your lifestyle. (20-year old Peruvian from Focus Group 2)

> I have read it before but for whatever reason, it's stuck with me the way it's written here about calories. 3500 calories is one pound. So that's why they said by cutting back 500 calories a day, you will be guaranteed losing a pound a week … And my husband has told me every time… But whatever reason, the way it's written here, it's stuck with me. (47 year-old from Venezuela in Focus Group 6)

> I do like that it seems that physical activity is addressed in every week. So I think, you know, it's important to encourage staying active. And it does actually touch on a lot of aspects. (31 year-old from Peru from Interview 3)

In addition to helpful content regarding adaptive behaviors that promote a healthier lifestyle, participants felt that the use of illustrations in the manual was a creative strategy to address uncomfortable issues related to binge eating or managing their weight. Also, the use of self-assessments or quizzes was viewed as an effective technique to promote awareness of behaviors that increase binge eating and affect weight management.

> [Referring to illustrations] They're exercising together and the girl is like, "Oh my gosh. I'm the worse. I'm so out of shape. how did this happen?" And the man is just like, "Oh, my head band is too tight." They're blaming two different things. Here, page 25. They're blaming two different things and girls, we blame ourselves and guys blame everything but themselves. That is a good way to address it in a funny way. (24 year-old from Honduras in Focus Group 5)

> Yeah I think, and one of the biggest like it had a little test for like to pick your partner, and then it would tell you like how good of a person they will be. I think that's right cause sometimes we know we pick like our best friend…yeah. (20-year old from Mexico in Focus Group 3)

In relation to the overall structure and organization of the LEARN manual, participants expressed that all healthy lifestyle manuals should be structured in a similar and simplified format as in the LEARN manual.

> I liked how it was split into 12 different lessons, or like weeks. That's like something realistic for most people. That means 3 months. Not, like, one week.

> This is for one week, do it all and you'll lose this amount of weight. It doesn't tell you specific what you will lose. It says you will be in a better place. Like, you know, in all of these lifestyle [changes], you'll exercise better, your attitude will be better, like relationships with everyone. It fixes everything. (20-year old from Peru in Focus Group 2)

> I think it's pretty simple; I don't think it needs to be simpler, broken down for you to understand what it is. (21 year-old from Colombia in Interview 2)

> I liked it. I like the tone. I liked how a lot of things were kind of simple and broken down. It wasn't really, like, telling you what to do, but it was like this is all the guide if you follow these general steps. You can be successful and stuff. It wasn't like, you have to do A in the morning, you have to do B in the afternoon. So I kind of like that about it. (19 year-old from Mexico in Focus Group 2)

> So you can choose, and you still feel like you're going at your pace and nobody is really pushing you to do exactly. (29 year-old from Paraguay in Focus Group 5)

In sum, participants, who were familiar with other weight management programs, such as Weight Watchers, expressed positive statements about the overall content and organization of the general LEARN manual. For a healthy lifestyle manual to fit their needs, they believed that a simplified, 12-week structure would be appropriate and brief content on health education, negative self-talk, and focusing on lifestyle changes would be effective for them. Further, the use of illustrations and self-assessments would address their experiences of shape and weight concerns that are associated with BED as well as increase their awareness of how different genders may approach weight management.

4.3.3 Critical Statements of the Manual

Considering that participants were encouraged to heavily critique the manual to ensure that the LEARN manual could be culturally adapted to fit their experiences with binge eating, most of the responses in the present study centered around critiques of the manual content and organization. Within this broad category, two primary subcategories emerged from the data: content and organization.

In the focus groups and interviews, participants were first asked about their initial thoughts about the manual and participants most frequently reported:

> I was not a fan of it. It was way too big, way too much information. It feels like a class rather than something I'm going to take for my life benefit and actually do or even want to do. I could see this becoming a coaster at somebody's house. (33 year-old from Mexico in Interview 1)

> I read it before her and when, and she asked me how is the book, I told her it's long. (24 year-old from Mexico in Focus Group 3)

Subsequently, participants were asked, "What did you not like about [a particular] lesson?" Some participants expressed that the content in the manual provided too many options and references to foster self-monitoring of health behavior change. Further, they believed that the manual required necessary updates to reflect the current literature on health-related information to address weight management.

> There's some different things, I saw the food guide pyramid, which I think maybe has even changed since this was printed but you have like to just pick an approach. There are different approaches in this manual. Like we said, are you going to do portions? Are you going to go reference the food guide pyramid if you need? Because that's very different. … I need a diary, I need this. And then—or you're going to do calorie counting. There's so many different angles to look at it from, kind of decide on something or give some general guidance on that and approach it from there, from that perspective. [33 year-old from Mexico in Interview 1)

> How to measure your food, yeah. Have the visual ya know, have with the quarter, and the half, and the third, and ya know this is one third and so on. I didn't see that here, and that is very, very important to me. (39 year-old from Mexico in Focus Group 3)

At least one participant in each focus group and all participants in individual interviews believed that the manual needed some technological component in order to update its format and delivery. That is, including a technological component could allow the information to be accessed at a much faster and a more convenient rate. The following statement by a 31 year-old participant from Peru is a summary of participants'

responses regarding the use of technology in the manual, particularly in the early phases of starting a self-help manual designed to address binge eating and weight management.

> I've used MyFitnessPal, I used Weight Watchers 101 that – and that was actually something I wrote down to bring up is that, you know, this day and age, people want like convenient, portable, fast. And I'm not going to carry this manual around in my purse to help me track. I use MyFitnessPal on my phone because it's quick, convenient, and has a pretty good, you know, catalog of items. Like I think theirs is one of the more extensive ones. … You know, if you decide to go that way or decide to partner with another app or create your own, that maybe pull from MyFitnessPal if they allow that to happen. Also talk about, you know, making this like an audio or DVD version because some people don't necessarily like to read or they're on the go so they want to listen to it in the car. That can kind of add to the convenience of it and I think people can do things more when they're convenient for them. And those are kind of things like that. So I definitely feel like there's a technical aspect to it.

Participants also felt that some lessons in the LEARN manual increased their awareness of overeating problems but the lesson did not immediately provide recommendations on how to address these problems. Rather, they believed that the progressive nature of the manual required them to wait until a subsequent lesson to address these problems. Clear and explicit instructions of when they should move onto the next lesson were also needed in the LEARN manual.

> But then, [reasons for being overweight] was mentioned and he didn't tell me how to fix it. It's like, you brought this to my attention, now I know this, now I'm depressed because I partially feel like I'm this way because my mom was and my grandma, and you're telling me these things about food and my food patterns and I need to pay close attention. Now, how do I fix it? You're not actually telling me what to do. I'm aware of it, but I don't have the nutritional know-how of how I'm going to fix these things and I wasn't told that. It left me wondering, "You give all this information and you enlighten me, but you didn't educate me [on what to do in this lesson]". (20 year-old from Peru in Focus Group 2)

> Yeah that's what this book doesn't say. I think this book doesn't say - I don't remember reading all you need in this lesson one for this amount of time. Or it doesn't tell you like some goal at the end when you reach this goal you will be ready to go to the next step … That's why for me, I would prefer to have a group or at least like a head person because I want -- I would assume that person knows

> more and could guide me more. And hold me accountable. (29 year-old from Paraguay in Focus Group 5)

In terms of structure and organization of the manual, participants believed that restructuring the manual was important to increase the initial engagement and feasibility of this manual. For example, throughout the LEARN manual, additional information is provided in a separate textbox. Self-assessment quizzes were included in these separate textboxes to go to other pages of the manual, which they found as a nuisance.

> Yeah. But you start, and it says you finish it or take the rest of the test online, so it's like, "I'm doing it. Ok this is good. I like it. but oh – I can't finish it." Well maybe if I'm able to finish it, it's better, but I also don't want to necessarily have to go on my computer if the test is starting here. I want to start and finish here. I don't want to start it here and then get on your computer to finish it. I want to do whatever you're saying to do, on that one medium you're telling me to use. I don't want to use multiple mediums for that one thing. (27 year-old from Puerto Rico in Focus Group 2)

> Clunky flow, too much referring to other pages. (25 year-old from Mexico in Focus Group 1)

Further, participants provided feedback and suggestions to increase their engagement with the LEARN manual. Participants provided several suggestions that they believed would be especially helpful.

> Yeah, or reference page or appendix A in the back if you need tips on how to help your family understand or whatever as opposed of putting this entire chapter to this entire page on information of how I can convince my family on how to understand me. Well I don't need that, so now I'm reading this and feel like I'm kind of wasting my time. But if I know if I NEED it, I could just go to this place in the back (27 year-old from Puerto Rico in Focus Group 2)

> I just think it's very hard to read and it takes a lot of time to read all these. So it need to be condensed. And I think it may be -- I just read a book about Alzheimers that -- I had a lot of Alzheimers book and the only one -- the one that was the most helpful was the one that had tabs. It was written by a football coach and … [he] decided to write like a play book. So it had tabs. So all you had to do was go through the tab when you had a question or an issue or problem and it was easy to find it when you don't have a lot of time to read through a lot of this stuff.

> So I think maybe you could do something like that with this. (Participant age not reported from Mexico in Focus Group 4)

> Like I was saying, if you don't have time to read it, then at least, you're able to see the highlights or the high points… and I think what would be awesome like if there's parts where they're talking about, especially like with food, like if they could include like a quick little recipe or a quick, ya know. Something like that… not that it becomes a cooking lesson in all the chapters. But an example. (47 year-old from Venezuela in Focus Group 6)

In sum, participants expressed a number of critiques of the LEARN manual, including update relevant health information (e.g., the food pyramid), incorporate the use of technology, and provide clear solutions and suggestions to address problematic eating once it has been brought to their attention. In terms of improvements in organization, they specifically suggested that providing the most up-to-date information in a bulleted and brief format would be most effective for their needs and lifestyles. The following statement accurately reflects participants' general feelings and responses towards the original LEARN manual.

> Yeah because I mean once you get this condensed, you know, and we check the material and it's really helpful. I mean it will be easier to deliver this to more people around the community and have them stick with it. They'll be more aware, even if they don't stick with it. They at least will have information. They will be more educated. (29 year-old from Ecuador in Focus Group 4)

4.3.4 Structure of Self-monitoring Forms

Similar to other components of a healthy lifestyle program, the LEARN manual encourages self-monitoring as a key component of adopting a healthy lifestyle. Based on cognitive-behavioral therapy principles, the self-monitoring forms in the LEARN manual were designed to increase the awareness of problematic thoughts and health behaviors in order to identify and change such behaviors that interfere with successful weight

management. Participants who had previous experiences with self-monitoring believed that it is an important skill for health behavior change.

> Likes the recording form because it worked for me previously; Would be nice to have a booklet just for monitoring. (48 year-old from Cuba in Focus Group 1)

> You know how you said how it changes, the way you track it. At first, you're keeping track of calories, but there are good calories and there are empty calories. How it spreads it out between dairy, meat, wheat, and everything. I feel like that's really helpful once you start getting used to what you're eating. You have to start basic and then you kind of separate [within each food group]. (20 year-old from Peru in Focus Group 2)

> I also did think that they showed samples on the forms is good, because it feels like if you each get the blank form you're like, "I think I'm doing this right but I don't know." But then when you see like, "Okay they did this so I'm going to try to do the same thing over here." It was a little helpful and I think it will be of some help for people that have never filled out like a form of food stuff at all. They can have something to guide themselves with. (24 year-old from Mexico in Focus Group 3)

However, some participants remarked that the structure of the self-monitoring forms in the LEARN manual may be too detailed or complex for Latinas who are new to the concept of self-monitoring. The self-monitoring

> It's expanded. I don't think it had the feelings. Yeah, they changed from before – it was just the place/calories, Now, it has time, feeling, and activities. I thought that was interesting, the feeling part. And what you were doing. Because some stuff are kind of automatic, so then it makes me think that [the previous food log form] wasn't so useful. Why even have just this [monitoring form]. If I'm really trying to understand what my problems are and what's happening, why am I not finding them out from the beginning? Why not have this one here instead of this one? Why expand it [later]? It's good for me to know my feeling, like I was tired, or I was bored, that's why I was watching TV and eating chips. I ate the whole bag because I wasn't realizing how much chips I was eating. I was looking at the TV. It's important to know that I was bored and watching TV so it's just automatic eating. As opposed to just knowing the place. Ok, living room, but was I watching the TV? Reading a book? Watching the kids? What I was doing makes a big difference in understanding how you're eating and why you're eating. (27 year-old from Puerto Rico in Focus Group 2)

> Yeah. It's very hard to do. And I think it would be -- it would be very helpful if the book says you're ready to go to the next step once you have been successful in

> monitoring every day and very detailed, like the example. (Participant age not reported from Mexico in Focus Group 4)
>
> I don't know. How would I know how much calories every food has, if it's not listed [in the manual]. I guess I could Google it but I don't know how I would know. (21 year-old from Colombia in Interview 2)

In sum, participants appreciated and understood the concept of self-monitoring. However, the self-monitoring forms in the LEARN manual were too complex and provided detailed information that they believed would be irrelevant for them to manage their weight and excessive binge eating behaviors. They preferred simple self-monitoring forms that is utilized consistently throughout the manual. They believed that presenting self-monitoring forms in this way may be more conducive to participants who are new to self-monitoring in general. In addition, participants preferred that the self-monitoring forms explicitly indicate when one is ready to move onto the next lesson, if they were to utilize the LEARN manual as a pure self-help intervention.

4.3.5 Need for Cultural Relevance

As indicated, surface level modifications include changing superficial or face valid components of an evidenced-based intervention to improve congruence with Latina's cultural preference (Barrera et al., 2013). Specifically, this category refers to specific culturally relevant content that participants believe should be included in the culturally adapted version of the LEARN manual or another healthy lifestyle manual for Latina women that was not already discussed in RQ1 and RQ2. In terms of adaptations, participants primarily referenced these areas: including culturally congruent foods and certain exercises in the appendices of the manual, addressing how to portion control or manage certain foods in a Latino diet, and the importance of discussing variations of body sizes in the LEARN manual.

> But, as far as the things I eat, I actually couldn't find a lot of the stuff. Maybe I didn't look well. I couldn't find black beans. I couldn't find red beans, pigeon peas, yucca. These are things I cook with. So if this is geared towards me and my culture, I make all types of diverse things … And you don't have it [in this manual]. (27 year-old from Puerto Rico in Focus Group 2)

> Well, a lot of the dishes that Hispanic people make are heavy in carbs, but there is a good bit of vegetables. Maybe try and talk about how to replace this serving of rice with *camote*, sweet potato, it's a little healthier. Cause I know that's one of the biggest problems I had when trying to eat better, but still eat things that my family made. And trying to cook new things, I realized how carb-heavy a lot of stuff is. (19 year-old from Mexico in Focus Group 2)

> I mean, also, when I was looking through this, I was, I guess under the impression that you had already [adapted the manual]. And I was like, "This doesn't talk about Latinas at all. Like it's just very general." So definitely kind of incorporate the whole, you know, women used food to show their love. But it's going to be hard to get away from that with, you know, certain Latinas but it's not a bad thing to bring to their attention or just, you know, maybe show other ways to love them like you love their health, too, so cook healthy. (31 year-old from Peru in Interview 3)

> Yes, they because they need to understand that if you come from a heavy family you cannot, you cannot punish yourself because you're not thin. Like its heredity, and I think that that's a problem with a lot of, umm, Hispanic people is that they wanna be, ya know, we wanna be thin but then ya know we don't realize that ya know what, I cannot be that thin because 80% of my family is heavy (39 year-old from Mexico in Focus Group 3)

In sum, participants provided specific suggestions on ways to culturally adapt the LEARN manual that were not discussed in RQ1 and RQ2. Certain surface level changes that were discussed were including culturally congruent foods in the appendices of the LEARN manual, how to portion control typical Latino foods that may not be healthy, and the role of genetics and variations in body size across different ethnic groups. Participants recognized that the general LEARN manual required some changes in content to increase the cultural relevancy of the program and such changes might only be minimal changes.

> So having that little information is beneficial, but I don't think there needs to be as far as culture, including some of the foods that are kind of regular staples in Latin dishes. At least in my culture, in our Latin dishes. That's important. But

> otherwise, culturally, I didn't feel like there was too much to change, as far as culture is concerned in this book. (27 year-old from Puerto Rico in Focus Group 2)

4.3.6 General Summary

Overall, qualitative data from the participants discussed several surface level (RQ3) to deep level changes (RQ1 and RQ2) that must be considered in a culturally adapted version of the LEARN manual or another healthy lifestyle manual. Participants believed that this manual could be a feasible and effective intervention to promote weight loss while addressing binge eating once improvements are made.

Table 2: Categories and subcategories

Deep Level (RQ1)	Deep Level (RQ2)	Surface Level (RQ3)
Monitoring of her health - Identified problematic behaviors and rule out diagnoses - Utilized apps	Consideration of diversity factors - Multiethnic neighborhoods - Norms and values of other ethnic groups	Redundancy and repetitive nature of manual content
Family dynamics and support - Critical feedback - Strategizing and negotiating	Latino health beliefs & expectations - Fad diets - Body type and size - Trust and rapport	Positive statements about the manual - Content - Organization
Motherly role or caretaker - Family's needs over their own - "Matriarch" of the family	Environmental facilitators or barriers - Lack of health-promoting facilities - Low health education - Lack of low cost resources - Adapting to fast pace of the US - Increase of community health clinics and churches	Critical statements about the manual - Content - Organization (lengthy) - Suggestions
Facilitators to health management - Goal setting and pre-planning - Creative strategies and activities - Family history of medical diagnoses or own health problems - Supportive network or support person	Cultural meaning of food and physical activity - Food as a sign of love and comfort - Exercise and PA in the US compared to home countries	Need for cultural relevance - culturally congruent food and exercises - Portion control Latino diets - Discuss shape and weight within their families
Barriers to health management - Using food as a coping strategy - Life transitions - Perceived judgment from others - Learning of current weight or health problems at doctor visits		Structure of self-monitoring forms of manual - Simple forms - Same form throughout lessons

CHAPTER 5: DISCUSSION

This chapter will discuss the implications of the results presented in Chapter 4. First, the findings of the qualitative analyses will be discussed in reference to possible explanations of the findings and their convergence or divergence with previous literature. Next, clinical and research implications of the study will be discussed as well as researcher reflexivity. Finally, limitations and strengths of the study will be reviewed and suggestions for future directions within psychological research will be made.

It is well documented that the prevalence rates of obesity among women and/or racial/ethnic minority populations are on the rise (CDC, 2014; Flegal, Kruszon-Moran, Carroll, & Fryar, 2016). In particular, the prevalence rates of BN and BED among Latina women both in the US (Alegria et al., 2007; Franko et al., 2012b; Perez et al., 2016) and in Latin America (Kolar et al., 2016) are comparable to White women in the US (Alegria et al., 2007). Compared their normal weight counterparts, OW/OB Latina women with BED have a higher risk of both medical (e.g., type 2 diabetes, stroke, hypertension; CDC, 2014) and psychiatric comorbidities (e.g., depression and anxiety; Cachelin et al., 2006; Thompson-Brenner et al., 2013). Although CBT is the most externally validated and considered the treatment of choice for BED (Wilson & Zandberg, 2012), a significant limitation of this treatment is the lack of consistent weight loss among OW/OB individuals with BED (Grilo & Masheb, 2005; Grilo et al., 2011). Healthy lifestyle interventions (i.e., BWL programs) are recommended as the preferred method to address weight status among obese individuals (Jennings et al., 2015); however, BWL programs often do not address psychological distress or problematic behaviors, like binge eating, that are often associated with obesity. To date, there is only one study (Mama et al.,

2016) that has demonstrated that a culturally adapted healthy lifestyle intervention can be effective as a means of reducing BED and subthreshold BED, through improvements in dietary habits and increase in physical activity, among OW/OB Latina and African-American women. Thus, there is still a need to identify specific components of a culturally adapted healthy lifestyle intervention for OW/OB Latina women with BED that promotes weight loss and maintenance while also targeting binge eating as a core component. This is especially important since OW/OB Latinas with BED represent an understudied population in the eating disorders literature (Jennings et al., 2015) and culturally adapted healthy lifestyle interventions that also address binge eating significantly trails behind research on culturally adapted psychotherapies for mental health concerns (Barrera et al., 2013).

Informed by the ecological model of health behaviors (Sallis et al., 2008), this study followed the first two stages of the cultural adaptation framework proposed by Barrera et al. (2013) to culturally adapt an EBI. Therefore, the aim and purpose of this study were to determine the need for culturally appropriate modifications of the LEARN manual from a qualitative perspective. As noted, the LEARN manual emphasizes gradual and moderate lifestyle changes to promote weight loss. The LEARN manual includes 12 lessons that cover different aspects of weight loss where individuals complete each lesson per week in a self-help manner. The manual is structured with a series of steps designed to address eating and physical activity patterns in an additive manner while reviewing previous steps to facilitate mastery. This study answered the following research questions: What unique beliefs or contextual factors may impede or promote Latinas' ability to engage in healthy behaviors? What cultural components should be considered

and included in the culturally adapted LEARN program? How feasible and relevant will it be to culturally adapt the LEARN manual?

5.1 Suggestions to culturally adapt the LEARN Manual

5.1.2 Surface Level Changes

The presented findings that were organized as surface level categories answer the research question of how feasible and relevant will it be to culturally adapt the LEARN manual. As discussed, surface level changes determine the acceptability of an intervention by specifically modifying superficial components to improve initial engagement of the intervention (e.g., language, the inclusion of culturally specific foods or behaviors, partnering with culturally congruent staff; Barrera et al., 2013). To improve the feasibility and cultural adaptability of the LEARN manual or a similar BWL program, the main surface level changes for the LEARN manual, as described by the participants, include: 1) retain relevant content that focuses on promoting weight loss and reducing binge eating behaviors (e.g., topics on healthy lifestyle vs. diets, negative self-talk, self-assessments, and food restriction) and organize such content into brief bullet points, 2) simple self-monitoring forms with explicit instructions as to when one is ready to move on to the next lesson, and 3) utilize technology in the dissemination of the manual, for example, through brief online videos or audio recordings of each lesson. Such suggestions refer to the overall organization and specific content that participants believe are needed to culturally adapt the LEARN manual or better fit their needs for a healthy lifestyle manual.

More importantly, participants provided suggestions to increase the cultural significance of the LEARN manual. Specifically, they discussed the importance of

providing culturally congruent foods and exercises (e.g., Zumba or dancing) that are family- and/or community based. They also believed that the LEARN manual should be offered both in English and Spanish. These suggestions to improve the cultural relevance of the LEARN manual provided by the participants in this study were similar to other culturally adapted healthy lifestyle programs that were cited in this review (Fauchner & Mobley, 2010; Ockene et al., 2012; Ruggiero et al., 2011; 2012). The results of this study further contribute to a richer understanding of what surface level components need to be emphasized to engage and retain OW/OB Latina women with BED in a healthy lifestyle program.

5.1.3 Deep Level Changes

The following results answer the research question of what sociocultural factors should inform and be considered in the LEARN manual or another culturally adapted healthy lifestyle manual for OW/OB Latina women with BED. Sociocultural components, or deep level changes, that emerged from the results are traditional norms, behaviors, and values that are dynamically related to the current contextual and environmental factors that Latina women experience. Specifically, participants discussed the different cultural meanings of physical activity in the US compared to their home countries. Because of the geographic structure within their home countries, they were more likely to walk to nearby shops and markets, increasing their activity levels and reducing sedentary behaviors. This experience is contrasted with the geographic structure of US cities which may not be conducive to walking to nearby health-promoting facilities (e.g., affordable markets). This phenomenon, known as “food deserts” (Morton & Blanchard, 2007), refers to the lack of available supermarkets in low-income and ethnic

minority neighborhoods. Previous research demonstrated that the availability of markets was associated with better diets and lower prevalence of OW/OB in adults (Valdez et al., 2016). While the participants in the present study may not have labeled the lack of health-promoting markets as a food desert, it became apparent in their discussion that the lack of easy access to markets presented a challenge to managing their weight. At the same time, they recognized the importance of a resilient community that can alleviate the negative health effects associated with obesity and binge eating. Participants recognized many health-promoting initiatives within their church community and the increase of affordable health-clinics. Before such health initiatives can begin, participants believed that extensive trust must be built prior to involving the community. They also suggested that including important stakeholders, for example *promotoras*, is needed in order to engage the Latino community in health-promoting efforts.

The cultural significance of food discussed in this study was consistent with previous research that examined the sociocultural factors that influence binge eating and weight management efforts (Reyes-Rodriguez et al., 2016; Shea et al., 2012). Participants in this study discussed that food carries a significant meaning of love and is essential to a strong sense of connection within their family. The unique contribution of this study is the interesting discussion of the commonality of the cultural significance of food. That is, participants recognized that other ethnic groups also view food as a sign of love and appreciation. Therefore, it is important for the LEARN manual or a similar culturally adapted healthy lifestyle manual to recognize or acknowledge this commonality among all ethnic groups. One potential strategy to include in such a manual is to increase

individual awareness of the cultural significance of food, as it may negatively affect weight loss efforts and/or the ability to manage binge eating.

Furthermore, culturally adapted healthy lifestyle interventions should recognize the extent to which Latino health beliefs influence Latina women's engagement and success in a healthy lifestyle program. Beliefs that were revealed in this study were the expectation of a "quick fix," cultural pressures to adhere to a particular body type or size, and the influence of traditional gender norms on Latina women. For example, if OW/OB Latina women with BED enter treatment for binge eating and weight concerns with unrealistic weight loss or treatment expectations, it might interfere with their success and motivation to adopt small and meaningful changes that are more conducive to a sustainable and healthier lifestyle change (Jennings et al., 2015). Unrealistic weight loss expectations, in particular, are found to be a significant psychological factor that will affect weight loss success and maintenance among OW/OB individuals in general (Dalle Grave, Centis, Marzocchi, Ghoch, & Marchesini, 2013). A unique contribution of the present study is a greater understanding of the ways in which unrealistic weight loss expectations and in general, health (mis-)information becomes reinforced within the Latino community. Participants discussed that they were more likely to learn about unrealistic weight loss expectations or health information through informal sources, like family members and close friends, and through Spanish television and radio shows. Considering this significant contextual factor and the influence of Latino health beliefs, recognition of this shared process within the Latino community should be included or addressed in the development and/or dissemination of a culturally adapted healthy lifestyle manual or a culturally adapted version of the LEARN manual.

Relatedly, participants overwhelmingly believed that psychoeducation about psychological and medical comorbidities associated OW/OB and BED and more specifically, cultural expectations of a curvy body size and type were needed for the Latino community. This is particularly important given that lack of knowledge is often regarded as a primary barrier to seeking treatment for weight and eating concerns (Britigan, Murnan, & Rojas-Guyler, 2009; Cachelin & Striegel-Moore, 2006). It seems that presenting psychoeducation from a creative and humorous perspective might be an effective strategy to address potentially uncomfortable conversations about body size and type and eating disorders. This approach was suggested by participants in this study and is consistent with previous research. For example, Reyes-Rodríguez and colleagues found that *fotonovelas*, which is a popular graphic novel in the Latino community, are a culturally sensitive and effective means of providing psychoeducation about eating disorders and available treatments among both an adolescent and adult mixed gender Latino populations (Reyes-Rodriguez et al., 2016). Therefore, a discussion of sociocultural components and traditional norms and behaviors might be more acceptable if this information is presented as a *fotonovela* or on the TV and Spanish-language channels.

In terms of unique individual level beliefs, facilitators and barriers, the following results were discussed as potential factors that will promote or interfere with OW/OB Latina women's ability to manage their health and in particular, excessive binge eating. Barriers that interfered with their success to reduce binge eating were described as utilizing food as a coping strategy, life transitions that they encountered (e.g., weight gain during pregnancy, acculturative stress), perceived judgment from others outside of their

family, and awareness of physical health problems. Each of these factors are dynamically related to one another in that participants may have used food as a coping strategy when they struggled with different transitions in their lives or experience remarkable changes in certain aspects of their identity as wife, mother, or daughter. These unique challenges that they experience might be even more difficult to navigate if they continue to experience or perceive negative judgment about their inability to manage their weight from their family members or experience a physical health problem (e.g., an injury or development of diabetes) that hamper their efforts, thereby internalizing failures if they are unable to manage their weight or excessive binge eating.

A unique contribution of the present study highlights the potential mechanisms that reinforce the connection between food and coping with emotional distress among OW/OB Latina women BED. Other studies have suggested that elucidating the emotional connection between food and stress could be an initial first step towards promoting healthy eating patterns among normal weight Latina women with eating disorders (Reyes-Rodriguez et al., 2016; Shea et al., 2012). Considering the results of the present study, it seems that increasing insight and addressing this significant relationship may also help elucidate the relationship between emotional distress and coping with food for OB/OW Latina women with BED. While the general LEARN manual does include a lesson on the relationships between negative emotions and eating behaviors, the content of the lesson could include specific examples that were described in the present study in order to improve the cultural acceptability of the LEARN manual. One suggestion is to provide information about the cultural significance of food and provide examples of how Latina women may use food as a strategy to stay connected with traditions and norms in

their home country. Utilizing food in this way could interfere with their weight manage efforts and/or increase the likelihood that they might overeat these comfort foods.

The barriers that were discussed in the present study also can be viewed as psychosocial changes and challenges that Latina women and their families encounter after they immigrate to the US (Reyes-Rodriguez et al., 2010; Shea et al., 2012). While the present study did not explicitly examine the extent to which their immigration process to the US influenced their health behaviors, a potential explanation for the increase in binge eating behaviors and weight gain among Latina women may relate to acculturative stress that they experienced during the immigration process (Higgins Neyland & Bardone-Cone, 2016). According to Berry (1997), acculturative stress refers to the interaction between stress and reduction in health status that Latino/as experience as they engage in the process of acculturating or adapting to a new culture or the dominant culture (Berry, 1997). Research has found that increased acculturative stress was associated with increased negative affect and in turn, increased binge eating among Latino/as (Higgins Neyland & Bardone-Cone, 2016; Kolar et al., 2016; Reyes-Rodríguez et al., 2010). Participants in the present study described similar concerns related to acculturative stress that influences their efforts to manage their weight and reduce binge eating.

The acculturative stress that participants experience might also influence their role as a mother or caretaker and by extension, their family dynamics and the level of support they receive from their family members. This is particularly salient as Latino culture tends to identify with more collectivistic values, placing their family's needs over their own, to foster the value of *simpatia* (harmonious relationships; Campos et al., 2008;

Ruiz, Hamann, Mehl, & O'Connor, 2016). Findings from this study illustrate the challenges that participants experienced when they made attempts to change their binge eating behaviors or manage their weight. In particular, guilt and distress around changing their own health and their family's health were discussed from different perspectives. Some participants felt guilty when they attempted to manage their binge eating behaviors without their family's involvement while others felt guilty when they focused primarily on their family's health and not their own. One interesting perspective is their role as a mother or "matriarch" of their family, illustrating the complexity of their identity as a mother or caretaker as it relates to their ability to manage their own health. That is, some participants recognized that their identity as a mother or caregiver placed them in a unique role to change their family's health, in spite of their family's negative reactions, demands of their significant others, or traditional gender roles. Given the variability in responses regarding the extent to which Latina women would include their families, the findings highlight the importance of acknowledging within-group differences in the definition of *simpatia* and how the value of family connectedness might serve as both a barrier and a promoting factor for OW/OB Latina women with BED.

There are few studies within the literature that have discussed factors that successfully promote or facilitate the ability of OW/OB Latina women with BED to manage binge eating and weight (Reyes-Rodriguez et al., 2014). In the present study, salient health-promoting experiences for participants included self-monitoring, identifying a supportive network to reinforce their motivation to manage binge eating, and learning about certain physical diagnoses or illnesses that resulted from excessive weight gain. The most salient health-promoting factor was the importance of identifying

a supportive person or network to keep them accountable and maintain their motivation. Participants who had previous experience with a guided self-help approach intervention expressed that the social connection and personalized feedback helped them reinforce their own self-monitoring behaviors and improved their self-efficacy to address problematic eating behaviors and maladaptive shape and weight concerns. Reinforcing the cognitive skill of self-monitoring, in particular, can facilitate the internal drive for Latina women to discover intra- and interpersonal factors that will enhance and maintain their motivation to address maladaptive cognitive and behavioral processes associated with excessive binge eating (Cachelin et al., 2014b; Shea et al., 2012; Wilson & Zandberg, 2012). Through self-monitoring, Latina women might also begin to recognize and understand the influence of their sociocultural environment on potentially excessive and unrealistic shape and weight concerns. Therefore, such unique experiences and factors should be considered in the LEARN manual or a similar culturally adapted healthy lifestyle manual, as this will likely affect initial adherence and overall engagement with the LEARN manual.

5.2 Implications for Clinical Practice and Research

The results of this study have implications that inform clinical practice with OW/OB Latina women with BED. Based on the results of this study, Latina women may not seek treatment for binge eating problems and/or body shape and weight concerns until they experience a certain degree of acculturative stress that impacts traditional family dynamics, gender roles, and cultural shifts in food and body expectations. Oftentimes, they may be more likely to seek treatment on their own or with their families, depending on their age. An initial treatment approach might be to provide

psychoeducation on the relationship between acculturative stress and binge eating behaviors. Clinicians might also invite Latina women to explore unrealistic weight loss expectations and unrealistic perceptions to adhere to the American value of a thin body type. One strategy might include providing psychoeducation on the Health at Every Size concept (HAES; Robinson, 2005). The conceptual understanding of HAES stresses the importance of natural diversity in body shape and size, the long-term ineffectiveness and psychological consequences of dieting for weight loss, the importance of tuning into natural hunger-satiety cues, and the influence of sociocultural values on one's efforts to achieve health at any size (Robinson, 2005). Utilizing this strategy at the initial stages of treatment might reduce or alleviate psychological distress and negative emotions that have been internalized as a result of acculturative stress. In particular, this strategy may help Latina women navigate challenges related to varying cultural ideals in body shape and size. Clinicians can foster this process by utilizing multiple methods for assessing success in treatment for excessive binge eating and weight management. For example, clinicians might consider utilizing objective assessments, such as reductions in weight and binge eating frequency and changes in BMI and waist circumference, as well as subjective assessments, such as reductions in pain levels and improvements in sleep functioning and energy levels. It is particularly important to utilize multiple methods to assess treatment outcome to emphasize the importance of managing weight and binge eating for overall health and wellness and to prevent chronic illnesses associated with significant weight gain and excessive binge eating.

Further, helping Latina women identify an appropriate supportive network, whether that includes family involvement or not, is an important cultural factor that

clinicians should emphasize. Latina women may not include their family's involvement in their treatment efforts due to fear of judgment and critique. On the other hand, some Latina women may want to include their family members, as they recognize that their involvement is critical to their success to reach a realistic body size and manage binge eating. Regardless of the nature of the support system, it is important to engage in shared-decision making with Latina women prior to making assumptions that they would want to include their family members because of Latino collectivistic values. Moreover, clinicians should explicitly be aware of the influence of sociocultural and environmental factors, such as access to health-promoting facilities and cost effective resources, on Latina women's ability to manage binge eating and their weight. Therefore, identifying and problem-solving through realistic environmental barriers from a collaborative perspective might increase Latina women's self-efficacy to manage distress associated with such barriers. Clinicians might also help Latina women utilize mobile technology and available health-promoting apps as an alternative strategy if access to certain facilities, like a gym, community center, or safe parks, is not feasible.

In terms of implications for research, the results of this study highlight important innovations to effectively recruit, engage, and retain Latinos in health-promoting interventions. First, participants discussed the influence of their family on their efforts to reduce binge eating and manage their weight. In particular, the Latino community carries strong values of *familismo* as well as *simpatia* (i.e., harmony), which were shown to both reinforce and interfere with Latinas' ability to engage in appropriate treatment or seek help for disordered eating (Shea et al., 2012; 2016). If a culturally adapted version of the LEARN manual or a similar healthy lifestyle program were to be administered,

consideration of the family and community should be explicit, with Latina women considered as the "front lines" for health behavior change. This might include incorporating Latina women as "experts" at all phases of the research process, including research design, development, dissemination, and evaluation. As noted previously, researchers should consider including a detailed participant feedback report to further refine evidence-based interventions that are designed to address intra- and interpersonal factors that are related to obesity or binge eating among Latina women and by extension, the Latino community.

Relatedly, developing trust and rapport were also important values discussed by the participants in this study. In fact, utilizing culturally congruent staff and community experts have been shown to improve the recruitment and retention of disadvantaged and underserved communities (Murray et al., 2016). *Promotoras* in this study recognized that community health clinics and community health fairs held in churches disseminate important health-related information to the Latino community, thereby mobilizing the community to serve as agents of health behavior change can be a powerful way to reduce health disparities that are present in the Latino community.

5.3 Researcher Reflexivity

As the qualitative research process inherently influences the researcher to develop a more intimate connection and understanding of participants from their worldviews, it is especially important for the researcher to recognize and understand the extent to which their own cultural norms and values can influence and interact with participants' experiences and in turn, potentially compromise results that emerged. In addition to establishing inter-rater reliability, it was imperative to ensure that rigor was established

through researcher reflexivity, or self-reflexivity. Recognizing reflexivity or self-reflexivity throughout the qualitative research process ensures that the researcher is honest and authentic about one's biases and values as well as those of the audience in which they share these experiences (Tracy, 2010).

In this study, reflexivity occurred throughout different processes. First, as a first-generation Asian American immigrant raised in the Midwest with a surprisingly large group of Mexican immigrants, it was important to recognize moments where my experiences as a first-generation immigrant may influence how I interacted with the participants during the data collection and data analysis process. I was intentional and transparent with my experiences as a first-generation Asian-American during data collection, utilizing this stimulus value to establish trust and rapport with the participants. Second, my previous research experience with Mexican-American women with BN or BED also served as a strength for me to connect with participants in the present study; however, I continually and explicitly confirmed with participants in the present study to ensure that my past experiences were not misinterpreted as the experiences of the participants in this study.

Finally, during the development of the codebook and data analysis, I engaged in the process of a thorough review of all of the transcripts from beginning to end to vicariously learn and understand participants from their worldview, as suggested by Corbin and Glaser (2007). This approach also served as a strategy to reduce the likelihood of implicit bias and misinterpreting the data. During the data analysis phase, rigor and reflexivity were also established during the IRR process. One potential explanation of the initial low IRR may have been due to my experience as the facilitator

of all focus groups and interviews, thereby establishing a strong familiarity with the context in which these statements occurred compared to the second independent coder (i.e., AV). Therefore, the role of the third independent rater (BP) during the codebook refinement and data analysis process was to reduce any implicit biases or assumptions that may have occurred while I developed the codebook and analyzed the data.

5.4 Limitations

As with many research studies, this study is not without limitations. While some participants in the present study met criteria for BED, as determined by their participation in a previous study (Cachelin et al., in press), participants who were recruited from the community or from the network of *promotoras* were not formally assessed for the presence of BED through a formal diagnostic interview. Rather, participants were assessed for the presence of any binge eating with or without a sense of loss of control through the demographic questionnaire (see Appendix F). However, participants self-volunteered for a study that examined challenges with overeating and improving their weight. Further, recent research (Dorflinger, Ruser, & Masheb, 2017) suggests that a single item screening measure can assess for the presence of BED in primary care among OW/OB Veterans seeking treatment for binge eating. Given that OW/OB Latinas are more likely to visit their primary care providers for treatment for eating and weight concerns (Cachelin et al., 2001), future research might explore the utility of a single item binge screener for use with this population in primary care or within research studies as a pre-assessment for meeting initial criteria for BED, if a full diagnostic assessment is not feasible.

In addition, this sample represented a somewhat younger, educated, and bilingual sample and as such, their experiences with binge eating and weight management behaviors may not be representative or reflect the experiences of individuals who recently immigrated or moved to the US. However, 63% of the participants in this sample were first-generation immigrants whose social networks consisted primarily of other Latina women, suggesting that the cultural norms and values expressed in the present study can be representative of other OW/OB Latina women with similar binge eating concerns. Further, the average age of participants in the present study is comparable to other studies that have examined eating disorders among Latinas (e.g., Reyes-Rodriguez et al., 2014; 2016; Shea et al., 2016).

Strengths

Despite these limitations noted above, the present study has a few strengths. First, participants in this study represented a diverse Latino sample (i.e., Mexico, Cuba, Puerto Rico, Peru, Venezuela, Ecuador, Paraguay, Honduras, and Colombia) that resided in the Southeast Region in the US. While there is an argument that such groups may differ in terms of specific cultural values and practices established within each ethnic group (Zsembik & Fennell, 2004), this author was mindful of the various ethnic differences within each focus group and interview and continually confirmed with participants if their experiences were congruent or incongruent with one another. This strategy allowed for a rich and complex description of participants' experiences with binge eating issues and challenges with managing their weight. While some variations were raised, participants agreed that their experiences were relatively similar. Further, eight

participants served as *promotoras* for the Latino community and thus, inclusion of their unique experiences and expertise was a significant strength in this study.

Another strength is the rigorous data analysis process applied in the present study. This study utilized a structured and iterative qualitative data analysis approach that involved several revisions to the codebook to ensure that the finalized codebook was grounded within the data. In addition, this study recruited a large sample for qualitative analysis (Krueger, 1994; Onwuegbuzie et al., 2009) and data saturation was determined by the individual interviews that were conducted (Corbin & Strauss, 2007). Finally, the codebook continued to be refined as data analysis occurred after establishing excellent IRR. Thus, future studies might consider following the framework presented in the current study on the cultural adaptation of a healthy lifestyle intervention for OW/OB Latinas with BED.

5.6 Future Directions and Conclusions

As this study was an initial step towards a long-term goal to develop and examine the feasibility of a culturally adapted healthy lifestyle manual that addresses both weight gain and binge eating among OW/OB Latina women with BED, future studies might consider following the remaining stages of cultural adaptation proposed by Barrera et al., (2013). That is, future research might consider preliminary adaptation testing of the culturally adapted LEARN manual (stage III) and assess its initial feasibility and effectiveness, continue to refine the culturally adapted manual, using information and feedback from the initial adaptation testing (stage IV), and consider conducting a randomized-controlled trial of the revised intervention (stage V). In-depth interviews of

participants as well as supporters also can be conducted to inform further modifications or discuss issues that arose during dissemination and implementation of the intervention.

Other future directions might include combining a culturally adapted version of the LEARN manual with the culturally adapted CBT for binge eating to address both weight and eating concerns that are present among OW/OB Latinas. To date, the evidence on the effectiveness of the combined intervention to increase weight loss and improve binge eating have been inconsistent (Grilo et al., 2005). In addition, individuals who engage in high-frequency binge eating may continue to gain weight even when they are concurrently participating in weight management treatment (Masheb et al., 2015). Therefore, ongoing research is needed to determine the specific treatment components and structure for OW/OB individuals with binge eating, especially among Latina women, an understudied population in the eating disorders literature.

More importantly, there is a need for clinical research to identify factors that will effectively recruit, engage, and promote adaptive health behaviors (e.g., increase in physical activity, managing dietary intake) among the Latino community. Future research might consider the dissemination and implementation of a culturally adapted healthy lifestyle interventions for Latinos through a CBPR approach. In a CBPR approach, the Latino community and *promotoras* are considered important stakeholders and work closely with investigators during all aspects of the intervention development and design. Including the target population will address health disparities, ensure that the Latino community is represented in clinical research and intervention, and bolster the sustainability of a culturally adapted healthy lifestyle program (Murray et al., 2016; Sanchez-Johnsen et al., 2017). In addition, it is recommended that researchers who are

planning new interventions or culturally tailoring evidence-based interventions for the Latino community include a detailed participant feedback report, as this will lead to ongoing intervention evaluation and refinement to determine effective treatment components, with the common goal of reducing health disparities among the Latino community (McCurley, Gutierrez, & Gallo, 2017).

In conclusion, participants believed that the LEARN manual could be effective in reducing binge eating and supporting weight loss following adaptation. The current study provided a space for Latinas to feel empowered to discuss their concerns with problematic eating behaviors and negative internalized messages about their shape and weight. As many participants discussed during the current study, culturally adapted interventions provide an avenue for Latinas and the community at large to identify the most pressing health concerns that are personally relevant for them. Latina women especially believed that integrating and considering the sociocultural environment in which these interventions will be disseminated is an important and necessary step in reducing the health and economic burden that is associated with obesity and binge eating for Latina women and their families, and ultimately the larger community.

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APPENDIX A: RECRUITMENT FLYERS

Latina Women and Health

Do you have trouble starting exercise?
Do you overeat or eat in binges?
Are you a Latina or Hispanic woman
Between 18 to 50 years of age?

We are looking for participants for a focus group study about Latinas' health, eating, and well-being.

Participants will be paid $50 in giftcards for their time.
All information will be kept confidential.

For more information, please call Noy Phimphasone from the Women's Health Project
Department of Psychology
University of North Carolina, Charlotte
at: (704) 763-7764

THIS PROJECT HAS BEEN REVIEWED BY THE UNIVERSITY OF NORTH CAROLINA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH. ADDITIONAL CONCERNS AND COMPLAINTS, OR QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH PARTICIPANT SHOULD BE DIRECTED TO: (704) 687-1876.

APPENDIX B: ELIGIBILITY PRESCREEN

WOMEN'S HEALTH PROJECT
CALL SCRIPT FOR PRELIMINARY SCREENING

Hello, my name is (INTERVIEWER'S FIRST NAME). May I please speak with (RESPONDENT'S NAME)?

NOT AVAILABLE → GET CALL-BACK TIME

AVAILABLE

↓

Recently you contacted the Women's Health Project lab to inquire about our study. I'd like to tell you more about our project and then ask you some questions to determine whether you are eligible for this study. The questions should take less than 5 minutes. May I tell you about the project and ask some questions to determine whether you are eligible to participate?

The purpose of our project is to gather information about the development of health problems in Latina women, especially problems with starting exercise and eating well. This research is important because very little is known on the topic, and it will help inform public policy related to minority women's health issues. We need participants who experience such problems and those who do not experience such problems.

First, where did you hear about this study?

_____

Now, I am going to ask you a number of general questions to determine whether you meet the criteria for the study:

What is your age?

What is your ethnicity?

What is your country of origin?

Where were you born?

Where were your parents (or grandparents) born?

What is your height, without shoes? ____ feet ___ ___ inches

What is your weight, in light indoor clothing? _____ pounds

[CALCULATE BMI]

MEETS ELIGIBILITY CRITERIA?

Female	**Yes**	No
Latina	**Yes**	No
18-50 years old	**Yes**	No
25 ≤ BMI	**Yes**	No

[IF **DOES NOT** MEET ALL CRITERIA ABOVE, **EXCLUDE** FROM STUDY]:

Thank you very much for your time. Based on your responses, you are not eligible for our current study. However, we conduct various studies of this kind. Would you like us to contact you in the future for similar studies?

[IF RESPONDS "NO" – END]

[IF RESPONDS "YES" – RECORD MAILING ADDRESS BELOW]:

_____

_____

[IF **DOES** MEET ALL CRITERIA ABOVE, **ENROLL** IN STUDY]:

Thank you very much for your time. Based on your responses, you are eligible for our study. As I mentioned, the study is about Latina women's experiences with problems starting exercise and other related health issues. This topic is very important because little research exists on it and the information we gather will help increase Latina and other minority women's access to proper health care. The study consists of reviewing an exercise and nutrition manual to determine any concerns for using this manual with Latinas. You will have 15 days to read the manual. Additionally, your participation will involve a focus group, lasting about 2 hours. You will be paid a gift card of $50 for your time. All information will be kept strictly confidential. Do you have any questions? Are you interested in participating?

[IF YES] **I will send you two copies of the consent form, a demographic form, the exercise and nutrition manual, an outline of the weekly session topics and activities, and questions that will be addressed in the focus groups. Please make sure to mail back a copy of the consent form provided and demographic form as soon as possible. You may also bring these materials to your scheduled focus group.**

[RECORD MAILING ADDRESS]:

_____

_____

_____

Thank you. An interviewer will call you in a couple of weeks to make sure you received the materials and schedule your focus group session. Please don't hesitate to call our lab if you have any questions.

APPENDIX C: COVER LETTER AND INSTRUCTIONS

Principal Investigators
Phoutdavone Phimphasone, M.A.
Fary M. Cachelin, Ph.D.

Dear ,

Thank you for participating in our focus group study aimed at discussing challenges in establishing health-promoting behaviors (e.g., exercise, balance diet). We hope that our research will lead to the development of an effective self-help treatment for Latina women with similar problems. Your participation in this research is a significant contribution toward helping us realize this goal.

Enclosed please find two copies of the consent form, the demographics form, the *LEARN* manual, questions that will be covered in the focus group, and a prepaid envelope. Please complete sign the consent form and demographics form and return everything to us in the prepaid envelope or you can bring it to the focus groups. Keep one copy of the consent form for your records.

We will call you in a couple of weeks to schedule the focus group, which will last for 2 hours. **Please read as much of the *LEARN* manual as possible and list of focus group questions before your focus group.** You will have approximately 15 days to review everything. We will contact you to address any questions that come up while reading the materials. Additionally, we will call you two days before your scheduled focus group as a reminder.

For your time and effort, we will pay you $50 in Wal-Mart gift cards for reading and reviewing the materials and attending the focus group. You must read and review the materials and attend focus groups to receive the full amount of the gift card.

If you have any questions about this research at any time, please call for assistance at the lab (704) 687-1349 or Noy's cellphone (704) 727-6039. Thank you again for your commitment to being a part of this very important research.

Regards,

Phoutdavone "Noy" Phimphasone, M.A.
Fary M. Cachelin, Ph.D.

APPENDIX D: INFORMED CONSENT

UNC CHARLOTTE
College of Liberal Arts & Sciences

Department of Psychology

9201 University City Boulevard, Charlotte, NC 28223-0001
t/ 704-687-4731 f/ 704-687-3096 http://psyc.uncc.edu

Permission to participate in

Cultural adaptation of a guided self-help behavioral weight loss treatment for Latinas: A qualitative exploration

Project Title and Purpose:

You are invited to voluntarily participate in a research study titled, *Cultural adaptation of a guided self-help behavioral weight loss treatment for Latinas: A qualitative exploration.* The purpose of this study is to determine if this manual culturally relates to Latina's unique experiences with starting exercise and a balance diet. A second purpose is to cultural adapt this manual based on your critiques of the manual. Your participant and responses are very important because we hope to utilize the culturally adapted manual on Latinas such as yourself.

Investigator(s):

This study is being conducted by UNC Charlotte Health Psychology doctoral student, Phoutdavone Phimphasone under the supervision of Dr. Fary Cachelin.

Description of Participation:

If you agree to be in this study, you will be provided with two copies of this conform to be in the study, questions about your general background, the exercise and nutrition manual to critique (The *LEARN* manual), questions that you should think about while reading and critiquing the manual, and a prepaid envelope. You will then be invited to a focus group and will come to a private lab space in the UNC Charlotte Department of Psychology in Colvard South. We will send you a parking pass and a map of available parking lots a couple of weeks before your scheduled focus group.

Please sign and complete one copy of the consent form and general background questions. You may mail these materials with the self-addressed envelope provided or bring them with you to your scheduled focus group. One copy of the consent form is for you to keep.

The focus group will invite you to discuss challenges in starting exercise and a balanced diet with 4 other Latinas and two researchers. Additionally, the focus group will discuss the cultural relevance of the *LEARN* manual that may or may not be helpful for Latinas. **Please read and the *LEARN* manual and list of focus group questions (pink form) before your scheduled focus group.** You will have 15 days to read and review the *LEARN* manual and the focus group questions. Research assistants will call you to address any questions that come up while reading the materials. Additionally, research assistants will call you two days before your scheduled focus group as a reminder. At the focus group, we will give you a parking token for you to use as payment at one of the parking lots on campus.

Researchers will take notes during the focus groups and **all content will be audio recorded for later data analysis**.

Length of Participation

Your participation in this study will involve a 15-day review period of the *LEARN* manual. Additionally, you will complete a 2-hour focus group. If you decide to participate, you will be one of 20 participants in this study.

Risks and Benefits of Participation:

This study was designed to pose minimal risk or discomfort to you and you may withdraw or discontinue your participation at any time without loss of benefits to which you are entitled. Reports resulting from this study will not identify you as a participant. You will be referred by a name chosen by you during the focus groups. All information gathered in this study will remain confidential and be given out only with your permission or as required by law.

The potential benefits of participation in this study may include: 1) increasing your awareness of the impact of lack of physical activity and overeating on your health and well-being, and 2) receiving emotional support and validation while sharing your experiences with others.

Compensation

You will receive a $50 gift card for time and effort. You must read and review the materials and attend your focus group to receive full amount of the gift card.

Participants who decide to withdraw before the end of the study will not receive a gift card but will be able to keep the *LEARN* manual. There is no cost to participate in this study.

Volunteer Statement:

You are a volunteer. The decision to participate in this study is completely up to you. If you decide to be in the study, you may stop at any time. You will not be treated any differently if you decide not to participate or if you stop once you have started.

Confidentiality:

Researchers will keep all information about your participation, including your identity, confidential. Personal experiences that are shared during the focus groups should not be repeated outside the group. We will take the following steps to ensure your confidentiality: You can select the name we will call you during the focus group. All information we collect from the groups and questionnaires will be identified by the first initial of this name. The code linking your responses to your name will be locked in a separate file from your information. Once researchers have written down the audio-recorded interview, the recording will be kept in a locked cabinet and only accessible to Principle Investigator (Phoutdavone Phimphasone). Researchers will not use any identifying information in any presentation of the results. Your responses will not be shared with anyone outside of the research team.

Fair Treatment and Respect:

UNC Charlotte wants to make sure that you are treated in a fair and respectful manner. Contact the University's Research Compliance Office (704.687.1871) if you have any questions about how you are treated as a study participant. If you have any questions about the project, please contact the Principal Investigator Phoutdavone Phimphasone (704.727.6039) or co-investigator and advisor, Dr. Fary Cachelin (704.687.1319).

Participant Consent:

I have read the information in this consent form. I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction. I am at least 18 years of age, I agree to participate in this research project, and **I agree to have my comments voiced during the focus groups to be digitally recorded**. I understand that I will receive a copy of this form after it has been signed by me and the Principal Investigator or research assistant.

Participant Name (PLEASE PRINT) **Participant Signature** **DATE**

Investigator or Research Assistant Signature **DATE**

APPENDIX E: FOCUS GROUP QUESTIONS

Questions to think about as you read and review the manual

1) What did you think of the program/manual?

2) What did you like about it? Why?
What did you dislike about it? Why?

3) What was least helpful about it? Why?
What was most helpful about it? Why?

4) Would it work?
Why or why not?

5) What are some of the cultural values, traditions, or beliefs that would be important and relevant to consider when you or someone similar from your ethnic-cultural group was to use this program/manual?

5) Would you follow it?
Would you recommend it to a friend?
Why or why not?

6) What changes or improvements do you suggest we make? What are the key points you would pull from each lesson?

7) How can we motivate Latinas in the community to voluntarily use this program/manual?

APPENDIX F: DEMOGRPAHIC QUESTIONNAIRE

DEMOGRAPHIC FORM

Date of birth: / /

Marital Status:

0- Single (never been married)

1 - Married or living as married

2- Widowed

3 - Separated/divorced (not living as married)

9 - Missing value

Do you have any children? How many? ____ ____

What is your highest level of education?

1- 8th grade or less

2- Some high school, did not graduate

3 - High school graduate or GED

4 - Some college or 2-year degree

5 - Four-year college graduate

6 - More than 4-year college degree

Do you have a job at present? or Are you still in school? What is your job title?

How long have you been doing this job?

What does this involve?

Have you had to do any particular training for this?

Are (were) you responsible for someone else's work? Are (were) you a manager, foreman, or supervisor?

Occupational Status of Partner

What does your husband/partner do for a living?

How long has he/your partner been doing that job?

What does it involve?

Has he/your partner had to do any training?

Is (was) your husband/partner responsible for other people's work?

Full-time Students

If you are a full-time student, please answer:

Father's (or mother's) highest level of education:

Father's (or mother's) occupation:

Income Level

What is your total yearly household income?

1 - Less than $25,000

2 - $25,000 - $49,999

3 - $50,000 - $99,999

4 - $100,000 or more

Health Insurance

During the past five years, were you covered by any health insurance?

0 - No
1 - Yes

IF YES: For how many months out of the past five years were you covered by health insurance?

____ ____

Height and Weight

What is your current adult height, without shoes? ___ feet ___ ___ inches

What is your current weight, in light clothing? ___ ___ ___ pounds

Eating Habits

Have there ever been times when you have eaten what other people would think is an unusually large amount of food?

Yes or no

How many episodes of overeating have you had over the past 4 weeks? _____

During these episodes of overeating, how many episodes did you lose control or couldn't stop eating when you started? _____

APPENDIX G: CODEBOOK

Theoretical background:

Analyze using the constant comparative method: The essence of CCM is: 1) the systematic comparison of each text assigned to a category with each of those already assigned to that category, in order to fully understand the theoretical properties of the category; and 2) integrating categories and their properties though the development of interpretative memos.

During the coding process, determine if a participant's statement is a continuation from their previous statement or in agreement with another person's statement, in which case, it should be coded as the same or no code.

Instructions (from the email) :

- Attached is the codebook and a focus group. I'll start coding the same so we can discuss any discrepancies and calculate inter-rater reliability. Afterwards, you and I will code one of the phone interviews that I conducted in order to check the consistency of the codebook. It's likely that the codebook will need be refined after the focus group analysis, in which case, I'll do that and then we'll code the interview with the revised codebook.
- Code this focus group responses under the 13 codes/categories independently.
  - as you'll see in the codebook, these codes are organized according to research question, color coded, and numbered appropriately. As you code focus group, please highlight the code according to the color and indicate number.
  - codes/categories are mutually exclusive - code each response under only one category
  - sometimes a participant went on and on, but she was talking about the same issue. code that response only once, under one category.
  - sometimes a participant's response may relate to two issues, code that as separate responses under different categories
    - because this is the first round of coding, it's likely that the responses do not fit "cleanly" under each code, in which case, we'll have a discussion on how to refine that code.
- Once we're done coding, we'll calculate the total N of responses and % of responses under each category.
- I will code via Nvivo, as it organizes and accounts for your codes easier than word. You are welcome to do it either way (word or Nvivo).
- As you code, please make any comments on the codebook, e.g., critiques, clarity in definition, inclusionary, or exclusionary criteria, poor/need better examples.

RQ1: What unique beliefs or contextual factors may impede or promote Latinas' ability to engage in healthy behaviors? (i.e., what are the factors that may be unique to Latinas that affect their health?)				
Code name/label	**Definition**	**Inclusion Criteria**	**Exclusion Criteria**	**Example**
1.1: Monitoring of her health CODE NAME: [HEL MON]	Refers specifically to past experiences with food logging/monitoring one's health	Relevant statements about food logging/monitoring that doesn't relate to the manual (i.e., past successes and/or challenges with food monitoring, health behavior monitoring, exercise, overall nutrition)	Statements regarding food logging that relate to the manual	P2: I used it for about a week, then I was like this is stressful. I hate looking back over what I ate, like whatever, you just have those days when you can't contain yourself on that muffin. She's right, you really do start saying "oh should I eat this"? You don't' want to deprive yourself, because everything's like, you know, keep portions.
1.2: Family dynamics and support CODE NAME: [FAM DYN]	Thoughts and feelings regarding family structure, differences, rituals, dynamics, or interference that influence health behaviors	Statements FROM their family (including husbands) that can affect their health	Statements that refer to what they do as a mother/caregiver FOR their family	P3: Dinner time is the most important meal; it's the time we gather as a family. P2: I feel like a lot of Hispanic families that I've encountered, my family, are very "oh, eat a little bit' or 'here's some more.' You can't say no, and they get upset if you don't. And they get upset and if you don't eat it, they think you didn't like it.

Code name/label	Definition	Inclusion Criteria	Exclusion Criteria	Example
1.3: Caregiving role/motherly responsibilities [MOM-CARE GIV]	Comments about caregiving role or motherly responsibilities that influence (positive and negative) health behaviors	Comments about their ROLE as a caregiver/mother Note: some participants may be caregivers to siblings, nephews & nieces, grandparents, & parents	Comments about how their family can influence their health Irrelevant statements that do not refer to caregiving role/responsibilities influence on health behaviors	P2: "I have kids; I don't have time to measure!" P1: "We run the house, pay the bills, buy stuff for the house, cook, clean, take care of the children;" P3: But I think when we have kids we focus more on making sure they're healthy, they're growing healthy, they're active, they…ya know like my kids there's no juice, there's no soda, there's not fast food, and ya
1.4: Facilitators to health management CODE NAME: [FACIL]	Behaviors or experiences judged as "successful" for health behavior change and/or maintenance	Relevant statements that reflect personal experiences that facilitate successful health behaviors (e.g., goal setting, consistent support person, self-efficacy thoughts ["I just did it!"])	Statements that are barriers to their health	P: Oh, yeah. I've realized now that if I do eat more throughout the day but smaller portions it actually helps me lose weight, which I was very confused about at first. I was like why am I eating more and losing weight it's supposed to be the opposite way, so that's my struggle basically.

Code name/label	Definition	Inclusion Criteria	Exclusion Criteria	Example
1.5: Barriers to health management CODE NAME: [BARR]	Behaviors or experiences that interfered or challenged health behavior change and/or maintenance	Relevant statements that reflect personal experiences that interfered health behaviors (e.g., weight gain during pregnancy, change in schedule, significant life transitions [divorce, marriages, move to new location], work responsibilities, limited social support/accountability person)	Statements that can facilitate their health	P:I also noted that in here they talked a lot about having a buddy and how it's successful to have someone with you and working out with you. I thought it was good but I've been in Charlotte in a while and I have two friends in Charlotte. They're stick thin, they're not going to do this. They don't need to do this. But a way to actually help…maybe an online network. P2: I lost 40lbs once but when I ate normal again (tortillas, rice, beans, soda) I gained it back.

RQ2: What cultural components should be considered and included in the culturally adapted LEARN manual? (i.e., what cultural components/issues/environmental/broad level components need to be considered when culturally adapting)				
Code name/label	**Definition**	**Inclusion Criteria**	**Exclusion Criteria**	**Example**
2.1: Increase of diversity CODE NAME: [DIVER]	Consideration of diversity factors that can affect health or feasibility of manual	Comments about integrating or merging other ethnic cultures with their own (i.e., increasing diversity in every day behaviors, norms, or values outside of Latino culture	Statements that seem more relevant to Latino cultural backgrounds	P1: Just the basic 'how-tos'. How to deal with certain situations. Regardless of your tradition, I'm Puerto Rican – and there are certain things I cook, but I don't just cook Hispanic food, I only do that once or twice a week. I cook Asian and Indian and all types of stuff all throughout the week.
2.2: Latino health beliefs & expectations CODE NAME: [CHB]	Health beliefs constructed from Latino culture (i.e., norms, values)	Health belief statements that may have developed from Latino culture (i.e., knowledge regarding fad diets, health advertisements, religious considerations, cultural health awareness "passed" down from generations, beliefs on medical diagnoses)	Statements that can apply to all cultures about health beliefs.	P2: yeah, some people think that if I only eat once a day…but your body will handle that differently than if you eat small things during the day. P3: the information is already in there, at least the women in my family are very fad-oriented. My mom will do these cleanses and she'll buy these…what's that thing? P1: Herbalife?

Code name/label	Definition	Inclusion Criteria	Exclusion Criteria	Example
2.3: Environmental facilitators or barriers CODE NAME: [ENVIRON]	Environmental factors that promotes or inhibits health	Statements about their environment (positive & negative) that affect their health (e.g., neighborhood factors/cost of or lack of nearby facilities, lack of education or information, social environment not conducive to health)	Statements about personal factors that influence health and does not apply their environment	P1: We need more education too we, we do have somebody who provides education in the community and I think she's probably the only one whose talking about, about the need to, to eat the whole wheat. I don't hear much, we don't talk much about it.
2.4: Cultural meaning of food and health behaviors CODE NAME: [CUL MEAN HEL]	Social and emotional meanings of food and physical activity within Latino culture	Statements about cultural meaning of food and engaging in physical activity	Statements that do not refer to cultural meaning of food and physical activity	P3: …But, for my dad, he grew up in a restaurant. Food was really important in his household. His mom's way of loving her family was cooking. So that carried over with my Dad's cooking.

RQ 3: How feasible and relevant would it be to culturally adapt the LEARN manual?				
Code name/label	**Definition**	**Inclusion Criteria**	**Exclusion Criteria**	**Example**
3.1: Manual too redundant/repetitive CODE NAME: [REDUN]	Redundant/repetitive manual content (i.e., lessons) that can affect adherence	Comments (positive and negative) that discuss repetitive/redundant content (e.g., manual felt "dumbed down" or pace of manual)	Comments that do not relate to redundancy of manual content	P1: I agree. I feel like if you see in lesson 2, they talk about the benefits of physical activity. Then if you go to lesson 3 it's the importance of being active. It's like the same thing just with a different title. I don't feel like…so then it's like "ok, I know I'm going to be reading the same thing". That's a little frustrating.
3.2: Positive statements about manual CODE NAME: [POS CON]	Positive/supportive thoughts and feelings regarding manual content	Comments that refer to positive/supportive manual content and information only	Negative comments or criticism about manual content & structure.	P2: I liked how it was split into 12 different lessons, or like weeks. That's like something Realistic for most people. That means 3 months. Not, like, one week. This is for one week, do it all and you'll lose this amount of weight. It doesn't tell you specific, what you will lose, it says you will be in a better place.

Code name/label	Definition	Inclusion Criteria	Exclusion Criteria	Example
3.3: Criticisms of manual content CODE NAME: [CRITICS]	Refers to issues, criticisms, or negative thoughts and feelings regarding manual content	Critical comments about manual content and information only (e.g., information, structure, organization and length of each lesson, too tedious, too many numbers and calculations, too many words, too much education, not enough action, too many quizzes, not enough quizzes, content that needs updating [e.g., MyPlate food reference, needs technology)	Positive statements about manual structure or content.	P1: Or not even necessarily at the beginning, it could be at the end, but put all the quizzes at the end. Tell me 'take these 5 quizzes in the back of the book'. As opposed to every week. P1: Yeah, you can scan and it puts the calories. SO if this had some sort of app that could go with it, I feel like it would be so much more effective.
3.4: Need for cultural relevance CODE NAME: [CUL RELEV]	Manual content that requires culturally relevant info	Comments that will involve how to improve cultural relevancy (e.g., culturally relevant foods, use of vignettes, relevant personal stories)	Comments that do not discuss ways to improve cultural relevance	P1: But holiday stuff, that could be something interesting to include. Whether I'm traditional or not, I like certain dishes. I feel like thanksgiving has to have certain things. Stuff like that may be important culturally.

Code name/label	Definition	Inclusion Criteria	Exclusion Criteria	Example
3.5: Structure of food logging forms of manual CODE NAME: [LOG FEASE]	Refers specifically to food logging or monitoring used in this manual	Positive and negative comments about food logging forms in the manual (e.g., structure of monitoring, logging forms, information needed to log, booklet to log would help)	Statements made about past experiences with food logging but doesn't mention the use of food logs in this manual	P2: you know how you said how it changes, the way you track it. At first you're keeping track of calories, but there are good calories and there are empty calories. How it spreads it out between dairy, meat, wheat, and everything. I feel like that's really helpful once you start getting used to what you're eating. You have to start basic and then you kind of separate.