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Fit 4 You: an intervention program for occupational therapists working with children with obesity

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Doctoral Project

FIT 4 YOU:

AN INTERVENTION PROGRAM FOR OCCUPATIONAL THERAPISTS WORKING WITH CHILDREN WITH OBESITY

by

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DEDICATION

I would like to dedicate this work to the children who inspired and helped inform this project. I dedicate this work to helping improve the lives of children with obesity who struggle to find ways to stay healthy in our environment.

ACKNOWLEDGMENTS

I would like to extend my sincerest gratitude to everyone who played a role in helping me achieve my doctoral degree. I truly could not have accomplished this goal without my support system. First, my **parents** for teaching me to believe that anything is possible, and affording me the best opportunities, so that I can be where I am today. Secondly, my patient **husband and rescue dog, Wolfie**, who are my biggest cheerleaders and sat by my side through each assignment. Third, my **sister, (brother and sister) in-laws and nieces and nephews**, for their understanding and encouragement as my time was directed at completing my doctoral degree.

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***FIT 4 YOU*:**

AN INTERVENTION PROGRAM FOR OCCUPATIONAL THERAPISTS WORKING WITH CHILDREN WITH OBESITY

SAMANTHA NICOLE BURD GOLDMAN

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ABSTRACT

Childhood obesity affects roughly 1 in 5 children in the United States (Centers for Disease Control and Prevention, 2018). Childhood obesity is related to health concerns including physical illness, mental illness, and occupational imbalance (Centers for Disease Control and Prevention, 2016; Cantal, 2019; Pizzi, 2016). An in-depth literature review revealed that there are very few childhood obesity programs that support children at the familial or individual level. Rather, current programs are standardized, manualized, and do not allow for customization (Chomitz et al., 2010; Salmon et al., 2008). Program benefits vary based on the participants' personal and familial factors and supports (Chomitz et al., 2010; Salmon et al., 2008). Therefore, many children do not receive the optimal benefits that these programs suggest.

The author developed a 12-week, evidence-based, intervention program designed to guide occupational therapists in treating children with obesity. Behavior change theories guided both the understanding of the problem and the development of the program. *Fit 4 You* utilizes a flexible intervention approach that allows for customization of the program for each participant, therefore accounting for their personal and familial

factors. The *Fit 4 You* intervention is guided by four evidence-based concepts: (1) planning, (2) self-efficacy, (3) practice and (4) fun. The short and long-term outcomes of this program provide necessary services to an in-need population and contribute to evidence-based practice for occupational therapists. Findings from the program evaluation research will used to improve the program design and will be disseminated to families and occupational therapists to promote program expansion.

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LIST OF ABBREVIATIONS

BU	Boston University
GAS	Goal Attainment Scaling
OT	Occupational Therapist

CHAPTER ONE

The rate of childhood obesity in the United States has been steadily increasing since the year 2000. Data from the National Health and Nutrition Examination Survey, indicates that in the year 1999–2000, 13.9 percent of children aged 2–19 were diagnosed with childhood obesity (Hales et al., 2017). The same survey, completed in 2015–2016, demonstrated a significant increase in the rate of childhood obesity to 18.5 percent of children. In response to these rising rates, numerous community and national programs were created to prevent childhood obesity and improve the health of children in the United States.

Throughout communities, services have emerged to promote positive health behaviors for children. For instance, libraries now offer free education classes (Sonoma County Library, 2020), and community gardens have been planted to inspire children to eat fruits and vegetables (Delray Beach Children's Garden, n.d.). At the national level, the Centers for Disease Control and Prevention (Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, 2019) has launched initiatives specifically intended to support healthy eating and active living. Additionally, in the United States, the "Let's Move" Program, initiated by previous first lady, Michelle Obama, has been instrumental at providing education for the community, as well as advocating for policy change (Let's Move!, n.d.).

New policies have been implemented to allow individuals more control over their health. For example, the Food and Drug Administration updated their food label requirements (Food and Drug Administration, 2016). Additionally, as of 2020, companies

are required to provide larger and bolded calorie counts, appropriate serving sizes, and to report added sugars. The intent is for the labels to be more transparent and easily navigated by consumers. Further, as of 2015, restaurant chains with more than 20 locations are required to provide nutrition facts for menu items, so that customers can be better educated on the amount of calories they are consuming (Kux, 2014). It would thus be expected that childhood obesity would begin to resolve in the United States. However, in addition to the above positive environmental changes, a comparable amount of negative environmental factors exists.

One area of particular concern is the role of the obesogenic environment (Salmon et al., 2008; World Health Organization, 2017). Typically, this environment promotes decreased energy expenditure and increased calorie consumption. For example, tweens and teens are spending an average of 6–9 hours on screens a day (Rideout et al., 2015). Due to advances in technology, children have immediate access to social media, television, and video games. Physical activity has also declined due to lack of physical education and recess in the school systems (Centers for Disease Control and Prevention, 2003). At the same time, processed food is widely marketed, wrapped in colorful packaging, and contains television characters to entice children. All of these factors can make it challenging for families and children to select healthier food and activity options.

In order for the previously mentioned community and national programs to have a significant effect, families and children must *choose* healthier options over unhealthier options. For example, they must choose to fill their grocery cart with the available health promoting foods over candy bars. This means that despite community and national level

changes, behavior change must *also* occur at the familial and individual level. This behavior change likely occurs differently for each child based on their home environment, food preferences, and social networks. Yet, most programs are designed only to prevent or decrease obesity at the population or community level, and do not account for the child's personal or familial factors.

Thus, the problem being addressed is that current childhood obesity programs do not sufficiently support behavior change at the individual and familial level. As a result, some families may not be adequately prepared to defend themselves against their obesogenic environment. Most existing childhood obesity programs are designed at the community level, and follow a strict manual. These standard programs do not account for each child's values, motivational factors, and contexts (Chomitz et al., 2010; Dematttia, et al., 2006; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014). Therefore, even after participating in these programs, families and children may be unsuccessful at integrating healthy routines into *their* life. The purpose of this is doctoral program is to address this gap by creating a childhood obesity program that directly intervenes at the familial and individual level. The social-ecological model was utilized to understand and interpret the impact of the problem and design the solution.

The social-ecological offers a framework for understanding the influence and importance of the multiple-layers on children with obesity (Ohri-Vachaspati et al., 2015). Additionally, it offers insight on the impact of neglecting one or multiple of these layers in intervention programs. This will be discussed in greater detail in chapter two. The *Fit 4 You* program was designed with the understanding that the combined effects of the

various layers of the environment need to be considered when working with children with obesity.

Project Overview

The *Fit 4 You* program is an occupational therapy program designed to assist children and adolescents diagnosed with obesity to achieve their goals, and improve their participation and performance by embracing their personal and familial factors. This program focuses on preparing a participant with strategies and skills unique to their environments, that enable them to be independent at the community level. *Fit 4 You* is innovative in that the occupational therapy practitioner recognizes and incorporates the child's routines, habits, and desires into their individualized therapy plan. There are four main components of this program based on health behavior change theories and evidence: establishing an action and coping plan, increasing the participant's self-efficacy, physical and mental practice, and fun. The combination of these four components facilitates skill development and empowers the participants to choose a "healthy" lifestyle that fits *their* lives.

Domain of occupational therapy

The most recent revision of the Occupational Therapy Practice Framework: Domain and Practice describes the occupational therapy domain as "achieving health, well-being, and participation in life through engagement in occupations" (American Occupational Therapy Association, 2014, p. S4). One of the main factors of this program is to create meaningful, occupation-based goals, to ultimately improve the health, well-being, and participation of the clients. During the duration of the program, the

occupational therapist will routinely create an occupational profile and adapt interventions to design the “just-right-fit” for each client (The American Occupational Therapy Association, 2014). This “just-right-fit” principle is essential to increasing the likelihood of sustainable lifestyle change for *all* children in the program.

CHAPTER TWO

Introduction – Overview of the problem

The problem being proposed is that the majority of existing childhood obesity treatments fail to support the whole child within their individual and familial contexts (Chomitz et al., 2010); Demattia et al., 2006; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014). Most interventions do not account for motivational factors, family routines, or contextual barriers. Therefore, many children and families demonstrate difficulty creating healthy lifestyles that can be sustained long-term. This is concerning considering that approximately 13.7 million children and adolescents were diagnosed with obesity in 2016 (Centers for Disease Control and Prevention, 2019).

The Center for Disease Control and Prevention (2018b) defines childhood obesity as a body mass index (BMI) over the 95th percentile. Childhood obesity can have significant physical, mental, financial, and occupational implications. Children with obesity are at risk for developing serious physical and mental comorbidities including high blood pressure, high cholesterol, type 2 diabetes, psychological disorders, and joint and musculoskeletal changes (Centers for Disease Control and Prevention, 2016; Pulgarón, 2013). They also experience disruption in all areas of occupation, limiting their participation in daily life and well-being (Cantal, 2019; Pizzi, 2016). Additionally, children who are diagnosed with obesity at a young age are more likely to be obese as adults (Nonnemaker et al., 2009). Adult obesity has significant personal and economic ramifications. Adults with obesity are at risk for secondary diagnoses such as cancer, strokes, and early death. This caused the economic impact of adult obesity to be an

astonishing 147 billion in 2008 (Centers for Disease Control and Prevention, 2018a). These grave consequences indicate that effective programs must be in place to support children with obesity. This motivated the author to further investigate the proposed problem and possible solutions.

To understand the validity, causes and ramifications of the proposed problem, a literature search was completed. The author posed three specific research questions related to the proposed explanation of the problem. First, does an obesogenic environment exist in the United States and to what degree does it contribute to obesity? Second, why do some children succeed in an obesogenic environment or in childhood obesity programs, while others struggle with obesity? Third, which components of current childhood obesity programs are unsuccessful? With these questions in mind, the author embarked on the literature search.

The databases used for this search were "Pubmed," "Science Direct," "CINAHL," and "PSYCInfo." The following search terms were utilized in various combinations: "childhood obesity," "obesity," "child OR adolescents OR youth OR children OR teenager" "obesogenic environment," "Social-ecological model," "positive deviance," AND "occupational therapy." The filters for this search included journal articles, and the year 2000 to present. Among the results, there were very few randomized control trials. The majority were retrospective studies, cross-sectional studies, or review articles.

A review of the literature revealed three key points concerning the proposed problem statement. First, that obesogenic environment in the United States' is highly appealing and promotes "negative" health behaviors, which may be contributing to the

rise in childhood obesity (Cantal, 2019; Federal Trade Commission, 2008; Li et al., 2015; Moreno et al., 2016; Radesky & Christakis, 2016, Reingold & Jordan, 2013; Salmon et al., 2008; Senauer & Gemma, 2006; World Health Organization, 2017; Yayan & Çelebioğlu, 2017). Second, that some children can maintain a healthy lifestyle despite living in an obesogenic environment, which may be explained by protective positive outlier behaviors (Foster et al., 2015; Nelson et al., 2015; Stok et al., 2014; Taveras et al., 2015). Third, many conventional childhood obesity programs are designed at the community level. Therefore, they are standardized and manualized, which does not account for each child's person and familial factors. (Chomitz et al., 2010; Demattia, et al., 2006; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014). Each of these points will be discussed at length in the following paragraphs. Figure 2.1 is a depiction of the proposed problem, based on the literature review.

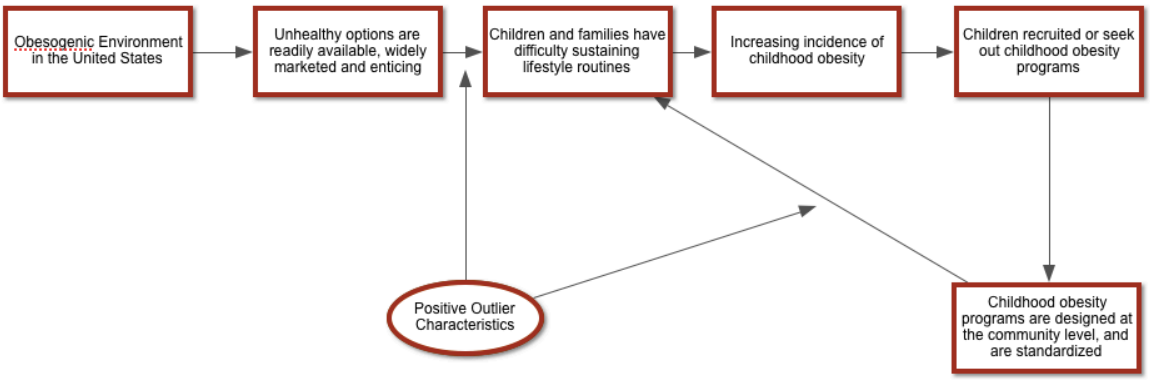


Figure 2.1: Diagram of Proposed Problem

Obesogenic Environment

It is understood that obesity is caused in part by an energy imbalance between calories expended and consumed (Salmon et al., 2008; World Health Organization,

2018). The World Health Organization (2017) defines an obesogenic environment as one that supports this energy imbalance by promoting "high energy intake and sedentary behavior. This includes the foods that are available, affordable, accessible and promoted; physical activity opportunities; and the social norms in relation to food and physical activity" (p. 5).

This obesogenic environment has become evident in the United States. Children are consuming more calorie-dense food due to impoverished food environments, increased junk food marketing, increased portion sizes, and lack of healthy items in schools (Cantal, 2019; Li et al., 2015; Reingold & Jordan, 2013). In 2006, $2.1 billion was spent on marketing food and beverages to both children and adolescents (Federal Trade Commission, 2012). The most highly marketed items to children and teens were carbonated beverages, restaurants, and breakfast cereals, respectively (Federal Trade Commission, 2008). The least marketed foods were fruits and vegetables. Home cooked meals are also becoming less common, and families are spending more time eating out (Senauer & Gemma, 2006). The Federal Trade Commission released a *Review of Food Marketing to Children and Adolescents* in 2012 (Federal Trade Commission, 2012). This reported concluded that although the food industry has shown progress in its marketing, there is still much that can be improved. Although the amount spent on food and beverage marketing dropped 19.5% from 2008 to 2012, the total spent was $1.79 billion, just short of the $2.1 billion spent in 2006. While marketing through television decreased, social media and "viral" marketing were on the rise. The percentage of marketing for carbonated beverages, restaurants, and breakfast cereals remained identical to the 2008

report. Although *small* nutritional improvements were observed, significant amounts of unhealthy food continue to be marketed to our impressionable youth, many of whom are developing sedentary habits.

Sedentary behavior in children has also increased in the United States. Children are not receiving sufficient physical activity during the school day due to changes in frequency of recess and physical education (Centers for Disease Control and Prevention, 2003). This is concerning considering that children spend most of their day at school. The Society of Health and Physical Activity Educators (SHAPE) (2010) recommends 150 minutes per week of physical education for elementary school children and 225 minutes per week for those in middle and high school. Unfortunately, only 8% of elementary schools, 6.4% of middle schools and 5.8% of high schools provide physical education daily (Burgeson et al., 2009). In addition to not receiving adequate physical activity at school, children are spending an extraordinary amount of time engaged in "screen time" at home. The American Academy of Pediatrics (2019) voiced concern that according to research (Rideout et al., 2015), children are spending over seven hours a day engaged in media including computers, video games, television and cellular phones. This leaves little time to engage in physical activity during the day, and potentially increases children's exposure to negative food marketing, as mentioned above (Moreno et al., 2016; Radesky & Christakis, 2016).

It has also been suggested that living in an environment that promotes the above obesogenic behaviors significantly relates to a child's body mass index (BMI) (Li et al., 2015; Yayan & Çelebioğlu, 2017). For example, the community food environment

surrounding children is significantly related to weight status (Li et al., 2015). Specifically, greater access to convenience stores and full-service restaurants was positively correlated with BMI, while proximity to supermarkets had an inverse relationship. Similarly, if a child's school provided a healthier food environment, the children were more likely to have a normal weight status. In another study of obesogenic environments by Yayan and Çelebioğlu (2017), adolescents who were obese were more likely to be living in an obesogenic environment. Thus, it is unsurprising that childhood obesity continues to be an emerging concern, due to the obesogenic environment the United States. However, despite the predominance of unhealthy options, some kids are able to make healthy choices and engage in health promoting activities and are thus considered to be positive outliers. That is, some children and families have characteristics that protect them against these options.

Positive Outlier Theory

The theory of positive deviance or outliers, explains that some people thrive despite living in a maladaptive environment (Foster et al., 2015; Stok et al., 2014). There is an array of factors that could explain this deviation from the norm in an obesogenic environment. Stok et al. (2014) identified that self-regulation skills acted as a protective factor against unhealthy snacking. Foster et al. (2015) found that parent perceptions, organizational skills, and knowledge on serving sizes and healthy food had a significant effect on weight status. Moreover, positive outlier families have been shown to use health promoting strategies including family-level changes, parent modeling, household rules and creativity (Sharifi et al., 2014; Taveras et al., 2015). These factors have enabled

some, but not all, families to maintain a normal weight in an obesogenic environment. Children who struggle to maintain a normal weight are often referred to, or their parents seek out a childhood obesity program.

What may be beneficial for one family, may not be the ideal solution for another family. There are a multitude of factors and strategies affecting childhood obesity. While major themes can be identified, no one solution can be used to address childhood obesity (Nelson et al., 2015). Therefore, it could be inferred that a "one-size-fits-all" program would not be beneficial for all children with obesity. Yet, many childhood obesity programs are standardized and manualized, using a one-size-fits-all approach (Chomitz et al., 2010; Demattia et al., 2006; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014).

Childhood obesity programs

The author originally intended to locate studies designed by occupational therapists, or that included individual, client-centered treatment. However, while many occupational therapy articles encouraged that the profession intervene with this population (Cantal, 2019; Pizzi, 2016; Pizzi & Vroman, 2013), evidence showing effectiveness of occupational therapy interventions addressing obesity still appears to be limited. Evidence suggests that current childhood obesity programs typically provide a strict regimen for providers to follow. This type of manualized and standardized program is often derived from disease self-management approaches, and provides clinicians with a structured approach to treatment. However, standardized programs may not allow the intervention to be individualized, making it difficult for the child or family to incorporate

the prescribed practices into their daily lives. As a result, some people may not receive optimal benefit from these programs.

For example, a randomized control trial by Salmon et al. (2008) focused on reducing screen time behaviors and increasing physical activity for children. The proposed intervention consisted of a behavior modification group, a fundamental movement skills group, a combined group, and a control group. Education was delivered via "lessons" to school classes, and standard games and activities developed for the program. These predetermined interventions did not address the individual factors of each child. Gender was discovered to be a moderator for physical activity in this study. Boys in the fundamental movement skills group and combined group demonstrated a significant difference in movement counts per day and vigorous-intensity physical activities minutes per day in comparison to the behavior modification and control groups. In contrast, girls in the behavior modification group demonstrated an improvement in movement count and moderate-intensity physical activity in comparison to control group. The authors suggested that the targeted skills in the fundamental movement skills group were more favorable to boys (kicking, running, and jumping), while the skills in the behavior modification group were more favorable to girls (self-monitoring, advocacy, and home environment). The authors proposed that future programs may benefit from providing customized activities for each gender.

Similar results were identified by Chomitz et al. (2010), who utilized the socio-ecological model as a guiding framework for their research on the community based-intervention, Healthy Living Cambridge Kids (HLCK). The authors suggested that they

intervened at all four levels: community, school, family, and individual. However, the interventions offered at the family and individual level were minimal and mostly standardized. At the family level, family fitness nights and family expos were offered as resources. In addition, "receptive" families were offered nutrition counseling. At the individual level, health and fitness program reports were distributed annually. While this study did achieve largely successful outcomes, it was not universal. Girls, children from higher income families, and white and black children, showed an "especially" significant decrease in weight status. In terms of weight status, 24% of children who were obese improved their status to being overweight during the 3-year period. Unfortunately, 9.4% of healthy weight children became overweight and 18.6% of children who were overweight became obese. Ultimately, this standardized program did not benefit many of the children. This author suggests that further customized intervention at the family and individual level would have led to a decrease in weight status for a greater number of children. While these disproportionate outcomes are concerning when utilizing standardized and manualized programs, the lack of attention to individual environmental or contextual factors is problematic.

In fact, childhood obesity is known to be caused by a complex interaction with *multiple* personal and social factors (Schmelzer & Krishnagiri, 2014) that families have to address when trying to make changes. To illustrate, mothers reported that achieving a healthy lifestyle was more of a "maze" than a "plan" due to this array of interacting factors (Schmelzer & Krishnagiri, 2014). As a result, the mothers felt fatigued and overwhelmed when trying to integrate conventional, standardized health promotion

techniques into their daily life. Similarly, families endorsed negative experiences with their health care practitioner when their child's treatment was "generalized" and attention was not given to the child's personal factors and background (Sharifi et al., 2014). This generalization of treatments and lack of individualization may contribute to why children are not universally benefiting from conventional programs.

To summarize, although many approaches can be taken to combat childhood obesity, designing interventions that can be customized at the level of the family and child within an obesogenic environment, may be more effective towards improving the knowledge, strategies, perceptions and ultimately the health of the child and family. For this reason, the Social-Ecological Model, which proposes addressing multilevel contextual, environments, and personal factors to enable behavior change was chosen to guide the author's understanding and development of this program (Ohri-Vachaspati et al., 2015).

Program Theoretical Framework

The Social-Ecological Model has previously been used to guide obesity intervention and is the Center for Disease Control and Prevention's guiding model for prevention of obesity (Brown, 2011; Cassel, 2010; Ohri-Vachaspati et al., 2015). Recognizing each person's unique contextual and personal factors is a vital component to improving childhood obesity interventions. The model consists of five levels of hierarchical factors: individual, interpersonal, community, organizational, and policy-enabling, which are illustrated in Figure 2.2. The Social-Ecological Model was chosen for the purpose of this doctoral project due to the emphasis on the role or impact of an

obesogenic environment while promoting intervention at the familial and individual level.

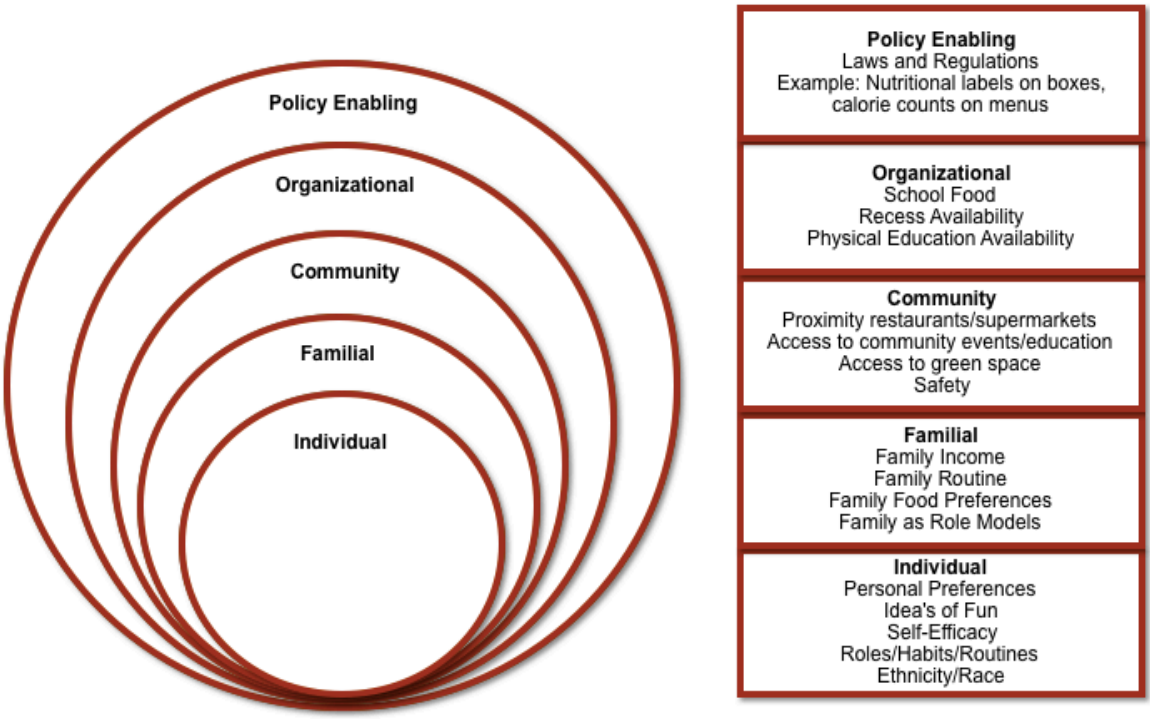


Figure 2.2: Modified Social Ecological Model for the *Fit 4 You* Program

This author hypothesizes that utilizing interventions at the familial and individual levels has the potential to help all participants successfully change their behavior. These interventions will focus on changing perceptions and behaviors, thus a framework for addressing motivational and intentional factors that influence intention to change is needed. To address this need, the Theory of Planned behavior was selected to guide the motivational factors behind behavior change. According to the Theory of Planned Behavior, there are three main constructs that determine intent to change, which are illustrated in Figure 2.3 (Clark & Janevic, 2014). First, *perceived behavioral control* describes how much control a person has over changing that behavior. Second, *subjective*

norm, represents how a person perceives that his/her peers perform and view that behavior change. Third, *attitude* denotes how the person feels and views that behavior and its outcomes. These three components are highly subjective, which further guides the author to believe that intervention at the individual and familial level is imperative for behavior change.

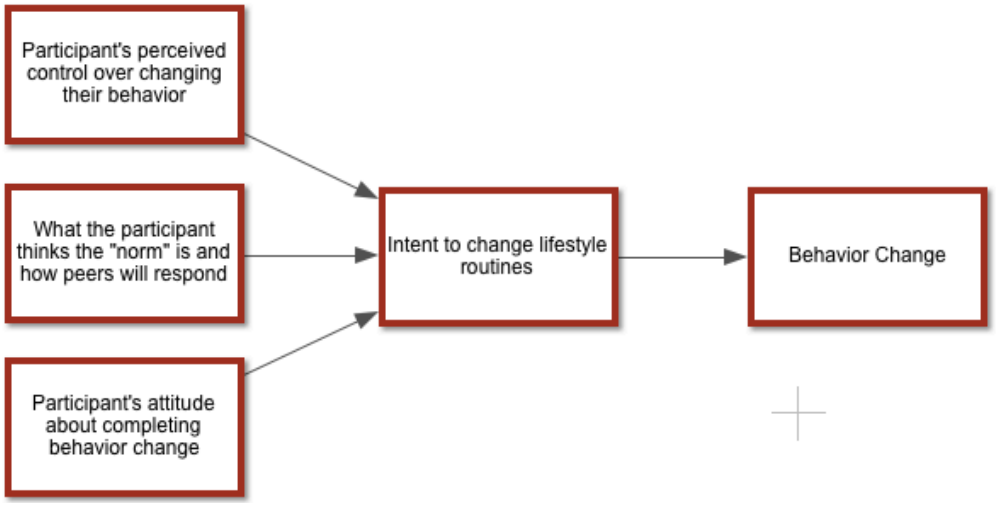


Figure 2.3: Modified Model of the Theory of Planned Behavior for the *Fit 4 You* Program (Clark & Janeciv, 2014)

This theory relates well to the targeted population as older childhood and adolescence is a pivotal time for developing social relationships and independence. The inclusion of subjective norm and perceived behavioral control will help guide the author in developing a program that motivates children and adolescents to complete a health behavior change. In order to ensure that the program was evidence-based, a second literature search was completed. This search examined previous health behavior change interventions that have been used at the individual and familial level with children and adolescents.

Literature Review

Based on the explanatory model of the problem, theoretical guidance, and the author's personal experience providing interventions for this population, four questions guided the literature search regarding behavior change interventions and those specifically for children with obesity. First, does the use of action planning or coping planning directly lead to behavior change? Second, does participating in activities that a child perceives as "fun" increase learning or performance? Third, do specific components of "practice" lead to improved self-efficacy or performance? Fourth, does self-efficacy mediate the relationship between planning and behavior change? The search terms and criteria of the literature search were chosen in an effort to answer these questions.

For the first two questions, the databases used to complete the literature search were "CINAHL" and "PSYCInfo." The searches were filtered to find only academic journals. The following search terms were utilized in various combinations: "child OR adolescents OR youth OR children OR teenager," "behavior change," "fun," "action plan," and "coping plan." The search term "obesity" was initially included, but resulted in no significant findings and was removed. The filters were initially set to "child: 6–12" and "adolescence: 13–18." However, it appears that action and coping planning has been studied more routinely in adults. Therefore, studies were accepted that *combined* adults, up to 45 years old, and children or adolescents. Once a sufficient amount of information was retrieved, the author began the literature search on the third question.

For the third question, the databases "CINAHL", "PubMed", and "PsycInfo" were utilized. The filters were the same as the first two questions, but were also limited to the

year 2000 to present. A variation of combinations of search terms were used: “physical practice,” “motor learning,” “practice,” “children,” “learning,” and “does practice improve self-efficacy.” Initially, the author had difficulty locating results, however the databases automatically expanded the searches. The expanded search provided sufficient results for the author to begin the search on the fourth question.

The combination of terms used to answer the author’s fourth question were “action planning,” “behavior change,” AND “self-efficacy.” The filters were identical to the ones above. 22 results appeared on the “CINAHL” database. The first three articles were applicable and included. The remainder did not fit the age or question. The same search was completed on PsycInfo and resulted in 19 articles. The results were examined and one result was chosen as applicable.

A review of the research revealed that these four intervention components were integral components in many successful behavior change research studies when performed correctly. First, *action planning and coping planning* have a positive effect on behavior change depending on the design of the program. Second, the effects of *self-efficacy* are more significant when acting as a moderator, instead of a mediator, to behavior change. Third, both mental and physical practice directly affect performance and self-efficacy, but have stronger results when combined. Fourth, *fun* improved learning, behavior change, and participation for children and adolescents. Based on the evidence obtained from the literature search, a causal pathway, located in Figure 2.4, was created utilizing these four components as essential elements of the *Fit 4 You* intervention. These main components will be reviewed below with supporting literature.

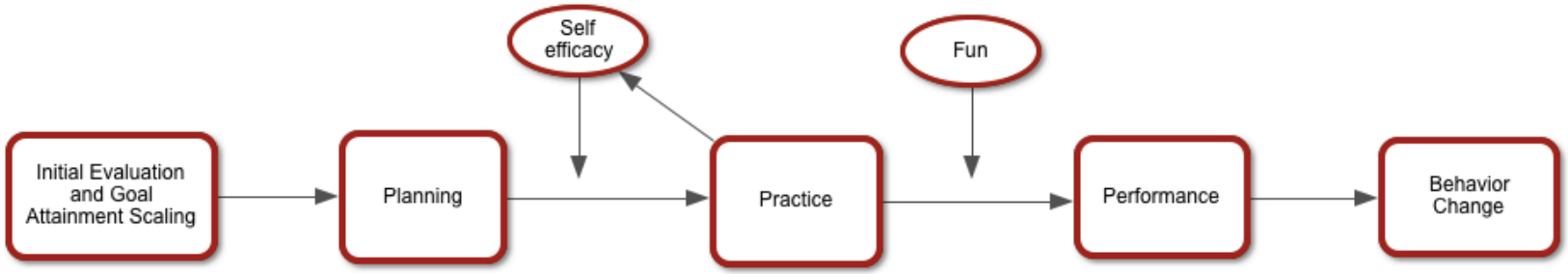


Figure 2.4: Causal Pathway of the Proposed Intervention Plan

Planning

Action planning and coping planning are integral elements of behavior change and can be conceptualized using the Health Action Process Approach (HAPA) model. As seen in Figure 2.5, the HAPA model was designed as a way to explain the gap between intention and behavior (Schwarzer, 2014).

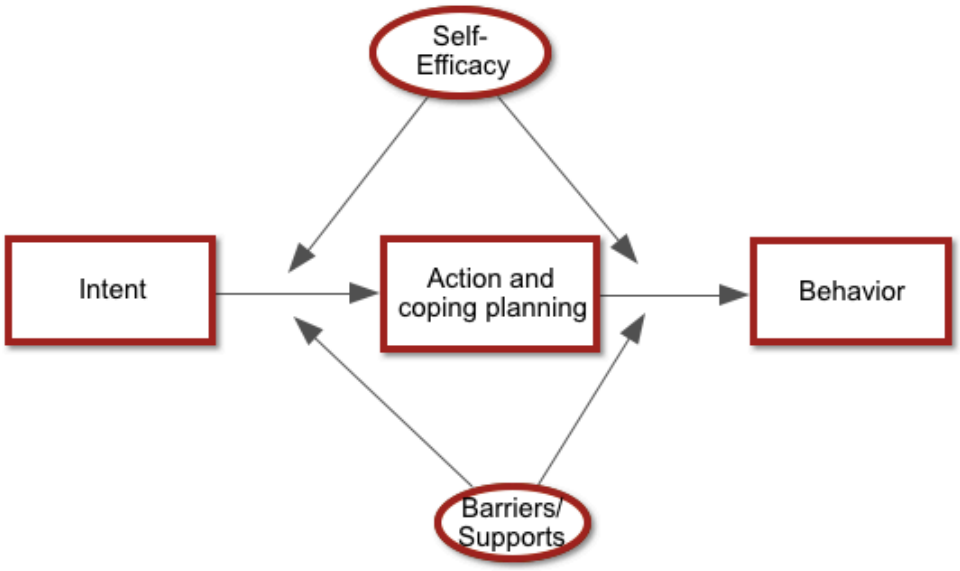


Figure 2.5: Modified Version of Health Action Process Approach Model

According to this model, people who create an action plan are more likely to engage in a behavior change. Additionally, people who create a coping plan are more likely to succeed in that behavior change. Studies show that incorporating action planning and coping planning into an intervention program could increase the likelihood of health behavior change (Sacher et al., 2012; Sawyer et al., 2018; Sevil et al., 2018; Szczepanska et al., 2013). Action planning is defined as preemptively determining "when, where, and how" a behavior will take place (Godinho et al., 2013). Coping planning entails envisioning barriers and using problem solving strategies to combat them when

encountered in daily life (Schwarzer, 2014). The health behaviors examined in the studies ranged from fruit and vegetable intake (Szczepanska et al., 2013) to sleep and movement (Sevil et al., 2018). The results indicated that preparatory behavior, also known as "planning," had a significant effect for participants over 12 years old in completing health behavior change. Unfortunately, only two studies were conducted on children with obesity. One of the programs targeting children with obesity is the MEND Program (Sacher et al., 2012). Although the intervention was completed at the community-level, participants were taught how to complete individual-level behavior changes. This was partially accomplished by education of goal setting and rewards. One component of the program is titled "Do It!" and is focused on teaching families to take action (UNC Center for Health Promotion and Disease Prevention, 2016). The MEND program resulted in significant changes in body mass index and waist circumference at long term follow-ups, which support action planning and teaching families how to complete individual-level behavior changes (Sacher et al., 2012). The exception was found by Sawyer et al., 2018 in a systematic review. While action planning was identified as a key "promising intervention," it was also identified as "non-promising intervention" in another study. Successful action planning depended on the specificity of the goal and duration of the study. Therefore, it is important to consider the goal elements in the design of the treatment when using action planning. In the systematic review by Sawyer et al. (2018), problem solving, also known as coping planning, was consistently identified as promising. Another key component of the HAPA model that will be included in the *Fit 4 You* program is self-efficacy.

Self-efficacy

In the HAPA model, self-efficacy is identified as a moderator throughout all behavior change stages. However, based on personal experience, the author initially hypothesized that self-efficacy would be a mediator between planning and behavior change. The research did not support this. Rather, self-efficacy was determined to be a moderator between the two components (Barz et al., 2016; Luszczynska et al., 2016; Luszczynska et al., 2011). This is consistent with the HAPA model. In the HAPA model, self-efficacy is understood as when a person feels that he or she has the ability to accomplish a desired action (Schwarzer, 2014). For example, one study examined increasing fruit and vegetable intake to decrease body mass index. Self-efficacy was discovered to be an important component both for increasing fruit and vegetable intake, and decreasing energy-dense foods for adolescents (Szczepanska et al., 2013). Another study by Luszczynska et al. (2011) determined that self-efficacy moderated the relationship between planning and physical activity behavior, increasing the likelihood that the behavior would take place. Therefore, individuals with high self-efficacy benefited more from planning interventions. The authors concluded that people with low self-efficacy may not benefit fully from planning interventions. Therefore, participants in the *Fit 4 You* program would benefit from developing self-efficacy skills in order to magnify the effect of planning on health behavior change.

Practice of Skills

According to Motor Learning Theory, children learn motor skills in a specific pattern, through practice and feedback to refine the skills (Exner, 2010). This occurs in

three phases. In the *cognitive phase*, the child learns the basic skills and creates a plan in their head. In the associative phase, the child continues to perfect the skill. Last, in the *autonomous phase*, the child performs the task easily. Based on this theory, the author hypothesized that physical practice and feedback would be sufficient for improving performance. However, the literature research revealed that a combination of mental and physical practice leads to the greatest success in performance (de Paula Asa et al., 2014; Hemayattalaba & Movahedi, 2010; Takazono & Teixeira, 2018). For example, in a study by de Paula Asa et al. (2014), physical practice of finger opposition led to improvement only on the hand that practiced, but mental practice led to an improvement bilaterally. In addition to improving performance, the literature also revealed that practice improves self-efficacy and confidence (Ernst et al., 2014; Frank Webb et al., 2015). Thus, in the *Fit 4 You* program, both mental and physical practice will be incorporated in therapeutic sessions. The effect of practice on self-efficacy should be considered with the above findings on the moderating effect of self-efficacy. The last theme identified in the literature search was that utilizing "fun," play-based activities would intrinsically motivate children and adolescents to increase their engagement in healthy lifestyle behaviors (Calderaro Munguba et al., 2008; Maziah et al., 2015; Sacher et al., 2012; Romero, 2015; Visek et al., 2015; Watson et al., 2016).

Fun Activities

According to the Intrinsic Motivation Theory, individuals are more likely to perform an activity if they derive pleasure and satisfaction from this activity (Alexandris et al., 2002). It is universally accepted that children demonstrate high engagement in the

occupation of "play." One study that is especially relevant to the *Fit 4 You* program compared the use of interactive board and video games on learning the food pyramid (Calderaro Munguba et al., 2008). Although the children preferred the video game, the level of attention and learning was similar in both types of games. Through interviews, comparisons, and focus groups on children and adolescents, the research also revealed that there were several subthemes and dimensions of fun that contributed to increased engagement. For example, important subthemes identified were social experiences with others, interacting with nature, games, and learning (Romero, 2015; Visek et al., 2015; Watson et al., 2016). Additionally, some programs found that educating kids about fruits and vegetables in a "fun" and exciting way leads to increased willingness to try new foods (Hornbeck et al., 2019; McCormick et al., 2009). Thus, in the *Fit 4 You* program, fun will be utilized as a moderator to increase the effect of practice on performance. This will be completed by ensuring that all activities are perceived as "fun" by the participant. The research surrounding the above elements of action planning, coping planning, fun activities, and self-efficacy strategies, have directed the author to examine the use of Goal Attainment Scaling and its associated theory to create each participant's personalized intervention plan.

Goal Attainment Scaling

Goal Attainment Scaling is a unique evaluation approach where clinicians and clients collaborate in the establishment of individualized goals (Kiresuk & Sherman, 1968; McDougall & King, 2007). The first step of Goal Attainment Scaling is to complete a client interview to gather data about what is meaningful to that person. The

second step is to create goals in conjunction with the patient with levels of predicted attainment. The client is able to not only choose their goals, but also relay their indicators for meeting this goal. For instance, a child may choose a goal of completing jumping jacks in gym class with his peers. He might feel that his expected level of outcome would be 10–15 jumping jacks. Somewhat less than expected may be 5–9 jumping jacks, and somewhat more than expected may be 16–20 jumping jacks. Therefore, using this approach allows the practitioner to create meaningful and achievable goals. Additionally, it provides a basis for an aforementioned action and coping plan to meet their expected outcomes. Goal Attainment Scaling also relates to the theory of intrinsic motivation discussed above.

An underlying component of the Goal Attainment Scale theory is that by setting meaningful goals, patients will be more motivated to participate, and are therefore intrinsically motivated (McDougall & King, 2007). Clinicians can then create "fun" intervention plans to assist the children in meeting their chosen goals, thus amplifying the level of motivation. This framework could be useful in informing the *Fit 4 You* intervention. Use of Goal Attainment Scaling would enable the *Fit 4 You* program to provide the individualized and familial level intervention that is missed in most childhood obesity programs. This would be accomplished by using action planning, coping planning, fun activities, and self-efficacy strategies to meet the client's chosen, meaningful goals. The goal indicators would enable both the clinician and client to receive feedback on progress to the goals, and alter the plan as necessary. For this reason, establishing meaningful goals is the base of the *Fit 4 You* program.

CHAPTER THREE

Basis of the Proposed Program

The *Fit 4 You* program is intended to help children and adolescents with obesity integrate lifestyle changes by intervening at the individual and familial levels. The *Fit 4 You* program encourages collaboration with *each* participant to create meaningful goals and contextually relevant plans of care. This flexible intervention approach allows the participants to learn how to navigate *their* obesogenic environment. The *Fit 4 You* program was designed based on literature that suggested that current obesity programs do not intervene at the familial and individual level.

As discussed at length in Chapter 2, most existing childhood obesity programs are standardized and provide intervention at the community level. This method does not allow for individualization of the program for participants. Although some participants benefit from these programs, many participants demonstrate insignificant health behavior changes. (Cantal, 2019; Chomitz et al., 2010; Demattia et al., 2006; Federal Trade Commission, 2008; Li et al., 2015; Moreno et al., 2016; Radesky & Christakis, 2016, Reingold & Jordan, 2013; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014; Senauer & Gemma, 2006; World Health Organization, 2018; Yayan & Çelebioğlu, 2017). Participants who are unsuccessful in conventional childhood obesity programs continue to be at risk for weight gain, mental illnesses, and related co-morbidities (Centers for Disease Control and Prevention, 2016). *Fit 4 You* offers an innovative approach to health behavior change for children with obesity, by providing intervention at the individual and familial level. There are two main populations that would likely be

interested in the *Fit 4 You* strategy and results.

The primary audience of the *Fit 4 You* program are the participants, i.e. children with obesity, and their caregivers. The *Fit 4 You* program will prepare the participants and families to make healthy choices despite the obesogenic environment by strengthening their skills. This is accomplished by creating meaningful goals, improving participant's self-efficacy, teaching planning, and improving their participation and performance. The secondary audience of this program is occupational therapists. This program is intended to be utilized by occupational therapists to improve their competence and service delivery to children with obesity.

The logic model below provides a general outline of the program including the target population, necessary resources, anticipated activities and outcomes, and guiding theories. It also projects potential barriers to implementation. This logic will be provided to interested stakeholders to inform them of program expectations.

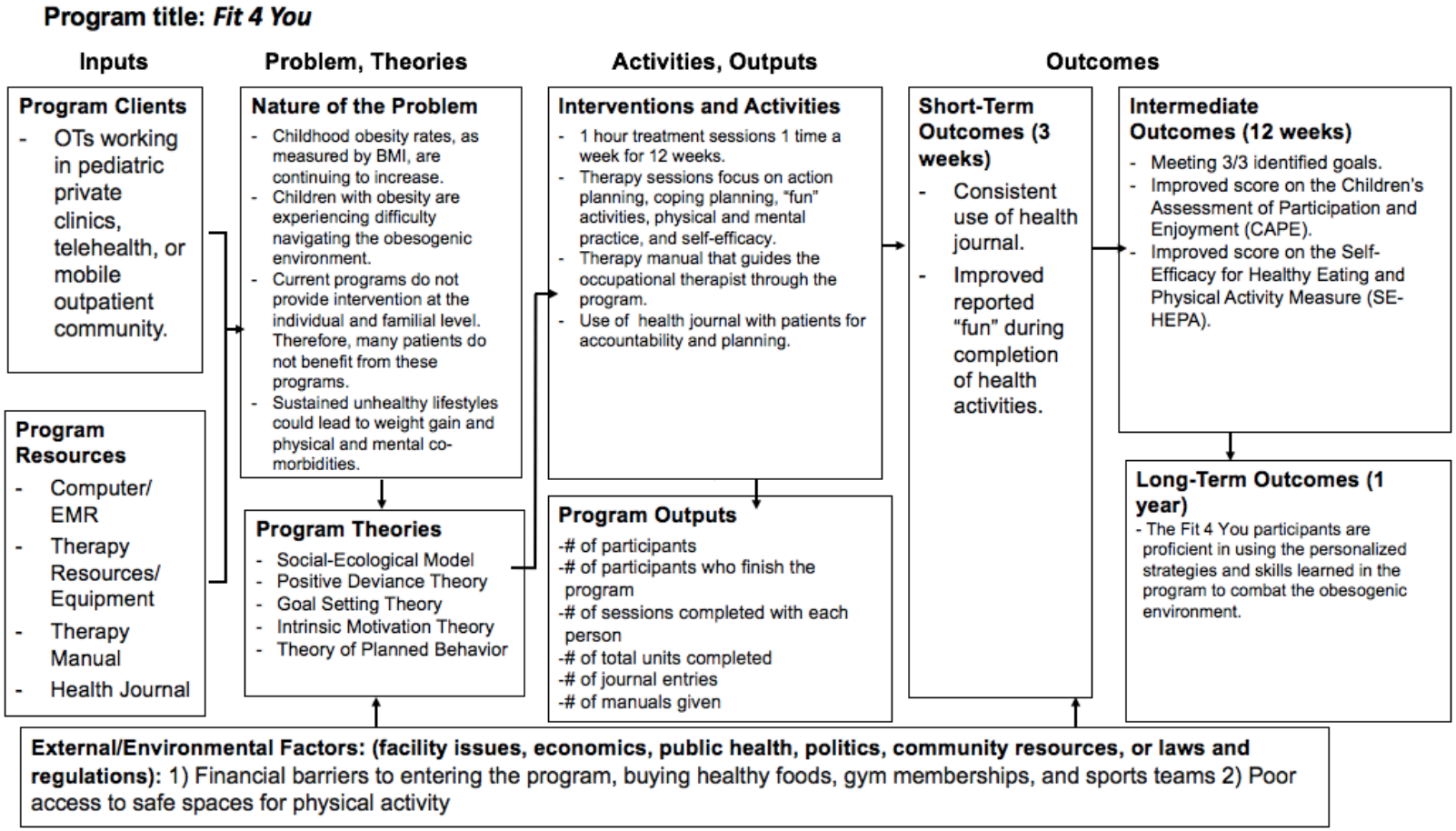


Figure 3.1: Fit 4 You Logic Model

Program Participants and Resources

The inclusion criteria for this program are children and adolescents aged 8–17 who have been diagnosed with obesity. During the initial trial period, participants must speak English, and have the ability to pay privately for the program, unless additional funding is achieved. This is due to the program being launched in a private, small business, to decrease costs and achieve initial outcomes. Once the program scales, it will be modified to include an interpreter and support insurance-based practice. Necessary resources include access to a computer, electronic medical records, basic therapy resources and equipment, a therapy manual designed for occupational therapists, and health journals designed for the participants. The author will recruit participants through social media, free educational seminars, and "lunch and learns" with pediatricians.

Program Content

The *Fit 4 You* program begins either through a referral from a pediatrician, or the family self-referring. However, this is contingent on state regulations for direct access. The participant and their caregiver are then scheduled for a 1:1 evaluation with an occupational therapist. The first part of the evaluation includes a thorough occupational profile that identifies the participant's unique experiences, values, interests, and needs (American Occupational Therapy Association, 2014). Additionally, the Bruininks-Oseretsky Test of Motor Proficiency, Second Edition (Bruininks & Bruininks, 2005), Children's Assessment of Participation and Performance (King et al., 2005), and Self-Efficacy for Healthy Eating and Physical Activity Measure (SE-HEPA) (Steele et al., 2013) will be administered. This will assist the occupational therapist in identifying

specific skills that may be impacting occupational engagement. The second portion of the evaluation consists of the therapist and the participant reviewing the results and collaborating to create three meaningful goals. As discussed at length in Chapter 2, meaningful goals are the basis of the *Fit 4 You* program.

This key factor of meaningful goals was derived from the Goal Attainment Scale (GAS) theory (McDougall & King, 2007). GAS suggests that creating attainable, measurable, and meaningful goals leads to increased success due to improved participant motivation (Kiresuk & Sherman, 1968; McDougall & King, 2007). GAS is completed in two parts. First, the participant chooses three meaningful goals with the occupational therapist. Second, the therapist and client collaborate on identifying indicators for achieving each goal. For example, indicating a number of push-ups that would need to be completed to consider a goal of completing push-ups as met. Once the goals and goal indicators are set, the evaluation is complete. Prior to leaving the outpatient clinic, a date will be chosen for the first treatment session. Participants will attend the program for 60-minute treatment sessions, 1 time a week, for 12 weeks. At 6 weeks, a re-evaluation will be completed in addition to the standard session. Therefore, that session will last 90-minutes. 12 weeks was chosen as sufficient time to address each goal, monitor the outcomes, and then modify the intervention as necessary.

As discussed above, the *Fit 4 You* program will intervene at the familial and individual level. Each of the main components of the program will be customized for each participant. Additionally, the intervention plan is continually modified to support the participant based on their performance and feedback. The intended outcome is that by

intervening at the individual and familial levels, participants will be more successful in integrating healthy routines into their own lives. The main, evidence-based, components that guide the *Fit 4 You* program, are action and coping planning, self-efficacy, physical and mental practice, and fun. Each of these intervention components will be described below with a corresponding example in Table 1. A detailed 12-week schedule can be located in Table 2.1 in the appendix.

The first main component of the intervention phase is creating an action plan and a coping plan for each goal. In the *Fit 4 You* program, action planning will consist of the therapist and participant collaborating to determine the "what, where, and how" steps to complete the desired goal (Godinho et al., 2013). The steps will be broken into smaller components, in order to ensure that the action plan is achievable. Then, the therapist and participant will discuss how to complete the steps. After the action plan is determined for each goal, a coping plan will be created.

Coping planning will be completed by the therapist and participant collaborating to preemptively create a backup plan in case that the action plan fails. The therapist and participant break down each component of the goal and discuss what to do if they are unable to complete their action plan. By preparing participants with a plan, they may also experience improved self-efficacy and confidence (Ernst et al., 2014; Frank Webb et al., 2015). In turn, high self-efficacy is linked to improved success in maintaining action and coping plans (Barz et al., 2016; Luszczynska et al., 2011; Luszczynska et al., 2016).

Therefore, the second main component of the *Fit 4 You* program is increasing self-efficacy. For the purpose of this program, self-efficacy will be considered the

participant's perceived confidence in completing health behavior change (Schwarzer, 2014). After the therapist and participant complete a preliminary action and coping plan, they will then focus on increasing the participant's self-efficacy. This will consistent of discussing potential stressors, learning coping skills, and giving feedback. Another method that will be used is practicing or rehearsing skills.

Practicing skills is the third key component in the *Fit 4 You* program. According to the literature review, a combination of both physical and mental practice leads to the best likelihood of success. In the *Fit 4 You* program, the therapist and client will practice the skills needed to improve carryover of the action plan, coping plan, and performance in both a controlled and natural environment. Each week the therapist and participant will give feedback and grade the activity to increase independence. Throughout all steps of the intervention, emphasis will be placed on making each activity fun for the participant.

The final component of the program, fun, will be utilized as a moderator between practice and performance. The purpose of using fun activities in the *Fit 4 You* program is to increase the participant's motivation to learn and create health behavior change. Therefore, in the *Fit 4 You* program, the therapist will plan specific activities that each client perceives as fun, as determined by their occupational profile. Examples of all components can be found in the Table 3.1 in the appendix.

The examples in the Table 3.1 suggest possible treatment activities with one participant. The core of the *Fit 4 You* program is individualized care, therefore the sessions will be unique and designed to accommodate the participant's goals. Table 3.2 suggests a timeline for the *Fit 4 You* program. It illustrates how the key ingredients will

be addressed throughout the program. The schedule was designed based on the information achieved from the author's literature search. In an effort to ensure that each goal is accomplished, one goal will be targeted at a time. The final three weeks will consist of a review of the progress to each goal.

The desired intermediate-term outcome from the combination of these components is for each participant to achieve all three of their proposed goals after 12 weeks of intervention. Additionally, it is anticipated that the participants will experience an improvement in participation and enjoyment as seen by the Children's Assessment of Participation and Enjoyment (CAPE) (King et al., 2004) and self-efficacy as evidenced by the Self-Efficacy for Healthy Eating and Physical Activity Measure (SE-HEPA) (Steele et al., 2013). The expected long-term outcome, at 6 months, is independence with sustained health behavior changes, which will be measured using a follow-up phone call and standardized questions. Specifically, these changes would lead to an increase in the amount of calories expended and decrease the amount of calories consumed. Ultimately, this sustained behavior change would likely lead to weight loss.

The largest potential barrier to implementation is an inability for participants to personally finance the 12 weeks in the program. This may lead to "dropping out" before completion of the program. A second barrier is poor attendance, participant illness, or needing to withdraw from the program for personal reasons.

CHAPTER FOUR

Introduction

Research suggests that most existing childhood obesity programs intervene at the communal or policy level. Evidence is limited in childhood obesity programs intervening at the individual and familial level. The purpose of this study is to add evidence in support of intervention at these levels. This research study sets out to determine both the effectiveness of the *Fit 4 You* program as well as the relationships between the components. The author hypothesizes that (1) the *Fit 4 You* program will have a positive relationship to meeting of the participant's three desired goals, (2) that the level of "fun" would moderate performance, (3) that the use of action planning and coping planning will directly improve performance, (4) that mental and physical practice improve performance (5) that self-efficacy acts as a moderator to planning and performance.

Vision for the Program Evaluation Research

In the short-term, the focus of the author's program evaluation research will be to determine the level of program effectiveness and its strengths and weaknesses at both a micro and meso-level of evaluation. The short-term vision is that the data collected over a two-year period for the preliminary trial of the program will provide confirmatory evidence of its value. At a micro-level, the formative data from the will be reviewed by the author and potential staff members to improve delivery of the program. The qualitative results could provide information to improve usability and quantitative results might assist in validation. At a meso-level, the author envisions the summative research findings would lead to expansion of the program. These findings will be disseminated via

in-services to pediatricians and families in the community. The in-services may offer reassurance that this program is beneficial to the clients that we serve, provide the basis for donations, and encourage expansion.

The author's long-term vision of the program evaluation research is to support advocacy for occupational therapy's role in childhood obesity via publication and teaching. Specifically, the results would be used to help occupational therapy practitioners become more familiar with the approaches and techniques that can be used with children with obesity. One way this can be accomplished is by writing continuing education articles to the American Occupational Therapy Association (AOTA) regarding occupational therapy's role in childhood obesity. Another possibility is distributing the therapeutic manual used in the program to guide treatment. A third vehicle for advocacy, education seminars on the use of the *Fit 4 You* program, might be instrumental in increasing availability of occupational therapy to this population. Full information regarding the dissemination plan will be discussed in Chapter Six.

Stakeholders

The *Fit 4 You* program is intended to be modified for any environment. During the trial period, initial evaluations will be completed in private, clinic room rented in a co-working space. Interventions will be completed either in the co-working space, in a community based setting, or via telehealth. The identified community-based settings include grocery stores, public parks, and restaurants. In person, one-to-one treatment sessions will be the main method of program delivery.

At its launch, this program will provide children with overweight or obesity in

the South Florida area with access to occupational therapy services, which will provide an opportunity to contribute to the occupational therapy evidence base with this population. The author will be the therapist delivering the program. Once the program is established, a second occupational therapist will be hired as an assistant. At this point, staff meetings will be conducted bi-weekly, and day-to-day communication will occur via email on the company's HIPPA compliant G-Suite server. The author will determine budgeting, staffing, reimbursement, and improving quality of care. Participation in the program will be contingent on the family's ability to pay privately. Reimbursement will be collected prior to each session by the therapist.

There are several stakeholders and populations that would benefit from this program and evaluation of the impact on clients and the efficiency and practicality of the program delivery process. Since this program will be provided by a private, cash-based provider, the participant and caregivers, who are the payers, will be the largest stakeholders. Other entities would indirectly benefit from the program by way of the program evaluation findings and may include; the treating clinician, occupational therapy practitioners and the American Occupational Therapy Association (AOTA), and the referring pediatricians.

Simplified Logic Model for Use with Stakeholders

The logic model depicted in Figure 4.2 shows the anticipated clients and resources needed to complete the author's program. It briefly details the proposed intervention activities, and projected outputs and outcomes. The outcomes are divided into short-term, intermediate, and long-term outcomes. The model also includes the

standardized assessments that will be utilized for quantitative measurement and gives insight into the qualitative methodology. Baseline data will be collected at initial program launch as the basis to measure change. This model will be used during meetings with stakeholders to provide an overview of the suggested program. The research questions were designed with the stakeholder's potential questions in mind.

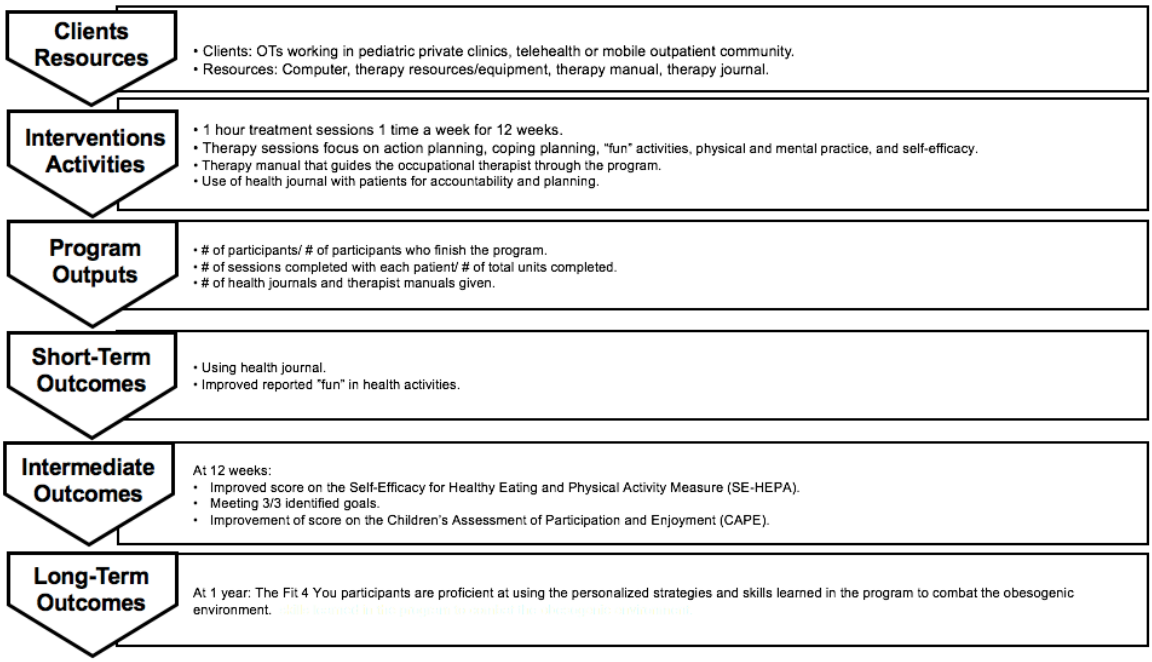


Figure 4.1: Fit 4 You Simplified Logic Model

Program Evaluation Research Questions by Stakeholder Group

The questions depicted in Table 4.1 in the appendix provide details regarding the anticipated research questions that each stakeholder would want addressed as a result of the *Fit 4 You* program evaluation research. For qualitative information gathering, semi-structured interviews with open-ended items should address each of the questions in the table. To ensure that the needs of each stakeholder are met, the author will review

applicable interview questions with the relevant stakeholder. The quantitative questions could be answered by the identified assessments, or through retrospective review of the program.

Research Design

The author will use a combined qualitative and quantitative design for the program evaluation research. Each participant will complete the program over a 12-week time period. Data will be collected at four points in time for each individual: baseline, six weeks, twelve weeks, and six-months post intervention. Pre- and post-testing will be completed for the quantitative design as a summative or outcomes methodology to determine the direction and magnitude of change. Semi-structured interviews will be employed for the formative or process portion of the author's program evaluation. These will consist of direct questions that will be asked with each person as well as open-ended, exploratory questions. The focus of this formative research will be to determine the degree to which the program is meeting the needs of the patients and to collect information that can be used for ongoing modification the program for the purpose of optimizing content and delivery. This information will allow the author to explore the strengths and weaknesses of the program.

For the summative or outcomes research, the author will use a quasi-experimental, repeated measures with a pre and posttest methodology. Participants will be their own control. The summative dependent variables will consist of weekly ratings for both fun and self-efficacy, goal assessment, and scores from the Children's Assessment of Participation and Enjoyment (CAPE) (King et al., 2004) and the Self-

Efficacy for Healthy Eating and Physical Activity Measure (SE-HEPA) (Steele et al., 2013) at 12 weeks.

Methods

Participants and Procedures

The program evaluation research will be carried out in one private, cash-based, pediatric therapy provider located in Boca Raton, Florida. Due to scheduling and availability, the author anticipates that about 120 children will be able to participate in the program in a two-year period. There are 15 after-school spots reserved for participants. Each of the participants will be enrolled for 12-weeks. The inclusion criteria will be children and adolescents ages 8–18 and English speaking participants and caregivers. Families must be able to attend therapy sessions one time per week for 60 minutes. Exclusion criteria include neurological diagnoses and/or serious medical conditions, or inability to pay for sessions.

The author will complete Collaborative Institutional Training Initiative (CITI) human subjects training and receive institution review board (IRB) approval from the hospital and Boston University committees. Once this is achieved, recruitment will begin. Participants will be recruited through social media, flyers in the community, community and school education sessions, and by a convenience sample from doctor referrals.

Once enrolled, participants will be asked to complete an intake form and return in person or through email within two weeks. The participant will be required to agree to attend 1 session a week for 12 weeks. The participant will then schedule an appointment for pre-test measures, also known as an initial evaluation. An in-depth interview will be

completed, goals will be set according to Goal Attainment Scaling (Kiresuk & Sherman, 1968; McDougall & King, 2007), and the Children's Assessment of Participation and Enjoyment (CAPE) (King et al., 2004) and Self-Efficacy for Healthy Eating and Physical Activity Measure (SE-HEPA) (Steele et al., 2013), will be completed. The participant will then be asked to choose a date within the next 14 days to begin therapy. If a patient misses a week of therapy, sessions will be pushed back one week. Participants who miss more than 2 visits will be asked to start the program from the beginning. Each week, the participant will be asked to provide a rating score for perceived "fun" of the activity and self-efficacy to carry over the activity in their natural environment. Progress to goals will be reassessed via semi-structured interviews and observation every six weeks. At 12 weeks, the CAPE and SE-HEPA will be re-administered. Six months after the completion of the program, participants will receive a follow-up phone call with 4 specified questions to determine the sustainability and long-term success of the program.

Measures

Semi-structured interviews using both open-ended and closed-ended questions will be asked to both the participants and caregivers during the interviews. The author will have a standardized script that will be followed, with room to modify the interview for each participant. Each semi-structured interview will consist of questions regarding the service delivery, therapy process, and facility suitability.

In an effort to evaluate underlying skills that may be impacting participation, the Bruininks-Oseretsky Test of Motor proficiency, Second Edition (BOT-2), with administered at each *initial* evaluation (Bruininks & Bruininks, 2005). The BOT-2 is a

widely used, standardized assessment tool that measures both fine and gross motor skills. For the purpose of the *Fit 4 You* program, the gross motor portion of the BOT-2 will be the primary focus as it relates to physical activity. The gross motor subsections include Upper-Limb-Coordination, Bilateral Coordination, Balance, and Strength. This assessment also contains age equivalences and ratings ranging from "well-below average" to "above average," which provides participants and parent with an easy way to measure the participant's skills.

Setting meaningful goals was described early as the basis of the *Fit 4 You* program and will be completed through the use of Goal Attainment Scaling (Kiresuk & Sherman, 1968; McDougall & King, 2007). Additionally, indicators will be set in advance with criteria for meeting each goal. This consists of two part. Part one is setting the goals and indicators. Part two will be measuring progress to each goal.

"Fun" is a key construct of this intervention and will be measured using the Smileyometer scale (van der Sluis et al., 2012). The Smileyometer scale is a likert-style visual scale composed of five faces with corresponding descriptions. The five descriptions are "Awful," "Not very good," "Good," "Really good," and "Brilliant." Limited information was able to be located on the validity and reliability of this scale. However, this scale is very similar to the "Wong-Baker FACES scale" (Wong-Baker FACES Foundation, 1983), which has been proven effective with children (Garra et al., 2010). The Wong-Baker FACES Scale is a self-assessment, visual-analog scale that allows participants to choose a face to best communicate the level of pain they feel. Based on the validity and reliability of the Wong-Baker FACES Scale, it may be inferred

that children can accurately point to a picture to represent how they feel. Therefore, at the conclusion of each session each participant will be shown the Smileyometer scale and asked, “how fun did you find this activity?”

Self-Efficacy, an important component of behavior change, will be measured using two methods. First, the Self-Efficacy for Healthy Eating and Physical Activity Measure (SE-HEPA) (Steele et al., 2013), will be administered pre and post-intervention. The SE-HEPA is a questionnaire filled out by the participant. A questionnaire was chosen as self-efficacy is unique to each individual, and using a questionnaire allows them to select the appropriate scores for their perception. This questionnaire in particular was chosen due to its focus on health behaviors. Although only one study was able to be located regarding validation and reliability, the SE-HEPA was found to have a reliability over >.70 and overall good validity. Only two factors, relating to engaging others in physical activity, resulted in low validity. Second, a modified version of the “Wong-Baker FACES Scale” (Wong-Baker FACES Foundation, 1983) will be presented to the participant after the conclusion of each session, along with the question "what is your ability to complete this activity at home?” Although the “Wong-Baker FACES Scale” has not routinely been used to measure self-efficacy, as mentioned above, it is a reliable measure for kids and is quickly assessed. This measure was chosen in order to monitor the progression of self-efficacy throughout the program.

A major proposed outcome of the *Fit 4 You* program is participation and enjoyment. The Children’s Assessment of Participation and Enjoyment (CAPE) will be utilized to measure participation and enjoyment. The CAPE is a self-report assessment

that measures a children and adolescents', aged 6-21, participation in environments *outside* of school (King et al., 2004). 5 domains are measured: (1) Diversity, (2) Intensity, (3) With Whom, (4) Where, and (5) Enjoyment. It can be completed either by the caregiver or participant. In order to achieve a significant change, participants must improve 9.51 points on Diversity, 1.10 points on Intensity, or .73 points on Enjoyment (*Children's Assessment of Participation and Enjoyment & Preferences for Activities for Children*, 2017).

Data Management and Analysis

As mentioned above, the author's qualitative methodology consists of semi-structured interviews. Verbatim transcripts will be generated after the interview. The data will be gathered by audio-recording the sessions, if permission is granted, though it might be necessary to record responses by hand or computer. Quantitative data will be recorded either by hand, on standardized forms, or on an electronic medical record template.

Confidentiality is of upmost importance to the program. The company uses a HIPPA compliant network with sign-in information available only to those with access. Children will be assigned a numerical code for data analysis so that patient identification is not used. A spread sheet will be kept in our secure system for myself to identify the patients. Names and PHI will only be communicated for necessary therapy services, as doctors must sign the evaluation to obtain insurance authorization.

The author will use a combination of deductive and inductive coding to facilitate qualitative analysis. A hermeneutic method may be useful in identifying themes from the open-ended questions. This way, recurrent themes and patterns could be identified and

sorted. The Qualitative Data Analysis Program (QDAP) (University of Massachusetts Amherst, 2012) will be utilized as it is a free, open-sourced coding program. This is because the budget for research evaluation is limited. The QDAP was developed at the University of Massachusetts and has won awards for its software. In order to ensure trustworthiness of the findings, two trained staff members will review and check the coding for confirmation.

The author will use Microsoft Excel (Microsoft, 2019) to perform statistical analyses of quantitative data. A repeat measure paired t-test and correlational analysis will be used to analyze the program data. The parametric analysis that will be employed is repeat measure t-test. Specifically, the outcomes being measured are meetings of the participant's three goals and scores on the CAPE and SE-HEPA, and self-efficacy. Correlational analysis will be used to measure the relationships between each of the main components of the program. For example, the effect of planning, "fun," practice, and/or self-efficacy on performance.

CHAPTER FIVE

Proposed Program

Fit 4 You is a 12-week, evidence-based program designed to support children and adolescents diagnosed with obesity by intervening at the individual and familial level. This program emphasizes the use of a flexible, individualized intervention approach and begins by setting three meaningful, client-centered goals. *Fit 4 You's* intervention program is comprised of four main components that are customized for each participant. These components are action and coping planning, self-efficacy, physical and mental planning and "fun" activities. The expected outcomes of this program are improved self-efficacy, meeting of three meaningful goals, improved performance on the Children's Assessment of Participation and Performance (CAPE) (King et al., 2004), and long-term use of the strategies and skills learned in the program.

Fit 4 You will launch as a new program in the community. It is anticipated that the first year will contain many start-up costs including materials, equipment, and business set-up. It is also likely that the program will not initially launch at full capacity. The author predicts that in Q1 the program will at 25% capacity, or 6 patients, with a 25% increase in participants each quarter. The author compiled the below funding plan in order to determine true income and expenditure of the program, and determine necessary sources of funding.

Available Local Resources

Various local resources would be a valuable asset to the development and implementation of this program. The first resource, that is already being utilized are local

experts. Currently, a local lawyer has been instrumental in providing free counsel on the formation of consent forms. Additionally, the author has been paired with a mentor from South Palm Beach SCORE (SCORE Association, 2020) for assistance on scaling and marketing the program. In order to support the needs of running the program, the author will contact local occupational therapy programs including Nova Southeastern University and Florida International University for student volunteers.

There are many aspects of the community that will be utilized as free locations for therapy sessions in order to support carryover of skills within the natural environment. This includes the use of local playgrounds, parks, and grocery stores. The author will also contact community gardens to request for access to the gardens at a discounted cost for participants.

Budget

The *Fit 4 You* program will initially be launched as part of a private, cash-based, occupational therapy practice. Therefore, the costs include regular expenses associated with startup and the sustainability of the business. Tables 5.1 and 5.2 describe and categorize the expected year 1 and year 2 expenses, respectively.

Funding Sources

As seen in Table 5.2, The major funding source of the *Fit 4 You* program is private pay by the participants and their families. In order to fund startup costs, and to help participants who are unable to afford paying for the program out-of-pocket, the author will apply for corporate grants. Table 5.3 lists potential grant opportunities. In addition, crowdsourcing will also be utilized to raise money for families who cannot

afford to pay for services.

Table 5.3. Diagram of Potential For-Profit Grant Opportunities

Grant	Amount	Qualifications	Past Recipients
Cocokind Impact Foundation	$2,500–$10,000 and business mentor	For-profit, Women, U.S. resident, 18+ No raising of institutional capital Focus on health, wellness or sustainable industry and goal to create social impact	Social Cipher: Video games for youth with autism Kimbritive: Sexual education for women and girls of color
Amber Grant	$4,000–$25,000	For-profit, Women	Work & Tot: Co-working and play space
Kuvio Creative	80 hours of services. After 80 hours of services, the winner also receives and 3 hours of services per month for one year.	For-profit, Women-owned business	Fortuna – Coconut cooler to keep food fresh and oceans healthy
Idea Café Small Business Grant	$1,000 in cash, $1,500 in advertising	For-profit business	Mew Haven Cat Café
InnovateHer	$10,000–$40,000	Business with impact on families and women, fills need in marketplace, potential for commercialization	Dino-Drop Ins: Childcare to help busy families

Conclusion

The *Fit 4 You* program is intended to be a revenue-generating program that supports a small occupational therapy business. The funding plan provides an outline of the local resources, expected expenses, and income sources during the first two years of the program. The Year 1 Budget depicts a gradual, quarterly increased in patients as the program becomes more established. The author is hopeful that at the launch of the

program, six children will be enrolled. As the program expands to clinics at the local, state, and national level, new expenses and income sources are anticipated. The author will reassess costs monthly and adjust the budget as needed.

CHAPTER SIX

This chapter discusses the dissemination plan and details the distribution strategy of the *Fit 4 You* key messages to the program's target audiences. This dissemination will occur after the program evaluation research is compiled, examined, and the effectiveness of the 12-week *Fit 4 You* intervention program and it's four individual components is determined. *Fit 4 You* utilizes a combination of planning, practice, "fun," and self-efficacy to intervene at the individual and familial level in order to improve the participant's goal attainment, self-efficacy, participation, and performance. Should the program evaluation research support that the *Fit 4 You* program assists children with obesity in creating successful behavior change, the results will be disseminated to the target audiences to promote continuity of the program. If the program evaluation research does not support the program goals, the program will be examined, modified, and re-evaluated prior to dissemination of the key messages.

Dissemination goals

The *Fit 4 You's* program intends to empower participants with the necessary strategies and skills to take control over their health while having fun. The short-term dissemination goal is that the program results will encourage participation in the *Fit 4 You* program within the first trial setting, by spreading awareness of the program's mission and success. The long-term goal is to increase the accessibility of occupational therapy services for children with obesity by improving the competence and self-efficacy of occupational therapy practitioners.

Target Audience

The primary audience for the dissemination of *Fit 4 You's* program evaluation results is parents of children with obesity located in the states where the treating occupational therapists are licensed. Parents will consider the program evaluation results and determine whether the program may benefit their child. The secondary target is occupational therapy practitioners. The program results will advance the scope of occupational therapists and inform their practice. The key dissemination message will be tailored to each population based on the information that they would likely find valuable.

Key Messages

Parents of children with obesity

Many children struggle with maintaining a healthy lifestyle. Often, being "healthy" is perceived as difficult and unenjoyable. Unfortunately, excess weight places many children at risk for mental illness, heart issues, diabetes, and disruptions in occupations (Centers for Disease Control and Prevention, 2016; Pizzi, 2016). *Fit 4 You* helps children embrace healthy lifestyles and meet their personal goals by making therapy FUN! This program is for children that are feeling frustrated or have low confidence in their ability to maintain a healthy lifestyle and are ready to make a change. In this program, occupational therapists help the participants: (1) create a plan for meeting their goals, (2) practice their goals in both a clinic and natural setting, such as a grocery store or playground, (3) improve their confidence in doing the activities they want to do, and (4) figure out how to make healthy meaningful and fun. Parents are provided with contact information and encouraged to complete a free discovery visit.

Occupational therapists

Occupational therapists have a valuable role in helping children with obesity. Children with obesity are at risk for disruptions in all areas of occupation, and occupations therapists are ideally suited to help children sustain a healthy lifestyle (Pizzi, 2016). The *Fit 4 You* program is an evidence-based childhood obesity program designed support occupational therapists in offering assessing and treating children with obesity. In the *Fit 4 You* program, therapists focus on: (1) planning, (2) practicing of skills, (3) improving self-efficacy, and (4) utilizing "fun" activities to provide intervention at the individual and familial level. Therapists interested in utilizing the *Fit 4 You* program are encouraged to purchase the program manual or sign up for a continuing education course in order to increase their competence in treating this population.

Sources/Messengers

Families

The most credible messenger for disseminating the message of *Fit 4 You* is past participants of the program. Past participants are able to honestly discuss the strengths and weaknesses of the families, and describe it in a way that is easily understood. Participants who have successfully completed the program will be offered to opportunity to become family ambassadors and share their experience with potential participants. Past participants would be invited to share testimonials through written communication such as brochures and flyers as well as through electronic communication such as social media, websites testimonials, and blogs.

Another messenger that can potentially distribute the message to families is their

physicians. Families trust their physicians, and may be more likely to engage in a program if recommended by their doctor. In-person and virtual "Lunch and Learns" with physicians will be scheduled to discuss the program evaluation results. Additionally, the physicians will be provided with flyers and brochures to provide to potential participants. Physicians will spread the message via in-person interactions with their patients, by verbal education and handing out of brochures and flyers.

Occupational Therapists

The author, who is an occupational therapist (OT) and has experience with this population would be the most effective messenger for OTs. The author is knowledgeable on all portions of the program and can describe to colleagues how *Fit 4 You* can be related to their practice settings. Prior to the completion of the program evaluation research, the author will begin a podcast to build a community for occupational therapists who are interested in improving their competence in health promotion for their patients. Additionally, the author will initiate the construction of an online continuing education course for occupational therapists and publication of the program manual. After completion of the program evaluation research, the author will apply for peer-reviewed journal articles, submit magazine articles, record a podcast episode discussing the results of the *Fit 4 You* program evaluation research, and complete the program manual and continuing education program. In year one, the author is the only intended staff member, therefore will be responsible for all year one dissemination.

As described above, numerous avenues will be used to disseminate the key messages to the target audiences. These avenues are divided into written, electronic, and

person-to-person. The methods will vary depending on the audience. Table 6.1 and 6.2 describes the specific methods that will be employed for each audience, and their intended timelines.

Many of the above dissemination activities are free. However, some of the methods require an associated cost. In order to properly prepare for these costs, a dissemination budget was created. Table 6.3 contains the anticipated expenditures for dissemination.

Table 6.3: Dissemination Budget

Item	Price	Description
AOTA Conference	1,500	Conference registration, flights, hotel, and meals.
Manual	3,000	Self-publishing, and editing costs – 100 copies.
Flyers	500	Printing Costs
Marketing	1,000	Bloggers, ads, Lunch and Learns.
Total	$6,000	

Evaluation

Success of the dissemination of materials to families will be measured by the amount of families that register and complete the second year of the program. Referral sources will be tracked to measure the success of each separate activity and networking effort. Success of the dissemination materials to occupational therapists will be determined by the amount of manuals and continuing education modules purchased. Additionally, the author will follow up with occupational therapists who have purchased

the programs via surveys to determine whether they were able to successfully implement the recommendations. In addition to tracking referrals, the author will evaluate the amount of podcast downloads, and number of people who attended the AOTA conference. At the conference, evaluation forms will be collected as well. Using the above information, the author will examine all forms of dissemination quarterly, and adjust accordingly.

Conclusion

This dissemination plan plays an important role in expanding upon and continuing the *Fit 4 You* program. If executed correctly, the dissemination plan will enable many more children with obesity to receive access to occupational therapy services. Furthermore, this allows them to receive the individual and familial level intervention that is currently missing within childhood obesity programs.

CHAPTER SEVEN

The rate of childhood obesity continues to increase. Despite minimal effectiveness of conventional childhood obesity programs, new programming that supports children with obesity within their personal context is limited. The *Fit 4* You program offers a novel approach to childhood obesity intervention by suggesting that occupational therapists intervene at the individual and familial level to address relevant personal factors.

The *Fit 4 You* program hopes to teach children and families that healthy can be fun, achievable, and sustainable. From the author's experience with this population, health behavior change is often perceived as boring and difficult, leaving children and families feeling overwhelmed and unmotivated. Instead, in the *Fit 4 You* program, participants will learn how to make "healthy" something that they enjoy and look forward to everyday. Ideally, the families who complete this program will be inspired to share this message with other families worldwide.

It is crucial that new programming emerges to support children with obesity. Without interventions that support children at the individual and familial level, these children will likely continue to engage in unhealthy habits and gain weight. This may eventually lead to an increase in the number of adults with obesity, comorbid diseases, and economic ramifications. *Fit 4 You* was established to interrupt this cycle of unhealthy habits, by establishing lifelong skills that will support these children in the ever-changing obesogenic environment.

The large scale goal of the *Fit 4 You* program is to improve accessibility of

occupational therapy services to children with obesity throughout the world. First, by providing direct therapy services in person and via telehealth through a private cash-based practice. Second, by improving the competence and confidence of occupational therapists. Occupational therapists are a vital part of the interdisciplinary team for children with obesity, however do not routinely provide services to this population due to decreased research and education regarding interventions to address childhood obesity. The *Fit 4 You* program offers occupational therapists an opportunity to initiate treatment using a theory and evidence-based program.

The program will be initially launched in one private, cash-based clinic. Outcomes from the 2-year program evaluation research will be examined and used to optimize the program and enhance effectiveness for individuals and family. At this time, the author will release both the program manual and online continuing education courses for purchase within the United States. Unfortunately, childhood obesity has also become global concern, with more than 41 million children being overweight in 2016 (World Health Organization, 2020). Feedback will be obtained from the therapeutic community for 5-year period before expanding sales of the program manual and continuing education courses to other countries. The author envisions that using this program, therapists worldwide will begin to offer occupational therapy services to children with obesity and decrease the incidence of childhood obesity long-term.

APPENDIX

TABLES

Table 3.1 Examples of the Key Components of the *Fit 4 You* Program

Action Planning	Example: The goal of the participant is to learn how to prepare a novel vegetable. The therapist and client collaborate to determine "what" vegetable the participant would like to prepare, "where" the participant will grocery shop and locate the items needed, and "how" he will accomplish it. In addition, the therapist and participant breaks down the steps into smaller components. This includes: looking up a recipe, make a grocery list, go grocery shopping, and preparing the chosen vegetable. Over the first week, the participant decides to go to the grocery store and explore the different kinds of vegetables.
Coping Planning	Example: The client prepares a grocery list to take to the grocery store. He tells his therapist that he often forgets his groceries lists. The therapist and client come up with a plan that if the client forgets the list he can take a picture of the grocery list on his phone after creating it, call his sister at home, or find the chosen recipe on his phone.
Self-Efficacy	Example: The participant reports he does not feel confident in his ability to eat a new vegetable due to fear of gagging. The therapist and participant walk through potential scenarios, then discuss strategies to help calm himself before gagging.
Practice	Example: The therapist and participant discuss the steps needed to grocery shop for a novel vegetable. The participant then visualizes themselves completing the steps in their head. The therapist simulates a grocery store environment in the clinic. Once this is mastered, the therapist and participant complete the activity in a grocery store in the community.
Fun Activities	Example: In order to make the grocery shopping experience fun, the therapist incorporates a "find-and-seek" activity. The participant tries to find vegetables in all colors of the rainbow and gets to check them off a list using color-coordinated markers.

Table 3.2 Proposed *Fit 4 You* Weekly Schedule

Week 1	Week 2	Week 3
Choose first goal to target	Review of perceived barriers to goal 1	Review of progress of goal 1
Break goal down into achievable steps	Problem solve solutions to increase self-efficacy	Modify plan as needed
Create an action plan for each step	Goal 1: "Fun" mental and physical practice (respectively) in the clinic	Continue goal 1: "Fun" mental and physical practice (respectively) in the natural environment
Create a coping plan if the action plan fails	Review action and coping plan.	Review action and coping plan.
Week 4	**Week 5**	**Week 6 – Re-evaluation**
Review first goal and progress	Review of perceived barriers to goal 2	Review of progress of goal 2
Choose second goal to target	Problem solve solutions to increase self-efficacy	Modify plan as needed
Break goal down into achievable steps	Goal 2: "Fun" mental and physical practice (respectively) in the clinic	Continue goal 2: "Fun" mental and physical practice (respectively) in the natural environment
Create an action plan for each step	Review action plan	Review action plan
Create a coping plan if the action plan fails	Review coping plan	Review coping plan
Week 7	**Week 8**	**Week 9**
Review first and second goals and progress	Review of perceived barriers to goal 3	Review of progress of goal 3

Choose third goal to target	Problem solve solutions to increase self-efficacy	Modify plan as needed
Break goal down into achievable steps	Goal 3: "Fun" mental and physical practice (respectively) in the clinic	Continue goal 3: "Fun" mental and physical practice (respectively) in the clinic
Create an action plan for each step	Review action plan	Review action plan
Create a coping plan if the action plan fails	Review coping plan	Review coping plan
Week 10	**Week 11**	**Week 12**
Return to goal 1	Return to goal 2	Return to goal 3
Discuss any barriers encountered and practice solutions	Discuss any barriers encountered and practice solutions	Discuss any barriers encountered and practice solutions
Week 13 Re-evaluation		

Table 4.1 Stakeholder Research Questions

Stakeholder or Stakeholder Group	Types of Program Evaluation Research Questions
Participants (i.e Children and adolescents with obesity)	• Do I feel that I can maintain a healthy lifestyle on my own? • What activities were the most helpful? • Did I improve my participation and enjoyment improved? • Did I meet my goals? • Was the program "fun?"
Caregivers	• Did the program teach my child how to integrate healthy routines into our daily life? • What activities were the most helpful? • Does my child appear to have improved enjoyment and participation in life? • How many of our goals for the program were met? • Did my child have fun?
Staff delivering the program (including the author)	• Were some aspects of the program more successful than others? • Were any problems, issues or barriers to program delivery issues reported or identified? • Was the program duration adequate, or should it be shorter or longer? • Was the program delivery suitable with our available resources including staff and equipment? • How was the participant referred to the program? • What was the average number of treatment sessions attended? • Did the child's participation and enjoyment improve as evidenced by the CAPE? • How many of their goals did the participant's meet? • Did the child's self-efficacy improve as evidenced by the SE-HEPA? • Did the participant's consistently report that the activities were "Fun" on the Smileyometer scale?
Referring Doctors	• Did patients report satisfaction with the program? • Are patients reporting better compliance to my recommendations since completion of the program?
AOTA/ Occupational Therapists	• Is this program feasible for occupational therapists to implement into practice? • Will this project increase awareness of occupational therapy with other medical professionals?

	• Does this project support occupational therapy's role in treating childhood obesity? • Does this program provide an easy, understandable way to intervene with children with obesity? • Does this research data demonstrate the desired change in dependent variables?

Table 5.1. Expected Year 1 Expenses

Year 1 Expenses			
Category	**Expense**	**Amount**	**Justification**
Personnel			
	Salary	$60,000	Comparable full-time OT salary
Consultants			
	Lawyer	$1,000	Ensure program following rules and regulations
	Website	$1,500	Set up for lead generation and conversion
	CPA	$300	Set up Tax ID and S-Corp
	SEO	$1,000	Get the message to the right participants
Instruction			
	Motivational Interviewing course	$450	Ensure OT trained appropriately to assist participants
	Lifestyle redesign course	$792	Ensure OT trained appropriately to assist participants
Equipment			
	Mat	$169	Safety of participants
	Training manual	$0	Comes with purchase of program
	Games and toys	$500	Make activities "fun"
Supplies			
	4 packs computer paper	$24	Print resources for participant
	Black pens	$5	Fill out forms
	Apple laptop	$1,499	EMR and resource location
	Binders	$200	For recipe books
	Groceries	$1,200	To make cooking fun
Communication			
	Phone	$162	Communication with participant and parent
	Marketing	$3,000	Reach participants
	Stationary	$109	Thank you letters
	Dissemination	$6,000	Continue to grow the program
Materials preperation			
	Printer	$200	To print resources and manual
	Business cards	$26	For marketing
Travel			
	Gas	$1,200	Community meetings
Rental of facilities			
	Kho space	$13,890	Quiet meeting spot
	P.O. Box	$150	Mail
Evaluation			
	CAPE	$154	Measure change
	BOT-2	$981	Skills assessment
Internet			
	Comcast	$1,968	For EMR and communications
Website			
	Domain	$31	Participant marketing
	Wix	$480	Participant marketing
Business set-up			
	Business Liability Insurance	$615	Required for business in Palm Beach
	Personal Malpractice	$121	Required for business in Palm Beach
	Zoning	$50	Required for business in Palm Beach
	Delray Business Tax Receipt	$25	Required for business in Palm Beach
	Florida Department of State	$150	Required for business in Palm Beach
	Delray business tax	$190.30	Required for business in Palm Beach
	EMR	$300.00	HIPPA Complient EMR
	Hello sign pro	$156	Online Signatures to decrease time spent on forms in clinic
		$98,597	
Year 1 Revenue			
Category	**Expense**	**Amount**	**Justification**
Private Pay Patients			
	Evaluations	$8,580	52 evaluations a year
	Treatments	$97,500	24 patients a week
Grants			
	Amber Grant	$4,000	Dependent of awarding of grant
		$106,080	

Table 5.2. Expected Year 2 Expenses

Year 2 Expenses			
Category	**Expense**	**Amount**	**Justification**
Personnel			
	Therapist Salary	$80,000	Comparable Full-Time Salary
	Assistant Salary	$45,000	Part-Time Salary
Consultants			
	Marketing	$5,000	To recruit participants
Instruction			
	Kids Yoga Certification	$450	Ensure continued competence for therapist
Equipment			
	Games and Toys	$1,000	Continue to keep activities "FUN"
	Gardening kits	$500	"Fun" activity
Supplies			
	4 packs computer paper	$48	Print resources for participant
	Black pens	$5	Fill out forms
	Apple laptop for assistant	$1,499	EMR and resource location
	Binders	$200	For recipe books
	Groceries	$1,200	To make cooking fun
Communication			
	Phone	$162	Communication with participant and parent
	Marketing	$5,000	Reach participants
	Stationary	$109	Thank you letters
	Dissemination	$6,000	Grow program
Materials preperation			
	Printer	$200	To print resources and manual
	Business cards	$26	For marketing
Travel			
	Gas	$1,200	Community meetings
Rental of facilities			
	Kho space	$13,890	Quiet meeting spot
	P.O. Box	$150	Mail
Internet			
	Comcast	$1,968	For EMR and communications
Website			
	Domain	$31	Participant marketing
	Wix	$480	Participant marketing
Business set-up (yearly)			
	Business Liability Insurance	$615	Required for business in Palm Beach
	Personal Malpractice	$121	Required for business in Palm Beach
	Zoning	$50	Required for business in Palm Beach
	Delray Business Tax Receipt	$25	Required for business in Palm Beach
	Florida Department of State	$150	Required for business in Palm Beach
	Delray business tax	$190.30	Required for business in Palm Beach
	EMR	$300	HIPPA Complient EMR
	Hello sign business	$156	Online Signatures to decrease time spent on forms in clinic
		$165,725	
Year 2 Revenue			
Category	**Expense**	**Amount**	**Justification**
Private Pay Patients			
	Evaluations	$8,580	52 evaluations a year
	Treatments	$156,000	24 patients a week
Grants			
	Grant	$10,000	Cocokind Grant If received
		$174,580	

Table 6.1 Dissemination Activities and Tools for Families

Written	Electronic	Person-to-Person
Flyers and brochures: Original program flyers and brochures will be modified with results from program evaluation research within two weeks of completion. Within one month of completion they will be disseminated in coffee shops, kids programs, and parks.	**Website:** Website will be updated with results from program evaluation research within 1 week of completion. It updated on a monthly basis with new testimonials from participants.	**Past participants:** Participants who successfully completed the program will be contacted within one week of completion for testimonials and program ambassador information. Quarterly virtual parent education events will be completed where families will share their stories.
	Newspaper and magazine articles: Author will submit for newspaper and magazine articles within 2 weeks of completion of research.	**Doctors:** Author will set up in-person and virtual "Lunch-and-Learns" with two physicians each month.
	Blogs: Author will write 1 blog for program website about evaluation research within 1 month of completion. Blogs will continually be posted every week about beneficial components of program. Within 6 months of completion, author will reach out to family bloggers and influencers to be featured or purchase ad space.	**Community Events:** Within 6 months of completion, the author will complete 2 community education sessions. For example, at a library, or church, for parents.
	Social media: Weekly postings with program benefits and components to Facebook, Instagram and Pinterest will be completed both during and after program. YouTube testimonials will be uploaded on a monthly basis.	**Networking:** Each month, the author will network with 3 new school teachers, business owners, health professionals, and local authorities to meet in person and advocate for the program.

Table 6.2: Dissemination Activities and Tools for Occupational Therapists

Written	Electronic	Person-to-Person
Printed manual: Prior to completion of the program, the author will initiate publishing of the manual. Within three months of completion of the program, the manual will be finalized.	**Journal Articles:** Prior to completion of the program, the author will begin to research and write a peer-reviewed journal article. Within one year of completion of the program the journal article will be finalized and submitted.	**AOTA Conference:** Prior to completion of the program, the author will submit for the AOTA 2021 National Conference. If accepted, the author will present at the conference in March 2021 in San Diego, CA.
OT Practice Article: Prior to completion of the program, the author will submit an article to OT Practice advocating for OT's role in childhood obesity. If accepted, the article will be written within one month completion of the program evaluation research.	**OT Practice Article:** Prior to completion of the program, the author will submit an article to OT Practice advocating for OT's role in childhood obesity. If accepted, the article will be written within one month completion of the program evaluation research.	
	CEU Course: Prior to completion of the program, the occupational therapist will begin creating an online CEU course for occupational therapists. It will be completed for dissemination within 1 year of completion of program.	
	Social media: The author will network daily with other occupational therapists through various Facebook groups including "Occupational Therapists in Primary Care and Health Promotion," and "Occupational Therapy Cash Based Private Practice." The author will also post to the "Occupational Therapy in Obesity and Bariatric Care" group weekly.	
	Podcast: Prior to completion of the program, the author will start	

	a podcast focused on interviewing occupational therapists who focus on health promotion and wellness. Within one month of completion of the program, an episode focused on *Fit 4 You* will be released. This will be completed on the free Anchor hosting page.	

EXECUTIVE SUMMARY

Childhood obesity has become a serious concern in the United States, with the rate increasing since the year 2000 (Hales et al., 2017). Children with obesity are not only at risk for numerous physical and mental diagnoses, but are also more likely to become obese as adults (Nonnemaker et al., 2009). It is imperative that evidence-based programs are established to support this growing population. This executive summary details: (1) the design and overview of an occupational therapy program to support this need; (2) accompanying literature, and; (3) methods to evaluate the success of the program.

Purpose

The purpose of this doctoral project was to develop a program for occupational therapy practitioners when working with children who have been diagnosed with obesity. This program focuses on acknowledging each child's unique circumstances and designing a customized plan that works for them as well as their family. An evidence-based literature search was completed to further evaluate the problem and the need for this program. A review of the current literature revealed that not only is there an absence of occupational therapy programs for childhood obesity, but also that most childhood obesity programs that do exist are not designed for the individual. Rather, they are intended to help groups of people, and thus follow a strict protocol, focus only on certain factors, and are unable to be customized for the child or family (Chomitz et al., 2010; Demattia et al., 2006; Salmon et al., 2008; Schmelzer & Krishnagiri, 2014). As a result, many children do not benefit substantially from these programs (Chomitz et al., 2010; Salmon et al., 2008). Additionally, these authors propose that the need for individualized

protective factors is extremely important due to the obesogenic environment in the United States.

Obesogenic Environment and Protective Factors

It can be very difficult for families to maintain a healthy lifestyle in an obesogenic environment. This type of environment promotes less movement and exercise, and consumption of high calorie, processed foods (Salmon et al., 2008; World Health Organization, 2018). This is due to several factors including food marketing and pricing, easier access to video games and cellphones, and less time for movement within the school system (Cantal, 2019; Federal Trade Commission, 2012; Li et al., 2015; Reingold & Jordan, 2013; Rideout et al., 2015). These factors are typically very enticing, making it difficult for children and families to ignore. Weight gain is essentially a result of an imbalance of calories to energy expended. If a child engages in these negative behaviors long-term it is likely the child will continue to gain weight. The evidence-based literature suggests that some children in a similar obesogenic environment don't engage in long-term sedentary activities and consume high calorie foods. These families with healthier behaviors or protective factors can be considered positive outliers and are more likely to maintain a stable weight despite the environment (Foster et al., 2015; Stok et al., 2014). Such behaviors include parental modeling, knowledge, and organizational skills (Foster et al., 2015; Sharifi et al., 2014; Taveras et al., 2015). Therefore, in order to enable children to protect themselves against the obesogenic environment, changes must occur at the individual and family level. *Fit 4 You* was designed with this in mind.

Mission

The mission of the *Fit 4 You* program is to help children with obesity successfully change their behavior by making "healthy" FUN, meaningful and manageable for their lives.

Program Location

Fit 4 You will initially be launched by a private occupational therapy practice in South Florida. After the first year of the program, plans will be made to expand the program to other locations and states by training additional occupational therapy practitioners.

Program Overview

Families can become involved in the program either by receiving a prescription from their doctor, or by calling and requesting information. The child is then scheduled for an evaluation with an occupational therapist. In the evaluation, the therapist will examine the child's performance, goals, motivations and skills. If therapy is recommended, the therapist, child, and family will choose three goals for the child to address during the duration of the program. After the evaluation is completed, the child will be scheduled for the first therapy session the following week.

Throughout the program, the child will attend 12 60-minute occupational therapy sessions. Each session includes only one participant, so the child and family receives the full attention of the occupational therapy practitioner. Based on the needs of the child, the family may or may not be present in the session. All sessions are also customizable, and are able to be changed depending on the needs of the child and family. Sessions will

consist of four main evidence-based components:

1. Planning: The family and therapist will break down the steps and create a plan for how to accomplish each goal in order to make meeting the goal more manageable.
2. Practice: The child will have the opportunity to practice skills both in a private setting and in the community to improve their performance.
3. Self-Efficacy: Specific sessions will focus on improving the child's confidence in completing the behavior.
4. Fun: This will be a theme throughout each of the three above components. Every session and home exercise will be made fun for the participant, so that they feel motivated to do it.

Theoretical Basis

In addition to the evidence-based literature, theoretical knowledge guided the development of the *Fit 4 You* program. Each theory was chosen to describe different components of behavior change. The Social-Ecological Model acted as a guiding framework for understanding the multiple layers of the environment and their effect on behavior (Brown, 2011; Cassel, 2010; Ohri-Vachaspati et al., 2015). The Theory of Planned Behavior was used to understand and determine the child's intent to change (Clark & Janevic, 2014). The Health Action Process Approach and the Intrinsic Motivation Theory assisted in describing how to help the child take action (Alexandris et al., 2002; Schwarzer, 2014).

Evaluation

In order to determine the success and family satisfaction with the program, data will be collected over a two-year period. Several areas will be measured: (1) whether the child met their three predetermined goals; (2) participant and parent report via interviews; (3) change in the child's performance and participation via the Children's Assessment of Participation and Performance; (4) changes in the child's perceived confidence in making healthy changes via the Self-Efficacy for Healthy Eating and Physical Activity Measure and a modified Wong-Baker FACES Scale (Steele et al., 2013; Wong-Baker FACES Foundation, 1983), and (5) whether the child found the activities fun as measured by the Smileyometer scale (van der Sluis, 2012). After the completion of the two-year trial period, the results will be compiled and interpreted for evaluation and further development of the program.

Conclusion

In summary, *Fit 4 You* is a 12-week, evidence-based and theory-driven program that can be used by occupational therapists to support children with obesity. It provides *individualized* treatment that support both the child and the family, so that *all* participants benefit from the program. The *Fit 4 You* program takes a new approach at helping children with obesity, and will continually be improved, based on program evaluation research, to support their needs.

FACT SHEET

BOSTON UNIVERSITY

Fit 4 You

An intervention program for occupational therapists working with children with obesity

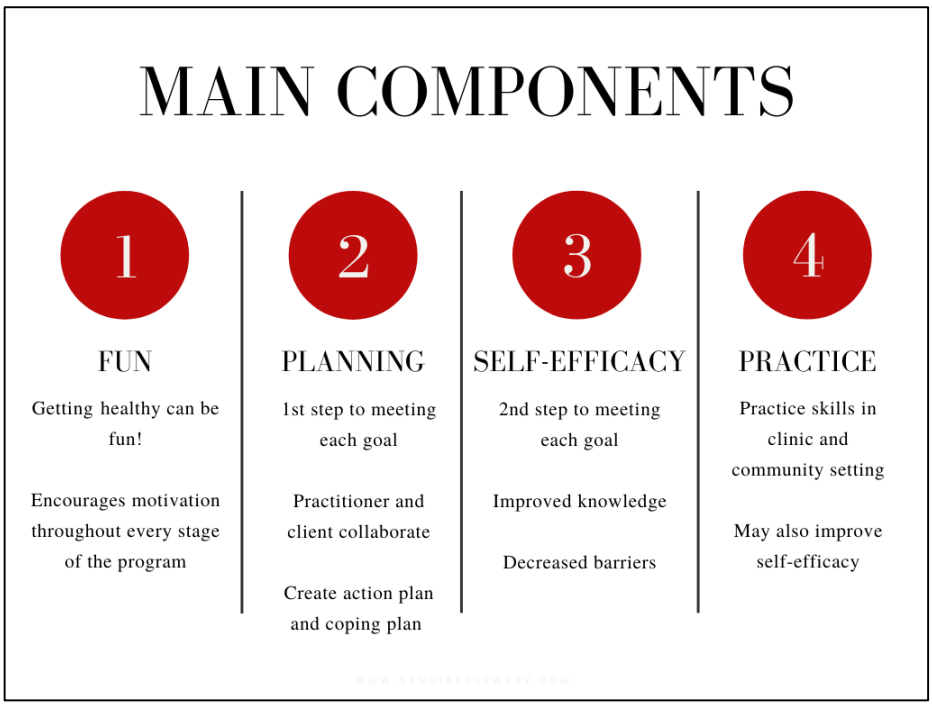
Samantha Goldman MOT, OTR/L

The Problem:

- Children with obesity are at risk for serious health concerns including physical illness, mental illness, and occupational imbalance (Centers for Disease Control and Prevention, 2016; Cantal, 2019; Pizzi, 2016).
- Most childhood obesity programs are designed to intervene at the community level. Therefore, they are standardized, manualized, and do not allow for customization.
- Results of these conventional programs may vary based on the participants' personal and familial factors (Chomitz et al., 2010; Salmon et al., 2008). Many children do not receive the optimal benefits from the community level programs.

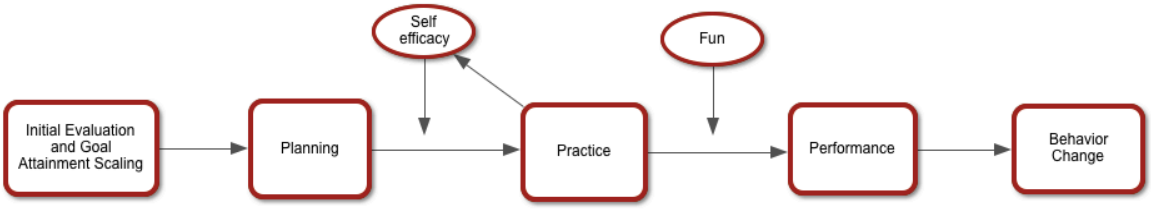
The Proposed Solution:

- 12-week, evidenced-based program to guide occupational therapists when treating children with obesity
- Flexible intervention approach, that accounts for personal and familial factors



The combination of these components are intended to elicit a behavior change for all participants

Model of the Solution:



Impact on Occupational Therapy:

- Occupational therapy practitioners are needed on the interprofessional team for children with obesity. This program provides occupational therapists with a guided approach to initiating treatment with this population.
- This theory-driven program provides therapist with an avenue to collect data and on clinical outcomes in order to promote an evidence-based approach to individualized client care.

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