

4-2018

CHAMPS: Child Health and Methods of Parenting Study

Megan Fletcher

University of Nebraska-Lincoln, megan.fletcher@doane.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/nutritiondiss>



Part of the [Nutrition Commons](#), and the [Public Health Commons](#)

Fletcher, Megan, "CHAMPS: Child Health and Methods of Parenting Study" (2018). *Nutrition & Health Sciences Dissertations & Theses*. 79.

<https://digitalcommons.unl.edu/nutritiondiss/79>

This Article is brought to you for free and open access by the Nutrition and Health Sciences, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nutrition & Health Sciences Dissertations & Theses by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

CHAMPS:
Child Health and Methods of Parenting Study

by

Megan E. Fletcher

A THESIS

Presented to the Faculty of
The Graduate College at the University of Nebraska
In Fulfillment of the Requirements
For the Degree of Master of Science
Major: Nutrition & Health Sciences
Under the Supervision of Professor Megan Kelley
Lincoln, NE
April, 2018

CHAMPS (CHILD HEALTH AND METHODS OF PARENTING STUDY)

Megan E. Fletcher, M.S.

University of Nebraska, 2018

Advisor: Megan Kelley

The range of different contexts in which children learn and develop dietary and physical activity habits varies greatly, yet there is limited research on the role of the family structure and parenting style in the development of childhood obesity. CHAMPS (Child Health and Methods of Parenting Study), was designed to explore the relationships between parenting style, family structure, and child health status through a new lens and novel application of the Unified Theory of Behavior model. Surveys were administered to families at two partner locations to examine these relationships. 51 parents/legal guardians and 57 children completed the survey. Results were analyzed using Fisher's test to evaluate the independence between the categorical variables. Analyses suggest significant findings in two of the four domains of the Unified Theory of Behavior model with the most significant association being between the perceived importance of parent/guardian's own health and their reported parenting style. Results were presented to the partner organizations where each facility shared how they intend to apply the results. Though there was a small sample size for this project, findings support the importance of engagement and involvement in children's dietary and physical activity behaviors as the family is an influential mechanism to influence behavior change and combat the increasing prevalence of obesity.

TABLE OF CONTENTS

INTRODUCTION.....	1
CHILDHOOD OBESITY	2
<i>Risk Factors</i>	2
ENVIRONMENT	3
<i>Physical Environment</i>	3
<i>Social Environment</i>	5
<i>Home Environment</i>	6
FAMILY	8
<i>Family-Based Health Education Programs</i>	10
<i>Family Structure</i>	12
<i>Parenting Style</i>	17
BEHAVIORAL THEORY	22
CURRENT STUDY (CHAMPS)	25
METHODS	27
SURVEY DEVELOPMENT.....	27
FOLLOW-UP SURVEY DEVELOPMENT	28
PROCEDURE/ADMINISTRATION OF SURVEYS.....	28
PARTICIPANT RECRUITMENT.....	29
MEASURES	29
ANALYSIS APPROACH	32
RESULTS	34
DEMOGRAPHIC RESULTS.....	34
UNIFIED THEORY OF BEHAVIOR RESULTS	35
<i>Expected Value Domain</i>	35
<i>Social Norms Domain</i>	35
<i>Attitudes/Beliefs/Feelings Domain</i>	35
<i>Self-Efficacy Domain</i>	37
DISCUSSION	39
UNIFIED THEORY OF BEHAVIOR.....	40
<i>Expected Value Domain</i>	40
<i>Social Norms Domain</i>	41
<i>Attitudes/Beliefs/Feelings Domain</i>	41
<i>Self-Efficacy Domain</i>	43
PARTNER ORGANIZATION APPLICATION	45
ENVIRONMENTAL/SOCIOECONOMIC.....	48
LIMITATIONS/FUTURE RESEARCH.....	52
ACKNOWLEDGEMENTS	56
TABLES AND CHARTS	57
REFERENCES.....	61
APPENDIX.....	70

INTRODUCTION

Over the past few decades, rates of overweight and obesity have increased dramatically among adults and children such that 32% of children (2-19 years) and 69% of adults (19 and older) in the U.S. are classified as overweight or obese (Mokhtari et al., 2017). Today obesity is considered a public health concern and an epidemic (Banks, Berlin, Rybak, Kamody, & Cohen, 2015; Dunton, Kaplan, Wolch, Jerrett, & Reynolds, 2009; Gungor, 2014; Wang & Lim, 2012). Childhood obesity is associated with long-term physical health concerns associated with detrimental chronic health condition that last into adulthood, such as cardiovascular disease, type 2 diabetes, asthma, as well as psychological health problems (Dehghan, Akhtar-Danesh, & Merchant, 2005). Obesity-related research has included studies of genetic factors, socioeconomic status (SES), environmental factors, access to prevention education, and their influence on the development of obesity (Gungor, 2014). Intervention programs have been targeted towards children to educate them and provide opportunities for a healthier lifestyle as well as to examine the effectiveness of the programs in the reduction of obesity. The range of different contexts in which children learn and develop dietary and physical activity habits varies greatly, yet there is limited research on the role of family structure and parenting style in the development of childhood obesity. An improved understanding of such factors in the home environment connected to childhood obesity may lead to the development of more effective interventions in reducing obesity rates.

Childhood Obesity

Risk Factors

Both adult and childhood obesity are influenced by a complex and wide range of factors including genetics, socioeconomic status (SES), diet, physical activity, and environmental factors. But obesity is also influenced by interactions between these factors (Gungor, 2014). Though there are rare, single gene defects that result in obesity, only a small number of cases of childhood obesity are due to genetic factors (Dehghan et al., 2005). Because obesity due solely to genetic factors represents such a small proportion of the cases, it is not a broad area of research (Krebs et al., 2007).

The link between socioeconomic status (SES) and childhood obesity has been studied by many researchers. Overweight and obesity in childhood and adolescence have been associated with adverse SES outcomes and low SES has been shown to affect children's risk in developing obesity (Wang & Lim, 2012). In general, there is an inverse relationship between SES and children's BMI, where children from high SES families tend to have lower BMI scores while children from low SES families tend to have higher BMI scores (Banks et al., 2015). In a global analysis of overweight and obese individuals, the combined prevalence of overweight and obesity increased in nearly all countries where data were available (Wang & Lim, 2012). However, it is low-SES groups in industrialized countries and high-SES groups in developing countries, that are at a higher risk of being overweight and obese (Mokhtari et al., 2017; Wang & Lim, 2012).

Specifically for children and adolescents in the United States, differences by SES in overweight and obesity have varied across age, race/ethnicity and gender (Wang &

Lim, 2012). For example, there is a strong association between SES factors and obesity for minority youth when compared to White youth (Berry et al., 2004). In addition, differences in SES that support healthy lifestyle behaviors, such as healthy eating and exercise, are correlated with lower rates of obesity (Banks et al., 2015). SES influences from birth to 7 years of age have been found to have a long-lasting impact on the child's risk of developing obesity (Berry et al., 2004; Power, Manor, & Matthews, 2003).

At an individual level, sedentary behaviors such as watching television, playing on the computer, and staying inside, are associated with an increased prevalence of childhood obesity, and most of these behaviors are associated with low-SES (Dehghan et al., 2015). There has been a steady decline in physical activity among children and adolescents and all age groups, specifically in areas of low-SES where exposure to and location of health promoting resources are limited (Wang & Lim, 2012).

Environment

Physical Environment

One's local environment, school, and the wider community play an important role in shaping children's physical activity (Dehghan et al., 2005). Adolescents living in rural, exurban, and mixed urban areas are more likely to be overweight than individuals living in newer suburban, older suburban, and inner city areas due to a lack of access to equipment, facilities, and resources (Dunton et al., 2009). Obesity is negatively related to access to facilities for physical activity (gyms) and the availability of bicycle and walking trails (Dunton et al., 2009). There are a number of factors to reduce obesogenic environments such as safe neighborhoods, walking networks, cycling networks, parks,

and recreation facilities so that healthier choices are more available, easier to access, and widely promoted to the majority of the community (Dehghan et al., 2005; Dunton et al., 2009).

The physical environment, sometimes referred to as the built environment, consists of neighborhoods, roads, buildings, food sources, and recreational facilities where people live, work, eat, and play (Sallis & Glanz, 2006). Each of these can affect children's weight by shaping both their eating habits and physical activity. People who have access to safe places for activity are more likely to be more active and eat more healthful foods (Sallis & Glanz, 2006). For example, in neighborhoods where there are walkable sidewalks, children are probably more likely to walk to school (Dunton et al., 2009). In addition, children and adolescents with access to recreational facilities and programs, usually near their homes, are more active than those without such access (Sallis & Glanz, 2006).

Fewer parks, sports fields, fitness clubs, and trails exist in low-income neighborhoods compared to affluent ones, suggesting that low-income youth may face barriers to physical activity; thus increasing their chances of developing obesity (Sallis & Glanz, 2006). In addition, traffic and physical disorder, as measure by graffiti and litter, in the physical environment are likely to discourage physical activity by increasing perceived danger on the street and public places, reducing the sense of neighborhood social cohesion (Franzini et al., 2009). However, although there is a link between the built environment and children's physical activity, there is not a clear conclusion as to

whether the built environment directly promotes obesity (Dunton et al., 2009; Sallis & Glanz, 2006).

The school setting has been identified as key to the reduction and prevention of overweight and obesity. Schools provide continuous and intensive contact with children during the formative years that shape their identity and have potential to provide a positive influence on health (Bustos, Olivares, Leyton, Cano, & Albala, 2016). The most commonly studied school-based intervention strategy for obesity reduction involves curriculum-based approaches to influence eating patterns, reduce sedentary behaviors, and promote higher activity levels among children (Dehghan et al., 2005).

Other intervention strategies for children have also targeted after-school care services as they serve as a natural setting for influencing the diet and physical activity of children and adolescents (Dehghan et al., 2005). Most nonclinical interventions involving child and adolescent eating and physical activity patterns are school-based and have been shown to be effective (Dehghan et al., 2005). Therefore, the different characteristics of the neighborhood, school, and community environments that favor inactivity are key contributors to the increased prevalence of obesity (Dunton et al., 2009).

Social Environment

Social factors may be as important to physical activity as the physical environment itself, but their role has not been adequately studied (Franzini et al., 2009). Social cohesion includes social contact and social exchange among those in the community or neighborhood (Franzini et al., 2009). For example, a network of parents who communicate and are willing to watch out for the neighborhood children, could

facilitate healthy choices (Franzini et al., 2009). Neighborhood social cohesion might also influence young people's physical activity levels as it has been associated with increased levels of physical activity among older adults as well as children and adolescents (Franzini et al., 2009). Social cohesion is higher in neighborhoods with high safety and walkability, where people are more likely to see and talk with their neighbors (Sallis & Glanz, 2006). These neighborhoods would have high safety, access to resources, and medium to high income levels, reiterating that socioeconomic status and the environment are interrelated and have an effect on the development of overweight and obesity in children. A favorable social environment is positively associated with the overall physical activity, days of vigorous exercise, days with physical education in schools, and is negatively associated with obesity (Franzini et al., 2009).

Home Environment

While social and physical environmental factors have strong associations with the development of obesity, families in the home environment are important referents in establishing health behaviors in children (Williams, Helsel, Griffin, & Liang, 2017). There is compelling evidence that children's contexts, such as the home environment, promote unhealthy eating and exercise habits that are precursors for the emergence of obesity (Arredondo et al., 2006). As with all environments, the home environment has factors that affect it specifically. Factors that affect family lifestyle and the home environment are poverty, employment, family conflict, violence, housing instability, and other neighborhood factors (Davison, Lawson, & Coatsworth, 2012; Kitzmann & Beech, 2006). Within the home environment, researchers found an association between the

parental BMI category, family nutrition, and children's physical activity patterns (Williams et al., 2017). Home environments are key factors in promoting the choice and consumption of healthy foods and reducing the risk of obesity in children (Bustos et al., 2016; Dunton et al., 2009). The home environment is also important in shaping children's eating behaviors and physical activity patterns because of the intentional interactions in focusing on the child (Dehghan et al., 2005). In addition, eating dinner together as a family has a positive correlation with healthy weight and consumption of healthy foods for all members of the family (Gruber & Haldeman, 2009). The home environment can influence a child's dietary behavior in specific areas such as availability/accessibility of foods, food socialization practices, and food-related parenting style (Williams et al., 2017). Social and physical home environments were found to have an effect on a child independent of the parenting style (Williams et al., 2017). Most of the factors studied are modifiable factors that influence children's behavior, such as parental involvement, screen time, and access to screens (Veldhuis, Grieken, Renders, Hirasing, & Raat, 2014). Aside from the social context of the family, health similarities among family members make the family a good candidate for being the "unit" of health promotion interventions (Gruber & Haldeman, 2009).

Changing the built environment alone is unlikely to induce change in physical activity and eating habits, even within the home environment (Sallis & Glanz, 2006). Nutrition education, exercise, and behavioral interventions are the mainstay of treatment for overweight and obese children and adolescents and their families (Berry et al., 2004; Wadden & Stunkard, 2002). Therefore, this research project will be specifically focusing

on the home environment since evidence suggests that the home environment is a key environment in the prevention of childhood obesity.

Family structure and parenting styles are two specific components in a long list that contribute to family members' attitudes and behaviors toward health. Chen and Escarce (2010) suggest that family structure may be related to different elements affecting the weight of the children including the time and the attention parents devote to providing for their children. Family-based intervention programs for health have been investigated because of the significant influence the family has in affecting health-behavior change. Examining the role of the family, outside of a clinical setting, for the prevention of obesity in children and adolescents, is suggested since the family provides a more continuous and direct influence (Davison et al., 2012). For that reason, it would make sense to target the family for different health promotion interventions. However, there is little concrete research and evidence on both family structure and parenting styles in their relation to child health (Chen and Escarce, 2010; Gruber & Haldeman, 2009).

Family

The family environment is important to focus on as it is an important element for children's mental and physical development has an influence regarding the development of childhood obesity (Schmeer, 2012). The family is a major mechanism of influence in effecting change in other family members and in the individual members themselves (Gruber & Haldeman, 2009; Sallis & Nader, 1988). Family can be defined as an "ideal mutually reinforcing environment in which healthy behaviors can be introduced, accepted, and maintained"(Gruber & Haldeman, 2009; pg. 2). The family can impact children's habits and preferences initially and in ways that continue to influence their

behavior, even when the family is not together (Williams et al., 2017). Likewise, the family represents the primary source of social learning, influence, and exposure to an adoption of health habits as well as interpersonal support that is instrumental in shaping and maintaining children's eating habits and physical activity patterns (Chen & Escarce, 2010; Gruber & Haldeman, 2009).

The involvement of the family in a child's life is a complex matter that is often characterized and hampered by unclear structural relations and contrasting needs and expectations within the family (Grabowski & Hóeg, 2016). The investment from parents, such as their time, health behaviors, parenting styles, and emotional support aids in ensuring healthy BMI levels in children due to the connections between childhood obesity and parents' health-related behavior (Savage et al., 2007; Schmeer, 2012). The family also plays a significant role as a source of behavior change; particularly with respect to health-related behaviors such as physical activity, nutrition, and weight loss goals (Gruber & Haldeman, 2009). Part of the pivotal role that the family plays, in addition to the social support and habit shaping, is that the family is the primary setting for exposure to food choices, eating habits, and involvement opportunities for physical activity (Gruber & Haldeman, 2009). Family-based programs and treatments for childhood overweight and obesity have been shown to be more effective than treating the child alone (Gibson et al., 2016). These education and prevention programs have also been successful in preventing childhood overweight and obesity (Gibson et al., 2016).

Family-Based Health Education Programs

Family involvement is important in interventions for behavior change (Fagg et al., 2014). Family social support has been demonstrated to be a key factor for promoting and sustaining health behavior change (Gruber & Haldeman, 2009). Therefore it is crucial to increase the awareness of families with the next step targeting the family through health-education of the family (Gungor, 2014). Family-based interventions are effective ways in which family members can work together toward improving nutrition and exercise behaviors (Berry et al., 2004). When implemented, the family-based interventions for childhood obesity are associated with improvements in children's BMI and psychosocial outcomes (Fagg et al., 2014). Thus the family-oriented approach involving the entire family may be helpful in determining how to best promote behavior change among all its members (Gruber & Haldeman, 2009).

Family-centered interventions foster the highest level of family involvement and empowerment when they are adaptive and responsive to family needs and cultural values (Davison et al., 2012; Dunst, Johanson, Trivette, & Hamby, 1991). The majority of family-based interventions have been conducted with middle-class White youth, whereas the highest obesity rates are among African American, Hispanic, and American Indian children (Berry et al., 2004; Ogden, Flegal, Carroll, & Johnson, 2002). Berry et al. (2004) designed a behavioral intervention and found when parents and children were together, the weight loss occurred in parents, both, or the child. By contrast, when parents and the children worked by themselves, the weight loss occurred for either the parent or the child; never a combination of both (Berry et al., 2004). This suggests that parents who guide

and support children in weight loss (or any health-related behaviors) will help improve the child's health status and lifestyle (Berry et.al, 2004). Intervention that addressed the family as a whole with the goal of building and improving self-efficacy help the parents to promote healthy behaviors to their children (Davison et al., 2012). Families would benefit by seeing health behavior changes which could benefit the community by creating more environments and resources to promote healthy behavior for others. The change that comes from the family-based health-education programs, have been lasting and sustaining, allowing more action to be taken to influence the community in addition to the family (Gruber & Haldeman, 2009).

Duncan et al. (2016) designed an intervention study that targeted families rather than individuals and found a reduction in body mass index (BMI) by 2.5% for family members who were overweight and a 2.1% reduction for family members who were obese. It was concluded that a family-centered intervention can generate moderately better health outcomes than usual care alone as it provides an emphasis and direction in how to target physical activity and nutrition for lasting effects (Duncan et al., 2016). Similarly, Sallis & Glanz (2006) found that respondents from various family-based interventions have generally favored a community approach to reducing childhood obesity and rated parents, health care providers, and schools as the top influences in helping to reduce childhood obesity. Family-focused prevention programs can effectively reduce a range of negative behavioral health outcomes such as sedentary behaviors and unhealthy eating behaviors (Leslie et al., 2016). Tested family-focused programs have significantly improved outcomes for children and these positive effects indicate promise

for a broad public health impact of children's well-being (Leslie et al., 2016). Despite this potential, less than half of childhood obesity prevention programs include parents and those that do, seldom focus on sustainable change, such as integrating the program and promoting active involvement throughout the program, at the level of the family (Davison et al., 2012).

Family Structure

Medalie & Cole-Kelley (2002) and Gruber & Haldeman (2009) describe a family as “a complex of configurations representing census, biological, household family, and functional family connections” and that a family “includes a parent-child connection” (Gruber & Haldeman, 2009 p. 1; Medalie & Cole-Kelley, 2002). Over the years, the living arrangements of children, and rise in unmarried families, have made family structures more varied and potentially unstable (Brown, 2010). The stability of the family is defined as having established, consistent routines (Brown, 2010). Though most children still live in married families of two biological parents, the proportion in this living arrangement has continuously declined over time (Brown, 2010; U.S. Census Bureau, 2010).

Family structure and parental union status are important aspects of the family context that have been linked with many child development outcomes (Schmeer, 2012). Overall, child health is improved when two-parents are present, biological or not, compared to single-parent families (Bramlett & Blumberg, 2007; Schmeer, 2012). Over the last several decades, changes in the family structure have occurred, such as increases

in single and couple-only family structures (Turagabeci, Nakamura, Kizuki, & Takano, 2007).

New and diverse family structures have replaced two-married parent contexts (Brown, 2010; Schmeer, 2012). Fewer children reside with two biological married parents and more live with unmarried parents, whether in families with biological cohabiting parents, two cohabiting stepparents, a single mother, or a single father (Brown, Manning, & Stykes, 2015). Family structure is closely tied to child well-being and studies have found that family structure also affects children's health care and physical health outcomes (Brown et al., 2015; Chen & Escarce, 2010). Family structure-related disparities in child outcomes are related to many aspects of a child's well-being such as health, education, and future overall development (Bramlett & Blumberg, 2007). The growing diversity in family structure and the continued high rates of childhood obesity in the United States point to a critical need to understand the links between different determinants of the family structure such as parental union status and a child's BMI status (Schmeer, 2012).

Between 1970 and 2013, the proportion of children living in two married parent households fell 23% to 64% whereas the proportion of children living with single mothers doubled to 23.7% (Krueger, Jutte, Franzini, Elo, & Hayward, 2015). Also, the number of children living with single fathers quadrupled to 4.1%, and the share of children living with grandparents doubled to 6.2% (Krueger et al., 2015). Children who lived in cohabiting, single mother, skipped-generation, and extended family homes had delayed health care rates that were 1.19-1.78 times higher than children who lived with

parents who were married (Krueger et al., 2015). This suggests that the structure of the family plays a critical role in health-related decisions which influence and are influenced by other health-related factors that affect children (Krueger et al., 2015).

When it comes to data and research on family structure and child health outcomes in the United States, research has often focused on the impact of marital status. In addition, when multiple family structures are studied, the biological relationship between parents and children may be analyzed. In such cases, family structures such as blended, single, or grandparent families may be compared with two-parent families. For example, in a study by Bramlett & Blumberg (2007), results showed that the overall health of the children was high (greater than 70% as excellent/very good) for all family structures, however it was highest for those with two parents. However, these findings indicate that two-biological parent family structures, though having the best health outcomes for their children, are not the only structure for children to have good health outcomes (Bramlett & Blumberg, 2007). For example, parents in blended adoptive families might be more likely than parents in blended step families to have a healthy marriage thus leading to the possibility that the adoptive child may have better health outcomes than children in blended step families (Bramlett & Blumberg, 2007). Children from families in which there are two biological married parents experience better educational, social, cognitive, and behavioral outcomes than other children on average due to married relationships averaging higher socioeconomic status and greater access to health care than other family structures (Brown, 2004; Brown, 2010; Krueger et al., 2015). Thus, researchers have reached mutual conclusions that children tend to have better developmental outcomes in

households with two-biological parents than in other family structures, due to the higher levels of economic resources, social support, and relationship commitment (Bramlett & Blumberg, 2007; Brown, 2010; Schmeer, 2012). The difference in outcomes for children in two-biological parent families and married parent families compared to other family structures is modest but consistent (Brown, 2010). These family structures tend to have more social support and economic resources but are not the only family structure for a child to have healthy outcomes (Amato, 2004; Bramlett & Blumberg, 2007; Brown, 2010).

For example, children in single-mother families and grandparent-only families have poorer health status compared to children in families with two parents (Bramlett & Blumberg, 2007). Children in single-mother families average worse health outcomes than children in married couple families due to the fewer resources and lower access to a routine place for health care (Brown et al., 2015; Krueger et al., 2015). There is strong evidence that children who live with a single mother were at a greater risk for childhood obesity than those with two-biological parents who were married (Chen & Escarce, 2010). In a longitudinal study of a kindergarten cohort, it was found that children from single-mother families had higher rates of obesity than children from households with two biological parents (14% of kindergarteners from home with a single mother were obese compared to 13% of children from two biological parents families) (Chen & Escarce, 2010). As researchers followed the children throughout elementary school, there was an increase in the percentage of children from single mother families who were obese as 23% were obese in third grade and 28% were obese in fifth grade (Chen &

Escarce, 2010). In comparison, for children from two biological parent households, 20% were obese in third grade and 22% in fifth grade (Chen and Escarce, 2010). In addition, children from single-parent families, including single-father families, had higher BMI scores than children from two-parent families (Gibson et al., 2016).

Family stability can be indicated by parents having established and consistent routines (Brown 2010). Though children fare best in stable family environments, this is not limited to only two-biological parent married households (Brown, 2010; Schmeer, 2012). Although stable living arrangements tend to promote child well-being, not all the typical stable family forms, such as two-biological married parents, are beneficial for children (Brown, 2010; Schmeer, 2012). When examining the effects of marriage for families and child well-being, there are associations between family structure and child well-being, but there are other underlying mechanisms that affect family structure and child outcomes (Brown, 2010; Brown et al., 2015). Family conflict, no matter the structure, can compromise a child's well-being. For example, marital stressors and high marital conflict in two-biological parent married families can impact a child's well-being and health outcomes (Brown, 2010). Thus, marital breakup may be more beneficial for the child and single-parent than remaining in an unhealthy marriage (Brown, 2010; Haimi & Lerner, 2016). Focusing on different two-parent family structures, such as cohabiting and same-sex, could bring a new direction for future research as two-biological married parent households are still more common family structures and have already been highly studied (Brown, 2010; Brown et al., 2015; Krueger et al., 2015).

Typically, measures of family structure capture a child's relationship to a resident biological parent and ignore the presence of other family members (Brown, 2010). Evidence suggests that it is not necessarily just being married that helps the child, but rather the increased availability and sharing of resources that tend to follow two-biological married parent households, more than two biological cohabiting parent households (Brown, 2010). Though families where there are two parental figures, married or not, show the highest proportions of having three regular meals daily, healthy eating habits, and regular exercise, children in cohabiting and multi-generational families remain more likely to experience barriers to health care compared to children where the parents are married (Kruger et al., 2015; Turagabeci et al., 2007). Similarly, children in unmarried couple families average worse outcomes than children in married couple families (Krueger et al., 2015). However, this is not limited to two-biological married parents, it is simply two parents, married (Krueger et al., 2015). In addition, children who are raised by their grandparents have been found to have the poorest health outcomes of all (Bramlett & Blumberg, 2007).

Parenting Style

Parents are influential in creating the physical and social environments for their children's physical and mental health (Gungor, 2014). Parents play a fundamental role in shaping children's development, including dietary and physical activity behaviors (Davison et al., 2012). Most parents are motivated to enhance their child's health and learn about their own role in ensuring their child's well-being (Leslie et al., 2016). Because of this, parents are important social referents and can influence their children's

physical activity by participating with them, encouraging them to be active, and taking them to places where they can be active (Williams et al., 2017). Parents' attitudes toward child rearing are influenced by cultural norms and sociocultural issues as parenting practices may differ across ethnic groups (Arredondo et al., 2006). Direct involvement of at least one parent as an active partner with his or her child in the weight-loss process improves a child's short-term and long-term (one year) health behaviors and health status (Berry et al., 2004; Wadden & Stunkard, 2002). Further evidence indicates that direct involvement of at least one parent and parenting support has been reported as a determinant of children's involvement in physical activity (Gruber & Haldeman, 2009).

Similarly related to family structure, parenting styles also play a critical role in children's healthy or unhealthy behavior habits and can reduce the risk of childhood obesity. Research suggests that parenting practices and strategies that are specific to diet and physical activity are shaped by factors proximal to children and parenting, such as SES, ethnicity, education, and characteristics of the child, in addition to the contexts in which they live and interact (Davison et al., 2012). Parenting practices and parenting decisions on the physical home environment take place in the context of parenting style (Veldhuis et al., 2014). Parenting styles are characterized by the use of appropriate discipline and reinforcement and have been associated with children eating healthier foods and having more physical activity compared to parenting styles characterized by high levels of control on the child (Arredondo et al., 2006). There are four categories of parenting styles that were first identified by Baumrind (1966) and then revised by Maccoby and Martin (1983). The revised styles (see Figure 1) are based on the level of

demandingness (how much strict obedience is expected/required) and responsiveness/support (how much independence and support is given): authoritarian (high demandingness, low support), authoritative (high demandingness and support), permissive (low demandingness and high support), and neglectful (low demandingness and support) (Maccoby & Martin, 1983).

[FIGURE 1: PARENTING STYLES MATRIX]

		Responsiveness/Support	
		High	Low
Demand / Control	High	Authoritative	Authoritarian
	Low	Permissive	Indifferent

(Adapted from: Maccoby & Martin, 1983)

Authoritarian parenting aims to shape and control the behaviors and attitudes of the child based on high standards already set by the parents/guardians (Baumrind, 1978). Obedience is valued and there is often little explanation and support (Maccoby & Martin, 1983). In households with authoritarian feeding styles, children consumed fewer fruits and vegetables compared to all other parenting styles (Arredondo et al., 2006). Children with authoritarian parents consistently have higher rates of obesity among the four different parenting styles and, conversely, authoritative parenting has been found to have lower BMI scores in children compared to the other parenting styles (Williams et al., 2017).

Authoritative parenting, by contrast, attempts to direct the child's decision in a rational manner; there is encouragement and explanation but the child is still held to a high standard set by the parents/guardians (Baumrind, 1966). When reported in studies by both youth and parents, authoritative parenting is characterized by negotiating

responsibilities, but the parent has the final say (Baumrind, 1978). This is different from the authoritarian parenting style, where the parent dictates/controls the behavior, and the permissive parenting style, where the parent exerts less control (Saletsky, Trief, Anderson, Rosenbaum, & Weinstock, 2014). Studies suggest that an authoritative parenting style with parental involvement is a good balance and relates to better youth self-reliance, achievement, and social competence in addition to health outcomes (Baumrind, 1978; Baumrind, 1966).

Permissive parenting is acceptant and affirmative toward the impulses and actions of the child (Baumrind, 1966; Maccoby & Martin, 1983). There is a lot of explanation and support, but a low level of demand in the household (Maccoby & Martin, 1983). In a study focused on diabetes medication adherence and parenting style, a permissive parenting style towards normative tasks and a less authoritarian style towards diabetes tasks predicted better medication adherence (Saletsky et al., 2014). Saletsky et al. (2014) aimed to understand the relationships between parents and their youth with type 2 diabetes, where the participants, both the parents and the youth, of this research project completed questionnaires. Due to the high levels of responsiveness and lower levels of demand, the children felt they had more control over their behavior, again, predicting better medication adherence (Saletsky et al., 2014). Families with an authoritative or authoritarian parenting style had a lower percentage of children's screen time compared to families with a permissive or neglectful parenting style (Veldhuis et al., 2014). Parenting style within the household in this study appeared to not be an effective modifier in any of the associations between the social or physical home environment

characteristics (Veldhuis et al., 2014). The study concluded that children in families with rules and parental monitoring regarding watching TV are less likely to actually watch TV, a sedentary lifestyle behavior (Veldhuis et al., 2014).

The direct involvement of at least one parent improves a child's weight management significantly (Gruber and Haldeman, 2009). Arredondo et.al (2006) examined the relationship with healthy eating and physical activity of children and evaluated effective and ineffective parenting styles related to the associations between children's healthy eating and parenting styles. Arredondo et al. (2006) examined the relationships between parenting style and children's healthy eating and physical activity in Latino families aiming to expand research evaluating the influence of effective/ineffective parenting styles associated with obesity-related behavior. Parent completed a survey at their children's school where weight and height of both the parent and children were measured by trained researchers. Parents filled out a self-administered food frequency questionnaire and rated physical activity for both themselves and their children. Results show a positive association between positive parental characteristics, such as the use of reinforcement, limit-setting, and discipline, and children's health-related activities (Arredondo et al., 2006). For example, parental monitoring and reinforcement for healthy eating and physical activity were significantly associated with the children's healthy eating and physical activity (Arredondo et. al., 2006). These positive parental characteristics are associated with the authoritative parenting style that Baumrind (1978) describes as the "ideal" parenting style due to the high level of demand and a high level of support (see Figure 1). Previous research has also shown that parents,

who exhibit authoritarian characteristics -- specifically regarding health behaviors and their children -- increase their children's risk for being overweight and or obese (Arredondo et.al, 2006). Parents are key to the development of a home environment that fosters healthful eating and participation in physical activity, and their role is likely critical to most solutions in combating obesity (Gruber & Haldeman, 2009).

Behavioral Theory

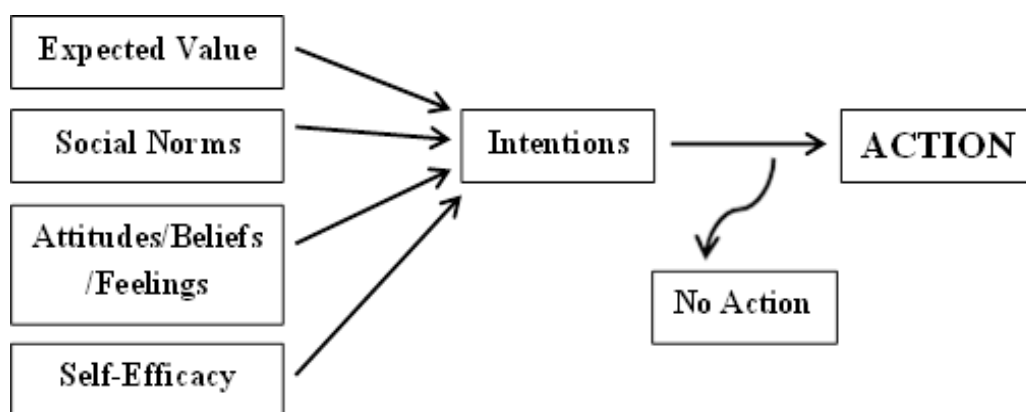
Behavior change is a key component shown to be an effective target for obesity prevention and interventions. Research has found that the effective prevention and treatment of obesity involves behavior change -- which poses difficult challenges (Mokhtari et al., 2017). There are many different factors at the individual level and the interactions between them that should be targeted. But behavior is seen as a dynamic process and not an "all-or-none" phenomenon that can be easily targeted (Krebs et al., 2007). Motivation is a key aspect of behavior change that has been well-studied.. In motivation-based interventions focusing on weight loss, motivation is used to promote behavior change, with a goal leading to weight loss (Mokhtari et al., 2017). The assessment of the individual's motivation and the potential inability to initiate and or maintain the behavior change is essential for lifestyle modification regarding weight loss and weight management (Mokhtari et al., 2017). Specifically, overweight and obese adolescents exhibit similar, autonomous motivation (personal belief that behavior is important) for healthy eating, but they also exhibit higher controlled motivation (external influences) for healthy eating in comparison with adolescents who were normal weight (Mokhtari et al., 2017, p. 2).

In addition to motivation exclusively, literature using existing behavioral theories targeting the family have focused on cognitive-behavioral modification using concepts such as problem solving, goal-setting, and self-monitoring for change in relation to health behaviors (Berry et al., 2004). For example, the Social Learning Theory emphasizes that behavioral action or behavioral change is constructed upon reinforcement, punishment, and modeling (Berry et al., 2004). The different behavioral patterns that are conditioned are then instrumental in changing and maintaining behavioral changes and are supported by different interactions such as punishment or reinforcement (Berry et al., 2004). Since motivation, behavior modification, and other behavioral theories have been researched and found to be an effective target for behavior change, the CHAMPS project aimed to use a newly developed behavioral theory framework that focused on behavior change. Olin et al., (2010) developed a research study about barriers families face for health service utilization called the 'Parent Empowerment Program'. The goal of the 'Parent Empowerment Program' was to engage parents in becoming active agents of behavior change and empowering them to do so. Staff worked with the parents to address the barriers preventing them from engaging in behavior change and to provide the necessary knowledge to alter the attitudes and beliefs of the parents (Olin et al., 2010). This was done to ensure the care of their child would be in an environment with consistent values, beliefs, and goals for health (Olin et al., 2010).

The researchers used a model called the Unified Theory of Behavior as a framework for this program. This Unified Theory of Behavior contains two dimensions for a person's behavior: 1) those pertaining to the immediate determinants of behavior

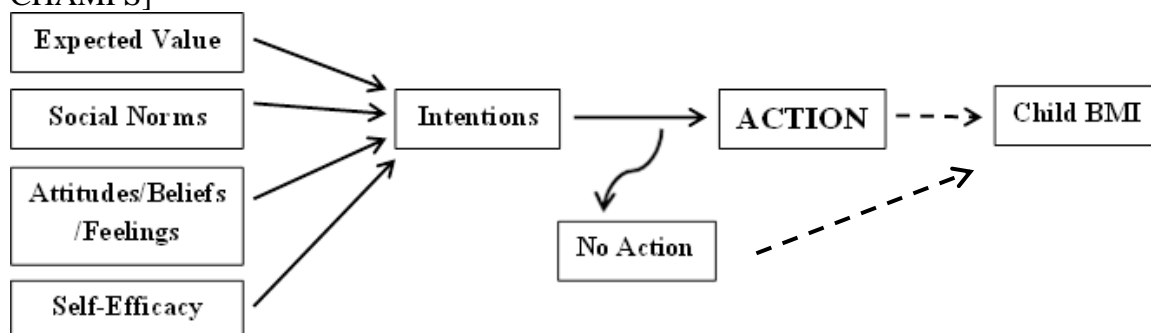
and 2) the willingness to engage in a given behavior (Olin et al., 2010). Ultimately, the Parent Empowerment Program and the Unified Theory of Behavior were combined to present a new framework and model with four domains that are distinguishable and separate from each other, but all influence behavioral intention which leads to either engaging in the intended action or not engaging (i.e. the behavior change) (Olin et al., 2010). The four domains are expected value, social norms, attitudes/beliefs/feelings, and self-efficacy (Olin et al., 2010). The expected value domain includes whether or not the action taken will have a direct impact for the individual or not (Olin et al., 2010). The social norms domain describes what the individuals thinks/perceives is the “norm” and or what others will think of them engaging in the action (Olin et al., 2010). The attitudes/beliefs/feelings domain has more of a focus directly on the individual’s attitudes, beliefs, and or feelings toward engaging in the action or not (Olin et al., 2010). Lastly, the domain of self-efficacy gives a construct for if the individual sees themselves as competent or effective in engaging or not engaging in the action (see Figure 2) (Olin et al., 2010). These domains provide a logical and practical way to categorize parenting style, family structure, and other health-related questions administered in surveys for CHAMPS to explore the relationships and associations with child health status. Child BMI is used as a proxy for the action in the adapted behavioral model (see Figure 3). It is assumed that the child’s BMI percentile (health status) as the outcome is a result of parental action or not (Berry et al., 2004; Gruber & Haldeman, 2006). Overall, application of this new framework may provide a new and insightful way to look at child health, family structure, and parenting style.

[FIGURE 2- THE UNIFIED THEORY OF BEHAVIOR MODEL]



(From: Olin et al., 2010)

[FIGURE 3- THE UNIFIED THEORY OF BEHAVIOR MODEL ADAPTED FOR CHAMPS]



(Adapted from: Olin et al., 2010)

CURRENT PROJECT: CHAMPS

There are influences regarding the family, such as family structure and parenting style, in relation to children's health that needs to be studied. The current project, CHAMPS (Child Health and Methods of Parenting Study), was designed to examine ways of keeping adults and children healthy outside of a clinical setting by exploring the relationships between parenting style, family structure, and child health status through a new lens of the Unified Theory of Behavior model. The application Unified Theory of

Behavior model may also enhance partner organizations' understanding of the families they serve; the measurements, associations, and conclusions drawn may provide new insights to inform the development of family-based health education programs.

The objectives of this study are to:

1. Examine how Unified Theory of Behavior domains vary by key family dynamics – marital status, parent-child relationship, and parenting style – as well as child health status.
2. Summarize the information and data gathered for partner organizations' application.

METHODS

Survey Development (see Appendix)

The Child Health and Methods of Parenting Study (CHAMPS) examines relationships between child health, parenting style, family structure, and the four domains of the Unified Theory of Behavior model (Expected Value, Social Norms, Attitudes/Beliefs/Feelings, Self-Efficacy). Questions for parenting style were adapted from Arredondo et al. (2006) and Saletsky et al. (2014). Questions for the domains of the Unified Theory of Behavior were developed based on concepts explained by Olin et al. (2010).

The CHAMPS survey included components for both parents and children. For parents, the survey included questions about demographic characteristics, family structure, parenting style, the perceived importance of their own health and their family's health, their perceptions of social norms related to parenting, and comfortability of discussing health-related topics with their children. Response options were multiple choice, Likert Scale rankings, and short answer. For the child, there were health questions similar to the parent's questions, including those about the child's knowledge of health, and their perspective on their parent(s) parenting style related to health. Participants were offered a chance to win an incentive after completing the survey.

Informal feedback for the CHAMPS survey was gathered in May 2017. Most families that read the survey responded that they could understand and comprehend it with only two parents needing word clarity for a few of the questions. All children reported that they were able to understand the survey. Changes to the survey for clear,

concise questions were completed before the full administration of the survey in September and October 2017.

Follow-Up Survey (see Appendix)

After the initial administration of the survey, a follow-up survey was developed to gain a better understanding of participant interpretations of a few questions. The initial survey used the term “health”, but did not clearly define the scope of the term. The follow-up survey was sent via email to those who submitted an email address for the chance to win the incentive. Participants expanded on their perceptions of what it means to be healthy and what it means to be comfortable discussing health topics with their children and provided examples.

Procedure/Administration

Initial invitations to be a part of the CHAMPS project were emailed to a number of different facilities and organizations in Lincoln, Nebraska. Two recreational facilities responded and partnered to administer the CHAMPS surveys to their members – Madonna ProActive and Lincoln Fallbrook YMCA. These two facilities are located on opposite sides of Lincoln, Nebraska and there is a fee to join the recreational facilities. The survey was approved through the institutional review boards (IRB) at the University of Nebraska-Lincoln (IRB Project #17274, Approval #20170817274EP), Lincoln Fallbrook YMCA, and Madonna ProActive prior to administration of the survey. The CHAMPS survey was administered three times at each location during open business hours for 3-4 hours, between September and October of 2017. Surveys were completed through the Qualtrics online survey database. If the participants were unable to complete

the survey at the point of introduction on site, a link was given for the participants to complete on their own time if they desired. In total, 51 parents/legal guardians and 57 children completed the survey.

Participant Recruitment

Participants recruited for CHAMPS were parents and legal guardians of at least one child between first and eighth grade. Participants were recruited at the two partner locations of Madonna ProActive and the Lincoln Fallbrook YMCA. Families of any family structure were eligible to participate. In order for children to participate in the project, they had to be students between first grade and eighth grade. If a family did not have children that fell in this age range, they were excluded from the study.

Measures

Demographic and Health Status - Questions in the CHAMPS survey included demographic information for the parent and child such as height, weight, zip code, race/ethnicity, parent marital status, and parent relationship to the child. Adult and child self-reported height and weight were used for BMI calculations and categorizations and were completed based on standards given by the Centers for Disease Control and Prevention (Centers for Disease Control and Prevention, 2015).

Unified Theory of Behavior Domains – Survey questions were also developed in order to address the four key domains in the Unified Theory of Behavior: Expected Value, Social Norms, Attitudes/Beliefs/Feelings, and Self-Efficacy. Each of these domains have distinguishing definitions, questions, and criteria (Olin et al., 2010). To apply a behavioral theory lens to this study, the CHAMPS survey adapted the domain-specific questions to be pertinent to family and child health (see Figure 4).

Parenting Style – Parents/guardians and children were asked questions in order to determine parenting style (see Figure 5). Based on the work of Maccoby and Martin (1983), parenting style questions focused on the discipline and responsiveness of the parents and the perceived discipline from the parents according to the children and were categorized based on the responses.

Family Structure – Parents/guardians were asked questions about their relationship to their child; whether they were biological or not. In addition, the parent/guardian was asked about their relationship to other adults living in the household (if there was another adult in the household) to understand the households' composition.

[FIGURE 4-SURVEY QUESTIONS IN CORRESPONDING DOMAIN]

UTB Domains	Corresponding Survey Questions (Parent)
Expected Value	<ul style="list-style-type: none"> -How often do you choose healthy behaviors for yourself? -How often does your family discuss health-related topics? -Do you think a family-based health education program would be beneficial? (Parent) -Would you be interested in learning about health with your family? (Parent)
Social Norms	<ul style="list-style-type: none"> -How much do you agree with the following statements? -Most parents do not address health-related topics with their children. - Most parents make the best health-related decisions for the family. - Most parents discipline/correct their child/children for unhealthy behaviors. -There is little explanation and discussion between parents and children about health related topics.
Attitudes/Beliefs/Feelings	<ul style="list-style-type: none"> -How important is it to you that YOU are healthy? -How important is it to you that YOUR FAMILY is healthy?
Self-Efficacy	<ul style="list-style-type: none"> -How comfortable do you feel discussing health topics with your children? (Parent) -How comfortable do you feel talking to you parents about health-related topics? (Child)

[FIGURE 5- PARENTING STYLE QUESTIONS]

Arredondo et al., 2006 (Parents only)	Saletsky et al., 2014 (Children / Parents)	CHAMPS Study (Appendix) (Parents / Children)
<u>Monitoring</u> -How much do you keep track of sweet & salty snacks, high-fat foods, fruits & vegetables that child eats? -How often must your child ask permission before getting a snack? -How much do you keep track of the amount of TV/video your child is watching? Amount of exercise your child is getting? <u>Discipline</u> -How often do you discipline your child for doing the following without permission? (getting a snack, drinking a soda) -How often must your child ask permission before drinking a soda? -How often do you discipline child for doing the following without permission? (watching TV, playing video games) <u>Control</u> -How much do you agree or disagree with each statement? (Offer sweets to child as a reward for good behavior, child should always eat all the food on their plate, I have to be especially careful to make sure child eats enough, if I don't regulate or guide child's eating, they would eat much less than they should, I offer TV, videos, to my child as a reward for good behavior) <u>Limit setting</u> -How much do you agree or disagree with each statement? (I limit the amount of soda my child drinks, I limit the number of snacks my child eats, I limit amount of time my child watches TV/videos, I limit the amount of time my child plays video games) <u>Reinforcement</u> -How often do you praise your child for eating a health snack? -How often do you praise your child for being physically active?	-My parents and I agree on everything / My children and I agree on everything -I go to my parents for help before trying to solve a problem myself / My children come to me for help -Even when my parents and I disagree, my parents are always right / In disagreement, I am always right -It's better for kids to go to their best friend than to their parents for advice -I try to have the same opinions as my parents / My children and I have the same opinions -I wish my parents would understand who I really am / I understand who my child really is <u>Type 2 Diabetes Questions:</u> -Parent-child agreement on: -Injection interval / regularity -Injection meal-timing / regularity -Calories consumed -Eating frequency -Exercise duration, type, frequency -Glucose-testing frequency	<u>Parent</u> -How do you usually communicate about health with your child/children? (I tell them what to do, no discussion – Authoritarian, We discuss what to do, but I have the final say – Authoritative, I always let them make the decision – Permissive, We don't ever talk about healthy choice – Indifferent) -If your child made an unhealthy decision, how would you address it? (Discipline/Correct them, no explanation – Authoritarian, Discipline/Correct them with explanation – Authoritative, No discipline/correction, it was their choice – Permissive, Avoid discipline/correction – Indifferent) <u>Child</u> -If you make a bad/unhealthy choice, how does your parent(s) handle that? (They correct me, but we don't talk about the unhealthy choice, They correct me, and we talk about the unhealthy choice, I can do whatever I want and they don't talk about unhealthy choice, They are not interested/we never talk)

Analysis Approach

Once the original survey and follow-up surveys were complete, responses were coded to undergo statistical analysis using SPSS (version 24 and 25) software. Since all responses were categorical outcomes, a chi-squared test was used initially as it tests for the independence of two variables (Kim, 2017). Questions with four or more initial response categories were difficult to interpret due to the relatively low number of total adult responses. Questions were recoded to have two response categories to facilitate more meaningful data analysis (see Figure 6). After the responses were grouped together into two responses per questions, a two-sided Fisher's exact test was used to analyze the data. A Fisher's exact test is used to test significance when there is a small sample size and when the categorical variables will be analyzed in a 2x2 table (Kim, 2017).

[FIGURE 6: GROUPED ANSWERS FOR SURVEY QUESTIONS]

<u>Demographics</u>						
Race/ Ethnicity	Marital Status	Parenting Style	Relationship to Child	Location	Child BMI Percentile	Adult BMI Category
Caucasian/ White	Married	Authoritative	2 Biological Parents	North Lincoln	Underweight/ Normal	Normal
Minority	Not Married	Not Authoritative	Not 2 Biological Parents	South Lincoln	Overweight/ Obese	Overweight/ Obese
<u>Expected Value Domain</u>						
How often do you choose health behaviors for yourself?		How often does your family discuss health- related topics?		Do you think a family- based health education program would be beneficial?		Would you be interested in learning about health with your family?
About half of the time		Once a week and less		Yes		Yes
Most of the time/Always		Multiple times a week to Every day		Maybe/No		Maybe/No
<u>Social Norms Domain ("How much do you agree with the following statements?"</u>						
Most parents do not address health-related topics with children		Most parents make the best health-related decisions for the family		Most parents discipline/correct their child/children for unhealthy behaviors		There is little explanation/discussion between parents and children about health- related topics
Agree		Agree		Agree		Agree
Neutral/Disagree		Neutral/Disagree		Neutral/Disagree		Neutral/Disagree
<u>Attitudes/Beliefs/Feelings Domain</u>						
How important is it to you that YOU are healthy?				How important is it to you that YOUR FAMILY is healthy?		
Slightly/Moderately Important				Slightly/Moderately Important		
Very/Extremely Important				Very/Extremely Important		
<u>Self-Efficacy Domain</u>						
How comfortable do you feel discussing health topics with your children?				How comfortable do you feel talking to your parents about health related topics?		
Comfortable				Very Comfortable		
Not Comfortable				Kind of Comfortable		

RESULTS

Demographic Results (Table 1 and Table 2)

Parents (n=51) and children (n=57) completed the CHAMPS survey. More than 75% of parents/guardians self-identified as Caucasian/White, as parents who were married, and as using an authoritative parenting style. Similarly, more than 75% of children identified as Caucasian/White. Slightly more surveys were completed at the south Lincoln location compared to the location in north Lincoln (North Lincoln, n = 23; South Lincoln, n = 28). For body mass index (BMI) categorization, 70.60% of adults had a normal, or healthy, BMI based on their self-reported height and weight (Centers for Disease Control and Prevention, 2015). The normal BMI range for adults is 18.5 - 24.9. The normal BMI percentile range for children is 5% - 84.9% (Centers for Disease Control and Prevention, 2015).

Follow Up Survey Results (Table 3)

Due to the potential for different interpretations in two of the questions in the original developed survey, a follow-up survey was administered in order to understand how the participants interpreted and defined key terms. Participants (n=5) were asked to define “healthy” and being “comfortable” in discussing health-related topics with their children. The most common responses from the participants are shown in Table 3. The responses indicated that the questions were interpreted as intended. These responses also guided interpretation and application of results for this project.

Unified Theory of Behavior (UTB) Results

Expected Value Domain (Table 4)

The expected value domain of the Unified Theory of Behavior focuses on the perceived direct impact the action/behavior will result in for the individual (Olin et al., 2010). Using that, questions categorized in the expected value domain were analyzed in relation to various outcome variables. In the chi-square analysis and Fischer's exact test of the relationship between the expected value domain of the Unified Theory of Behavior and the outcome variables, all cross-tabulations did not show a significant value to suggest an association between the questions and the different outcome variables (see Table 4). The results then suggest that there is not enough evidence to support an association between the questions in the expected value domain and the outcome variables for this sample population.

Social Norms Domain (Table 5)

There were no significant values or associations found for questions in the social norms domain in the chi-square analysis and the Fischer's exact test. This suggests that there is no association between social norms and the different outcome variables and that these are independent of each other. Thus, for this population of respondents, the social norms domain was not significant in the health-related behaviors as hypothesized.

Attitudes/Beliefs/Feelings Domain (Table 6, Table 7, and Table 8)

The domain of attitudes/beliefs/feelings focuses directly on the individual's attitudes, beliefs, and feelings toward the behavior (Olin et al., 2010). So regarding the parents'/guardians' attitudes/beliefs/feelings about the importance of their *family's*

health, there were no significant values, from both chi-square and Fischer's analyses, to indicate any association with the outcome variables (see Table 6). This suggest that there is not enough evidence to support that there could be an association between the importance of the families' health to the parents/guardians and the outcome variables for this population.

However, results did show that there is evidence to suggest an association between the perceived importance of the parents'/guardians' own health compared to their relationship to their child. The initial chi-square analysis reported a significant value ($p=0.047$). But when analyzed with the Fischer's exact test, the value was approaching significance ($p=0.083$). The association is still worth reporting (Table 7) as there is a significance percentage difference between the variables. In Table 7, 80.6% (29/36) of households that had two biological parents responded that their own health was very/extremely important, where as 53.3% (8/15) of households that did not have two biological parents responded that their own health was very/extremely important.

When examining parenting style and the importance of the parents'/guardians' own health, results suggest another association between the two (see Table 8). The initial chi-square analysis reported a significant value ($p=0.016$). When the variable were tested with the Fischer's exact test, the value was still significant ($p=0.028$), supporting that this relationship between the importance of the parents'/guardians' own health and parenting style has a significant association. About 79% (34/43) of authoritative parents responded that their own health is very/extremely important in contrast to only 37.5% (3/8) of parents who were not authoritative selected their own health as very/extremely important

Self-Efficacy Domain (Table 9, Table 10, and Table 11)

Based upon the Unified Theory of Behavior, the results showed no significant values to suggest any associations between the comfortability (which respondents defined as having knowledge, confidence, and being prepared) of talking about health-related topics of the parents/guardians to their children and the outcome variables (see Table 9). But for the child's comfortability in talking about health-related topics with their parents, initial chi-square results suggest an association between the child's health status (BMI percentile) and their comfortability (see Table 10). The initial chi-square analysis reported a significant value ($p=0.043$), but the Fischer's exact test reported a value that approaches significance ($p=0.064$). Since there is still large difference in the percentages for overweight/obese children and their comfortability, the association will be discussed. There were 48.5% (17/35) of children who were categorized as overweight/obese and were very comfortable talking to their parents about health-related topics. By contrast, 18.75% (3/16) of children who were categorized as overweight/obese were "kind of comfortable" (less than very comfortable) talking to their parents/guardians about health-related topics.

Also for the child's comfortability talking to their parents about health-related topics (see Table 11), there is evidence, from an initial chi-square test, to suggest that there is an association with whether or not the parents/guardians view a family-based health education program as beneficial. The initial chi-square analysis reported a value at significance ($p=0.05$), but the value from the Fischer's exact test approaches significance ($p=0.059$). Since the value is approaching significance, and there is a large difference in

the percentages for these two variables, this relationship is still reported and discussed.

Only 12.5% (2/16) of parents thought a family-based health education program would be beneficial when their child indicated that they were “kind of comfortable” talking to their parents about health-related topics. But 40% (14/35) of parents did not see a family-based health education program as beneficial when their child responded as “kind of comfortable” talking to their parents about health-related topics.

DISCUSSION

There are a range of factors and influences that play pivotal roles in the rising prevalence of obesity. Factors such as SES, physical environment, and home environment have been explored in their relation and influence on obesity. Specifically, targeting the family for the prevention of childhood obesity is suggested as the family is a mechanism of influence and has been shown to be effective in reducing childhood and adult obesity (Gruber & Haldeman, 2009). Likewise, identifying the number of obesogenic environments will help to address and influence healthier choices with the increased availability and promotion of healthier lifestyles to the population (Dehghan et al., 2005). CHAMPS (Child Health and Methods of Parenting Study) examined how family structure, parenting styles, and the Unified Theory of Behavior are associated with child health status as defined by child BMI percentile. By using a behavioral theory as a new lens, results were also analyzed to look at how family-based health education programs may or may not be perceived to benefit the family. Family-centered interventions have been shown to be effective in reducing childhood obesity and other health outcomes (Davison et al., 2012; Dunst et al., 1991; Fagg et al., 2014; Gruber & Haldeman, 2009). Thus, the family-centered approach could be helpful at the partner locations to best promote behavior change targeting the reduction of obesity.

The Unified Theory of Behavior frames that a behavioral action or change is based upon the individual's intention and the intention is influenced by four distinct domains (Expected Value, Social Norms, Attitudes/Beliefs/Feelings, Self-Efficacy) (Olin et al., 2010). Each specific domain is related to the behavioral intention which leads to the individual acting or not (behavior change or not). The BMI percentile of the child was

measured and used as a proxy for the action in the behavioral model. With the understanding that each specific domain of the behavioral theory is related to the behavioral intention brought about a few major findings within two of the four domains.

Unified Theory of Behavior Domains

Expected Value Domain

In using the behavioral theory, the expected value domain focuses on the perceived value for the individual in whether they take the action or not (Olin et al., 2010). For this group of respondents, there were no significant values to indicate any association between the expected value domain and the outcome variables. Since families can provide different environments and can model healthy behaviors for children, there is a significant impact of a child's health practices and behaviors (Williams et al., 2017). This lack of significant associations could be because the sample population was recruited at health-promoting facilities. This could indicate that the parents already perceive health to be important, and have made the choice of becoming members at one of the two facilities. The choices parents make for their self and for their family influence the child's health in addition to playing a fundamental role in shaping their children's development (Davison et al., 2012). It also re-enforces that parents should be engaged and involved in their child's dietary behaviors as the family is a mutually reinforcing environment where health behaviors can be introduced, accepted, promoted, and maintained (Gruber & Haldeman, 2009).

Social Norms Domain

For the social norms domain, there were no significant associations between the questions and the outcome variables. The social norms questions focused on the perceived “norm” of different interactions between parent, child, and health-related topics or choices. The lack of significance between these variables could be due to the fact that the participants who completed the surveys were already involved in a recreational facility promoting physical activity. Parents’ attitudes toward child rearing and parent-child interactions are influenced by cultural norms and sociocultural issues (Arredondo et al., 2006). This different environmental variable may bring about a different view of what the perceived “social norm” is for this population of participants.

Attitudes/Beliefs/Feelings Domain

Regarding the attitudes/beliefs/feelings domain, there were two significant findings. The importance of the parent’s/guardian’s health was significantly associated with their relationship to their child and the parent’s/guardian’s reported parenting style. There was a higher percentage of parents who identified as biological parents in the household and rated their own health as very/extremely important compared to households that did not have two biological parents. Using the behavioral theory framework as a lens, parents that come from households with two biological parents believe that their own health is important and thus their intention leads to their health-promoting actions. This finding supports that households with two biological parents experience better educational, social, cognitive and behavioral outcomes for all members of the family (Brown, 2004; Brown, 2010). This is also a correlation with two biological

parent households and children's health outcomes (Bramlett & Blumberg, 2007; Brown, 2010). In addition, children in households with two biological parents were more likely to fall in the underweight/normal BMI percentile category. Though these results support associations between two biological parent households and children's health outcomes, it is important to remember that this is not the only structure for children to have good health outcomes (Bramlett & Blumberg, 2007). For any family structure, family conflict or marital stressors could create negative environments for children's health (Brown, 2010; Brown et al., 2015; Haimi & Lerner, 2016). Even though a majority of this population identified as biological, married parents, there was still not have a strong association between child health status and family structure.

Authoritative parents were more likely to rank the importance of their own health as very/extremely important compared to the parents who did not use an authoritative parenting style, based on their responses. This provides new insight for authoritative parents for this population in application to the Unified Theory of Behavior. This would translate to authoritative parents believing that their own health is important and thus form the intention that leads to healthy behavior. When an authoritative parent ranks their own health as very/extremely important, they may be modeling that importance to their children which can influence the child's health-related behavior choices in the future. Likewise, parenting behaviors have been found to have a major impact on childhood obesity, specifically those with authoritative parenting have a positive impact (Williams et al., 2017). The authoritative parenting style and its characteristics are associated with positive outcomes for children (Baumrind, 1966; Baumrind, 1978; Williams et al., 2017).

This finding suggests that while authoritative parents are assertive, they may use their high level of demand to prioritize their health and the high level of responsiveness to communicate the importance of health with their children.

Understanding that parenting styles are based on a level of demand and response from the parent, this can be directly applied to how children will react and respond in their health-related behaviors and outcomes (health status-BMI). Parenting style is an important factor for shaping children's behavior choices, especially those associated with obesity (Arredondo et al., 2006). Children with authoritative parents have been found to have lower BMI levels and better overall outcomes compared to children that do not have authoritative parents (Saletsky et al., 2014; Williams et al., 2017). Parents are crucial to the development of environments that promote healthy behavior choices, and these results suggest that their parental health-related attitudes, beliefs, and feelings may influence the intention to engage in healthy behaviors. This is where a family-based health education program may be able to promote the importance of communication and cohesiveness as the family works together to improve their health and prevent the development and onset of obesity.

Self-Efficacy Domain

There was a significant association between the child's comfortability to talk with their parents about health and the child's health status. Overweight/obese children were more likely to be very comfortable talking to their parents compared to the overweight/obese children who were kind of comfortable talking to their parents about health-related topics. In comparison to children who were underweight/normal and

reported being very comfortable talking to their parents about health-related topics, the overweight/obese children were almost identical. There were 51.5% (18/35) of underweight/normal children who were very comfortable talking with their parents and 48.5% (17/35) of overweight/obese children who were very comfortable talking with their parents. Self-efficacy, also defined as self-confidence, to talk with parents would be expected to lead to the intention for a behavior change to occur. But because of the higher proportion of overweight/obese children being very comfortable talking to their parent/guardians, this finding is not parallel with current literature. Current literature suggests that overweight/obese children do not regularly discuss health-related topics with their parents and are not as comfortable talking to their parents (Turagabeci et al., 2007). Perhaps these children responded as very comfortable talking to their parents because the problem of the child being overweight or obese may be talked about frequently with the parents. In addition, the population comes from health-promoting facilities, indicating that health may be a frequent health conversation topic already.

For the child's comfortability talking with their parents and the child's health status, the significant association may also be related to parenting style, specifically the responsiveness aspect (Maccoby & Martin, 1983). When a parent is actively involved to help with healthy behavior choices the child makes, it is likely associated with parents who are responsive and whose children feel comfortable talking to them about health-related behaviors (Berry et al., 2004). Research suggests that most parents are motivated to enhance their child/children's health and well-being, and the involvement of at least

one parent improves a child's health-related behaviors (Berry et al., 2004; Gruber & Haldeman, 2009; Leslie et al., 2016).

The comfortability of the child talking to their parent/guardian about health-related topics was significantly associated with whether or not the parents thought a family-based health education program would be beneficial. When children selected being "kind of comfortable" talking to their parents, there were a higher proportion of parents who did not see a family-based health education program as beneficial. This association can be used to promote family-focused prevention programs and help reduce the negative attitudes and negative behavioral health outcomes associated with a lack of knowledge and confidence regarding health-related behaviors. Previous research has shown that there are positive effects of family-based programs and a positive impact on children's health and well-being (Leslie et al., 2016). Based on this domain of the Unified Theory of behavior, if the self-efficacy of both parents and children can be targeted in a family-based health education program, the intention and behavior change could result in a positive impact on their well-being and the prevention of obesity in families.

Partner Organization Application

Since research suggests that it is crucial to increase the awareness of obesity among families, an effective next step would be the education of the family as families are an important and significant target for interventions to promote behavior change (Berry et al., 2004; Fagg et al., 2014; Gungor, 2014). The Unified Theory of Behavior's framework focuses on specific behavioral domains and their relation to intention and an action of behavior change; therefore the model provides a new lens to approach family-

based health education programs. As the results of CHAMPS were shared with Madonna ProActive and the Lincoln Fallbrook YMCA, each facility shared how they intend to apply the results.

The dietitian at Madonna ProActive will be using the information and data to improve their approach for their family-nutrition program in the summer. Since more families are at ProActive in the summer, the dietitian will have more resources, such as educational information and workshops for “healthy summer snacks”, for the families to utilize. By using the results from the surveys and the application with the Unified Theory of Behavior, this solidified the method and approach the dietitian will use for the nutritional resources. In addition, the dietitian found that the significance from the self-efficacy and attitudes/belief/feelings domains of the Unified Theory of Behavior will be applied as a focus for the nutritional resources. The dietitian is now going to develop the resources and workshops to help families feel more confident and have better attitudes, beliefs, and feelings toward their nutrition instead of just educating them on the “healthy choices. By focusing more on the self-efficacy and attitudes/beliefs/feelings domains, the dietitian hopes that families will embrace the nutrition education opportunities and the behavior change will be a small step leading to obesity prevention.

The Fallbrook YMCA will be applying the results and data differently than Madonna ProActive. Since the YMCA already has a variety of programs for families, they are going to incorporate more health education in some of the summer family-centered programs. The YMCA director also believes it will be beneficial to focus on the self-efficacy domain for the families. Most families that sign up for the various programs

offered in the summer do so to engage with their family and provide a health-promoting environment for their children. Often times in the family programs, extra resources are given to the families, but are not explained to the families. The director discussed how the unintentionality of handing out resources might contribute to low self-efficacy and this is where the potential application will be integrated. By being intentional in explaining and discussing the extra resources, the director hopes this approach will help increase the self-efficacy of the families; leading to more families engaging with each other, promoting healthy lifestyles, reducing obesity, and being able to have a positive impact and influence for the YMCA in the community.

Social investments by parents, including their time, health behaviors, parenting style, and emotional support may be particularly relevant for ensuring healthy BMI percentiles in children due to the connections between childhood obesity and parents' various health-related behaviors (Schmeer, 2012; Savage et al., 2007). Based on the results from respondents for the partner organizations and the application from the partner organizations, the family would be beneficial to target for the possible implementation of a family-based health education program. Given that a majority of the population for this study is in a middle-class environment/location and the surveys were given at health-promoting facilities, parents may already be "healthy" and not see the need for a family-based health education class. Nonetheless, the results, in conjunction with the Unified Theory of Behavior, provide a new lens to explore different interactions between the family and overall child health status for health-education programs.

Environmental/Socioeconomic

Environmental factors, lifestyle preferences, and cultural environment play pivotal roles in the rising prevalence of obesity (Dehghan et al., 2005). Children and adolescents are influenced by different environments. Physical environments such as the school environment, built environment (parks, recreation facilities), home environment, and the social environment (social interactions and social cohesion) have substantial influence on children. The support that children receive occurs in many different environments or between multiple environments and can help facilitate healthy behaviors (Gruber & Haldeman, 2009).

For this population, a family-based health education program would increase availability and promotion of healthier lifestyles, even though this small population sample may not need a health-promoting intervention. Nonetheless, the implementation of a family-based health education program at the partner organizations would create more positive opportunities for the prevention of obesity in families than negative. In addition, a family-based health education class, for this population, could contribute to the social environment in promoting social cohesion and helping create a positive social environment. Social environments are an important component of an individual and family's overall environment due to the positive association with physical activity and negative association with obesity (Franzini et al., 2009).

The sample in this study had opportunities and access to resources through the physical and built environment in north and south Lincoln, Nebraska. This could contribute to the proportionately low number of overweight and obese children in

comparison to the underweight/normal children for the study's sample. But by simply identifying these relationships and associations to different parts of the environment is not enough. The direct approach of an implementation of a family-based health education program can be a tool used to induce behavioral change and target obesity prevention within the context of the environment.

Previous research shows that differences in SES are associated with different exposure to resources that support healthy lifestyle behaviors suggesting that the implementation of family-based health education programs would provide more resources to families and could assist in the prevention and reduction of childhood obesity. However, for this sample population, since most were Caucasian/White and already categorized as normal for BMI, the risk factors for obesity would be lower and the need for a family-based health education class would be lesser.

Surveys were given at locations where a majority of the respondents were middle-class and were White/Caucasian. The facilities are also promoting physical exercise and have a fee members must pay in order to use the facility. Therefore, it is assumed that respondents from lower socioeconomic statuses were not really prevalent and thus it is difficult to demonstrate from this study the inverse relationship between SES and the development of childhood obesity (Banks et al., 2015; Wang & Lim, 2012). Family-based intervention research conducted with middle-class White families is the most common type of research on childhood obesity and family input (Berry et al., 2004, Ogden, 2002). Moreover, research suggests there is a strong association between culture, socioeconomic status, and obesity with minority children compared to White youth

(Berry et al., 2004). Nevertheless, the implementation of family-based health education classes at the partner locations, with the results and using the Unified Theory of Behavior as a lens, could bring about prevention of obesity through targeting the families in a different way.

Although this study targeted specific components and influences for childhood obesity, results and data gathered still support the evidence that SES heavily affects development of obesity and a healthy lifestyle at an early age. Again, those that participated in this project were already members of recreational, physical activity promoting facilities, in middle-class neighborhoods. Nonetheless, strategies can still be initiated at home to influence the diet and physical activity for both children and adults (Dehghan et al., 2005). This study supports research and literature that recommends targeting childhood obesity outside of the clinical setting in order for interventions to have a longer-lasting effect (Berry et al., 2004). Targeting the family as an intervention for family health and prevention of childhood obesity is worth researching given the rates of obesity in the U.S.

As the prevalence of obesity affects about 12.7 million children and adolescents in the United States, the prevalence of obesity is around 14.7% among non-Hispanic Whites (Ogden, Carroll, Fryar, & Flegal, 2015). Though there is more awareness and focus on targeting the prevention of obesity for adults and children in the United States, there are still more Americans overweight and obese than ever before. Statistics shows that more than half of the adults in the U.S. are overweight, and the number of overweight children and teens has doubled in the past decade (Borrund, Chiappa, & Burt,

2014). Because of the rise in obesity rates for adults and children, public health experts and researchers are looking for ways to improve both diet and fitness with the goal of reducing obesity rates. Since physical activity in children and adolescents promotes health and would help prevent obesity, programs should be implemented to educate and provide opportunities for health and fitness to reduce obesity rates.

These findings support other research verifying that the family is the most influential aspect of a young child's immediate environment and can significantly shape their behaviors (Williams et al., 2017). Health-related values, behaviors, and choices are highly influenced and impacted by the values, beliefs, and lifestyles emphasized by the family unit. Furthermore, a positive influence from the family and supportive family relationships is widely accepted across today's society. Therefore, parents are key to the development of a home environment that embraces healthy behaviors, as parents are important as potential solutions to combating childhood obesity (Chen & Escarce, 2010). Family-based treatments are vital for successfully treating childhood obesity due to the significance of different components that make up the family's structure and parenting style within the household (Gibson et al., 2016). Because of the growing diversity in family structures and the continued prevalence of childhood obesity, links between family structures and children's health status should be researched further and in more detail to gain adequate understanding of the relationship. Nonetheless, it is important for the family to be engaged and involved in children's dietary and physical activity behaviors, particularly since interventions where parent involvement is substantial have been shown to be linked to seeing behavior change in the child (Davison et al., 2012).

The association found within each domain of the Unified Theory of Behavior can bring new insight for future implementation of family-based health education programs and future research regarding targeting families to reduce the prevalence of obesity and the development of effective, sustaining family-based health programs. Lasting change for the reduction of obesity is more likely when it involves the family unit because of the increased likelihood that family members will take action and sustain behaviors to combat obesity (Gruber & Haldeman, 2009). Using these findings, the application of the Unified Theory of Behavior as a lens, and the support from other research, it is important that the potential application from the partner organizations focus on the family because of the role that the family plays as a source of behavior change to combat the prevalence of obesity.

Limitations/Future Research

There are a number of limitations that should be taken into consideration for CHAMPS. The survey used for CHAMPS was developed by adapting questions and components from existing literature. Self-reporting for both the parent and the child/children who participate in the survey is another limitation. Particularly with the younger children, the potential implication of the parent completing the survey for the child and telling the child what they should be filling out on the survey could give inaccurate results that we have no control over. Specifically, height and weight for BMI calculations were self-reported for both parents and children leading to the potential for inaccurate reporting and thus, inaccurate BMI value representation for this population. Also, the CHAMPS survey was not piloted before administration.

For the CHAMPS project, the distribution and diversity of the surveys completed were not as high and significant as initially hoped for. Since there were only two locations for survey administration and completion at Madonna ProActive and Lincoln Fallbrook YMCA, the range of diversity was limited to two specific areas of Lincoln. The partner organizations are also recreational facilities that promote physical exercise. Having on-site recruitment of participants for the survey resulted in, most likely, the participants being members at the facilities already. In addition, only having two locations for the survey distribution resulted in a small sample size. The small sample size created some difficulties in running and interpreting the results of the data analysis and affected categorical analysis and some of the results cannot be concluded as significant but rather just show there could be evidence to support or reject hypotheses. Responses to questions had to be combined into two categorical variables in order to have significant results for this project.

There were only three technological devices for participants to complete the survey on-site at the location and resulted in the administration of the link for the families to fill out the survey on their own time. Giving the participant's a link to the survey to complete on their own time may have diminished their ability to ask questions about the survey and complete it satisfactorily. It also reiterates the potential implication of self-reporting and potential inaccuracy in responses since the survey includes parenting style and health related questions.

Overall, this study, CHAMPS (Child Health and Methods of Parenting Study) provides an beginning foundation for future research regarding family-based health

intervention program implementation, studying and understanding the role of the parent or parents in the household, specifically pertaining to healthy choices made by the family and each individual member, and other direct areas of focus concerning health and the family unit in reducing obesity. One specific recommendation for the next step or follow up of this study would be the collaboration with each partner organization for thoroughly implementing programs or providing more resources for health and health behaviors with an emphasis on the family unit. Completing a cognitive test/pilot test with the surveys first in order to help validate and ensure the survey measures what it is intended to measure can allow researchers to gain a better understanding of specific correlations and links between adults and children regarding health and behaviors.

Because of the sample size of the CHAMPS project, the conclusions drawn cannot be generalized for an entire population. The results do support current research and evidence for trends and hypotheses regarding the family and the public health concern of obesity. However for future research, it is suggested that researchers use a larger and more diverse sample population or a sample population to decrease the chance of the respondents being a part of a recreational facilities prior to collecting data. Another direction for future research worth noting is to look at each domain of the Unified Theory of Behavior individually. This approach could bring about more concrete evidence worth noting and applying to family-based health education programs. Each domain may be able to help develop curriculum and better understand where the focus in term of health education and behavior change needs to be for the families.

Another direction for research focusing on family-based health education classes would be to examine in more detail how more diverse family structures influence child health status and behavioral choices as this is not well understood. For example, future studies could look at child health outcomes in the context of same-sex, cohabiting, or multi-generational family structures. Future research needs to go beyond the child and parents, solely, within a family and incorporate broader indicators of family membership.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my thesis advisor Prof. Megan Kelley, PhD. of the University of Nebraska-Lincoln for her constant support, guidance, patience, and knowledge of research throughout this process of completing this project. I would also like to thank the rest of my committee, Prof. Virginia Chaidez, PhD, and Prof. Mary Willis, PhD. for their insightful comments, input, and encouragement to help guide me in thinking and writing outside of my comfort zone. Another thank you is extended to Madonna ProActive and the Lincoln YMCA-Fallbrook, for their openness to partner for this thesis in survey participants and practical application. Lastly, I would like to thank the University of Nebraska-Lincoln for the opportunity to be a graduate student, develop a project and execute it well.

TABLES AND CHARTS

TABLE 1

Parent demographic statistics (n=51)

	Percentages
Race/Ethnicity	
Caucasian/White	84.30%
Minority	15.70%
Marital Status	
Married	78.40%
Not Married	21.50%
Parenting Style	
Authoritative	84.30%
Not Authoritative	15.60%
Relationship	
2 biological parents	70.60%
Not 2 biological parents	29.40%
Adult BMI Category	
Normal	70.60%
Overweight/Obese	29.40%
Location	
North Lincoln	45.10%
South Lincoln	54.90%

TABLE 2

Child demographic statistics (n=57)

	Percentages
Race/Ethnicity	
Caucasian/White	84.20%
Minority	15.80%
Child BMI Percentile	
Underweight/Normal	66.69%
Overweight/Obese	33.34%
Location	
North Lincoln	43.90%
South Lincoln	56.10%

TABLE 3

Follow-Up Survey Results (n=5)

Questions	Responses
1. What does HEALTHY mean to you?	<ul style="list-style-type: none"> Nutritious/healthy eating, exercise, getting enough sleep, balance of physical and mental health
a) Top 3-4 behaviors that come to mind for health/healthy behavior?	<ul style="list-style-type: none"> Eating healthy, exercising, getting enough sleep, no stress
2. What does it mean to you to be COMFORTABLE discussing health topics with your children?	<ul style="list-style-type: none"> Knowledge, prepared, confidence/competent
a) 3-4 health-related issues you discuss with your children?	<ul style="list-style-type: none"> Eating healthy, getting enough sleep, more physical activity, and less screen time

TABLE 4

Parent report for Expected Value of health-related behaviors and choices (Fischer's exact test) (p-values)

Expected Value Domain Questions	C-BMI %	Rel.	MS	PS
Choose healthy behaviors for SELF?	0.324	0.730	0.706	0.404
Discuss health topics with FAMILY?	1.000	0.532	1.000	0.242
FBHEP beneficial?	0.360	0.333	1.000	0.694
Interested to learn with family?	1.000	0.214	0.088	0.440

Note: C-BMI = Child BMI % is based off of calculations from the CDC. Rel. = Parent relationship to child. MS = Marital Status of parents. PS = Parenting style. FBHEP = Family-based healthy education program. There are no significant values in this analysis.

TABLE 5

Parent reported perception of Social Norms for parent-child interactions for health-related behaviors (Fischer's exact test) (p-values).

Social Norms Domain Questions (Most parents...)	C-BMI %	Rel.	MS	PS
Do not address topics	1.000	0.542	0.514	0.442
Make best decisions for family	1.000	1.000	0.726	0.694
Discipline/correct unhealthy decisions	1.000	0.162	0.319	1.000
Little explanation/discussion	0.567	1.000	1.000	1.000

Note: C-BMI% = Child BMI % is based off of calculations from the CDC. Rel. = Parent relationship to child. MS = Marital Status. PS = Parenting Style. There are no significant values in this analysis.

TABLE 6

*Parent perceived Attitudes/Beliefs/Feelings on health/being healthy
(Fischer's exact test) (p-values)*

Attitudes/Beliefs/Feelings Domain Questions	C-BMI %	Rel.	MS	PS
Important: YOU are healthy?	0.758	0.083*	0.148	0.028**
Important: FAMILY is healthy?	1.000	0.506	0.388	0.292
Family health > self-health	0.580	0.761	1.000	0.715

Note: C-BMI% = Child BMI % based on calculations from the CDC. Rel. = Parent relationship to child. MS = Marital Status. PS = Parenting Style.
*p < 0.05 in chi-square analysis; **p < 0.05 in chi-square and Fischer's

TABLE 7

*Specific analysis of parents' importance of own health
and parenting style (p=0.047*; 0.083**)*

	Relationship	
Important: YOU are healthy?	2 biological parents	Not 2 biological parents
Slightly/Moderately	7 (19.5%)	7 (46.7%)
Very/Extremely	29 (80.6%)	8 (53.3%)
Totals	36	15

Note: *p<0.05 for chi-square; ** p-value = Fischer's.

TABLE 8

*Specific analysis of parents' importance of own health
and parenting style (p=0.016*; 0.028**)*

	Parenting Style	
Important: YOU are healthy?	Authoritative	Not Authoritative
Slightly/Moderately	9 (21%)	5 (62.5%)
Very/Extremely	34 (79%)	3 (37.5%)
Totals	43	8

Note: *p<0.05 for chi square analysis, **p<0.05 for Fischer's

TABLE 9

Parent and child comfortability (perceived Self-Efficacy) talking about health-related topics with each other (Fischer's exact test) (p-values).

Self-Efficacy Domain Questions	C- BMI%	Rel.	MS	PS	FBHEP beneficial
Parent Comfortability	1.000	0.406	0.635	0.300	1.000
Child Comfortability	0.064*	0.510	0.723	0.694	0.059*

Note: C-BMI% = Child BMI % is based off of calculation from the CDC.

Rel. = Parent relationship to child. MS = Marital Status. PS = Parenting Style. FBHEP = Family-based health education program.

*p<0.05 in chi-square analysis

TABLE 10

Specific analysis of comfortability of children talking about health-related topics with their parents and child BMI percentile (p=0.043 0.064**)*

Child BMI%	Child Comfortability	
	Very	Kind of
Underweight/ Normal	18 (51.5%)	13 (81.2%)
Overweight/ Obese	17 (48.5%)	3 (18.8%)
Totals	35	16

Note: Child BMI % based upon CDC calculations.

*p<0.05 for chi-square analysis; ** p-value for Fischer's

TABLE 11

Specific analysis of child comfortability talking about health-related topics with their parents and if parent perceives a FBHEP as beneficial (p=0.05, 0.059**).*

Child Comfortability	FBHEP beneficial?	
	Yes	Maybe/No
Very	14 (87.5%)	21 (60%)
Kind of	2 (12.5%)	14 (40%)
Totals	16	35

Note: FBHEP = Family-Based Health Education Program. *p=0.05 for chi-square; **p-value for Fischer's

REFERENCES

- Amato, P.R., (2004). Tension between institutional and individual views of marriage. *Journal of Marriage and Family*. 66. 959-965
- Arredondo, E. M., Elder, J. P., Ayala, G. X., Campbell, N., Baquero, B., & Duerksen, S. (2006). Is parenting style related to children's healthy eating and physical activity in latino families? *Health Education Research*, 21(6), 862-871. doi:10.1093/her/cyl110
- Banks, G. G., Berlin, K. S., Rybak, T. M., Kamody, R. C., & Cohen, R. (2015). Disentangling the longitudinal relations of race, sex, and socioeconomic status, for childhood body mass index trajectories. *Journal of Pediatric Psychology*, 41(4), 453-461. doi:10.1093/jpepsy/jsv062
- Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development*, 37(4), 887-907.
- Baumrind, D. (1978). Authoritarian vs. authoritative parental control. *Adolescence*, 3(11), 255-272.
- Berry, D., Sheehan, R., Heschel, R., Knafl, K., Melkus, G., & Grey, M. (2004). Family-based interventions for childhood obesity: A review. *Journal of Family Nursing*, 10(4), 429-449. doi:10.1177/1074840704269848
- Borrund, L., Chiappa, M., Burt, V., (2014). National health and nutrition examination survey: National youth fitness survey plan, operations, analysis, 2012. *National Center for Health Statistics*. 2(139). 1-24.
https://www.cdc.gov/nchs/data/series/sr_02/sr02_163.pdf

- Bramlett, M. D., & Blumberg, S. J. (2007). Family structure and children's physical and mental health. *Health Affairs*, 26(2), 549-558. doi:10.1377/hlthaff.26.2.549
- Brown, S.L. (2004). Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family*. 66. 351-367.
<https://doi.org/10.1111/j.1741-3737.2004.00025.x>
- Brown, S. L. (2010). Marriage and child well-being: Research and policy perspectives. *Journal of Marriage and Family*, 72(5), 1059-1077.
doi:10.1111/j.1741-3737.2010.00750.x
- Brown, S. L., Manning, W. D., & Stykes, J. B. (2015). Family structure and child well-being: Integrating family complexity. *Journal of Marriage and Family*, 77(1), 177-190. doi:10.1111/jomf.12145
- Bustos, N., Olivares, S., Leyton, B., Cano, M., & Albala, C. (2016). Impact of a school-based intervention on nutritional education and physical activity in primary public schools in chile (KIND) programme study protocol: Cluster randomised controlled trial. *BMC Public Health*, 16(1), 1-11. doi:10.1186/s12889-016-3878-z
- Byrne, M. L., Badcock, P. B., Simmons, J. G., Whittle, S., Pettitt, A., Olsson, C. A., Allen, N. B. (2016). Self-reported parenting style is associated with children's inflammation and immune activation. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, doi:10.1037/fam0000254

- Centers for Disease Control and Prevention. (2015). Body mass index (BMI). Retrieved from <https://www.cdc.gov/healthyweight/assessing/bmi/index.html>
- Centers for Disease Control and Prevention (2017). Childhood obesity facts. Retrieved from <https://www.cdc.gov/obesity/data/childhood.html>
- Chen, A. Y., & Escarce, J. J. (2010). Family structure and childhood obesity, early childhood longitudinal study - kindergarten cohort. *Preventing Chronic Disease*, 7(3), A50. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20394689>
- Davison, K. K., Lawson, H. A., & Coatsworth, J. D. (2012). The family-centered action model of intervention layout and implementation (FAMILI). *Health Promotion Practice*, 13(4), 454-461. doi:10.1177/1524839910377966
- Dehghan, M., Akhtar-Danesh, N., & Merchant, A. T. (2005). Childhood obesity, prevalence and prevention. *Nutrition Journal*, 4(1), 24. doi:10.1186/1475-2891-4-24
- Duncan, S., Goodyear-Smith, F., McPhee, J., Zinn, C., Grøntved, A., & Schofield, G. (2016). Family-centered brief intervention for reducing obesity and cardiovascular disease risk: A randomized controlled trial. *Obesity*, 24(11), 2311-2318. doi:10.1002/oby.21602
- Dunst, C. J., Johanson, C., Trivette, C. M., & Hamby, D. (1991). Family-oriented early intervention policies and practices: Family-centered or not? *Exceptional Children*, 58(2), 115-126. doi:10.1177/001440299105800203

- Dunton, G. F., Kaplan, J., Wolch, J., Jerrett, M., & Reynolds, K. D. (2009). Physical environmental correlates of childhood obesity: A systematic review. *Obesity Reviews : An Official Journal of the International Association for the Study of Obesity*, 10(4), 393-402. doi:10.1111/j.1467-789X.2009.00572.x
- Fagg, J., Chadwick, P., Cole, T. J., Cummins, S., Goldstein, H., Lewis, H., . . . Law, C. (2014). From trial to population: A study of a family-based community intervention for childhood overweight implemented at scale. *International Journal of Obesity* (2005), 38(10), 1343-1349. doi:10.1038/ijo.2014.103
- Franzini, L., Elliott, M. N., Cuccaro, P., Schuster, M., Gilliland, M. J., Grunbaum, J. A., Tortolero, S. R. (2009). Influences of physical and social neighborhood environments on children's physical activity and obesity. *American Journal of Public Health*, 99(2), 271-278. doi:10.2105/AJPH.2007.128702
- Gibson, L., Allen, K., Byrne, S., Clark, K., Blair, E., Davis, E., & Zubrick, S. (2016). Childhood overweight and obesity: Maternal and family factors. *Journal of Child and Family Studies*, 25(11), 3236-3246. doi:10.1007/s10826-016-0485-7
- Grabowski, D., & Høeg, D. (2016). Family matters in obesity treatment for children and adolescentsDan grabowski. *European Journal of Public Health*, 26(suppl_1) doi:10.1093/eurpub/ckw174.219
- Gruber, K. J., & Haldeman, L. A. (2009). Using the family to combat childhood and adult obesity. *Preventing Chronic Disease*, 6(3), A106. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19527578>

- Güngör, N. K. (2014). Overweight and obesity in children and adolescents. *Journal of Clinical Research in Pediatric Endocrinology*, 6(3), 129-143.
doi:10.4274/jcrpe.1471
- Haimi, M., & Lerner, A., (2016). The impact of parental separation and divorce on the health status of children, and the ways to improve it. *Journal of Clinical & Medical Genomics*. 4(1), 1-7 doi: 10.4172/jcmg.1000137
- Halpern-Meekin, S., & Tach, L. (2008). Heterogeneity in two-parent families and adolescent well-being. *Journal of Marriage and Family*, 70(2), 435-451. Retrieved from <http://www.jstor.org/stable/40056285>
- Heard, H. E. (2007). Fathers, mothers, and family structure: Family trajectories, parent gender, and adolescent schooling. *Journal of Marriage and Family*, 69(2), 435-450.
doi:10.1111/j.1741-3737.2007.00375.x
- Hudziak, J., & Ivanova, M. Y. (2016). The vermont family based approach: Family based health promotion, illness prevention, and intervention. *Child and Adolescent Psychiatric Clinics of North America*, 25(2), 167-178.
doi:10.1016/j.chc.2015.11.002
- Institute of Medicine (US) Committee on Health and, & Behavior: Research, P. (2001). *Individuals and families: Models and interventions* National Academies Press (US). Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK43749/>

- Kim, H.Y., (2017). Statistical notes for clinical researchers: Chi-squared test and Fischer's exact test. *Restorative Dentistry & Endodontics*. 42(2). 152-155.
doi: [10.5395/rde.2017.42.2.152](https://doi.org/10.5395/rde.2017.42.2.152)
- Kitzmann, K. M., & Beech, B. M. (2006). Family-based interventions for pediatric obesity. *Journal of Family Psychology*, 20(2), 175-189. doi:10.1037/0893-3200.20.2.175
- Krebs, N.F., Himes, J.H., Jacobson, D., Nicklas, T.A., Guilday, P., & Styne, D., (2007). Assessment of child and adolescent overweight and obesity. *Pediatrics*, 120(4). 193-228. doi:10.1542/peds.2007-2329D
- Krueger, P. M., Jutte, D. P., Franzini, L., Elo, I., & Hayward, M. D. (2015). Family structure and multiple domains of child well-being in the united states: A cross-sectional study. *Population Health Metrics*, 13(1), 6. doi:10.1186/s12963-015-0038-0
- Leslie, L. K., Mehus, C. J., Hawkins, J. D., Boat, T., McCabe, M. A., Barkin, S., . . . Beardslee, W. (2016). Primary health care: Potential home for family-focused preventive interventions. *American Journal of Preventive Medicine*, 51(4, Supplement 2), S118. doi:10.1016/j.amepre.2016.05.014
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family. *Handbook of Child Psychology*, 4, 1-101.

- Manning, W. D., & Brown, S. (2006). Children's economic well-being in married and cohabiting parent families. *Journal of Marriage and Family*, 68(2), 345-362. doi:10.1111/j.1741-3737.2006.00257.x
- Medalie J.H., & Cole-Kelly K. (2002). The clinical importance of defining family. *American Family Physician*.65(7), 1277-1279.
- Mokhtari, S., Grace, B., Pak, Y., Reina, A., Durand, Q., & Yee, J. K. (2017). Motivation and perceived competence for healthy eating and exercise among overweight/obese adolescents in comparison to normal weight adolescents. *BMC Obesity*, 4(36)
- Ogden, C.L., Carroll, M.D., Fryar, C.D., Flegal, K.M., (2015). Prevalence of obesity among adults and youth: United States 2011-2014. *NCHS Data Brief*. 219. 1-8. <https://www.cdc.gov/nchs/data/databriefs/db219.pdf>
- Ogden, C. L., Flegal, K. M., Carroll, M. D., & Johnson, C. L. (2002). Prevalence and trends in overweight among US children and adolescents, 1999-2000. *Jama*, 288(14), 1728-1732. doi:10.1001/jama.288.14.1728
- Olin, S. S., Hoagwood, K. E., Rodriguez, J., Ramos, B., Burton, G., Penn, M., . . . Jensen, P. S. (2010). The application of behavior change theory to family-based services: Improving parent empowerment in children's mental health. *Journal of Child and Family Studies*, 19(4), 462-470. doi:10.1007/s10826-009-9317-3
- Power, C., Manor, O., & Matthews, S. (2003). Child to adult socioeconomic conditions and obesity in a national cohort. *International Journal of Obesity*, 27(9), 1081-1086. doi:10.1038/sj.ijo.0802323

- Saletsky, R. D., Trief, P. M., Anderson, B. J., Rosenbaum, P., & Weinstock, R. S. (2014). Parenting style, parent–youth conflict, and medication adherence in youth with type 2 diabetes participating in an intensive lifestyle change intervention. *Families, Systems, & Health*, 32(2), 176-185. doi:10.1037/fsh0000008
- Sallis, J. F., & Glanz, K. (2006). The role of built environments in physical activity, eating, and obesity in childhood. *The Future of Children*, 16(1), 89-108. doi:10.1353/foc.2006.0009
- Sallis, J. F., & Nader, P. R. (1988). Family determinants of health behaviors. *Health Behavior* (pp. 107-124) Springer, Boston, MA. Retrieved from https://link.springer.com/chapter/10.1007/978-1-4899-0833-9_6
- Sanders, M. R. (2015). 'Triple P-positive parenting program as a public health approach to strengthening parenting': Correction to sanders (2008). *Journal of Family Psychology*, 29(1), 38-38. doi:10.1037/fam0000060
- Schmeer, K. K. (2012). Family structure and obesity in early childhood. *Social Science Research*, 41(4), 820-832. doi:10.1016/j.ssresearch.2012.01.007
- Turagabeci, A. R., Nakamura, K., Kizuki, M., & Takano, T. (2007). Family structure and health, how companionship acts as a buffer against ill health. *Health and Quality of Life Outcomes*, 5(1), 61. doi:10.1186/1477-7525-5-61
- U.S. Census Bureau. (2010) Children by presence and type of parent(s), race, and Hispanic origin, 2009. *Annual Social and Economic Supplement*. Retrieved from <http://www.census.gov/population/www/socdemo/hhfam/cps2009.html>

- Veldhuis, L., Grieken, A., Renders, C., Hirasing, R., & Raat, H. (2014). Parenting style, the home environment, and screen time of 5-year-old children; the 'be active, eat right' study. *PLoS ONE*, 9(2), e88486. doi:10.1371/journal.pone.0088486
- Wadden, T. A., & Stunkard, A. J. (2002). *Handbook of obesity treatment* (Updated ed. ed.). New York [u.a.]: Guilford Press.
- Wang, Y., & Lim, H. (2012). The global childhood obesity epidemic and the association between socio-economic status and childhood obesity. *International Review of Psychiatry*, 24(3), 176-188. doi:10.3109/09540261.2012.688195
- Williams, J., Helsel, B., Griffin, S., & Liang, J. (2017). Associations between parental BMI and the family nutrition and physical activity environment in a community sample. *Journal of Community Health*, 42(6), 1233-1239. doi:10.1007/s10900-017-0375-y4

APPENDIX

(CHAMPS Survey and Follow-Up Survey Questions)

CHAMPS Survey

Parental Informed Consent

Thank you for your interest in this survey. Please read the important information below and let us know if you have any questions before completing the survey.

Adult Consent:

This survey is part of a masters research thesis on family dynamics and child health. You (age 19 and older) are eligible to participate in this study. You will be asked to complete the questions in the following survey. The survey should take no longer than 5 minutes per person to complete. Though there are no direct benefits to you for completing the survey, your answers will help inform the potential future development of family-based health intervention programs. There are no known risks associated with this survey and research project for you. Any information obtained during this project that could identify you individually will be kept confidential and will not be shared outside of this research project. Participation in this study is voluntary; you may refuse to participate or withdraw from participation at any time and your relationship with Madonna ProActive or FallbrookYMCA, the researchers, and the University of Nebraska-Lincoln will not be affected. After completing this survey you will be eligible to participate in a prize drawing for a \$30 gift certificate to your choice of the following: Champions Fun Center, Lost in Fun, Lincoln Laser Tag, or Defy Gravity. Each family has about a 1/30 chance of winning the gift certificate. Winning participants will be notified in September 2017 via email. Contact information provided for the prize drawing will not be associated or stored with you or your child's responses to the survey. Your contact information will be deleted after the incentives are awarded.

If you have any questions concerning this project you may contact any of the researchers/contacts below for further questions about being a participant in this study:

Megan Fletcher (megan.fletcher@doane.edu)

Megan Kelley (megan.kelley@unl.edu)

University of Nebraska-Lincoln Institutional Review Board (irb@unl.edu)

Thank you for your interest in this survey. Please read the important information below and let us know if you have any questions before completing the survey.

Parent/Legal Guardian Consent for Child Participation: This survey is part of a masters research thesis on family dynamics and child health. The child (entering 1st-8th grade) for whom you are a parent or legal guardian are eligible to participate in this study. Your child will be asked to complete the questions in the following survey. The survey should take no longer than 5 minutes per person to complete. Though there are no direct benefits to your child for completing the survey, your child's answers will help inform the potential future development of family-based health intervention programs. There are no known risks associated with this survey and research project for your child. Any information obtained during this project that could identify your child individually will be kept confidential and will not be shared outside of this research project. Participation in this study is voluntary; you and your child may refuse to participate or withdraw from participation at any time and your relationship with Madonna ProActive or Fallbrook YMCA, the researchers, and the University of Nebraska-Lincoln will not be affected.

Contact information provided for the prize drawing will not be associated or stored with you or your child's responses to the survey. The contact information will be deleted after the incentives are awarded.

If you have any questions concerning this project you may contact any of the researchers/contacts below for further questions about being a participant in this study:

Megan Fletcher (megan.fletcher@doane.edu)

Megan Kelley (megan.kelley@unl.edu)

University of Nebraska-Lincoln Institutional Review Board (irb@unl.edu)

By checking either choice below, you are voluntarily making a decision on whether you and your child will or will not participate in this research project. Checking "I agree" certifies that you have decided to participate and have read and understood the information presented for both you and your child.

- ☐ I agree (1)
- ☐ I do not agree (2)

Parent Survey

What is your zip code?

What is your race/ethnicity?

- ☐ African American (1)
- ☐ Asian American (2)
- ☐ Hispanic/Latino (3)
- ☐ Caucasian/White (4)
- ☐ Native American (5)
- ☐ Other (6) _____

Are you...

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other (3) _____

Age

Height (feet and inches)

Weight (pounds)

How would you describe your relationship in terms of parents/guardians of your children eligible to complete this survey (children must be 1st-8th grade).

☐ Biological parent (1)

☐ Single-parent (2)

☐ Grandparent (3)

☐ Step-parent (4)

☐ Foster parent (5)

☐ Adoptive parent (6)

☐ Other: (7) _____

What is the marital status of the child's legal guardians?

- ☐ Married to biological parent (1)
- ☐ Married, not to biological parent (2)
- ☐ Partnered to biological parent (3)
- ☐ Partnered, no to biological parent (4)
- ☐ Divorced/Separated (5)
- ☐ Widowed (6)
- ☐ Never married (7)
- ☐ Other (8) _____

How many children are in your home?

Please list the age and grade level of each child. (i.e. 8, 3rd; 13, 7th; etc)

Current education level



- ☐ Less than high school (1)
- ☐ High school diploma/GED (2)
- ☐ Some college (3)
- ☐ 2 year degree (4)
- ☐ 4 year degree/Undergraduate (5)
- ☐ Graduate (6)
- ☐ Post-Graduate (7)
- ☐ Other (8) _____

Use the slider to rank importance of the following questions.

	Not at all important	Slightly important	Moderately important	Very important	Extremely important			
			0	1	2	3	4	5
How important is it to you that YOU are healthy? (1)								
How important is it to you that YOUR FAMILY is healthy? (2)								

Use the slider to indicate how often you do the following:

(Healthy behaviors/choices and health related topics include: nutrition, physical activity, drug/alcohol use, sleep, stress, seat belt use, etc)

	Never	Sometimes	About half the time	Most of the time	Always	
	0	1	2	3	4	5
How often do you choose healthy behaviors/choices for YOURSELF? (1)						
How often does YOUR FAMILY discuss health-related topics? (2)						

How comfortable do YOU feel discussing health topics with your children?

- ☐ Very comfortable (1)
- ☐ Slightly comfortable (2)
- ☐ Neither comfortable nor uncomfortable (3)
- ☐ Slightly uncomfortable (4)
- ☐ Very uncomfortable (5)

A family-based health education program is designed to help all family members achieve health goals by improving their health-related knowledge, skills, and confidence. Do you think this program approach would be beneficial?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

If yes, or maybe, which location would be the best place to have a family-based health education program?

- ☐ School (1) _____
- ☐ YMCA (2) _____
- ☐ Other (3) _____

Would you and your family be interested in participating in a family-based health education class?

- ☐ Yes, definitely (1)
- ☐ Yes, maybe (2)
- ☐ Probably not (3)
- ☐ Definitely not (4)

How do you usually communicate about health with your child/children? (Health= nutrition/physical activity, sleep, stress, sex education, seat belt use, etc.)

- ☐ I tell them what to do/what's the best choice, no discussion (1)
- ☐ We discuss what to do/what's the best choice but I have the final say (2)
- ☐ I always let them make the decision (3)
- ☐ We don't ever talk about healthy choice/not important (4)

If your child made an unhealthy decision, how would you address it? (Unhealthy decisions include anything that can harm the physical, mental, or emotional health/well-being of the child)

- ☐ Discipline/Correct them, no explanation (1)
- ☐ Discipline/Correct them with explanation (2)
- ☐ No discipline/correction, it was their choice (3)
- ☐ Avoid discipline/correction and the situation all together (4)

How much do you agree with the following statements?

	Strongly agree (1)	Some what agree (2)	Neither agree nor disagree (3)	Some what disagree (4)	Strongly disagree (5)
Most parents do not address health- related topics with their children (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most parents make the best health- related decisions for the family (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most parents discipline/correct their child/children for unhealthy behaviors (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is little explanation and discussion between parents and children about health related topics. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Child Survey

We are doing a study to learn about families and their health. We are asking you to help because it is important to us to learn about everyone's health - adults and children.

If you agree to be in this study we will ask you some questions about yourself and your

family. We will not share your answers with anyone not involved in our study. If you finish the questions, your family has the chance to win a prize. If you need help answering questions, you can ask us at any time. If you decide you do not want to finish, you can stop at any time - it won't hurt our feelings :)

If you agree to be part of the study, click "Yes" below. If you do not want to be part of the study, click "No."

☐ Yes (1)

☐ No (2)

Here are some questions about you and your health. Your answers will help us learn about ways that families can be healthy together.

If you need help understanding the questions, please ask an adult for help.

Are you...

☐ Boy (1)

☐ Girl (2)

☐ Other (3)

How old are you?

What grade are you in?

How tall are you? (feet and inches)

How much do you weigh? (pounds)

How important is it for YOU to be healthy?

- ☐ Very important (10)
- ☐ Kind of important (11)
- ☐ Not important (12)

How often do you talk with your parents about health topics? (food, exercise, sleep, stress, etc.)

- ☐ Every day (1)
- ☐ One to a few times a week (2)
- ☐ A couple times a month (3)
- ☐ A couple times a year (4)
- ☐ Never (5)

How comfortable do you feel talking to your parents about health topics? (food, exercise, sleep, stress, etc.)

- ☐ Very comfortable (1)
- ☐ Kind of comfortable (2)
- ☐ Not comfortable/Uncomfortable (3)

Would you enjoy learning about ways to be healthy as a family WITH your family?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

Which one of these drinks is your favorite drink?

- ☐ Milk (1)
- ☐ Juice (2)
- ☐ Soda/Pop (3)
- ☐ Water (4)
- ☐ Gatorade/Powerade (5)

Which one of these drinks is the HEALTHIEST drink?

- ☐ Milk (1)
- ☐ Juice (2)
- ☐ Soda/Pop (3)
- ☐ Water (4)
- ☐ Gatorade/Powerade (5)

Where did you learn what the healthiest drink was?

- ☐ School (1)
- ☐ Parents (2)
- ☐ Friends (3)
- ☐ Another family member (4)
- ☐ Doctor (5)
- ☐ Other (6) _____

If you make a bad/unhealthy choice, how does your parent(s) handle that?

- ☐ They correct me, but we don't talk about the unhealthy choice (1)
- ☐ They correct me, and we talk about the unhealthy choice (2)
- ☐ I can do whatever I want and they don't talk about the unhealthy choice (3)
- ☐ They are not interested and we never talk about it (4)

Is there another child in your family that would like to complete this survey?

- ☐ Yes (1)
- ☐ No (2)

CHAMPS follow-up survey

Good afternoon,

You recently completed a UNL graduate student survey at Madonna ProActive or Fallbrook YMCA. We would like to better understand how survey respondents interpreted a few of the key concepts in the survey. Could you answer a few quick follow-up questions to help us better interpret the results of this study?

Thank you!

Megan Fletcher

Informed Consent:

This follow-up survey is part of a masters research thesis on family dynamics and child health. You (age 19 and older) are eligible to participate in this study. You will be asked to complete the questions in the following survey. The survey should take no longer than 5 minutes per person to complete. Though there are no direct benefits to you for completing the survey, your answers will help inform the potential future development of family-based health intervention programs. There are no known risks associated with this survey and research project for you. We are not collecting any personally identifying information about you in this follow-up survey.

Participation in this study is voluntary; you may refuse to participate or withdraw from participation at any time and your relationship with Madonna ProActive or FallbrookYMCA, the researchers, and the University of Nebraska-Lincoln will not be affected. If you have any questions concerning this project you may contact any of the researchers/contacts below for further questions about being a participant in this study:

Megan Fletcher (megan.fletcher@doane.edu)

Megan Kelley (megan.kelley@unl.edu)

University of Nebraska-Lincoln Institutional Review Board (irb@unl.edu)

1. Survey Question:

"How important is it to you that you are *healthy*?" / "How often do you choose *healthy* behaviors?"

Follow-up Question:

What does *healthy* mean to you?

1a. What are the top 3-4 behaviors that come to mind when you think of being healthy / choosing healthy behaviors?

2. Survey Question:

"How *comfortable* do you feel discussing health topics with your children?"

Follow-up Question:

What does it mean to you to be *comfortable* discussing health topics with your children?

2a. If you discuss health topics with your children, what are the top 3-4 issues that you discuss the most?
