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An Examination of the Relationship between Family Leisure that Includes Physical Activity and Family Functioning

Joaquin Fenollar
Brigham Young University - Provo

AN EXAMINATION OF THE RELATIONSHIP BETWEEN FAMILY LEISURE THAT INCLUDES PHYSICAL ACTIVITY AND FAMILY FUNCTIONING

by

Joaquin Fenollar

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GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Joaquin Fenollar

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

_____	_____
Date	Mark A. Widmer
_____	_____
Date	Ramon Zabriskie
_____	_____
Date	Dennis L. Eggett

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Joaquin Fenollar in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

_____ _____

Date

Mark A. Widmer
Chair, Graduate Committee

Accepted for the Department

_____

Patti A. Freeman
Chair, Department of Recreation Management and Youth Leadership

Accepted for the College

_____

Gordon B. Lindsay, Associate Dean
College of Health and Human Performance

ABSTRACT

AN EXAMINATION OF THE RELATIONSHIP BETWEEN FAMILY LEISURE THAT INCLUDES PHYSICAL ACTIVITY AND FAMILY FUNCTIONING

Joaquin Fenollar

Department of Recreation Management and Youth Leadership

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The purpose of this study was to examine the relationship between family leisure that includes physical activity and family functioning among families that have at least one child (17 years old or younger) at home. The sample consisted of 519 families. Data were analyzed from a parental perspective. Family leisure that includes physical activity was determined by using an adapted version of the Family Leisure Activity Profile (FLAP). Family functioning was determined using FACES II. Univariate analyses (zero moment coefficients) indicated significant correlations between physical activity participation and family functioning, cohesion, and adaptability. Multivariate analyses (blocked multiple regression analyses) indicated a strong relationship between family leisure involvement and family functioning. Both core and balance family leisure patterns

were predictors of family functioning, however, core family leisure patterns were, from parents perspective, the strongest family leisure predictor of family functioning. Family leisure that includes physical activity did not have significant strength explaining the variance of the dependent variable, family functioning. Implications for recreational practitioners and recommendations for further research are discussed.

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Table of Contents

List of Tables

List of Figures

Running head: FAMILY PHYSICAL ACTIVITY AND FAMILY FUNCTIONING

An Examination of the Relationship between Family Leisure that Includes Physical Activity and Family Functioning

Joaquin Fenollar, M.S.

Mark A. Widmer, Ph.D.

Ramon Zabriskie, Ph.D.

Dennis L. Eggett, Ph.D.

Brigham Young University

Abstract

The purpose of this study was to examine the relationship between family leisure that includes physical activity and family functioning among families that have at least one child (17 years old or younger) at home. The sample consisted of 519 families. Data were analyzed from a parental perspective. Family leisure that includes physical activity was determined by using an adapted version of the Family Leisure Activity Profile (FLAP). Family functioning was determined using FACES II. Univariate analyses indicated significant positive correlations between the amount of the intensity present during physical activity participation and family functioning, cohesion, and adaptability. Multivariable analyses indicated a significant positive relationship between family leisure involvement and family functioning. Both core and balance family leisure patterns were predictors of family functioning; however, core family leisure patterns were the strongest family leisure predictor of family functioning. Intensity of physical activity during family leisure, as indicated by the results of the multivariable analyses, was not significant in explaining the variance of the dependent variable: family functioning. For the sample of this study, home-based recreational activities were preferred over all other types of family recreation even if families were living by public parks or recreational centers. Implications for recreational practitioners, other interesting findings, and recommendations for further research are discussed.

Key Words: family leisure, core and balance family leisure, physical activity, family functioning, cohesion, adaptability, families, home-based recreational activities

Introduction

The perspective that American marriages and families are weak and troubled is widespread (Nock, 1998). The call for society to take steps to help protect and strengthen the family unit is common (Taylor, 2005). The author of a recent study pointed out that "by examining what the family does as a unit, the processes that occur within the family can be better understood" (p. 62). According to Family Systems Theory, different events taking place within the family will affect the whole family system. Family functioning is one of those variables that can be affected by the presence of different events taking place within the family.

Family functioning is likely to be directly and indirectly related to variables such as family leisure, physical health, and mental health (Chen, 2004; Zabriskie, 2001a, 2001b; Zubrick, Williams, Silburn, & Vimpani, 2000). These variables may affect the quality of life of family members. For instance, according to the U. S. Department of Health and Human Services (USDHHS, 1996) regular participation in physical activity is one of the leading indicators of physical and mental health. Individuals' mental states such as mood, self-esteem, self-image, and ability to cope with stress are positively affected when individuals participate in regular physical activity (Tucker & Maxwell, 1992; USDHHS, 1996). When these mental states are positively affected, the quality of the relationships among individuals, including family members, may improve (Godin, Anderson, Lambert, & Desharnais, 2005; Sweeting & West, 1995). Physical activity may be an important factor in promoting healthy family relationships as it has the capacity to

reduce stress and depression among individual family members (USDHHS, 1996). Families have much to gain from the benefits of physical exercise.

Physical activity may also improve social and family relationships as a result the changes that many individuals experience in their mood (endorphins raise), self-image, and self-esteem as they engage in regular physical activity (Tucker, 1987; Tucker & Maxwell, 1992, USDHHS, 1996). Studies assessing obesity in children have indicated that obesity is related to self-esteem and "obese children with decreasing levels of self-esteem demonstrate significantly higher rates of sadness, loneliness, and nervousness and are more likely to engage in high-risk behaviors such as smoking or consuming alcohol" (Kaplan & Wadden, 1986, p.1). Some evidence suggest that obesity may be directly related to family functioning (Chen, 2004; Wilkins, Kendrick, Stitt, Stinett, & Hammarlund, 1998). Recent research suggests that higher levels of obesity in families are related to lower levels of family functioning (Chen, 2004).

Consistent research indicates that family leisure activities—which may include physical activity—are positively related to family functioning (Freeman & Zabriskie, 2003; Hawkes, 1991; Holman & Epperson, 1984; Orthner & Mancini, 1991). The nature of the relationship between family leisure and family functioning has been explored (Freeman & Zabriskie, 2003); however, the relationship between family leisure that includes physical activity and family functioning remains unexplored. Several studies have examined different health conditions of individuals (such as obesity, mental health, and mood disorders) and their relationship with family functioning (Chen, 2004; Zubrick, et al., 2000); nevertheless, these studies did not explore how family leisure that includes

physical activity may be related to family functioning. Thus, the purpose of this study was to examine the relationship between family leisure that includes physical activity and family functioning.

Review of Literature

Family Systems Theory

Social science scholars invest much energy and resources on understanding family life; many scholars utilize the foundations of Systems Theory as a means to get a better perspective of family life processes (Ayvazoglu, Oh, Kozub, 2006: Fingerman & Bermann, 2000; Freeman & Zabriskie, 2003; Olson, 2000; Zabriskie & McCormick, 2001). Family Systems Theory was developed as a theoretical framework that has been broadly used to understand family life processes (Broderick, 1993; Steinglass, 1987; Whitchurch & Constantine, 1993). The principal idea of this model is that a family can be seen as a complex system—as a dynamic organism composed of individual entities that interact with one another. Zabriskie and McCormick (2001), along with other authors (Klein & White, 1996), pointed out that Family Systems Theory perceives families as "goal directed, self-correcting, dynamic, interconnected systems that both affect and are affected by their environment and by qualities within the family itself" (Zabriskie & McCormick, 2001, p. 281). Family members' decisions and actions generally have an impact on the rest of the family (Whitchurch & Constantine, 1993).

Subjects dealing with issues such as substance abuse, obesity, eating disorders, or mental illness have usually been studied from the perspective of the individual; however, lately these problems are being studied, understood, and treated as disorders that involve

the whole family system (Chen, 2004; Kumpfer & Collings, 2003; Whitchurch & Constantine, 1993). It seems "approaches to solving [individuals' problems should not be] dealt from the viewpoint of fixing the individual manifesting the symptoms, but by involving the entire family in improving family processes" (Taylor, 2005, p. 62). A study conducted by Chen (2004) shows that the family system is related to the health of individual family members. She found that families with higher levels of family functioning have lower rates of obesity among their children. In this study the principles of Family Systems Theory were used in order to gain a better understanding concerning the relationship that may exist between family leisure that includes physical activity and family functioning.

Family Functioning

Family functioning is a concept composed of different dimensions of family interactions. Cohesion or togetherness, flexibility or adaptability, and communication are typical dimensions of family functioning (Olson & DeFrain, 2000). Family functioning has been examined by several scholars from the point of view of Family Systems Theory. In 1986, Olson (Olson & DeFrain, 2000) developed a graphical model based on Family Systems Theory—the Circumplex Model—in order to provide more understanding on how families function. This model examines three dimensions of family functioning—cohesion, flexibility, and communication—within the family system (Olson & DeFrain, 2000).

According to Olson (1999) the Circumplex Model seeks to understand the interconnection between family members and their behaviors (see Figure 1). The

dimension of cohesion is connected to the idea of togetherness; the dimension of flexibility is related to the ability to cope with life changes; and finally, communication is a dimension that addresses those patterns of verbal interaction among family members that are used in order to regulate family cohesion and flexibility (Olson & DeFrain, 2000). Families that show high scores of togetherness and adaptation to change also show high levels of functioning. There are other variables that may affect cohesion, adaptability, and communication. Health, family satisfaction, family religiosity, and family leisure time are among those many factors that are related to family functioning (Taylor, 2005; Zabriskie, 2001b; Zubrick et al., 2000). For instance, family leisure involvement has been reported to have a positive relationship with family functioning (Freeman & Zabriskie, 2003; Zabriskie, 2001b), and regular physical activity participation has also been reported to be positively associated with improved relationships among individuals, including parent-child relationships (Bratton, Ray, Rhine, & Jones, 2005; Field, Diego, & Sanders, 2001). A family may experience more or less physical activity during family leisure time, and this fact may be positively related with family functioning. The nature of this relationship remains unexplored; however, past research indicated that healthy weight, physical health, and mental health—all linked to physical activity—are indicators of family functioning (Chen, 2004; Zubrick et al., 2000; Wilkins et al., 1998).

Health and Family Functioning

Past and current research consistently support a positive relationship between physical activity involvement and physical health (Astrand, 1969; Page & Tucker, 1994; Rowland, 1990), emotional health (Brown, Welsh, Labbe, Vitulli, & Kulkarni, 1992; Sevcikova, Ruzanska, & Sabolova, 2000), mental health (Richardson, Faulkner, McDevitt, Skrinar, Hutchinson, Piette, 2005; Stein & Motta, 1992; USDHHS, 1996), and social development (Svoboda, 1994; Wandzilak, Carroll, & Ansorge, 1988). One recent study (Gardner, 2004) centered on the importance of being physically active indicated that regular involvement in "physical activity and maintaining a healthy body weight are associated with numerous physical and psychological benefits including a reduced risk of heart disease, cancer, depression, and anxiety". Notwithstanding these benefits, "about 60% of American adults" and an increasingly number of children "are not physically active and 64% are overweight and obese" (p. 4676).

Obesity is at epidemic proportions in the United States (USDHHS, 2001). Much effort and funding is invested in studies that seek to find out the underlying causes of obesity and how to reduce obesity rates among children, adults, and the elderly (USDHHS, 2001). Obesity is commonly associated with physical health; however, it has been consistently found that "overweight children display more psychosocial problems" than those who are not overweight (Stradmeijer, Bosch, Koops, & Seidell, 2000, p. 113). For instance, studies assessing obesity in children have indicated that obesity is related to self-esteem and "obese children with decreasing levels of self-esteem demonstrate significantly higher rates of sadness, loneliness, and nervousness and are more likely to

engage in high-risk behaviors such as smoking or consuming alcohol" (Kaplan & Wadden, 1986, p.1). It appears that obesity may be related to family functioning (Chen, 2004; Wilkins et al., 1998). Chen (2004) indicates that higher levels of obesity in families are related to lower levels of family functioning. Similarly, a recent Australian study found physical and mental health to be indicators of social and family functioning (Zubrick et al., 2000). It seems that families that adopt healthy lifestyles may also have higher levels of family functioning.

Physical Activity

Physical activity is generally defined as "any bodily movement produced by skeletal muscles that result in energy expenditure" (Meeks, Heit, & Page, 2005, p. 366). Research suggests that physical activities that enhance the health of people must have a minimum of intensity, duration, frequency, and repetition (USDHHS, 1996); these variables may be present in different types of activities. Physical activities that require a notable participation of the cardio-respiratory system have the highest positive impact on individuals' health (USDHHS, 1996). Running, shoveling snow, bicycling, and swimming are just a few examples of this type of activity (USDHHS, 1996).

Physical activity is associated with other terms that connect body muscular activity with health benefits. These terms are exercise, physical fitness, and moderate or vigorous regular physical activity. The capacity to perform physical efforts in order to respond to daily needs with higher or lower intensity is known as physical fitness (USDHHS, 1996). Health improvements in each of the components of physical fitness are directly related with the capacity to work, play, or exercise efficiently during longer

periods of time. The higher the intensity of any given activity in which a person participates, the more his physical fitness will increase (USDHHS, 1996). Research indicates that higher levels of fitness are positively correlated with lower risks of premature death (Aldana, 2005).

Regular physical activity is another notion associated with health-enhancement. This term is related to the number of times that physical activity is performed in a given week. Regular physical activity can be moderate or vigorous. Activities such as brisk walking, dancing, gardening, raking leaves, touch football, or mowing the lawn usually produce a gentle increase in one's breathing or heart rate. These activities have moderate intensity. Other activities such as wrestling, playing basketball, jumping rope, or high-impact aerobic dancing produce a notable increase in ones' breathing and heart rate. These are considered activities of vigorous intensity (USDHHS, 1996). Physical activity "does not have to be strenuous to achieve health benefits" (Meeks et al., 2005, p. 367). As suggested by Meeks et al. (2005), one may "break [30 minutes of dancing activity] up into three 10-minute periods of activity and still receive the same health benefits" (p. 370).

Physical activity and social relationships. Individuals who experience good physical and mental health may be more likely to have positive relationships (Sweeting & West, 1995). For instance, increased positive mood, higher self-esteem, and positive self-image increase self-confidence and reduce aggressive behavior and antisocial behaviors (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Part of the underlying factors of these relationships is attributed to physiological changes that take place during

exercise (USDHHS, 1996). Another factor that may play a role in improving mental health and relationships is the increased level of endorphins in the body resulting from exercise (Phillips, Kiernan, & King, 2001; USDHHS, 1996). Endorphins are hormones considered "the body's own mood-elevating, pain-relieving compounds. Endorphins appear to reduce levels of stress and depression" (USDHHS, 1996, p. 7). Consequently, regular participation in physical activities may not only provide important physical health benefits, but it may also improve mental and emotional health which may improve relationships. By inference, physical activity may play a role in promoting healthy family functioning. Not only will it moderate obesity, diabetes, and other chronic health problems, but the effect on stress, aggression, depression, and positive self-concept should provide a supportive context for healthier family relations.

In summary, it seems that individuals (and families) who are committed to participate in regular physical activity may enjoy better quality in their relationships, including those within the family. A study recently conducted supports this reasoning. Using a sample of 1200 Canadian adolescents, researchers indicated that regular participation in physical activity was related to higher quality in the relationships between adolescents and parents (Godin et al., 2005).

Family Leisure and Family Functioning

Parents often intentionally and purposefully seek to plan and provide recreational activities for their family members in order to strengthen relationships among them (Shaw & Dawson, 2001). Several authors have examined the relationship between family leisure and family functioning (Hawkes, 1991; Holman & Epperson, 1984; Orthner &

Mancini, 1991). Research conducted during past decades suggests that families that are regularly involved in recreational activities exhibit higher levels of family functioning, interaction, satisfaction, stability (Driver, Brown, & Peterson, 1991; Zabriskie & McCormick 2003;), and enhanced patterns of communication (Smith, 2005; Huff, Widmer, McCoy, & Hill, 2003) than those who do not participate or participate sporadically.

Family leisure can take many forms (e.g., outdoor adventures, vacations, talents development, work at home, and arts), and some manners of recreation may require more or less amount of physical activity, creativity, interaction, etc. Zabriskie (2001b) developed a model in order to better explain the underlying factors that relate family leisure to family functioning.

Core and balance model of family leisure functioning. Iso-Ahola (1984) and Kelly (1996, 1999) stated that individuals seek for recreational activities that may provide stability, change, constancy, and novelty in their leisure behavior. Using this line of reasoning, Zabriskie (2001b) suggested that similar to individuals, families also seek for these elements in their leisure behavior. He developed the Core and Balance Model of Family Leisure Functioning in an effort to quantify family leisure behavior. This model is based on Family Systems Theory and focuses on the relationship between family leisure and family functioning. Zabriskie's model aims to provide understanding on how family recreation involvement is correlated with two areas of family functioning—cohesion and adaptability. The Core and Balance Model combines two common patterns of family leisure, core and balance activities (see Figure 2). Both patterns in proper balance help to

fulfill individual needs for constancy, novelty, stability, and change indicated by Iso-Ahola (1984) and Kelly (1996). According to Freeman and Zabriskie (2003), core leisure patterns are "depicted by activities that are common, everyday, low-cost, relatively accessible, often home-based, and are participated in frequently" (p. 76). Examples of core leisure activities are singing, gardening, raking leaves, watching a movie, rough housing, playing tag, running, playing board games, and playing basketball or soccer in the backyard. These types of activities require little planning and provide excellent circumstances to enhance family stability and constancy. Several studies have indicated that home-based recreation or core leisure activities facilitate family closeness (Taylor, 2005).

The other type of activities examined by the Core and Balance Model of Family Leisure Functioning is called balance family leisure patterns. These activities facilitate novelty and change. They are different from and less common than core leisure patterns and frequently require larger investments of money, time, and effort (Zabriskie, 2001b). A few examples of these activities are outdoor recreational activities, family vacations, and sports that may require special equipment (e.g., snow skiing, rafting, camping, and rock climbing). Olson (1986) suggested that a balance between cohesion and adaptability was vital for healthy family functioning; and Zabriskie (2001b) pointed out that a combination of both, core and balance activities, facilitates cohesion and adaptation—which are key dimensions of family functioning.

Many core and balance leisure activities involve physical activity. For example, dancing, gardening, raking leaves, rough housing, playing tag, playing touch football,

wrestling, long hikes, playing soccer in the backyard, mountain biking, skiing, rock climbing, ice skating, snow boarding, and wind surfing are recreational activities that involve moderate or vigorous physical activity.

Summary and Hypotheses

The review of literature suggests a number of explanations underlying the correlations between physical activity, family leisure, and family functioning. As indicated previously, many forms of physical activity (present during core and balance family leisure patterns) contribute to increasing levels of endorphins, which is one of the body's natural mood-elevating and pain-relieving mechanism (USDHHS, 1996). When the individuals experience positive moods, they concomitantly experience better interpersonal relationships (USDHHS, 1996). Some forms of physical activity, such as sports and outdoor recreation, provide opportunities for change, novelty, variety, challenge, structure, stability, and familiarity; leading to greater family cohesion and adaptability (Iso-Ahola, 1984; Kelly, 1996, 1999; Zabriskie, 2001). In addition, collective participation in physical activity generally provides a perfect setting for open communication, social support, and self-esteem (USDHHS, 1996). Chen (2004) and Zubrick et al. (2000) indicated that good health (usually the product of an active lifestyle) is positively correlated with family functioning. Considering all these findings, this study sought to examine the relationship between family leisure that includes physical activity and family functioning. Three hypotheses were tested:

Hypothesis 1. There is a positive relationship between family leisure that includes physical activity and family functioning.

Hypothesis 2. There is a positive relationship between family leisure that includes physical activity and family cohesion.

Hypothesis 3. There is a positive relationship between family leisure that includes physical activity and family adaptability.

Methods

Procedures

A convenience sample was recruited using a non-systematic method. Three different types of participants were contacted by phone and email throughout the United States and asked to forward a link with the survey of the study to potential participants—families with children at home. Participants were asked to read and explanation regarding risks and benefits of participating. By completing the online questionnaire, participants expressed informed consent (see Appendix A-1a). Three types of contacts to solicit participants were used. These consisted of Directors of several YMCA (Idaho, Nevada, California, New York, and Texas) and other family associations (Utah PTA Family Life, Quality of Life Group, Utah Granite School District Parents); faculty at Brigham Young University and University of Utah; and college students from Brigham Young University and Touro University. The actual number of participants contacted through each method is not known.

The sample of this study consisted of 516 adults, representing a total of 516 families. The majority of the respondents in the sample were married (95.2%) and only 3.5% were divorced. This percentage of married respondents is not representative of current society as the researcher used specific wording asking for married couples. Eighty

percent of the respondents were adult females. The majority of respondents were Caucasian (92.4%); the rest of respondents were Hispanic (2.7%) or other ethnicity (4.8%). The age of the participants ranged from 19 to 67 years of age, with a mean age 37.84 (*SD* = 9.6). More than one fifth of the families in the sample (86%) had between three and six children living at home.

Participants represented 41 different states. Six respondents were from Canada. The states with the largest participation rates included Utah (19%), California (17 %) and Arizona (11%). A total of 84.5 % of respondents lived in single family homes and 11.2% in apartments. Seventy-eight percent of the respondents owned their homes. Respondents' household annual incomes ranged from less than $10,000 to over $150,000. Approximately one third of the group had incomes less than $40,000. About half of the group had incomes between $40,000 and $80,000 annually. The remaining 20% had salaries above $80,000. In terms of education, 13.4% reported a high school education, 17.4% reported holding an associates degree, 39.7 reported holding a bachelors degree, 20.5% hold a graduate degree. An additional 8.9% reported some other unspecified level of education.

Instrumentation

Family functioning was measured using the Family Adaptability and Cohesion Evaluation Scales (FACES II) (Olson, Portner, & Bell, 1982). Family leisure was measured using an adaptation of the Family Leisure Activity Profile (FLAP) (Zabriskie & McCormick, 2001). Sociodemographic questions were used to gather data on key related variables (see Appendix A-1b, A-1c, and A-1d).

The Family Adaptability and Cohesion Scales (FACES II), is based on the Family System Circumplex Model (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1992). The instrument measures perceptions of family cohesion and adaptability. Olson et al. (1992) and other researchers (Smith, 2005; Taylor, 2005; Zabriskie, 2001b) have found evidence of the reliability and validity of the scale. Satisfactory internal consistency has been shown in studies that used national samples ($\alpha = .88$ and $\alpha = .86$ for cohesion and $\alpha = .78$ and $\alpha = .79$ for flexibility) (Zabriskie & McCormick, 2001). This questionnaire is composed of two sub-scales with a combined thirty items. Sixteen items assess cohesion and fourteen items assess adaptability. Dimensions regarding emotional bonding, coalitions, interests, family boundaries, friends, time, space, decision-making, and recreation are indicators of family cohesion. Adaptability is represented the dimensions of assertiveness, discipline, leadership, roles, rules, and negotiations (Olson et al., 1992). All of these dimensions are represented by 2 items each.

The FACES II uses a five-point Likert-type scale response format; one refers to the answer "almost never" and five to "almost always." Each dimension (cohesion and adaptability) results in an overall or total score that is computed by using a "formula that adds and subtracts item scores for each dimension based on its positive or negative reference" (Zabriskie & McCormick, 2001, p.284).

The Family Leisure Activity Profile or FLAP (Zabriskie, 2001b) "measures involvement in family leisure activity patterns based on the Core and Balance Model of Family Functioning" (Zabriskie & McCormick, 2001, p. 285). Scholars using this instrument have reported satisfactory evidence supporting the reliability and validity of

inferences (Freeman & Zabriskie, 2003). This instrument is designed to identify and measure two forms of family recreational activities: core family leisure patterns or home-based recreation patterns, and balance family leisure patterns. This instrument is comprised of sixteen items; half assessing core leisure activities and half balance leisure activities.

The respondents provided two types of information regarding each item. First, each item described a type of activity. Respondents were asked to indicate the frequency and duration of participation in that activity type. Second, the respondents indicated their level of satisfaction regarding participation in the activity described in the item. For example, the subject was asked if he or she participated in home-based outdoor activities (such as gardening, walks, etc.) with family members. Respondents identified the frequency (at least daily, weekly, monthly, etc.), duration (one hour, one to two hours, two to three hours, etc.), and satisfaction level of the activity. A Likert scale provided scores regarding levels of satisfaction from one ("very dissatisfied") to five ("very satisfied").

In the FLAP, core and balance family leisure index scores were calculated by multiplying the frequency and duration values in each category (core and balance) and summing the products. These two scores were combined to obtain a total score of family leisure participation.

For this study, the FLAP was slightly modified. A new question using a seven-point Likert-type scale from zero (lack of effort during the activity) to seven (vigorous effort during the activity) was added to each of the sixteen items of the FLAP in order to

measure the intensity of physical activity during family leisure involvement (see Appendix A-1c).

Demographic questions solicited information regarding the age, gender, ethnicity, family size, annual family income, education level, marital status, and residence type of the respondents. These data were useful in controlling external factors and examining family variables that may have influenced physical activity involvement (see Table 7).

Analysis

The purpose of the study was to examine the relationship between family leisure that includes physical activity and family functioning. Three different hypotheses were stated: first, no relationship exists between family leisure that includes physical activity and family functioning; second, no relationship exists between family leisure that includes physical activity and family cohesion; and third, no relationship exists between family leisure that includes physical activity and family adaptability.

In order to test each hypothesis, the following steps were followed: cleaning of data, checking for multicollinearity, and two statistical tests examining the existence and strength of the relationships. The first one, a univariate analysis, examined the hypothesized relationships among all the variables studied. The second one, a multivariable analysis that included three multiple regression analyses using a blocked entry method, further explored the hypothesized relationships by examining the amount of variation explained by each variable (see Table 1).

Data were cleaned and analyzed using SPSS v. 15.0. Cleaning of data included identifying missing data, input errors, and recoding mistaken responses that were not

entered as categorical or numerical data. Descriptive statistics were used to initially examine the data (see Table 2). Pearson Product Moment Zero-order correlations between dependent and independent variables were examined for multicollinearity and in order to identify any controlling factors that could be included in further analysis (multiple regression). No multicollinearity was found in this analysis.

For each multiple regression analysis, a backward elimination process was used in order to select sociodemographic variables that accounted for meaningful variance. Each demographic variable was analyzed independently and variables that did not account for significant variance were removed. Each blocked multiple regression analysis used to test each hypothesis examined the variance that the selected sociodemographics, family leisure, and family leisure involving physical activity had on the dependent variables. This allowed for the partitioning of variance resulting from physical activity. The influence of that variance on family functioning, cohesion, and adaptability was then examined. All multiple correlation coefficients (R^2) were examined at an alpha level of .05. Standardized regression coefficients (Beta) were used to determine unique contributions of each variable in the model (see Tables 4, 5, & 6).

In order to examine the first hypothesis, the researcher used Pearson Correlation Coefficients. This analysis examined the correlation between the independent variable (family functioning) and the dependent variable (family leisure involving physical activity) (See Table 3). In order to determine the amount of variation in family functioning explained by family leisure involving physical activity, a multiple regression blocked analysis was conducted (See Table 4). Hypothesis two was tested using the same

procedure. A univariate analysis examined the correlation between the dependent variable (cohesion) and the independent variable (family leisure that includes physical activity) (See Table 3). A blocked multiple regression analysis was used to examine the amount of variation explained by the independent variable, family leisure that includes physical activity (See Table 5). The third hypothesis, was examined initially through correlational analysis (See Table 3). The resulting correlation was further examined through the use of blocked multiple regression analysis to examine the amount of variation in the dependent variable, family adaptability, explained by the independent variable, family leisure that includes physical activity (See Table 6).

Results

The purpose of this study was to examine the relationship between family leisure that includes physical activity and family functioning. The results of this examination are presented below.

Respondents' scores on FACES II (N = 516) ranged from 25 to 80 for cohesion (M = 66.28, SD = 8.08), 22 to 66 for adaptability (M = 49.20, SD = 5.99), and 1.5 to 8 for total family functioning (M = 5.55, SD = 1.3) (See Table 2). The scores from this study are similar to those established by the norm for the instrument (e.g., cohesion, M = 64.9, SD = 8.4; adaptability, M = 49.9, SD = 6.6; Olson et al., 1992).

Scores on the FLAP ranged from 16 to 168 for core leisure patterns involvement (n = 500, M = 46.03, SD = 15.06), 2 to 131 for balance leisure patterns involvement (n = 512, M = 55.68, SD = 22.81), and 28 to 207 for total family leisure involvement (n = 497, M = 101.68, SD = 31.82). The scores from this data set are also similar to

previously reported norms (e.g. core $M = 42.0$, $SD = 12.2$; balance, $M = 58.8$, $SD = 29.1$; Zabriskie, 2000; Zabriskie & McCormick 2001) (See Table 2).

Scores on intensity of physical activity during family leisure ranged from 3 to 48 for core leisure involvement ($N = 516$, $M = 18.93$, $SD = 7.24$), 2 to 52 for balance leisure involvement ($N = 516$, $M = 19.22$, $SD = 8.48$), and 6 to 94 for total family leisure involvement (See Table 2).

Sociodemographic Variables

Univariate and multivariable analyses, using backward elimination process, indicated that those sociodemographic variables that appeared to be more significant ($p = .05$) predicting variance on all dependent variables (family functioning, cohesion, and adaptability) were age of the respondent, gender, type of residence, and the presence of parks nearby (See Tables 4, 5, and 6). These four variables were included in each blocked regression analysis. The rest of sociodemographic variables (education, ethnicity, state, marital status, and income) were not significant in explaining variance on the dependent variables (See Appendix A-1d).

Univariate Analysis

To examine the possible existence of significant correlations between the variables stated in the three hypotheses, Pearson Moment zero-order correlation coefficients were calculated. The coefficients indicated positive relationships between all but one pair of variables (core family leisure that includes physical activity and family cohesion) (See Table 3). The results of the coefficients were: family leisure patterns and family functioning (core $r = .231$, $p < .001$; balance $r = .214$, $p < .001$); family leisure that

includes physical activity and family functioning (core $r = .114$, $p < .001$; and balance $r = .159$, $p < .001$); family leisure patterns and cohesion (core $r = .217$, $p < .001$; balance $r = .210$, $p < .001$); family leisure that includes physical activity and family cohesion (core $r = .072$, $p = .103$; and balance $r = .152$, $p < .001$); family leisure patterns and adaptability (core $r = .222$, $p < .001$; balance $r = .190$, $p < .001$); family leisure that includes physical activity and adaptability (core $r = .148$, $p < .001$; and balance $r = .160$, $p < .001$)(See Table 3).

Multivariable analysis

In order to examine the contributions of the independent variables on family functioning, cohesion, and adaptability (as stated in the hypotheses) beyond the zero-order relationships, three multiple regression blocked analyses were conducted (see Table 1). In these analyses, a backward elimination process statistical technique was used to identify the most significant sociodemographic variables. Each demographic variable was analyzed independently. Only four sociodemographic variables were selected for inclusion in the final analyses: age of the respondent, gender, type of residence, and the presence of parks nearby. All multiple correlation coefficients (R^2) were examined at an alpha level of .05. Standardized regression coefficients (Beta) were considered in order to determine unique contributions of each variable in the model (see Tables 4, 5, and 6).

The first analysis was intended to assess the contributions of the independent variable stated in hypothesis one (no significant relationship exists between family leisure that includes physical activity and family functioning). The results of this analysis indicated that the model was significant in explaining the influence of family leisure on

family functioning (Block 2 $\Delta R^2 = .093$, $p < .0001$) (see Table 4); however, the model was not significant in explaining variance on family functioning when intensity of physical activity during family leisure was added to block three (Block 3 $\Delta R^2 = .000$, $p = .965$) (see Table 4). Considering these results, null hypothesis one was not rejected.

The second and third analyses followed the same procedure. Two different blocked regression analyses examined the contributions of the independent variables on cohesion in hypothesis two (no relationship exists between family leisure involving physical activity and family cohesion), and the contributions of the independent variables on adaptability in hypothesis three (no relationship exists between family leisure involving physical activity and family adaptability).

Similarly, the results of the second analysis (hypothesis two) indicated that the model was significant in explaining the variance that family leisure had on family cohesion (Block 2 $\Delta R^2 = .092$, $p < .0001$) (see Table 5); however, the model was not significant in explaining variance on family cohesion when intensity of physical activity during family leisure was added to block three (Block 3 $\Delta R^2 = .002$, $p = .627$) (see Table 5). Null hypothesis two was not rejected.

Finally, the results of the third analysis (hypothesis three) indicated that the model was significant in explaining the variance that family leisure had on family adaptability (Block 2 $\Delta R^2 = .069$, $p < .0001$) (see Table 6); however, the model was neither significant in explaining variance on family adaptability when intensity of physical activity during family leisure was added to block three (Block 3 $\Delta R^2 = .002$, $p = .658$) (see Table 6). Null hypothesis three was also not rejected.

In all three models, core leisure patterns were the most significant indicators of variance for each dependent variable: family functioning (core, B =.241, p < .0001; balance, B = .105, p = .089), cohesion (core, B =.240, p < .0001; balance, B = .114, p = .061), and adaptability (core, B =.199, p < .0001; balance, B = .071, p = .0268).

Discussion

The main purpose of this study was to examine the relationship between family leisure that includes physical activity and family functioning. Family leisure participation was positively correlated (without considering the intensity of physical activity) with family functioning, cohesion, and adaptability, especially home-base patterns of family leisure (see Tables 3, 4, 5, and 6). These results support findings from previous studies suggesting that family leisure (concretely, core leisure patterns) contribute to predict positive family functioning (Freeman & Zabriskie, 2003; Taylor, 2005; Zabriskie & McCormick, 2003).

The null hypotheses of this study were not rejected (see Tables 4, 5, and 6). Pearson coefficient between the intensity of physical activity during family leisure and the dependent variables (family functioning, cohesion, and adaptability) were statistically significant (see Table 3). The results of the multivariable analyses, however, indicated that the scores of the intensity in physical activity participation, when controlling for overall family leisure and sociodemographic variables, were not statistically significant in explaining variability in the scores of family functioning, cohesion, or adaptability (see Tables 4, 5, and 6). These results suggest that intensity of physical activity is correlated to

family functioning, but in this study intensity is not an important variable in predicting positive family functioning when family leisure is considered in the analysis.

This sample is unique in that most participants were highly educated, with generally high incomes, and an unusually high number of married couples (95% of sample were married). Generalizations beyond the scope of the study are somewhat limited. The results may not be necessarily inferred to single parent families, families with lower socioeconomic statutes and lower educational achievement; however, further research may support the generalizability of these findings to other family types. The benefits of both physical activity and leisure participation may reach each family member regardless the types of family. Nevertheless, further research is needed before inferring these findings.

There is a consistent positive relationship between core family leisure patterns and healthy family functioning (Freeman & Zabriskie, 2003; Smith, 2005; Taylor, 2005; Zabriskie & McCormick, 2001). This correlation may be contrary to what many adults believe regarding the type of recreational activities that may have stronger correlations with family functioning. Parents may assume that "exciting vacations or novel experiences will strengthen their families the most" (Taylor, 2005, p. 31). According to both the Circumplex Model (Olson, 1999) and the Core and Balance Model of Family Leisure Functioning (Zabriskie, 2001b) families need a variety of experiences that include stability, constancy, novelty, and change in order to facilitate healthy family functioning. This study, along with previous research (Freeman & Zabriskie, 2003; Smith, 2005; Taylor, 2005; Zabriskie & McCormick, 2001), suggests that simple and

everyday activities (core leisure patterns), such as shooting baskets, playing games at home, singing, cooking, and playing tag at home, seem to provide meaningful opportunities for stability, constancy, novelty, and change.

Family Recreation involving Physical Activity and Family Functioning

A particular contribution from this study is the significant positive correlation found in the univariate analysis conducted to examine the relationship between the level of intensity of physical activity during family leisure and family functioning (core r = .114, $p < .001$; and balance r= .159, $p < .001$), family cohesion (core $r = .072$, $p = .103$; and balance $r = .152$, $p < .001$), and family adaptability (core $r = .148$, $p < .001$; and balance $r = .160$, $p < .001$) (see Table 3). Intensity during physical activity is one of the many elements that are present in family leisure activities, and the multivariable analysis did not indicate that the level of intensity present during family leisure that includes physical activity explained the variance in family functioning, family cohesion, or family adaptability (see Tables 4, 5, and 6). This study assumed that part of the positive correlation consistently found between family leisure and family functioning (Freeman & Zabriskie, 2003; Smith, 2005; Taylor, 2005; Zabriskie & McCormick, 2001) may have been explained as a result of the benefits associated with physical activity (USDHHS, 1996); however, the results of this study did not support such an assumption. Further research using different approaches is encouraged for a more in depth examination of this assumption. Further knowledge regarding underlying factors that contribute to explain the relationship between family leisure and family functioning and other variables could be gained by examining the strength of each of the elements present in family leisure

(creativity, communication, laughter, physical activity, visual contact, physical contact, cooperation, improvisation, competition, etc).

Discussion of other Valuable Findings from the Data Set

Further examination of sociodemographic data and the scores obtained from the questionnaires contributed to other valuable findings not related to the stated hypotheses. Sociodemographic data indicated that even though 75 percent of respondents in the study were surrounded by a minimum of three public parks or recreational centers (and the remaining 24.4 % had one or two parks), a total of 73% of the respondents indicated that the place in which they recreate the most as a family was at home (See Table 7).

Other findings are related to the scores provided by the FLAP. An examination between each individual score from each item in the FLAP and the three dependent variables indicated that: (a) home-based outdoor activities (i.e. gardening, yard work, playing with pets, walks, etc.) had the highest positive correlation with all three dependent variables: family adaptability (r= .231, p < .001), cohesion (r= .216, p < .001), and adaptability (r= .222, p < .001); (b) the second highest positive correlation (see Table 8) came from home activities that may include creativity: crafts, cooking, and/or hobbies (i.e. drawing, scrap books, baking cookies, sewing, painting, ceramics, etc.); and (c) interestingly, the third highest positive correlation out of 16 items in the FLAP included physical activity. This positive correlation came from home-based sport/games activities (i.e. playing catch, shooting baskets, frisbee, bike rides, fitness activities, etc.) (See Table 8). These findings suggest that certain types of recreational activities are more correlated with family functioning (and other family variables). It seems that further research could

explore recreational activities in detail and present them in a hierarchical order in which higher or lower correlation with family variables will be easy to identify.

Certainly, the findings of this study add to the current body of knowledge of family leisure. Professionals in recreation, recreational practitioners, scholars, parents, and other individuals concerned with the wellbeing of the most important unit in our society, the family, should consider focusing part of their efforts in developing and promoting recreational programs that include home-based family recreational activities.

Implications and Recommendations for Future Research

The results of the study did not support the stated hypotheses. After examining the results and drawing conclusions, the researcher realized that several aspects of the study that may be improved: these include sampling, and instrumentation. Further research should consider assessing the weaknesses that the sampling and instrumentation of this study presented. A pilot study is recommended in order to test data collection procedures before running the collection of data for the study. Physical activity is a complex construct that needs to be measured with precision. The instrument of this study (adapted FLAP) did not measure with precision the main parameters of physical activity (frequency, duration, intensity, and repetition). The only parameter that was examined in this study was intensity; this was done from an adult perspective. Other instruments such as speedometers, pedometers, and physical activity questionnaires, specifically designed to measure all variables of physical activity, would yield different data regarding the presence of physical activity. Thus, more accurate scores of physical activity may provide

different results regarding the relationship between family functioning and the presence of physical activity during family recreation.

New research designs examining and identifying the different elements that are frequently present during family leisure (such as spending passive or active time together, participating in activities that require creativity, focusing on other members of the family instead of focusing on oneself, spiritually uplifting activities, competitiveness during games, health related activities and so forth) would be valuable. In pursuing these types of studies, researchers would be able determine the hierarchical order (see Table 8) of those specific elements that contribute to family functioning and other variables such as health, communication, satisfaction, self-efficacy, and so on. Development of new instruments (and adaptation of existing ones) will be needed in order to pursue this type of investigation. Knowledge regarding this hierarchical order of elements would provide recreation practitioners, scholars, parents, and all those who are interested in strengthening family life with valuable information as they seek to design beneficial activities and programs with specific goals for families.

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Table 1

Projected Blocked Multiple Regression Analyses

Analysis	Independent variable	Dependent variable
First analysis (Hypothesis 1)		
Block 1	Sociodemographic variables	Family functioning
Block 2	Family leisure	Family functioning
Block 3	Family leisure physical activity	Family functioning
Second analysis (Hypothesis 2)		
Block 1	Sociodemographic variables	Cohesion
Block 2	Core and balance family leisure patterns	Cohesion
Block 3	Core and balance F. L. physical activity	Cohesion
Third analysis (Hypothesis 3)		
Block 1	Socio-demographic variables	Adaptability
Block 2	Core and balance family leisure patterns	Adaptability
Block 3	Core and balance F. L. physical activity	Adaptability

Table 2

Descriptive Statistics for FLAP and FACES II

Variables' Scores	N	Minimum	Maximum	Mean	Std. Deviation
Cohesion	516	25.00	80.00	66.2810	8.08430
Adaptability	516	22.00	66.00	49.2093	5.99990
Family Functioning	516	1.50	8.00	5.5543	1.30196
Core Score	500	16.00	168.00	46.0300	15.06170
Balance Score	512	2.00	131.00	55.6836	22.81023
Total Family Leisure	497	28.00	207.00	101.6841	31.82327
Intensity PA Core	516	3.00	48.00	18.9360	7.24212
Intensity PA Balance	516	2.00	52.00	19.2209	8.48720
Total Physical Activity	516	6.00	94.00	38.1570	14.02579

Table 3

Pearson Correlations

	Family Functioning	Cohesion	Adaptability
Core	.231**	.217**	.222**
Balance	.214**	.210**	.190**
Int PA Core	.114**	.072	.148**
Int PA Balance	.159**	.152**	.160**
Age	-.163**	-.228**	-.030
Gender	-.052	-.006	-.070
Type of Residence	.004	-.020	.032
Parks Nearby	.142**	.153**	.100*
Education	.066	.031	.107*

Note. Balance = balance family leisure involvement; Core = core family leisure involvement; Int PA Core = intensity of physical activity during core leisure involvement; Int PA Balance = intensity of physical activity during balance leisure involvement; N = 516; ** $p < 0.01$; * $p < 0.05$.

Table 4

Blocked Regression Analysis: Hypothesis One (DV: F. Functioning)

Summary of the Model: Block 1 R^2 = .051 (p < .0001)

Model 1	B	Std. Error	Beta	p-value
(Constant)	6.053	.430		.000
Parks Nearby	.228	.068	.149	.001
Gender	-.215	.139	-.069	.121
Age	-.021	.006	-.159	.000
Type Residence	.054	.117	.020	.648

Summary of the Model: Block 2 Δ R^2 = .093 (p < .0001)

Model 2	B	Std. Error	Beta	p-value
(Constant)	4.782	.445		.000
Parks Nearby	.208	.064	.135	.001
Gender	-.143	.132	-.046	.280
Age	-.024	.006	-.182	.000
Type Residence	.037	.112	.014	.742
Core Score	.021	.004	.238	.000
Balance Score	.006	.003	.114	.016

Summary of the Model: Block 3 Δ R^2 = .000 (p = .965)

Model 3	B	Std. Error	Beta	p-value
(Constant)	4.789	.449		.000
Parks Nearby	.207	.066	.134	.002
Gender	-.143	.134	-.045	.285
Age	-.024	.006	-.181	.000
Type Residence	.037	.112	.014	.741
Core Score	.022	.005	.241	.000
Balance Score	.006	.003	.105	.089
Phys Act Core Score	-.002	.010	-.013	.817
Phys Act Balance Score	.002	.010	.017	.809

Table 5

Blocked Regression Analysis: Hypothesis Two (DV: Cohesion)

Summary of the Model: Block 1 R^2 = .077 (p < .0001)

Model 1	B	Std. Error	Beta	p-value
(Constant)	70.025	2.612		.000
Parks Nearby	1.510	.410	.160	.000
Gender	-.472	.842	-.024	.575
Age	-.180	.035	-.223	.000
Type Residence	0.58	.712	.004	.935

Summary of the Model: Block 2 Δ R^2 = .092 (p < .0001)

Model 2	B	Std. Error	Beta	p-value
(Constant)	62.262	2.699		.000
Parks Nearby	1.391	.391	.147	.000
Gender	-.018	.803	-.001	.982
Age	-.198	.034	-.246	.000
Type Residence	-.040	.677	-.002	.953
Core Score	.124	.026	.223	.000
Balance Score	.044	.016	.130	.006

Summary of the Model: Block 3 Δ R^2 = .002 (p = .627)

Model 3	B	Std. Error	Beta	p-value
(Constant)	62.546	2.722		.000
Parks Nearby	1.402	.397	.148	.000
Gender	-.059	.809	-.003	.942
Age	-.196	.034	-.243	.000
Type Residence	-.022	.679	-.001	.975
Core Score	.133	.028	.240	.000
Balance Score	.039	.021	.114	.061
Phys Act Core Score	-.058	.060	-.054	.335
Phys Act Balance Score	.031	.062	.033	.622

Table 6

Blocked Regression Analysis: Hypothesis Three (DV: Adaptability)

Summary of the Model: Block 1 $R^2 = .019$ ($p < .049$)

Model 1	B	Std. Error	Beta	p-value
(Constant)	49.290	2.004		.000
Parks Nearby	.769	.315	.109	.015
Gender	-1.106	.645	-.077	.087
Age	-.020	.027	-.034	.457
Type Residence	.381	.546	.031	.485

Summary of the Model: Block 2 $\Delta R^2 = .069$ ($p < .0001$)

Model 2	B	Std. Error	Beta	p-value
(Constant)	44.295	2.104		.000
Parks Nearby	.685	.305	.097	.025
Gender	-.828	.626	-.058	.187
Age	-.032	.026	-.053	.231
Type Residence	.313	.528	.026	.553
Core Score	.087	.020	.211	.000
Balance Score	.023	.012	.090	.065

Summary of the Model: Block 3 $\Delta R^2 = .002$ ($p = .658$)

Model 3	B	Std. Error	Beta	p-value
(Constant)	44.087	2.122		.000
Parks Nearby	.642	.309	.091	.039
Gender	-.765	.631	-.053	.226
Age	-.032	.026	-.054	.219
Type Residence	.293	.529	.024	.579
Core Score	.082	.022	.199	.000
Balance Score	.018	.016	.071	.268
Phys Act Core Score	.022	.047	.027	.640
Phys Act Balance Score	.019	.048	.027	.701

Table 7

Descriptive Statistics: Location of Recreation

How many parks do you have within 5 minutes walking from your home?

Parks Nearby	Frequency	Percent
No	3	.6
One	109	21.1
Two	17	3.3
More than three	387	75.0

Where do you recreate the most?

Recreation Place	Frequency	Percentage
Recreation Centers	5	1%
Public Parks	69	13.4%
Others	65	12.6%
Home	377	73.1%

Table 8
Pearson Correlations: Highest Correlations between FLAP and DV

Hierarchical order of first six highest correlations between FLAP Items and D variables

Flap Item	Family Functioning	Cohesion	Adaptability
FLAP, item 5 (Core Pattern) 5. Do you participate in home-based outdoor activities (for example star gazing, gardening, yard work, playing with pets, walks, etc.) with family members?	.231(**)	.216(**)	.222(**)
FLAP, item 4 (Core Pattern) 4. Do you participate in crafts, cooking, and/or hobbies (for example drawing, scrap books, baking cookies, sewing, painting, ceramics, etc.) with family members?	.199(**)	.156(**)	.211(**)
FLAP, item 6 (Core Pattern) 6. Do you participate in home-based sport/games activities (for example playing catch, shooting baskets, frisbee, bike rides, fitness activities, etc.) with family members?	.190(**)	.182(**)	.170(**)
FLAP, item 3 (Core Pattern) 3. Do you participate in games (for example playing cards, board games, video games, darts, billiards, etc.) with family members?	.146(**)	.155(**)	.137(**)
FLAP, item 2 (Core Pattern) 2. Do you participate in home-based activities (for example watching TV/videos, listening to music, reading books, singing, etc.) with family members?	.156(**)	.084	.135(**)
FLAP, item 16 (Balance Pattern) 16. Do you participate in tourism activities (for example family vacations, traveling, visiting historic sites, visiting state/national parks, etc.) with family members?	.138(**)	.116(**)	.136(**)

Note. ** correlation is significant at the 0.01 level (2-tailed); * correlation is significant at the 0.05 level (2-tailed).

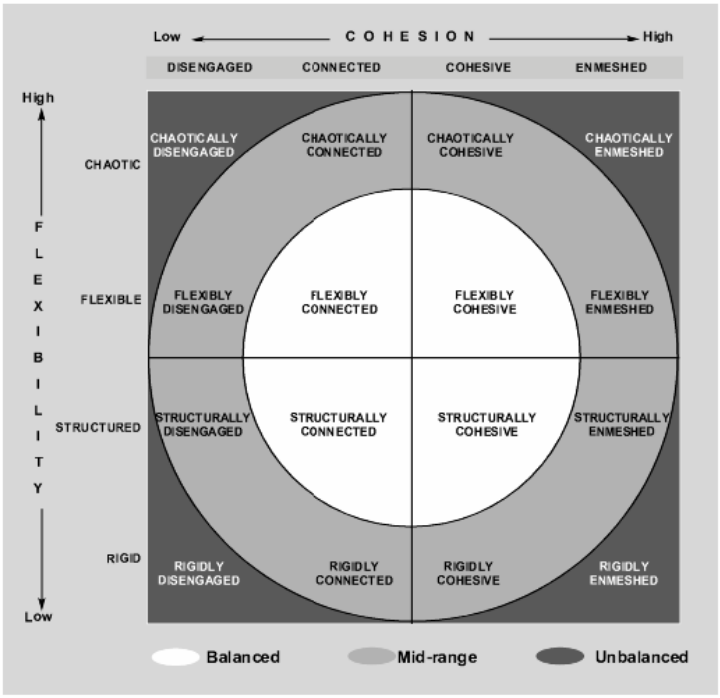

Figure 1

Family Circumplex Model (Olson, 2000)

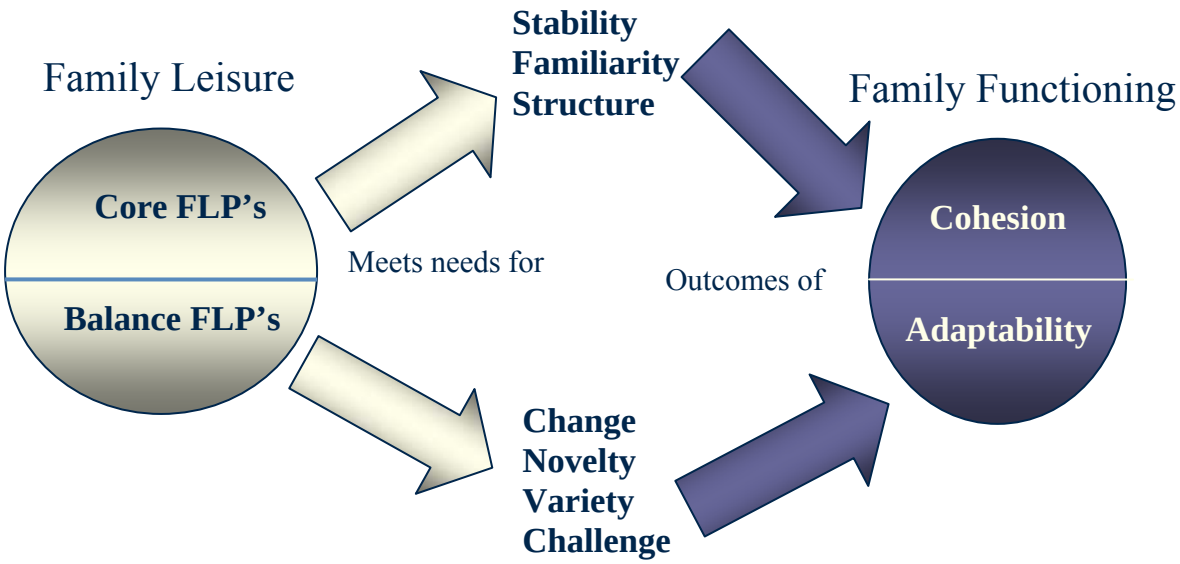

Figure 2

The Core and Balance Model of Family Leisure Functioning (Zabriskie, 2001)

Appendix A

Prospectus

Chapter 1

Introduction

The perspective that American marriages and families are weak and troubled is widespread (Nock, 1998). The call for society to take steps to help protect and strengthen the family unit is common (Taylor, 2005). One view of family function is based on principles of systems theory and focuses on the dimensions of togetherness and adaptability (the ability to cope with challenges and changes) within the family (Olson & DeFrain, 2000). This construct is widely used by social researchers in order gain a better understanding of family life (Olson & DeFrain, 2000; Zabriskie, 2001b). Family Systems Theory suggests that the family can be seen as a complex and dynamic organism composed of individual entities that interact with one another (Olson & DeFrain, 2000). Zabriskie and McCormick (2001), a long with other authors (Klein & White, 1996), pointed out that Family Systems Theory defines families as "goal directed, self-correcting, dynamic, interconnected systems that both affect and are affected by their environment and by qualities within the family itself" (Zabriskie & McCormick, 2001, p. 281). Individual family members' decisions and actions generally have an impact on all family members (Whitchurch & Constantine, 1993). Taylor (2005) pointed out that "by examining what the family does as a unit, the processes that occur within the family can be better understood" (p. 62). According to Family Systems Theory different events taking place within the family will affect the whole family system; family functioning is one of those variables that can be affected by the presence of different events taking place within the family.

Although family functioning is typically thought to be dependent upon levels and quality of cohesion, adaptability, and communication, the family system is likely related to other more specific variables that affect quality of life. For example, family functioning is likely to be directly and indirectly related to family leisure, physical health, and mental health (Chen, 2004; Zabriskie, 2001a, 2001b; Zubrick, Williams, Silburn, & Vimpani, 2000). For instance, regular participation in physical activity is one of the leading indicators of physical and mental health. Individuals' mental states such as mood, self-esteem, self-image, and ability to cope with stress are positively affected when individuals participate in regular physical activity (Tucker & Maxwell, 1992; U. S. Department of Health and Human Services, 1996). When these mental states are positively affected the quality of the relationships among individuals, including family members, may improve (Godin, Anderson, Lambert, & Desharnais, 2005; Sweeting & West, 1995). One of the reasons for which these mental states are affected by regular exercise is an increased level of endorphins in the body (Phillips, Kiernan & King, 2001). Endorphins are hormones that have been considered "the body's own mood-elevating, pain-relieving compounds. Endorphins appear to reduce levels of stress and depression" (USDHHS, 1996, p. 7). Consequently, regular participation in physical activities may not only provide important health benefits, but it may also improve mental health which may improve social relationships. Therefore, physical activity may be an important factor in promoting healthy family relationships by reducing stress and depression among individual family members.

More directly, physical activity is a key factor in reducing obesity, risk of diabetes, and other chronic health problems. The existence of any one of these negative health factors can add substantial stress to the family system. Onset of diabetes among teenagers holds potential for conflict between the teen and the parents as the teen must act responsibly with respect to monitoring blood sugar levels, diet, and insulin. Lack of responsibility poses serious health risks, causing grave concern for parents. Consequently, families have much to gain from the benefits of physical exercise.

Physical activity may also improve social and family relationships as a consequence of the changes that many individuals experience in their self-image and self-esteem as they engage in regular physical activity (Tucker, 1987; Tucker & Mawell, 1992). For instance, overweight and obese people may obtain a healthier weight (Rippe & Hess, 1998; Troiano & Flegal, 1998) and may change self-perceptions as they engage in regular physical activity (Tucker & Maxwell, 1992). Studies assessing obesity in children have indicated that obesity is related to self-esteem and "obese children with decreasing levels of self-esteem demonstrate significantly higher rates of sadness, loneliness, and nervousness and are more likely to engage in high-risk behaviors such as smoking or consuming alcohol" (Kaplan & Wadden, 1986, p.1). Some evidence suggests that obesity may be directly related to family functioning (Chen, 2004; Wilkins, Kendrick, Stitt, Stinett, & Hammarlund, 1998). Recent research suggests that higher levels of obesity in families are related to lower levels of family functioning (Chen, 2004).

Family leisure patterns may also be associated to physical activity and family functioning. Consistent research indicates that family leisure activities—which may include physical activity—are positively related to family functioning (Freeman & Zabriskie, 2003; Hawkes, 1991; Holman & Epperson, 1984; Orthner & Mancini, 1991). The presence of healthy behaviors such as regular physical activity within the family system may be related to healthy relationships among family members and family functioning. The nature of the relationship between family leisure and family functioning has been explored (Freeman & Zabriskie, 2003); however the relationship between family leisure that includes physical activity and family functioning remains unexplored. Several studies have examined different health conditions of family members (such as obesity, mental health, and mood disorders) and their relationship with family functioning (Chen, 2004; Zubrick, et al., 2000); nevertheless, these studies have not explored how family leisure that includes physical activity may be related to family functioning. Thus, the purpose of this study is to examine the relationship between family leisure that includes physical activity and family functioning.

Statement of the Problem

The focus of this study is to examine the relationship between family leisure that includes physical activity and family functioning.

Purpose of the Study

Few studies examine the relationships between healthy behavior or healthy lifestyle and family functioning, and none of these studies have sought to examine the relationship between family leisure that includes physical activity and family functioning.

The purpose of this study is to examine the relationship between family leisure that includes physical activity and family functioning in an effort to provide empirical direction to families about behavioral strategies to improve the quality of family leisure.

Significance of the Study

According to the principles of Family Systems Theory specific actions or behaviors performed by individuals in the family system may affect the whole system. Health behaviors adopted by some family members may impact the rest of the family. Substantial research supports the positive benefits that participation in regular physical activity—moderate or vigorous—has on the physical and mental health of individuals (O'Donnell, 2004). Any individual, regardless of age or gender may benefit from participating in regular physical activity (Aldana, 2005).

Besides health benefits, research suggests that participation in physical activities may have an impact not only on the individual but also on some family processes such as family functioning. For instance, several studies indicated an improvement of the parent-child relationship when children were involved in regular physical activity (Brown, 1995; Field, Diego, & Sanders, 2001). Even though exercise may have many benefits, today's reality concerning individuals engaging in regular physical activity is unfavorable; children, youth, and adults are more physically inactive than thirty years ago (National Center for Health Statistics, 2000). The sedentary lifestyle of Americans has reached epidemic proportions and an increasing number suffer from different diseases associated with inactivity (USDHHS, 1996).

Family leisure involvement including leisure activities that require physical activity may provide high-quality opportunities for parent-child interaction (Taylor, 2005). Examples of this type of recreational activities may include basketball, tag, bicycling, and rough housing play. When both or one of the parents engage with their children in physical activities, they are endowing their children with the potential to develop and adopt lasting healthy patterns of physical activity participation (Godin et al., 2005; Wilson, Baker, Derbyshire & Cote, 2003) and an improvement in the quality of the relationship within the whole family system (Field et al., 2001). Furthermore, studies on family leisure that may include physical activity indicate that recreation is positively related to family functioning (Freeman & Zabriskie, 2003; Smith, 2005; Taylor, 2005). It appears that the examination of the relationship between family leisure that includes physical activity and family functioning may provide important, interesting, and revealing information concerning family life and those variables affecting family functioning. Scholars may gain insight regarding the role of physical activity in promoting healthy family members and strong family relationships. Finally, this study will provide knowledge regarding those types of family recreational activities involving physical activity that may be effective in programs that seek to strengthen the health of family members and family relationships.

Delimitations

This study will be delimited by the following circumstances:

1. The study will include a minimum of 200 adults that are part of a family. The families of this study will be compounded by at least one parent and at least one child.
2. The two variables of this study will be family leisure that includes physical activity (independent) and family functioning (dependent).
3. Data collection will take place during a period of four weeks during the months September and October 2006.
4. The instruments used for this study will be Family Leisure Activity Profile (FLAP) (Zabriskie & McCormick, 2001), which measures family leisure involvement and Family Flexibility and Cohesion Evaluation Scales (FACES II) (Olson, 2000), which measures family functioning.
5. Family leisure that includes physical activity will be measured with several questions that will be included in the FLAP. These questions will ask for the level of intensity (regarding physical activity) that families are experiencing during leisure time.
6. Participants in this study will complete the surveys online.

Limitations

This study will be limited by the following factors:

1. Adults that are part of a family (at least one father and at least one child) will represent the sample of this study.
2. A convenience sample using snowball technique will be employed. This may generate some bias selection limiting external validity.

3. The sample will be collected online.
4. This study is correlational in nature, focusing on the nature and strength of relationships between the variables measured.

Assumptions

The study will be based upon the following assumptions:

1. Participants will answer the questionnaires accurately and honestly.
2. The FLAP will provide valid and reliable inferences of family recreation involvement.
3. The FLAP and the new items added to the FLAP regarding physical activity intensity will provide valid and reliable inferences of family leisure level of physical activity.
4. The FACES II will provide valid and reliable inferences of family functioning.

Hypotheses

The study will test the following null hypotheses:

1. No relationship exists between family leisure that includes physical activity and family functioning.

2. No relationship exists between family leisure that includes physical activity and family cohesion.

3. No relationship exists between family leisure that includes physical activity and family adaptability.

Definition of Terms

The following terms are defined to clarify their use in the study:

Balance family leisure patterns. These leisure patterns refer to activities "that are generally less common, less frequent, more out of the ordinary, and usually not home based" (Zabriskie & McCormick, 2003, p. 168). These leisure patterns provide novel experiences. Examples of these activities may include "family vacations; most outdoor recreation (e.g., camping, fishing, boating); special events; and trips to a theme park, a sporting event, or the bowling alley" (Zabriskie & McCormick, 2001, p. 284).

Family adaptability. The "ability of a family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress" (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1992, p. 1).

The Family Circumplex Model. The Family Circumplex Model is built on the principles of systems theory. It is "a graphic representation of dynamic relationships within families." Addresses cohesion, flexibility, and communication within the family (Olson & DeFrain, 2000).

Family cohesion. The emotional bonding that family members share among themselves (Olson, Portner & Bell, 1982).

Family functioning. Those relationships, processes, and interactions that generally occur within a family. Family systems theory and the Circumplex Model (Olson & DeFrain, 2000) refer to family functioning using three dimensions: cohesion, flexibility (which implies adaptability), and communication.

Family involvement. In this study family involvement (referred to family leisure involvement or family leisure including physical activity involvement) is attributed to two or more family members participating together in any given leisure activity in any given moment.

Family leisure involvement. In this study family leisure involvement or family recreation involvement will be synonyms, and both terms refer to family members' involvement in any type of recreational or leisure activity.

Core family leisure patterns or home-based recreational activities. Recreational or leisure activities carried out in or around the home. Generally these activities are simple, ordinary, familiar, low-cost, and easily accessible by family members and families. In this study, these activities are called core family leisure patterns or core activities (Zabriskie & McCormick, 2001). Activities such as gardening, singing, board games, watching movies, cooking, and playing basketball in the backyard are some examples.

Moderate physical activity. This type of physical activity is characterized by a minimum intensity of muscular effort. An activity is considered moderate when the heart rate and breath rate slightly increase over normal or resting rates (USDHHS, 1996).

Physical activity. Generally defined as any movement of the human body that produces an expenditure of energy (Meeks, Heit, & Page, 2005).

Regular physical activity. Regular physical activity is another notion associated with health-enhancement; this term is related to the number of times that physical activity is performed in a given week. Regular physical activity can be moderate or vigorous.

Physical activity of moderate intensity is considered regular when it is performed five or more times per week and it lasts about 30 minutes per session (or it is fractioned in short periods of time summing up to a total of 30 minutes per day). Physical activity of vigorous intensity is regular if the activity is performed a minimum of three days per week and it is carried out for a minimum of twenty to sixty minutes per session (USDHHS, 1996). The USDHHS (1996), in defining regular physical activities, points out that in order to obtain greater health outcomes individuals should increase the amount of time spent doing activities and supplementing their activities with different types of activities.

Vigorous physical activity. This type of physical activity is characterized by a considerable intensity of muscular effort. An activity is considered vigorous when the heart rate and breath rate rises notably over normal rates. This type of activity is also recognized when an individual finds it difficult talking because his breathing is intense (USDHHS, 1996).

Chapter 2

Review of Literature

The purpose of this study is to examine the relationship between family leisure that includes physical activity and family functioning. For organizational purposes, the literature discussed in this study will be presented under the following headings: (a) family systems theory, (b) family functioning, (c) health, obesity, and family functioning, (d) physical activity and health, (e) physical activity and social relationships, (f) family leisure and family functioning, and (g) summary.

Family Systems Theory

Social science scholars invest much energy and resources on understanding family life; many scholars utilize the foundations of Systems Theory as a means to get a better perspective of family life processes (Ayvazoglu, Oh, Kozub, 2006: Fingerman & Bermann, 2000; Freeman & Zabriskie, 2003; Olson, 2000;; Zabriskie & McCormick, 2001). A system is commonly defined as a united set of elements that are interconnected; these elements as a unit behave in coherent ways (Constantine, 1986). A simple way to understand the basics of systems theory is observing the behavior of mechanical devices. For example, the engine of a car is a complex system which is compounded by many independent elements or pieces (carburetor, valves, battery, wires, radiator, filters, gas tank, injectors, etc.); each element plays a specific role in contributing to the expected outcome of the whole engine (appropriate power to propel a car). When one of these elements is removed or altered (e.g., key screws of the carburetor are readjusted), then the

functioning of the whole system may vary; the car may lack the strength to be properly propelled or it may work more efficiently than before.

A family may be compared to a system only as a metaphor. It is obvious that families are not mechanical systems; family members are independent, living entities with individual freedom to act by themselves. Family Systems Theory was developed as a theoretical framework that has been broadly used to understand family life processes (Broderick, 1993; Steinglass, 1987; Whitchurch & Constantine, 1993). The principal idea of this model is the family can be seen as a complex system—as a dynamic organism composed of individual entities that interact with one another. Zabriskie and McCormick (2001), along with other authors (Klein & White, 1996), pointed out that Family Systems Theory perceives families as "goal directed, self-correcting, dynamic, interconnected systems that both affect and are affected by their environment and by qualities within the family itself" (Zabriskie & McCormick, p. 281). Family members' decisions and actions generally have an impact on the rest of the family (Whitchurch & Constantine, 1993). Taylor (2005) pointed out, "by examining what the family does as a unit, the processes that occur within the family can be better understood" (p. 62). A broad variety of interfamily processes such as cohesiveness, separateness, integration, adaptations to change, family functioning, communication, and family health behavior choices may be explained by this framework (Whitchurch & Constantine, 1993).

Individuals dealing with issues such as substance abuse, obesity, eating disorders, or mental illness have usually been studied from the perspective of the individual; however, lately these problems are being studied, understood, and treated as disorders

that involve the whole family system (Chen, 2004; Whitchurch & Constantine, 1993). For instance, recent experimental research has focused on the family as a system in order to find better ways to help children and youth at risk **(**Kumpfer & Alder, 2003**;** Kumpfer, Alvarado & Whiteside, 2003; Kumpfer & Collings, 2003**).** It seems "approaches to solving [individuals' problems should not be] dealt from the viewpoint of fixing the individual manifesting the symptoms, but by involving the entire family in improving family processes" (Taylor, 2005, p. 62). Another study conducted by Chen (2004) showed that the family system was related to the health of individual family members, those families with higher levels of family functioning had lower rates of obesity among their children (Chen, 2004).

Families seen as systems are affected by external or environmental factors such as the area of residence, education opportunities, health providers, and job opportunities (all of which may affect individuals' mood and well being). A system can also be affected by choices made within the system. A decision can be made by few members of the system (parents) and affect the whole system. For example, a couple may be interested in pursuing a goal that will improve current and future health behavior of the system. Adopting a new behavior in the system such as family leisure involving regular physical activity or improving current diet patterns may result in health improvements on each entity of the system and the whole system. Another example would be those parents that purposively use leisure as a way to increase the quality of their family system's health and its members' relationships (Shaw & Dawson, 2001).

The author of this study will utilize the principles of Family Systems Theory in order to gain a better understanding concerning the relationship that may exist between family leisure that includes physical activity and family functioning.

Family Functioning

Families have been considered to be the fundamental unit of our society since ancient primitive cultures; they are organized systems that contribute to procreation, education, and transferring of values to children (Carlson, Deppe, & MacLean, 1972). Family members are usually bound together throughout their lives as they face challenges and growth. Families' healthy interconnections and behaviors contribute to a healthy society. Family functioning is a concept composed of different dimensions of family interactions. Cohesion or togetherness, flexibility or adaptability, and communication are typical dimensions of family functioning (Olson & DeFrain, 2000). Family functioning has been examined by several scholars from the point of view of Family Systems Theory.

Family Systems Theory perceives the family as a multifarious organization or system in which individuals (family members) interact with one another (Broderick, 1993; Klein & White, 1996). All family members amalgamate forming the family or the system. This perspective of the family has been useful for social scientists as they have sought to understand the processes of family functioning (Olson & DeFrain, 2000; Zabriskie, 2001b). In 1986, Olson developed a graphical model based on Family Systems Theory—the Circumplex Model—in order to provide more understanding on how families function. This model examines three dimensions of family functioning—

cohesion, flexibility, and communication—within the family system (Olson & DeFrain, 2000).

According to Olson (1999) the Circumplex Model seeks to understand the interconnection between family members and their behaviors (see Figure 1). The dimension of cohesion is connected to the idea of togetherness; the dimension of flexibility is related to the ability to cope with life changes; and finally, communication is a dimension that addresses those patterns of verbal interaction among family members that are used in order to regulate family cohesion and flexibility (Olson & DeFrain, 2000). Family functioning rests on the harmony of cohesion and flexibility. Families that show healthy scores of togetherness and adaptation to change, also show high levels of functioning. There are other variables that may affect cohesion, adaptability, and communication; and thus, may influence how families function. Health, family satisfaction, family religiosity, and family leisure time are among those many factors that are related to family functioning (Taylor, 2005; Zabriskie, 2001b; Zubrick et al., 2000). For instance, family leisure involvement has been reported to have a positive relationship with family functioning (Freeman & Zabriskie, 2003; Zabriskie, 2001b), and regular physical activity participation has also been reported to be positively associated with improved relationships among individuals, including parent-child relationships (Bratton, Ray, Rhine, & Jones, 2005; Field et al., 2001). A system—family—may experience more or less physical activity during family leisure time and this fact may be positively related with family functioning. To date, we do not know the nature of this relationship; however, research has indicated that healthy weight, physical health, and mental health

are indicators of family functioning (Chen, 2004; Zubrick et al., 2000; Wilkins et al., 1998).

Health, Obesity, and Family Functioning

Obesity is at epidemic proportions in United States (USDHHS, 2001). Much effort and funding is invested in studies that seek to find out the underlying causes of obesity and how to reduce obesity rates among children, adults, and elderly (USDHHS, 2001). Obesity is commonly associated with physical health; however, it has been consistently found that "overweight children display more psychosocial problems" than those who are not overweight (Stradmeijer, Bosch, Koops, & Seidell, 2000, p. 113). For instance, studies assessing obesity in children have indicated that obesity is related to self-esteem and "obese children with decreasing levels of self-esteem demonstrate significantly higher rates of sadness, loneliness, and nervousness and are more likely to engage in high-risk behaviors such as smoking or consuming alcohol" (Kaplan & Wadden, 1986, p.1). It appears that obesity may be related to family functioning (Chen, 2004; Wilkins et al., 1998). Chen (2004) suggests that higher levels of obesity in families are related to lower levels of family functioning. A recent Australian study found physical and mental health to be indicators of social and family functioning (Zubrick et al., 2000). Families that adopt healthy lifestyles may also have higher levels of family functioning.

Physical Activity and Health

Approximately forty percent of our body is composed of muscle tissue and another fifteen percent of skeletal tissue. The human body is built for action, to facilitate commuting, hunting and gathering, and several social functions (communicating, expressions of affection, play, etc.). No more than fifty years ago our lifestyle demanded substantial physical activity; most people would put more physical effort in their quotidian doings. For example, many people walked or rode their bicycles long distances in order to go to work. It is interesting to notice that the rates of divorce in the days when regular physical activity was more common among individuals was remarkably lower than today. In Western societies, the more recent technological era and the current era of information has allowed many people to dramatically reduce the amount of physical activity in their day to day lives. This drop in physical activity has resulted in a variety of chronic health problems, raising concerns in the health care industry and among world governments. For example, more than thirty-five years ago, the Council for Cultural Co-operation, Council of Europe, issued a booklet titled Sport for All: Exercise and Health (Astrand, 1969). The following statement appears in the introduction: "the human body is 'constructed' for and adapted to muscular activity—not for rest and inactivity" (p. 7). The concern regarding inactivity is a major health issue today. Past and current research consistently support a positive relationship between physical activity involvement and physical health (Astrand, 1969; Page & Tucker, 1994; Rowland, 1990), emotional health (Brown, Welsh, Labbe, Vitulli, & Kulkarni, 1992; Sevcikova, Ruzanska, & Sabolova, 2000), mental health (Richardson, Faulkner, McDevitt, Skrinar, Hutchinson, Piette, 2005;

Stein & Motta, 1992; USDHHS, 1996), and social development (Svoboda, 1994; Wandzilak, Carroll, & Ansorge, 1988). One recent study (Gardner, 2004) centered on the importance of being physically active indicated that

> [regular involvement in] physical activity and maintaining a healthy body weight are associated with numerous physical and psychological benefits including a reduced risk of heart disease, cancer, depression, and anxiety. Despite these benefits, about 60% of American adults [and an increasingly number of children] are not physically active and 64% are overweight and obese (p. 4676).

Recently, the USDHHS (2000), in order to improve American residents' health, created an initiative called Healthy People 2010. In this project the main two health indicators identified as major health concerns for the United States are physical activity and obesity. Obesity is not only related to health problems but also to psychosocial problems including dysfunctional families (Chen, 2004). This section of the literature review will expound the definition of physical activity and other related terms, and how these terms are related to health and social relationships—including those taking place in the family.

Definition of physical activity and other related terms. Physical activity is generally defined as "any bodily movement produced by skeletal muscles that result in energy expenditure" (Meeks et al., 2005, p. 366). However, this definition is vague or ambiguous for the purpose of this research. This study will focus on those types of physical activities that may enhance or maintain the health of individuals. For instance, an overweight individual playing the trumpet is evidently moving his fingers and arms,

and therefore causing energy expenditure; nevertheless, this activity is not enough to either enhance his cardio-respiratory endurance, or to improve his body composition. Research suggests that physical activities that enhance the health of people must have a minimum of intensity, duration, frequency, and repetition (USDHHS, 1996); these variables may be present in different types of activities. Different health benefits may result from different ways to exercise the body. The most tested ways to improve one's physical and mental health through physical activity are those activities that require the participation of the cardio-respiratory system, muscular flexibility, muscular strength, and muscular endurance (Aldana, 2005).

Physical activities that require a notable participation of the cardio-respiratory system have the highest positive impact on individuals' health (USDHHS, 1996). Running, shoveling snow, bicycling, and swimming are just a few examples of this type of activity. Flexibility activities are those that require the lengthening of one's muscles more than usual. Yoga or regular stretching programs are a couple of examples under this category. Muscular endurance can be improved with activities that require resistance; for example, a generous number of sit-ups will increase the endurance of the abdominal muscles. Finally, muscular strength is achieved with activities that require voluntary effort in order to resist or succeed against an oppositional force; this force can be a consequence of gravity, one's own weight, external weights, or any type of external forces (USDHHS, 1996).

Physical activity is associated with other terms that connect body muscular activity with health benefits. These terms are exercise; physical fitness; and moderate or

vigorous regular physical activity. Organized, planned or structured activities, designed to produce specific benefits or outcomes for the body are called exercise. These types of activities are characterized by repetitive physical movements that seek to improve or maintain one or more components of physical fitness. These include cardio-respiratory endurance, flexibility, muscular strength, muscular endurance, and body composition (USDHHS, 1996).

The capacity to perform physical efforts in order to respond to daily needs with higher or lower intensity is known as physical fitness (USDHHS, 1996). Health improvements in each of the components of physical fitness are directly related with the capacity to work, play, or exercise efficiently during longer periods of time. The higher the intensity of any given activity in which a person participates, the more his physical fitness will increase. Research indicates that higher levels of fitness are positively correlated with lower risks of premature death (Aldana, 2005).

Physical activity can also be moderate or vigorous. Activities such as brisk walking, dancing, gardening, raking leaves, touch football, or mowing the lawn usually produce a gentle increase in one's breathing or heart rate. These activities have moderate intensity. Other activities such as wrestling, playing basketball, jumping rope, or high-impact aerobic dancing produce a notable increase in ones' breathing and heart rate; these are considered activities of vigorous intensity (USDHHS, 1996).

Regular physical activity is another notion associated with health-enhancement; this term is related to the number of times that physical activity is performed in a given week. Regular physical activity can be moderate or vigorous. Physical activity of

moderate intensity is considered regular when it is performed five or more times per week and it lasts about 30 minutes per session (or it is fractioned in short periods of time summing up a total of 30 minutes per day). Physical activity of vigorous intensity is regular if the activity is performed a minimum of three days per week and it is carried out for a minimum of twenty to sixty minutes per session (USDHHS, 1996). Regular physical activity has been consistently associated with positive health outcomes, and research indicates that avoiding high extremes of exposure to exercise, the longer the periods and the repetitions of the exercises, and the higher the intensity, the greater the positive impact on individuals' health (USDHHS, 1996).

Physical activity and physical health. Regular physical activity, even at moderate levels, is associated with important health benefits for one's body (Aldana, 2005; Meeks et al., 2005). A report by the USDHHS (1996), based in numerous studies, suggests that physical activity is associated with lower rates of morbidity, mortality and disability. For instance, moderate physical activity strengthens muscles and bones, reduces body fat, lowers heart and respiratory rates, and improves joint mobility (Aldana, 2005). Furthermore, "exercise reduces blood pressure in people with hypertension" and "decreases the risk of cardiovascular disease mortality" (USDHHS, 1996, p. 149). In contrast, physical inactivity is directly related to coronary artery disease, stroke, limitation of physical movement, and other health problems such as obesity and diabetes (Dunstan et al., 2004; USDHHS, 1996).

Draheim, Williams, and McCubbin (2002) conducted a study to evaluate the prevalence and effect of physical activity on individuals that usually have a sedentary

lifestyle. Based on the results of their study, they suggested that "future physical activity programs should be focused on providing a variety of physical activities and encouraging participation in moderate intensity physical activity five or more times per week" for those individuals who are physically inactive and seek to enhance their overall health (Draheim et al., 2002, p. 443). Those individuals that usually are inactive can improve their health and well-being by becoming even moderately active on a regular basis. Physical activity "does not have to be strenuous to achieve health benefits" (Meeks et al., 2005, p. 367). As suggested by Meeks et al. (2005), one may "break [30 minutes of dancing activity] up into three 10-minute periods of activity and still receive the same health benefits" (p. 370).

Physical activity and mental health. Many studies have sought to identify and understand relationships between physical activity and mental health. More than two decades ago, Folkins and Sime (1981) pointed out that "almost all outcomes [regarding the effects of exercise on anxiety and self-esteem has] been positive" (p. 378). Tucker (1987) examined 385 male high school students in order to determine the character of the relationships between several measures of physical activity and mental health. Tucker reported that as physical activity [in form of fitness] increased, "subjects were more intelligent, emotionally stable, venturesome, practical, and self-confident" (p. 267). One recent study conducted among high school seniors showed that those students who participated in higher levels of physical activity "were less depressed," more reluctant to use drugs, and "had higher grade-point averages than did students with a low level of exercise" (Field et al., 2001, p. 105).

Physical activity and emotional health. Tucker and Maxwell (1992) indicated that weight training (physical activity in which individuals move weights in a systematic way) positively influences emotional well-being and body image in females. Sixty female college students were part of the experimental group that participated during 15 weeks (two days per week, forty minutes per session) in a weight training activity. The findings revealed that the control group (which did not participate in such activity) did not get as many benefits as the experimental group did. Tucker and Maxwell concluded that "participation [in such activity] is closely associated with… emotional well-being, and body image in women" (1992, p. 344). Their conclusions supported "improvements in general well-being, and body catharsis in women, as previous research [had] shown in males" (p. 344).

Physical Activity and Social Relationships.

A large number of health professionals and health promoters, including the USDHHS use regular physical activity as the number one strategy among all kinds of people to improve overall health (USDHHS, 1996, 2000). Research provides evidence that regular physical activity has a large variety of benefits for individuals (Aldana, 2005; USDHHS, 1996). These benefits include stronger cardio-respiratory system functioning, protection against diabetes, weight control and others. In addition, physical activity promotes positive mental health and emotional well being (Chen & Millar, 1999; USDHHS, 1996), positive self-image (Folkins & Sime, 1981; Tucker & Mawell, 1992), and an increased ability to cope with stress (O'Donnell, 2004). Individuals who experience good physical and mental health may be more likely to have positive

relationships. (Sweeting & West, 1995). For example, increased positive mood, higher self-esteem, and positive self-image increase self-confidence and reduce aggressive behavior and antisocial behaviors (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Part of the underlying factors of these relationships is attributed to physiological changes that take place during exercise (USDHHS, 1996). Another factor that may play a role in mental health and relationships is the increased level of endorphins in the body resulting from exercise (Phillips et al., 2001; USDHHS, 1996). Endorphins are hormones considered "the body's own mood-elevating, pain-relieving compounds. Endorphins appear to reduce levels of the stress and depression" (USDHHS, 1996, p. 7). Consequently, regular participation in physical activities may not only provide important health benefits, but it may also improve mental health which can improve relationships. By inference, physical activity may play a role in promoting healthy family functioning. Not only will it moderate obesity, diabetes, and other chronic health problems, but the affect on stress, aggression, depression, and positive self-concept should provide a supportive context for healthier family relations.

In contrast, inactivity has the potential to result in negative health and emotional outcomes, which could in turn play a negative role in relationships. For instance, inactivity is one factor that contributes to obesity (others are genetic heritage and excessive caloric intake) (USDHHS, 1996). Obesity may be an indicator that individuals lack regular physical exercise and a healthy diet (USDHHS, 1996). Obese people are generally less active than people who are not overweight or obese (USDHHS, 1996). Research indicates that many obese people experience lower levels of self-esteem, and

higher levels of isolation than those who are not obese (Dietz, 1998; Strauss, 2000). Obesity does not only affect individuals' health but also social and family relationships. Several studies suggest that good relationships or high levels of family functioning are related to lower rates of obese family members (Chen, 2004). Chen (2004) and other researchers (Kinston, Loader, & Miller, 1987; Kinston, Loader, Miller, & Rein, 1988; Valtolina & Marta, 1998; Wilkins et al., 1998) found that dysfunctional families had higher rates of obesity among their children than families with high levels of family functioning.

In summary, individuals or families who are committed to participate in regular physical activity may enjoy better quality in their relationships, including those within the family. A study recently conducted supports this reasoning. In a sample of 1200 Canadian adolescents factors associated with regular physical activity in leisure time were studied (Godin et al., 2005). The researchers indicated that regular participation in physical activity was related to higher quality in the relationships between adolescents and parents (Godin et al., 2005).

Family Leisure and Family Functioning

Parents often intentionally and purposefully seek to plan and provide recreational activities for their family members in order to strength relationships among them (Shaw & Dawson, 2001). Several authors have examined the relationship between family leisure and family functioning (Hawkes, 1991; Holman & Epperson, 1984; Orthner & Mancini, 1991). Research conducted during past decades suggests that families that are regularly involved in recreational activities exhibit increased levels of family functioning,

interaction, satisfaction, stability (Driver, Brown, & Peterson, 1991; Zabriskie & McCormick 2003;), and enhanced patterns of communication (Smith, 2005; Huff, Widmer, McCoy, & Hill, 2003) than those who do not participate or do participate sporadically. In other cases specific forms of family leisure such as wilderness outdoor programs may increase collective efficacy (Wells, Widmer, & McCoy, 2004). Recreation plays a central role in healthy family life (Holman & Epperson, 1984; Nelson, Capple, & Adkins, 1995). Higher levels of happiness, healthy functioning, and unity in families have been reported by families that recreate together (Kraus, 1984; Smith, 1997). Nelson et al. (1995) pointed out that among other benefits shared recreational activities provide an ideal setting for honest communication and cooperation to solve problems. Skills that are learned in recreational situations can be transmitted into family life settings (Smith, 1997). Family leisure can take many forms (e.g. outdoor adventures, vacations, talents development, work at home, and arts) and some manners of recreation may require more or less amount of physical activity, creativity, interaction, etc. Zabriskie (2001b) developed a model in which he pointed out two patterns of family leisure activities, core and balance family leisure patterns, in order to better explain those factors that relate family leisure to family functioning.

Core and Balance Model of Family Leisure Functioning. Iso-Ahola (1984) and Kelly (1996, 1999) suggested that recreational activities providing stability, change, constancy, and novelty are important for families in order to facilitate healthy family functioning. Using this line of reasoning, Zabriskie (2001b) developed the Core and Balance Model of Family Leisure Functioning in an effort to quantify family leisure

behavior. This model is based on Family Systems Theory and focuses on the relationship between family leisure and family functioning. Zabriskie's model aims to provide understating on how family recreation involvement is correlated with two areas of family functioning—cohesion and adaptability. The Core and Balance Model combines two common patterns of family leisure —core and balance activities—in order to examine the relationship between family leisure and family functioning (see Figure 2). Both patterns in proper balance help to fulfill the family needs for constancy, novelty, stability, and change indicated by Iso-Ahola (1984) and Kelly (1996). According to Freeman and Zabriskie (2003), core leisure patterns are "depicted by activities that are common, everyday, low-cost, relatively accessible, often home-based, and are participated in frequently" (p. 76). Examples of core leisure activities are singing, gardening, raking leaves, watching a movie, rough housing, playing tag, running, playing board games, and playing basketball or soccer in the backyard. These types of activities require little planning and provide excellent circumstances to enhance family stability and constancy. Several studies have indicated that home-based recreation or core leisure activities facilitate family closeness (Taylor, 2005).

The other type of activities examined by the Core and Balance Model of Family Leisure Functioning is called balance family leisure patterns. These activities facilitate novelty and change. They are different to and less common than core leisure patterns, and frequently require larger investments of money, time, and effort (Zabriskie, 2001b). A few examples of these activities are outdoor recreational activities, family vacations, and sports that may require special equipment (e.g., snow skiing, rafting, camping, and rock

climbing). Olson (1986) suggested that a balance between cohesion and adaptability was vital for healthy family functioning; and Zabriskie (2001b) pointed out that a combination of both, core and balance activities, facilitates cohesion and adaptation—which are key dimensions of family functioning.

Many core and balance leisure activities involve physical activity. For example, dancing, gardening, raking leaves, rough housing, playing tag, playing touch football, wrestling, long hikes, playing soccer in the backyard, mountain biking, skiing, rock climbing, ice skating, snow boarding, and wind surfing are recreational activities that involve moderate or vigorous physical activity. Considering that regular physical activity may affect individuals' relationships, it may be that different intensities or frequency of physical activity during family leisure involvement may be related to family functioning. However, to our knowledge, there are no studies that examine this relationship—how family leisure that involves physical activity is related to family functioning.

Summary

Physical activity, as it has been indicated previously, positively affects psychological states such as mood, self-image, self-esteem, emotional well being, and increased ability to cope with stress (USDHHS, 1996). These states, when positive, have been reported to have positive affect in the quality of relationships among individuals (USDHHS, 1996). If this is true, considering that positive social relationships are an important component of family functioning, it may be that regular participation in physical activity may be positively related to family functioning. It has also been consistently reported that family leisure has a positive relationship with family

functioning (Freeman & Zabriskie, 2003; Orthner & Mancini, 1991; Smith, 2005; Taylor, 2005), and frequent physical activity is a fundamental part of leisure activities (Shinew, Floyd & Parry, 2004). Physical activity is commonly present in both patterns of family leisure mentioned previously—core and balance—which have also been reported to have a positive relationship with family functioning (Zabriskie, 2001b). Considering the findings presented, it may be that family leisure activities that include physical activity (with the minimum intensity and frequency recommended) may have greater positive affect on family functioning than those family leisure activities that do not include physical activity or include physical activity with lower intensity and frequency of participation. However, we do not know about the nature of this relationship. To our knowledge no studies have assessed this relationship before. Thus, the purpose of this study is to examine the relationship between family leisure involving regular physical activity and family functioning.

Chapter 3

Methods

The problem of this study is to examine the relationship between family leisure involving physical activity and family functioning. This section addresses: (a) selection of subjects; (b) instrumentation; (c) data collection procedures; and (d) analysis of data.

Selection of Subjects

An initial list with names, phones, and emails of managers, supervisors, and secretaries of different national associations including families in their membership (e.g. YMCA, YWCA, Public Recreational Centers, and Public Educational Institutions) will be selected. The researcher will establish contact with the participants and explain to them about the purpose of the study. Participants will be selected using a convenience and snowball sample. If these first contacts agree in participating in the study they will be requested to select from their data bases those parents that are eligible for the study and then, they will be asked to forward a specific email regarding the study and survey online to those potential respondents. Then, these possible respondents will also be asked to forward the same electronic message they received to other eligible respondents that they may know. In order to be eligible the respondent must be a parent that has at least one child (seventeen years old or younger) at home.

A minimum of 200 respondents will constitute the sample of the study. The unit of the study will be the family; each respondent will be a parent who will represent his or her own family.

Respondents will be informed about the purpose of the study and their rights as research participants. Through electronic mail the subjects will be presented a paragraph describing the elements of the informed consent of the study (IRB). As part of the informed consent, participants will be informed that by completing and submitting the questionnaire, they are expressing their consent to participate in the study. They will also receive information regarding the study title, purpose, duration, and procedures. In addition, the potential benefits for participants and society will be described. No personal identifying information will be collected.

Instrumentation

The research instrument will include Family Adaptability and Cohesion Evaluation Scales (FACES II) (Olson et al., 1982), an adaptation of the Family Leisure Activity Profile (FLAP) (Zabriskie & McCormick, 2001), and a series of sociodemographic questions.

Family functioning will be measured using the Family Adaptability and Cohesion Scales (FACES II), which is based on the Family System Circumplex Model (Olson, 1992). This instrument, as its name illustrates measures perceptions of family cohesion and adaptability. Olson et al. (1992) and other researchers (Smith, 2005; Taylor, 2005; Zabriskie, 2001b) have found evidence of reliability of the scale. Satisfactory internal consistency has been shown in studies that used national samples ($\alpha = .88$ and $\alpha = .86$ for cohesion and $\alpha = .78$ and $\alpha = .79$ for flexibility) (Zabriskie & McCormick, 2001). This questionnaire is composed of two sub-scales with a combined thirty items. Sixteen items assess cohesion and fourteen items assess adaptability. Dimensions regarding emotional

bonding, coalitions, interests, family boundaries, friends, time space, decision-making, and recreation are indicators of family cohesion and each of these dimensions is represented by two items in the questionnaire. Adaptability is represented by items that assess the dimensions of assertiveness, disciple, leadership, roles, rules, and negotiations (Olson et al., 1992).

The questionnaire FACES II uses a five-point Likert-type scale response format; one refers to the answer "almost never" and five to "almost always." The perceived dimension of family cohesion and family adaptability each receive an overall or total score that is computed by using a "formula that adds and subtracts item scores for each dimension based on its positive or negative reference" (Zabriskie & McCormick, 2001, p.284). Cohesion or adaptability scores may vary in different ways. For example, some families, can be "disengaged" or "very connected" when scoring 1 or 8 in cohesion, respectively, or they can be "rigid" or "very flexible" if the scores of adaptability are 1 or 8, respectively.

The Family Leisure Activity Profile or FLAP (Zabriskie, 2001b) is an instrument that "measures involvement in family leisure activity patterns based on the Core and Balance Model of Family Functioning" (Zabriskie & McCormick, 2001, p. 285). Scholars using this instrument have reported satisfactory evidences supporting the reliability and validity of inferences (Freeman & Zabriskie, 2003). This instrument is designed to identify and measure two forms of family recreational activities: core family leisure patterns or home-based recreation patterns, and balance family leisure patterns. This instrument is comprised of 16 items; half assessing core leisure activities and half

balance leisure activities. The respondents provide two types of information regarding each item. First, each item describes a type of activity and respondents must answer regarding their participation in that activity, frequency of participation, and duration of overall participation in the activity described by the item. Second, the respondents signify their level of satisfaction regarding participation in the activity described in the item. For example, the subject is asked if he or she participates in home-based outdoor activities (such as gardening, walks, etc) with family members. Respondents identify the frequency (at least daily, weekly, monthly, etc.), duration(one hour, one to two hours, two to three, etc.), and satisfaction level of the activity. A Likert scale provides scores regarding levels of satisfaction from one "very dissatisfied" to five "very satisfied."

FLAP core or balance family leisure index scores are calculated multiplying the frequency and duration values in each category (core and balance) and adding the products. These two scores are summed up to obtain a total score of family leisure participation.

Physical activity during home-based leisure involvement will also be measured using the FLAP. This instrument contains items assessing the duration and frequency of participation in leisure activities. For this study a new set of items using a seven-point Likert-type scale (zero, lack of effort during the activity, and seven, vigorous effort during the activity) will measure the intensity of physical activity during family leisure involvement.

Demographic questions for this study will address the age, gender, ethnicity, family size, annual family income, education level, marital status, and residence type.

These data will be useful to control external factors and examine family variables that may influence physical activity involvement. For instance, families whose annual income are greater may find more possibilities to exercise together during winter (as they can afford to ski more regularly) than those families that cannot afford that activity.

Data Collection Procedures

The initial participants—managers, supervisors, directors, and faculty from different social institutions—will be selected and contacted via phone and electronic mail by the principal investigator. These subjects will be asked to participate in the study in the following way: after they are informed about the purpose of the study, and they agree in participating, they will be asked to forward an electronic message containing information regarding the study and the rights of participation. This electronic message will also contain an electronic link (http://walking.familyleisureresearch.com/survey.htm) that will provide access to the questionnaires—which will include both instruments (FACES II and FLAP) and the socio-demographic questions. Then, we expect respondents filling out the instruments online and after they have submitted the survey, the data will be stored in an Excel spreadsheet data base.

Analysis of Data

Data will be cleaned and analyzed using SPSS v. 14.0. Cleaning will include identifying missing data, input errors, and multicollinearity using Pearson Product. Alpha level of .05 will be used to consider statistical significance. Descriptive statistics will be evaluated in order to examine the variables of the study.

The independent variables (family functioning, family cohesion, and family adaptability) and the dependent variables (demographics, family leisure involvement, family leisure involving physical activity, core and balance family leisure patterns, and core and balance family leisure involving physical activity patterns) will be examined as they have been stated in the hypotheses of the study in order to test these hypotheses. Calculations in both instruments (adapted FLAP and FACES II), along with sociodemographic information, will provide index scores that will facilitate the statistical analysis.

Analysis will employ three blocked multiple regression analyses. This method allows for the partitioning of variance among the independent variables, identifying the amount of influence each independent variable has on the dependent variable. Thus, each blocked multiple regression analysis will test each of the three hypotheses. Hypothesis one states: there is no relationship between family leisure involving physical activity and family functioning. Each block will test the variance each of the independent variables (socio-demographics, family leisure, and family leisure involving physical activity) may have on the dependent variable, family functioning,

The second analysis will test hypothesis two: no relationship exists between family leisure involving physical activity and family cohesion. In this second analysis we will examine how much variance socio-demographics, core and balance family leisure, and core and balance family leisure involving physical activity may have on family cohesion.

A third analysis will test hypothesis three: no relationship exists between regular family leisure involving physical activity and family adaptability. This analysis will assess the amount of variance that socio-demographics, core and balance family leisure, and core and balance family leisure involving physical activity may have on family adaptability.

Table 1 illustrates the blocked multiple regression analyses described previously.

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Table 1

Blocked multiple regression analyses

Analysis	Independent variable	Dependent variable
First analysis (Hypothesis 1)		
Block 1	Sociodemographic variables	Family functioning
Block 2	Family leisure	Family functioning
Block 3	Family leisure physical activity	Family functioning
Second analysis (Hypothesis 2)		
Block 1	Sociodemographic variables	Cohesion
Block 2	Core and balance family leisure patterns	Cohesion
Block 3	Core and balance F. L. physical activity	Cohesion
Third analysis (Hypothesis 3)		
Block 1	Socio-demographic variables	Adaptability
Block 2	Core and balance family leisure patterns	Adaptability
Block 3	Core and balance F. L. physical activity	Adaptability

Figure 1

Family Circumplex Model (Olson, 2000)

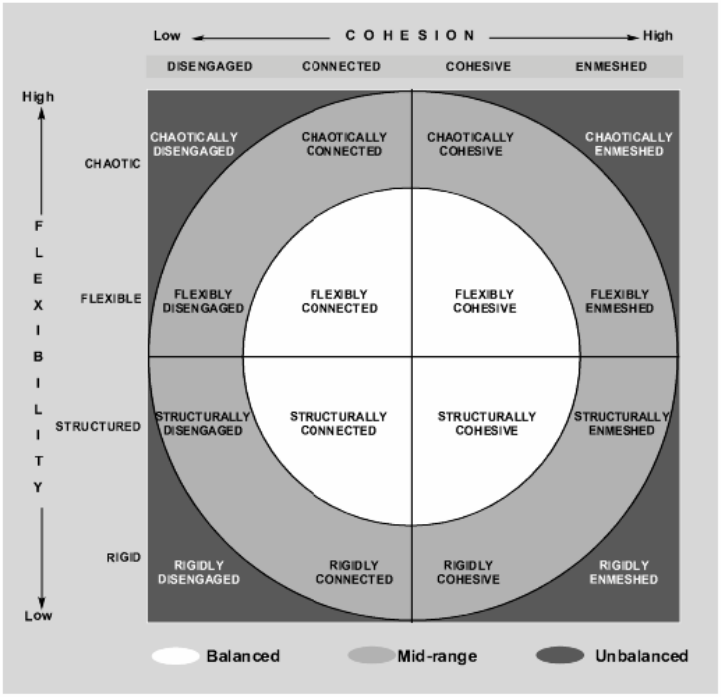
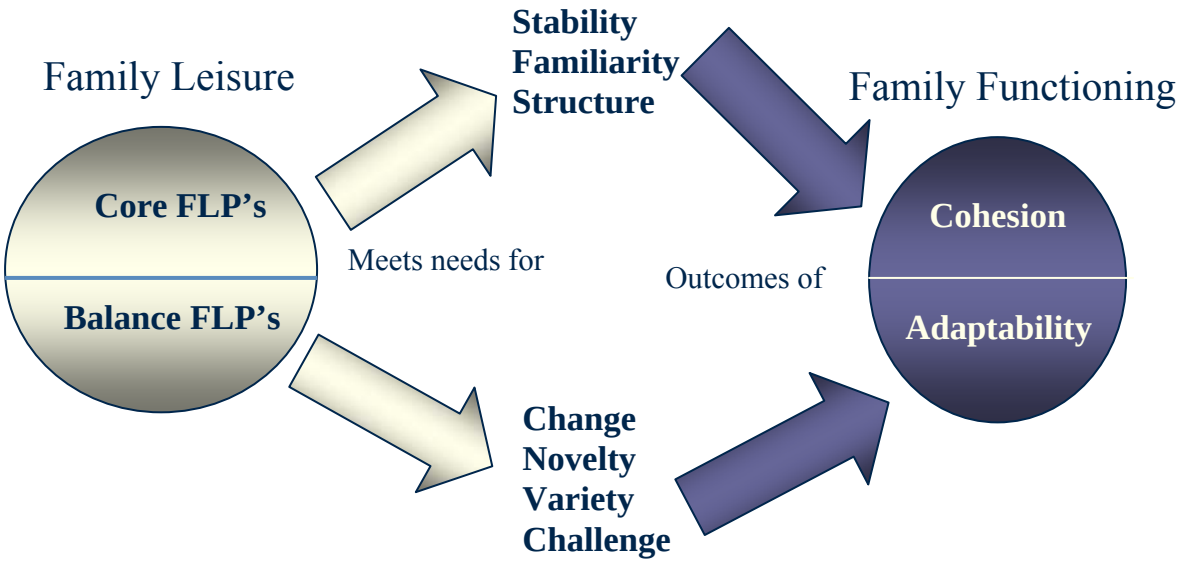


Figure 2

The Core and Balance Model of Family Leisure Functioning (Zabriskie, 2001)



Appendix A-1a

Informed Consent

Consent to be a Research Subject

This research study is being conducted by Joaquin Fenollar at Brigham Young University to examine underlying factors that may determine relationships between family recreation involving physical activity and family functioning.

Your participation is greatly needed and appreciated. This questionnaire will take approximately 15 minutes to complete. You will be answering to three set of questions regarding family leisure patterns (including physical activity involvement), family functioning, and socio-demographic questions. We request that one parent for family complete the questionnaire. There are no direct benefits for participation in this study. It is hoped, however, that the knowledge gained from this study will help researchers better understand the benefits derived from family leisure involvement and what role physical activity plays in those benefits. The risk of participation in this study is minimal or inexistent. All information will remain completely confidential and will only be reported in general numbers with no identifying information. All data will be stored on a password-protected computer. Only the researcher will have access to the data. After the research is completed, the data will be erased. There is no compensation for participation in this study. Participation is optional and completely voluntary. You have the right to withdraw at any time without penalty or you may choose to refuse to participate entirely. If you have questions regarding this study, you may contact Joaquin Fenollar at 422-3215, fenollar@gmail.com; or Dr. Mark Widmer at (801) 422-3381. If you have questions regarding your rights as a participant please contact Dr. Renea Beckstrand, Chair of the Institutional Review Board for Human Subjects at Brigham Young University (422 SWKT, BYU, Provo, UT 84602; phone [801] 422-3873; email renea_beckstrand@byu.edu). Completion of this online survey is regarded as implied consent to participate in this research.

The link below goes to the survey. Please click on the link. Thank you!

http://walking.familyleisureresearch.com/survey.htm

Survey conducted by the Recreation Management Youth Leadership department at Brigham Young University.

BYU
BRIGHAM YOUNG UNIVERSITY

RMYL
RECREATION MANAGEMENT YOUTH LEADERSHIP

Appendix A-1b

Family Adaptability and Cohesion Scales

FACES II: Family Version

Family Flexibility and Cohesion Evaluation Scales

Please answer the following questions in reference to your family currently. Please be as open and honest as possible. All responses are strictly confidential.

Use the following scale:

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost always

Describe your family:

___ 1. Family members are supportive of each other during difficult times.
___ 2. In our family, it is easy for everyone to express his/her opinion.
___ 3. It is easier to discuss problems with people outside the family than with other family members.
___ 4. Each family member has input regarding major family decisions.
___ 5. Our family gathers together in the same room.
___ 6. Children have a say in their discipline.
___ 7. Our family does things together.
___ 8. Family members discuss problems and feel good about the solutions.
___ 9. In our family, everyone goes his/her own way.
___ 10. We shift household responsibilities from person to person.
___ 11. Family members know each other's close friends.
___ 12. It is hard to know what the rules are in our family.
___ 13. Family members consult other family members on personal decisions.
___ 14. Family members say what they want.
___ 15. We have difficulty thinking of things to do as a family.
___ 16. In solving problems, the children's suggestions are followed.
___ 17. Family members feel very close to each other.
___ 18. Discipline is fair in our family.
___ 19. Family members feel closer to people outside the family than to other family members.
___ 20. Our family tries new ways of dealing with problems.
___ 21. Family members go along with what the family decides to do.
___ 22. In our family, everyone shares responsibilities.
___ 23. Family members like to spend their free time with each other.
___ 24. It is difficult to get a rule changed in our family.
___ 25. Family members avoid each other at home.
___ 26. When problems arise, we compromise.
___ 27. We approve of each other's friends.
___ 28. Family members are afraid to say what is on their minds.
___ 29. Family members pair up rather than do things as a total family.
___ 30. Family members share interests and hobbies with each other.

Appendix A-1c

Family Leisure Activity Profile

Family Leisure Activity Profile

Adapted version of the Family Leisure Activity Profile

The adaptation consists on adding an extra identical question to each one of the first 16 items of the original FLAP. The added question is the following:

Regarding: Do you have meals, at home, with family members?
Please, rate the level of intensity of the physical effort that family members experience during these activities based on the following:
No Intensity: Family members' breathing remains still (talk without any difficulty) [i.e. watching TV]
Low Intensity: Breathing increases slightly (does not affect ability to talk) [i.e. walking]
Moderate Intensity: Breathing increases significantly (talking becomes uncomfortable) [i.e. jogging]
Vigorous Intensity: Breathing increases dramatically (talking becomes very difficult) [i.e. running fast]

	1 None 	**2**	**3 Low** 	**4**	**5 Moderate** 	**6**	**7 Vigorous** 
Please pick one:	☐	☐	☐	☐	☐	☐	☐

Family Leisure Activity Profile

The following questions ask about the activities you do with family members. Please refer to the last year or so. These questions ask about groups of activities, so try to answer in terms of the group as opposed to any one specific example. This may require you to "average" over a few different activities. Don't worry about getting it exactly "right." Just give your best estimate.

Take a moment to look at the example below. This will give you some instruction on how to fill in your answers.

QUESTION: Do you participate in home-based activities (for example watching TV/videos, listening to music, reading books, singing, etc.) with family members?

First do you do these activities? → YES X NO ___

Next, how often do you usually do these activities?

If YES how often?	
At least daily	
At least weekly	x
At least monthly	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	x
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

Then, about how long, on average, do you typically do this type of activity each time you do it?

Last, how satisfied are you with your participation with family members in these activities? Please answer this question EVEN IF YOU DO NOT do these activities with your family.

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	(3)	4	5

Symbol Key
< = less than (e.g. < 1 hour reads "less than one hour")
> = more than (e.g. > 10 hours reads " more than ten hours")

1. Do you have meals, at home, <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

---

2. Do you participate in home-based activities (for example watching TV/videos, listening to music, reading books, singing, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

3. Do you participate in games (for example playing cards, board games, video games, darts, billiards, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

4. Do you participate in crafts, cooking, and/or hobbies (for example drawing, scrap books, baking cookies, sewing, painting, ceramics, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

5. Do you participate in home-based outdoor activities (for example star gazing, gardening, yard work, playing with pets, walks, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

6. Do you participate in home-based sport/games activities (for example playing catch, shooting baskets, frisbee, bike rides, fitness activities, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

7. Do you attend other <u>family members'</u> activities (for example watching or leading their sporting events, musical performances, scouts, etc.)?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

8. Do you participate in religious/spiritual activities (for example going to church activities, worshipping, scripture reading, Sunday school, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

9. Do you participate in community-based social activities (for example going to restaurants, parties, shopping, visiting friends/ neighbors, picnics, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

10. Do you participate in spectator activities (for example going to movies, sporting events, concerts, plays or theatrical performances, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied — Very Satisfied

1 2 3 4 5

11. Do you participate in community-based sporting activities (for example bowling, golf, swimming, skating, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours		> 1 day	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied — Very Satisfied

1 2 3 4 5

12. Do you participate in community-based special events (for example visiting museums, zoos, theme parks, fairs, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours			
1 day		8 days		15 days	
2 days		9 days		16 days	
3 days		10 days		17 days	
4 days		11 days		18 days	
5 days		12 days		19 days	
6 days		13 days		20 days	
One week		Two weeks		3 or more weeks	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied — Very Satisfied

1 2 3 4 5

13. Do you participate in outdoor activities (for example camping, hiking, hunting, fishing, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours			
1 day		8 days		15 days	
2 days		9 days		16 days	
3 days		10 days		17 days	
4 days		11 days		18 days	
5 days		12 days		19 days	
6 days		13 days		20 days	
One week		Two weeks		3 or more weeks	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

---

14. Do you participate in water-based activities (for example water skiing, jet skiing, boating, sailing, canoeing, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly (during season)	
At least annually	

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours			
1 day		8 days		15 days	
2 days		9 days		16 days	
3 days		10 days		17 days	
4 days		11 days		18 days	
5 days		12 days		19 days	
6 days		13 days		20 days	
One week		Two weeks		3 or more weeks	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

15. Do you participate in outdoor adventure activities (for example rock climbing, river rafting, off-road vehicles, scuba diving, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours			
1 day		8 days		15 days	
2 days		9 days		16 days	
3 days		10 days		17 days	
4 days		11 days		18 days	
5 days		12 days		19 days	
6 days		13 days		20 days	
One week		Two weeks		3 or more weeks	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

---

16. Do you participate in tourism activities (for example family vacations, traveling, visiting historic sites, visiting state/national parks, etc.) <u>with family members</u>?

YES ___ NO ___

If YES how often?	
At least daily	
At least weekly	
At least monthly	
At least annually	

→

For about how long per time? (check only one)					
< 1 hour		1-2 hrs		2-3 hours	
3-4 hours		4-5 hours		5-6hours	
6-7 hours		7-8 hours		8-9 hours	
9-10 hours		>10 hours			
1 day		8 days		15 days	
2 days		9 days		16 days	
3 days		10 days		17 days	
4 days		11 days		18 days	
5 days		12 days		19 days	
6 days		13 days		20 days	
One week		Two weeks		3 or more weeks	

How satisfied are you with your participation with family members in these activities? (please circle one)

Very Dissatisfied				Very Satisfied
1	2	3	4	5

Below are seven statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by circling the appropriate number on the line following that item. Please be open and honest in responding.

1	2	3	4	5	6	7
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

1. In most ways my family life is close to ideal	1	2	3	4	5	6	7
2. The conditions of my family life are excellent.	1	2	3	4	5	6	7
3. I am satisfied with my family life.	1	2	3	4	5	6	7
4. So far I have gotten the important things I want in my family life	1	2	3	4	5	6	7
5. If I could live my family life over, I would change almost nothing	1	2	3	4	5	6	7
6. Family leisure activities are an important part of our family life.	1	2	3	4	5	6	7
7. Family leisure adds to the quality of my family life.	1	2	3	4	5	6	7

Thanks for your time and effort in participating !!!

Appendix A-1d

Sociodemographic Questions

Socio-demographic Questions

The following section asks some general questions about you and your family.

Today's Date:

For each topic below, type your answer between the brackets. Don't worry about extra spaces at the end of your response.

Month [ ] Day [ ] Year [ ]

What is your age? [ ]

What is your gender?

( ) Male
( ) Female

Please indicate the total number of immediate family members (parent[s] and child[ren]) living at home at this time:

[ ]

Number of children living at home:

Under 6: [ ]
6 to 12 years old: [ ]
13 to 18 years old: [ ]
Over 18: [ ]

Ethnicity

( ) Asian
( ) Pacific Islander
( ) Black not Hispanic
( ) Hispanic
( ) Native American
( ) White, not Hispanic
( ) Other If other, please specify:

Level of Education

( ) High School
( ) 2 year associates degree
( ) 4 year undergraduate degree
( ) Master's degree
( ) Doctorate or similar

If other, please indicate level of education:

Please indicate the estimated annual income for your family.

( ) Less than $10,000
( ) 10,000 – 19,999 ( ) 20,000 – 29,999 ( ) 30,000 – 39,999
( ) 40,000 – 49,999 ( ) 50,000 – 59,999 ( ) 60,000 – 69,999
( ) 70,000 – 79,999 ( ) 80,000 – 99,999 ( ) 100,000 – 124,999
( ) 125,000 – 150,000 ( ) Over $150,000

Please enter your zip code: [ ]

State currently living in (if in Canada, please select Canada): [ ]

Population of your place of residency:

( ) Metropolitan (>500,000)
( ) Urban/Suburban (>50,000)
( ) Rural (<50,000)

Marital Status

Married [ ]
Windowed [ ]
Divorced [ ]
Unmarried [ ]
Single [ ]

How long? [ ]

Relationship to your family:

( ) Father
( ) Mother
( ) Other If other, please specify:

Type of Residence

( ) Apartment
( ) House
( ) Condominium
( ) Other If other, please specify

Do you own this residence?

( ) Yes
( ) No

In my home I have (please mark all that apply)

[ ] No backyard
[ ] Small backyard
[ ] Large backyard
[ ] Leisure Room or Play Room
[ ] Swimming Pool
[ ] Small areas inside the home
[ ] Large areas inside the home

Are there public parks, recreation centers, trails, or other areas in which you can recreate with your family close to your home?

( ) Yes
( ) No

If yes, please explain.

In general, where do you and your family participate “as a family" the most in recreational activities?

( ) At home
( ) At the recreation center
( ) At public parks
( ) Other If other, please specify