THE ROLE OF FAMILY COMMUNICATION IN INDIVIDUAL ATTITUDES AND BEHAVIORS CONCERNING NUTRITION AND PHYSICAL ACTIVITY

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The undersigned, appointed by the dean of the Graduate School, have examined the
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and hereby certify that, in their opinion, it is worthy of acceptance.

Professor Loreen Olson

Professor Jennifer Aubrey

Professor Mark Fine

Professor Colin Hesse
This work is dedicated to my “influential family members”: My father Tom Baiocchi, my mother Rhonda Baiocchi, and my sister Kaitlin Baiocchi.

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THE ROLE OF FAMILY COMMUNICATION IN INDIVIDUAL ATTITUDES AND BEHAVIORS CONCERNING NUTRITION AND PHYSICAL ACTIVITY

ELIZABETH A. WAGNER

Dr. Loreen N. Olson, Dissertation Supervisor

ABSTRACT

Despite the increasing popularity of family health communication studies, little attention has been paid to nutrition- and physical activity-related health communication in the family context. This mixed-method study explores the influence of family health communication on individual member attitudes and behaviors. Both phases of the study—grounded in Family Communication Patterns theory and Social Cognitive theory—revealed the importance of family communication as a contributor to physical health. Specifically, the first quantitative phase of the study used structural equation modeling and an Actor-Partner Interdependence Model (APIM) to assess the relationships between a young adult’s and corresponding family member’s health attitudes and behaviors. Moderating and mediating effects of communication and non-communication related variables were also examined. Two overarching themes and corresponding subthemes developed from the second, phenomenological phase of study. It emphasized (a) the importance of nonverbal health communication and (b) health as a gendered experience.
CHAPTER I
RATIONALE

The Deteriorating Health of a Nation: Causes and Consequences

The prevalence of overweight and obesity in Western society continues to be a growing concern—literally (Flegal, Carroll, Ogden, & Johnson, 2002). According to recent estimates, 65% of adults in the United States are overweight and over 32% are classified as obese (Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). Among the young adult population (ages 18-29), obesity rates tripled between 1971-1974 and 2005-2006, with approximately 28% of young adults currently obese (and an additional 28% overweight) (National Center for Health Statistics, 2009). The number of overweight children has more than tripled over the past three decades; studies show that nearly 34% of children and teens in America are either overweight or at risk of becoming overweight, and these numbers are even higher for female minorities (Office of the Surgeon General, 2008; Ogden et al., 2006). Moreover, a recent study estimated that a shocking 86% of Americans will be obese by 2030 (Wang, Beydoun, Liang, Cabellero, & Kumanyika, 2008), resulting in several physical, emotional, and economic consequences.

The most familiar consequences associated with overweight and obesity are physical consequences. Obesity leads to an increased incidence of cardiovascular disease, type 2 diabetes mellitus, cancer, osteoarthritis, work disability, gallstones, degenerative joint disease, and sleep apnea, among other physical illnesses (American
Heart Association, 2009; Thompson, Brown, Nichols, Elmer, & Oster, 2001; Visscher & Seidell, 2001), and, if obesity rates continue to rise, the current generation can expect a shorter life expectancy than their parents (Olshansky et al., 2005). Obesity in particular currently accounts for approximately 400,000 deaths per year, second only to deaths from tobacco (Finkelstein, Ruhm, & Kosa, 2005)—and it is the largest increase among all actual causes of death (Mokdad, Marks, Stroup, & Gerberding, 2004). In fact, Healthy People 2010 named “obesity and overweight” as a leading health indicator of preventable death (U.S. Department of Health and Human Services, 2000).

The emotional and psychological toll of obesity and overweight is just as important to note, however. Obese children as young as preschool age have higher rates of emotional distress than children of normal weight (Mills & Andrianopoulos, 1993). Obese adolescents suffer from low self-esteem and depression (Wallace, Sheslow, & Hassink, 2006). More and more, health care professionals are finding themselves playing the role of psychologists, tending not only to an obese patient’s physical ailments, but to their depression and dismal self-concept (Jonides, Buschbacher, & Barlow, 2002). Swami and colleagues (2008) highlighted the persistent stigma attached to overweight and obese individuals; in their study, results confirmed that individuals perceived overweight individuals as lazier, lonelier, and the targets of more frequent teasing than normal weight individuals. It follows that obese individuals are often stigmatized and discriminated against in the work force, in school, and in health care settings (Puhl & Brownell, 2001).

Finally, the cost of obesity is not just figurative. Obesity’s serious psychosocial consequences increase risk of social discrimination and downward social mobility:
scholars demonstrate that an individual’s body mass index level inversely correlates with salary (Sarlio-Lahteenkorva, Stunkard, & Rissanen, 1995, as cited in Colditz & Wang, 2008). On a grander scale, medical expenditures attributed to obesity-related diseases incurred by individuals, private insurers, Medicare and Medicaid are cause for serious concern (Finkelstein, Fiebelkorn, & Wang, 2003). Recently, obesity costs accumulated to over $93 billion—approximately 9% of the national medical bill (Herper, 2006). These expenditures included direct costs, or, those used within the health care system (e.g., ambulatory care, hospitalization) and indirect costs, such as those accumulated due to increased mortality prior to retirement (Colditz & Wang, 2008). Wang and colleagues (2008) projected that by 2030, the expense of health care could be estimated between $860 to $956 billion dollars. Moreover, obese patients make 38% more visits to their primary care physician compared to patients with normal weight; the slowing of these projections is unlikely without some form of effective intervention (Thompson et al., 2001). Unfortunately, those commonly afflicted by obesity may be those least able to afford the costs (Zhang & Wang, 2004).

In summary, these problematic consequences related to obesity stress the need for continued research aimed at impeding current—and preventing impending—obesity rates. Because the causes of overweight and obesity ultimately occur due to energy intake exceeding energy expenditure (e.g., Jakicic & Otto, 2006), much of the research designed to tackle the epidemic focuses on improving dietary and/or physical activity habits. Although investigations on adults are common, children are the most popular targets of intervention studies due to the (hopefully) long-term benefits. The salutary implications of these findings related to increased healthful foods and physical activity have particular
importance for the overweight and obese. Research from each of these areas—nutrition and physical activity—is reviewed below.

**Eating Habits and Nutrition**

Between 1970 and 2003, Americans’ caloric consumption increased by approximately 16%—roughly 523 calories, according to the Economic Research Service of the USDA (2005). This pattern emerged in almost every kind of eating venue: the home, conventional restaurants, fast-food outlets, and snack bars (Nielsen & Popkin, 2003). In general, American adults and youth are consuming more sugar (Brody, 2009), more restaurant-prepared food (Lin, Guthrie, & Frazao, 1999), and more processed, refined grains (Putnam, Allshouse, & Kantor, 2002). Most fail to eat the recommended number of servings of fruit and vegetables (Centers for Disease Control, 2009; Federal Interagency Forum on Child and Family Statistics, 2003). Poor nutrition has been clearly linked to weight gain and higher cholesterol levels leading to cardiovascular diseases—the leading cause of death in the United States (American Heart Association, 2007). In contrast, good nutrition leads to not only physical benefits, such as lower risk of cardiovascular diseases and type 2 diabetes, but also to increased learning readiness and academic achievement (Society for Nutrition Education, 2003).

**Physical Activity**

While an unhealthy diet is partially responsible for the increasing obesity rates, individuals’ sedentary lifestyles are equally to blame: Studies indicate that limiting caloric intake without incorporation of physical activity can lead to temporary weight loss, but more than likely increase chances of regaining weight (Eckel, 2008). Only 36% of young adults reported getting exercise in their spare time and even fewer incorporated
strength training into these routines (Hitti, 2009). These statistics make sense, given the enticing alternatives to exercise and other forms of physical activity, particularly for younger generations. Children and adolescents from 2-18 years spend approximately 5 ½ hours a day using media, and those 8 years and older spend 6 hours and 43 minutes a day using media, the bulk of this being television watching (2:46 hours on average) (Kaiser Family Foundation, 1999). Seventeen percent of 2-18 year-olds surveyed watched over 5 hours of television a day (Kaiser Family Foundation, 1999). Furthermore, in a follow-up study by the Kaiser Family Foundation (2002), approximately 92% of kids ages 2-18 played video games for at least 20-33 minutes per day.

On the brighter side, an increase in physical activity leads to several positive consequences, including improved long term weight loss, mental health, self-esteem, physical fitness, and bone formation (in children) (Baranowski et al., 2000; Jakicic & Otto, 2006). Improvements in cardiovascular activity catalyze overall reduction in the risk of death (Blair et al., 1995). Much like poor eating habits in childhood lead to poor eating habits in adulthood, the importance of physical activity early on carries into adulthood (Kelder, Perry, Klepp, & Lytle, 1994).

In summary, genetics may play a role in the equation, but overweight is most obviously “the result of caloric imbalance (too few calories expended for the amount of calories consumed)” (CDC, 2009, para. 2); that is, a combination of eating/nutrition and physical activity. As such, effective treatment for obesity and overweight involves health-promoting behavior changes (Krebs et al., 2007). Surprisingly, very few studies investigate why some people engage in health enhancing behaviors and others do not; those who do frequently frame the health problem as the individual’s responsibility.
Plus, most research ignores the detailed social aspects contributing to this health crisis in favor of investigations that quantify and/or identify its outcomes. Because outside influences greatly impact individuals’ current behaviors and their potential for behavior change, more studies detailing the day-to-day sources and content of messages related to nutrition habits and physical activity are merited.

**Obesity and Overweight: A Communication Problem?**

Recently, scholars from myriad fields have explored the “social” nature of the obesity problem. Communication scholars are well-suited to address obesity research from a socio-ecological perspective. That is, individual health behaviors (e.g., eating healthy, getting exercise) are multifaceted: institutional/organizational and community factors, societal structures, and interpersonal communication all affect one’s health behaviors as well (see McLeroy, Bibeau, Steckler, & Glantz, 1988). Certainly, these sources can positively affect one’s health. On the other hand, messages from these sources exacerbate health problems. The following sections take a closer look at relevant sources of influence at the societal, institutional/organization, and interpersonal levels.

**Societal Influence: The Impact of the Mass Media**

Undisputedly, the mass media are one example of a powerful, omnipresent source of information that can educate audiences about health behaviors, including education on the deterrence of overweight and obesity (see Kline, 2003 for a review). Unfortunately, with the exception of direct, effective health campaigns, much of the media’s “education” about eating and physical activity is counterproductive to resolving the obesity crisis. Harrison and Marske (2005), for instance, coded food advertisements \(N = 426\) during programs aimed at child audiences and discovered that convenience/fast foods and sweets
composed 83% of advertised foods during the televised programs. Similar patterns emerged in commercials during adult television shows: advertisements for food high in calories with little nutritional value (Henderson & Kelly, 2005). The authors of the Institute of Medicine Review (2006) even stated that food and beverage marketing on television “influences the preferences and purchase requests of children, influences consumption at least in the short term, is a likely contributor to less healthful diets, and may contribute to negative diet-related health outcomes and risks” (p. 307; see also Taras, Sallis, Patterson, Nader, & Nelson, 1989).

Moreover, television messages confuse children: even the unhealthiest of food is advertised as salubrious (Wallack & Dorfman, 1992) and children mistakenly equate food’s advertised weight-loss benefits with nutrition benefits (Harrison, 2005). In their content analysis, Berry, McCarville, and Rhodes (2008) discovered that advertisements for “physical activity” were common in magazines, but most ads promoted commercial brands, not physical activity benefits. In fact, so few public health advertisements existed in the magazines, that the authors could not include them in the analysis.

Although some might think health promoting information in print and television news would combat the health compromising messages found in advertisements, this is not the case: A project conducted by the Kaiser Family Foundation and the Pew Research Center’s Project for Excellence in Journalism (2008) found that news about health and health care accounted for less than 4% of all news coverage. Mass media research has been chastised further for factual inaccuracies and incomplete coverage of health information (Kline, 2003).

**Institution Influence: The Impact of Schools**
Schools are a major player in communicating health messages about nutrition and physical activity to children. Increasingly, public health efforts target the obesity epidemic through interventions in the education system. As of February 2004, of the 1,800 active programs designed to address obesity, 54% resided in schools and community programs (Donato, 2006). However, according to some, “schools are providing inadequate environments to support healthful eating” and “current instructional practices in physical education do not meet the standards identified by national health objectives” (SNE, 2003, p. 58). Adolescents’ physical activity levels did not correlate with (a) instruction of physical activity in physical education, (b) sports-related health benefits from physical education, or (c) special physical education programs (Ferreira et al., 2006).

With the exception of National School Lunch Program (NSLP) meals, “there are no federal rules for competitive foods sold elsewhere in the school, such as in snack bars and vending machines, except for foods of minimal nutritional value” (Cullen, Watson, & Zakeri, 2008, p. 111). Ellen, Scholder, Bone, and Stuart (1998) even suggested that school programs educating young people about the importance of eating nutritional, healthier foods is unlikely to change their behavior.

Those who have found school interventions to be somewhat productive contend that parental and community involvement in accordance with the school program is necessary (Story, 1999; see also Zametkin, Zoon, Klein & Munson, 2004). Research supports such claims: the most effective school programs are those involving students’ families and parents, in particular (CDC, 1996).
Interpersonal Relationship Influence: Spotlight on Families

Given that the family appears to be a third factor—and perhaps one of the most important factors—in the health behavior puzzle, it is surprising that minimal research attention has been devoted to family communication about eating/nutrition and physical activity. Extant literature sufficiently highlights the effects of one’s family and friends on his or her health. For instance, Strine, Chapman, Balluz, and Mokdad (2008) concluded that as one’s social and emotional support increased, obesity and physical inactivity decreased. Those with a socially supportive network more easily maintained a new weight after weight loss, as opposed to those who did not (Davis & Turner, 2001; Elfhag & Rossner, 2004). Furthermore, roughly 80% of those individuals without the social support of friends and family are estimated to eventually gain all the weight back (National Heart, Lung, and Blood Institute, 1998). Although social support is a crucial area for investigation, these studies use the social support variable for grouping purposes as opposed to adequately examining the how and why of these outcomes. In other words, one challenge facing researchers is answering how the family context and the communication within leads to healthy (or unhealthy) eating and levels of physical activity.

Specifically, a family’s modeling influence on an individual member’s diet and physical activity behaviors is largely communicative, as communication exists as the implicit mechanism through which family members offer words of caution, give advice, provide support, etc. A modicum of research in family and health communication has attempted to unravel a part of the process by looking at family socialization of diet and physical activity behavior. Research shows that parents are often their children’s most
important role model (Hart, Herriot, Bishop, & Truby, 2003). If children see their caregivers enjoying healthy foods and being physically active, they are more likely to do the same (Office of the Surgeon General, 2008). Similarly, Birch and Fisher (1998) suggested that children’s preference for unhealthful foods (e.g., food with high fat and sugar content) mirrored parents’ preferences, and parents’ food preferences limited children’s acceptance of a variety of foods. Other studies have demonstrated how parents and/or other close family members impact children’s healthful behaviors (e.g., Tanner, Dohu, Evans, & Condrasky, 2008), while some demonstrate bidirectional influence, or the influential power of children on their parents (Rimal & Flora, 1998).

**Aims of the Present Study**

Social support and family socialization studies aside, an understanding of the influence of family members’ direct verbal communication on one another’s diet and physical activity-related behavior is dramatically lacking in communication studies. Moreover, we have limited information on whether or not health behaviors and attitudes developed in childhood will endure once a child becomes independent of the family. Investigating this gray area in young adult health is exceedingly important, particularly because,

The period between ages 18 and 29 sets the foundation for future health behaviors and health status, and may be the time in life when health education and preventive care may arguably have their greatest impact…As parental and other adult oversight decreases, young people assume increasing responsibility for their own decisions. This includes decisions that will either directly affect their current and future health status—such as alcohol, cigarette, and illicit drug use or nonuse; sexual activity; childbearing; exercise; and eating habits—as well as decisions that will indirectly affect their future health. (National Center for Health Statistics, 2009, p. 72)
Other authors agree that we know very little about individuals in the developmental period during the late teens and early twenties—often referred to as “emerging adulthood”—especially in relation to their health status (Arnett, 2000; Park, Mulye, Adams, Brindis, & Irwin, 2006). As such, this research aims to improve our knowledge and understanding of family communication’s role in the formation of attitudes and behaviors related to diet and physical activity with an emerging adult population.

Given that little research has been conducted on the topic, this study is composed of two distinct phases of study, both of which are grounded in Family Communication Patterns Theory (FCPT; Koerner & Fitzpatrick, 1997, 2002a; 2002b; Ritchie, 1991). Over time, the family communication processes that create a family’s shared reality become patterned. Expanding on this idea, researchers have theorized the stability of these communicative patterns and have developed measures (e.g., Ritchie & Fitzpatrick, 1990) to specifically assess them, hoping to predict important family processes, psychosocial outcomes, and behaviors for individuals and families as a whole—including those pertaining to health.

In the first phase of study, I assess relationships between family communication variables related to nutrition and physical activity, and young adults’ and family members’ attitudes and behaviors related to nutrition and physical activity. Also, a description of this type of communication (e.g., how conversations are initiated, managed, and processed by the individual family member) is garnered for later analysis. Research demonstrates that early dietary and physical activity habits become adult lifestyles that strongly correlate with future quality of life (Nader et al., 1989). Likewise, Guo, Wu, Chumlea, and Roche (2002) pointed out the persistence of obesity from
childhood into adulthood. Therefore, I use young adult research participants in this study, in order to examine the effect of family communication (offered in childhood and adolescence) related to these health topics.

The second phase of the study digs even deeper into these relationships by seeking to uncover a more in-depth understanding of the relationships between family conversations about nutrition and physical activity and those conversations’ association with actual health behaviors. In particular, my goal is to understand how discussions on these topics are influenced by family member socialization, power structures within the family, and implicit gender roles. The mutual influence family members have on one another’s health is also a priority in this phase of the investigation.

**Contributions of Current Study**

The current project has the potential to contribute to the field of communication and health in primarily four ways. To begin, a paucity of research exists at the intersection of family and health communication. Within this small body of scholarship, only a handful of studies actually investigate the specific topic of nutrition and physical activity. Even fewer studies look at family communication about nutrition and physical in as much detail as the proposed study, and this study is one of the first in the field (currently known to this author) to use FCPT to explore this area. Results from this study will give communication scholars a more extensive understanding of how family communication contributes to or impedes health enhancing nutrition- and physical activity-related behaviors. Moreover, the study extends the scope of FCPT well beyond its original conception, opening several doors for health and family communication research to flourish under its guidance.
Second, the combination of quantitative and qualitative methods will not only enable future communication scholars to predict how family communication influences health, but also will acknowledge and demonstrate the importance of the unique family context. Few studies in the field use an explicitly mixed-method approach to guide research from multiple paradigms (Creswell, 2008). However, those studies that have managed to bridge paradigmatic gaps have catalyzed exceptional scholarship, as well as collegiality between researchers (for examples see Greene & Caracelli, 1997).

Closely intertwined with these theoretical contributions is the current study’s potential for practical application. By conjoining results from each phase of the study, researchers and health practitioners alike may gain a holistic understanding of why the family remains such an integral component in health behavior formation. Namely, if relationships between family communication variables and individuals’ attitudes and behaviors related to nutrition and physical activity exist, researchers may be able to more completely understand how family communication facilitates proclivity toward other physical health-related topics (e.g., cigarette smoking). Based on these findings then, practitioners may disseminate important information or implement specific, theory-driven interventions as ammunition in the continued war against obesity.

Importantly, the goals of this study centralize the role of communication. By utilizing communication-based theory, scales, and interview methods—as opposed to borrowing these from sister disciplines—this study summons communication and its function in knowledge production to the forefront. Continued recognition might present more opportunities for communication researchers’ participation in interdisciplinary

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collaboration, participation in research conducted in nonacademic institutions/settings, and procurement of grant funding.
CHAPTER II
LITERATURE REVIEW

Because definitions of family and family communication vary as widely as the research that targets the subjects, it is necessary to expound on the particular definitions used here, as these concepts guide and underpin much of the study’s design.

Family and Family Communication: Definitions and Perspectives

Scholars have long defined family by first describing it, usually through assumptions or properties of a family. For instance, families have been described as systems (Minuchin, 1984), interdependent (Kelley, 1983), or patterned (Vangelisti, 2004). Additionally, Baxter and Braithwaite (2006) proposed that a “family” includes a long term commitment, relations created through biology, law, or affection, enmeshment in a kinship organization, and institutionalization. Social changes in recent years have led more scholars away from traditional, structural approaches to family (Wamboldt & Reiss, 1991, as cited in Koerner & Fitzpatrick, 2004) in lieu of transactional definitions (Noller & Fitzpatrick, 1993). Such transactional definitions—that is, those definitions based on a group’s ability to generate a sense of family and emotional connection through behaviors—allow for a nuanced view of the family and the important ability to include diverse family types in research analyses (Galvin, 2004b). Moreover, transactional definitions also allow families to define themselves, rather than fit into a researcher-assigned definition based on genetics and/or other criteria (Fitzpatrick, 1998). As such,
in this study, family is defined as “a group of intimates who generate a sense of home and group identity and who experience a shared history and a shared future” (Koerner & Fitzpatrick, 2002a, p. 71).

This inclusive definition also lends itself to the study’s emphasis on family interaction and the related social constructionist approach to family communication. That is, the communicative processes studied here are also seen as constituting families. Communication in the family is more than the mere exchange of messages between members; rather, communication creates families by establishing roles, rules, and relationships (Vangelisti, 2004).

Despite preference and intention for a more diverse and inclusive approach to family in this study, note that the bulk of family communication studies still tend to espouse structural or psychosocial task definitions of family. In particular, research studying intact families, or those families with “all the members ascribed to them” (e.g., two parents and children; Koerner & Fitzpatrick, 2004, p. 178) receive much attention. This is perhaps more a reflection of society, however, than researcher perspective, as recent census information confirms that a majority of children are living in homes raised by two heterosexual parents (U.S. Census Bureau News, 2008). As such, it is highly likely that in this study, young adult participants’ communication about eating/nutrition and physical activity with their “primary caretaker/s” will most likely be communication with their parents. Still, it is important to observe whether other key family members who the participant frequently communicates with have an equal impact.

Having set the philosophical stage for this family study, I now turn to its theoretical grounding. The next section discusses a pivotal theory that will serve to guide
The data analyses. Family communication patterns theory (Koerner & Fitzpatrick, 1997; 2002a; 2002b; 2002c) is uniquely suited to better understand how macro family communication processes influence family conversation on health-related topics and thus, individuals’ health-related attitudes and behaviors.

**Theoretical Grounding: Family Communication Patterns Theory**

Koerner and Fitzpatrick (2006) remarked that the challenge of effective family theorizing necessitates attention to both intrapersonal and interpersonal processes and behaviors. Importantly then, “a comprehensive theory of family communication must consider both relational cognition and interpersonal behavior” (p. 51). Building on McLeod and Chaffee’s (1972) ideas of family coorientation and shared reality, Koerner, Fitzpatrick and others have dedicated much of their research program to demonstrating communication’s central role in family behaviors with family communication patterns theory, which embodies both cognitive and social processes (Koerner & Fitzpatrick, 2002a; 2002b; Ritchie, 1991). To fully grasp the current relationship of these aspects, it is useful to explain the evolution of the theory, beginning with its earliest form.

Family communication patterns first took shape in McLeod and Chaffee’s (1972) conceptualization, designed to explain the family’s processing of mass media messages and the stable, predictable ways families communicated about those messages. The theory was/is composed of two orientations: concept-orientation and socio-orientation. Concept-orientation explained how two or more persons focus on and evaluate a shared object in their material or social environment. In the process of socio-orientation, members may focus on an object and adopt the evaluations they see modeled by other family members. Taking the two orientations together, McLeod and Chaffee (1972)
posited that families achieve agreement on a message with two methods: (a) family members discuss the object and reach a shared perception (concept-orientation) and/or (b) conform to one another’s evaluations (socio-orientation).

Noting the ubiquity of these family processes in areas beyond mass media, Ritchie and Fitzpatrick (1990) revised the theory to emphasize the communication behaviors associated with each of the earlier orientations: socio-orientation was renamed conformity orientation and concept-orientation became conversation orientation. These two dimensions continued to uphold the balance of relational cognition and interpersonal behavior instated by McLeod and Chaffee as the mechanisms through which children come to engage in particular communication patterns and behaviors (Fitzpatrick & Caughlin, 2002).

High conformity families are characterized by cohesion and unity in their opinions, attitudes, beliefs, and values. In many cases, families with high conformity levels expect individual members to sacrifice personal interests and activities for the family (Koerner & Fitzpatrick, 2002b). On the other hand, low conformity families are characterized by family members’ heterogeneous beliefs and attitudes, and an individual’s independence from the family is valued and often privileged—even at the risk of a weakened family structure. Low conformity families then, disregard the traditional, hierarchical views of the family to which most high conformity families adhere (Koerner & Fitzpatrick, 2002b).

The second orientation, conversation orientation, is defined as “the degree to which families create a climate in which all family members are encouraged to participate in unrestrained interactions about a wide array of topics” (Koerner &
Fitzpatrick, 2002a, p. 85). A family high in conversation orientation frequently interacts about myriad topics and the sharing of thoughts, feelings, and activities is common. Conversely, families on the other end of the conversation spectrum not only engage in less spontaneous and less frequent interaction and sharing, but also do not believe these types of exchanges are necessary for good family functioning and child socialization.

The two opposing dimensions of FCPT offer researchers the ability to predict family outcomes. Conversation and conformity orientations have produced significant effects on family communication—both separately and as interacting variables. Concerning the latter, Koerner and Fitzpatrick (e.g., 1997) situated families into one of four categories based on patterns reflecting a family’s conversation and conformity orientation levels: consensual families (high in both conversation and conformity), pluralistic families (high in conversation but low in conformity), protective families (low in conversation, but high in conformity), and laissez-faire families (low in both conversation and conformity).

**FCPT and Social Cognitive Theory**

FCPT’s conceptualization of conformity and conversation orientation necessarily draws on elements of socialization, and more specifically, social cognitive theory (SCT; Bandura, 1977, 1986, 2002; known earlier as social learning theory. See also Kunkel, Hummert, & Dennis, 2006; Mischel, 1966). The underlying premise of SCT explains how personal cognitions, the environment, and behavior interact and determine each other reciprocally (Bandura, 1986, 2002). This mirrors much of the process families engage in when creating a shared social reality (see Koerner, 2007; A. Koerner, personal communication, June 20, 2009). In the family context for example, conformity
orientation can be explained using elements of SCT: behaviors are modeled by family members—particularly parents’ behaviors—and assessed by the child. Additionally, verbal communication, or, conversation, from family members is integral to socialization and is essentially a key vehicle by which social learning occurs in the family.

For instance, family communication scholars have demonstrated how children learn interpersonal communication skills, such as offering social support to others (Burleson & Kunkel, 2002), from watching and modeling their parents. Studies document how children learn gender roles by being rewarded for repeating gender appropriate behaviors (Howard & Hollander, 1997; Ivy & Backlund, 2004). Parents also supply children with perceptions of the importance of work and family (Medved, Brogan, McClanahan, & Morris, 2006). Social learning and the cognitive processes involved affect children’s communication with and perceptions of other groups, such as older adults (see Hummert, Garstka, Ryan, & Bonnesen, 2004 for a review). Other research indicates that abusiveness might be a learned behavior (Gelles, 1994). Within studies on family communication patterns specifically, Schrodt and Ledbetter (2007) posited that “collectively these lines of research confirm that not only are parents children’s primary socialization agents, but also that families continue to influence children’s behavior and well-being long after they have left their families of origin” (p. 331).

In sum, utilizing these two dimensions and/or four corresponding family types, scholars have demonstrated relationships between family communication pattern orientations and information processing outcomes, psychosocial outcomes, and behavioral outcomes as articulated by Schrodt, Witt, and Messersmith (2008). Information processing outcomes were obtained in Afifi and Olson’s (2005) study, which
confirmed that within high conformity and low conversation families, coercive power affected families’ likelihood to conceal secrets. In a similar vein, Dixson (1995) discovered that a child’s high conversation orientation was related to smaller differences between the child’s expectations of the parent-child relationship and their actual parent-child interaction experiences. Psychosocial outcomes, such as children’s communication apprehension (Elwood & Schrader, 1998) and young adults’ informational reception apprehension (Ledbetter & Schrodt, 2008), have also been noted. Avtgis (1999) demonstrated that those with lower family conversation orientations expressed the tendency to avoid communication interactions. Finally, and perhaps most popular in the communication literature, are those studies identifying the correlations between family orientations and individual communicative behavior outcomes. High conversation orientations have been found to correlate positively with children’s positive future romantic relationship behaviors (Koerner & Fitzpatrick, 2002c), enactment of family rituals (Baxter & Clark, 1996), and a child’s ability to seek social support in a conflict situation (Koerner & Fitzpatrick, 1997). In Koerner and Fitzpatrick’s (1997) study, children’s conflict avoidance correlated positively with conformity orientations. Other studies have noted the theory’s mediating effects and looked at combinations of outcomes. For instance, Schrodt, Ledbetter, and Ohrt (2007) discovered that parental affection and confirmation partially mediated conversation orientation effects, and fully mediated conformity orientation effects on a child’s self-esteem and stress levels.

Generally, FCPT study findings suggest (a) an inverse relationship between conversation and conformity orientations, (b) conversation orientations produce positive outcomes in families and individual members, and (c) the imprecise impact of
conformity. Overarchingly, however, “family communication patterns have a small, but meaningful association with a host of individual family member outcomes” (Schrodt et al., 2008, p. 262) and continued attention to family communication patterns could “not only facilitate family functioning, but ultimately enhance the general health and well-being of individual family members” (p. 265).

Given this theoretical grounding from FCPT and SCT, it is only logical to assume that children might also come to observe, discuss, and eventually adopt the health behaviors of parents and other close family members. Kunkel and colleagues (2006) noted, “Just as with prosocial and antisocial behaviors, the cognitions that inform individuals’ hygiene, diet, and disease prevention decisions may be learned from those nearest them on an everyday basis” (p. 265). Families may teach health-promoting behaviors such as nutritious eating and exercise habits by modeling appropriate behaviors, reinforcing an individual’s healthful behaviors, giving feedback on accuracy, correctness or rate of behaviors, giving information, persuading with sound arguments, and offering stimulus control (see Bandura, 1986).

To reemphasize, current research suggests that family communication patterns may have considerable influence on young adults’ attitudes and behaviors regarding diet and physical activity. Assuming that pivotal family members hold beliefs that health is important (e.g., regularly attending check-ups, eating a well-balanced diet, frequently exercising, etc.) and frequently discuss and/or model respective pro-health behaviors, one can also hypothesize that individuals may receive those types of messages and adopt similar attitudes and practices. In fact, Baxter, Bylund, Imes, and Shieves (2005) stated, “If researchers can establish that family communication environment relates
systematically to health-related socialization practices, they are one step closer to understanding how adolescents might be induced to make healthy lifestyle choices” (p. 212).

In summary, this section of the literature review advances the call of Baxter and colleagues (2005) by outlining an approach to family and family communication, in addition to demonstrating the applicability and utility of FCPT and SCT to this study. In the following section, a much closer look at the intersection of family and health communication is illuminated, identifying strengths of current research and the gray areas that remain understudied. Finally, the conclusion of this chapter attends to how the current study will properly address current research limitations.

**Family and Health Communication**

Scholars dedicating their research agenda to health communication are never without opportunity; recently, even more attention has been paid to the intersection of interpersonal communication and health studies (see Cline, 2003 for a review). From health information dissemination (Tardy & Hale, 1998) to endangering well-being (Alberts, Miller-Rassulo, & Hecht, 1991), to just “plain talk” (Lynch & Rosch, 1990, as cited in Cline, 2003), everyday interpersonal interactions, whether planned or incidental, greatly influence individual health. Few would argue the importance of interpersonal communication’s influence, as positive influences on health behaviors lead to positive outcomes for one’s physical well-being (Duggan, 2006), and negative influences on health behaviors often lead to negative outcomes (Trost, Langan, & Kellar-Guenther, 1999).
Further narrowing this realm, research studying the influence of family communication on an individual member’s health is also gaining increased recognition. Scholars agree that families represent one of the most important socializing agents (Baxter & Braithwaite, 2006), so it should come as no surprise that families’ communicated attitudes, beliefs, and behaviors about health substantially affect individual family members’ health behaviors (Rimal & Flora, 1998; Tinsley, 2003). In an introductory article in their edited volume of *Journal of Social and Personal Relationships* (dedicated to family and health communication), Bylund and Duck (2004) wrote, “Throughout the lifespan, the everyday interactions among family members have the potential to have a tremendous impact on individuals’ construction of health, talk about health, participation in healthcare systems, enactment of healthy or unhealthy behaviors, and health status” (p. 5). Family communication researchers, then, are well-suited to explain how communication from family members may influence an individual’s acceptance or refusal to engage in particular health behaviors. Investigations on health information gathering from family member sources (Pecchioni & Sparks, 2007), family members’ social support (Egbert, Koch, Coeling, & Ayres, 2006; Gardner & Cutrona, 2004), or family caregiving (Morgan & Zhao, 1993; Polk, 2005) are just the tip of the family-health iceberg; research on family and health is extensive. Ironically, due to the area’s breadth, much of this intersection remains understudied.

Consequently, scholars from multiple disciplines acknowledge the importance of continued scholarly attention to family influence on individual member health (e.g., Epstein, 2006). For instance, Kreps and colleagues (1994) stated,

Spouses, parents and other family members…can play important roles during communication exchanges that lead to productive health outcomes, although the
specific impact of these formal and informal communication systems on health outcomes is not clearly understood at this time. The time has come to advance research that illuminates the important relationship between communication and health outcomes. (p. 250)

In the years since Kreps and colleagues’ (1994) statement, however, surprisingly little work has been conducted on the junction of family communication and individual health outcomes (for exceptions, see select articles in Bylund and Duck’s 2004 edited JSPR volume), and understandably so: the same methodological complications affecting family communication scholarship plague the health and family researcher (e.g., unit of analysis). Plus, other complications, including the challenge of addressing and measuring a family’s ecological context (Adler & Ostrove, 1999) and some families’ inability to access prevention and intervention services (Aday, Quill, & Reyes-Gibby, 2001) obstruct many studies.

In the following section, the relatively scant but important literature on family communication and health is reviewed, particularly that which pertains to family communication’s influential role in individual family member’s health-enhancing or health-deteriorating behaviors.

The Intersection of Family Communication and Health

The ways in which family relationships influence health over time are numerous (see Jones, Beach, & Jackson, 2004 for a review), and while each is worthy of investigation, of particular importance here are communicative family processes that positively or negatively influence individual health behaviors. Jones and colleagues (2004) organize this narrowed area of family and health studies into three categories: studies on family members’ utilization of health care services, studies on family members’ compliance with treatment recommendations, and studies on family members’
health-promoting or compromising techniques. An overview of the first two categories is given briefly before reviewing more thoroughly the third category, as it is most relevant to the aims of the current study.

**Utilization of health care services.** A family’s influence on one’s decision to seek treatment for a particular symptom or medical question is paramount. For instance, it is easy to imagine how particular family members would be very influential in whether or not other family members scheduled and attended check-ups for immunizations, physicals, and other exams. As such, scholars have widely investigated this topic, with work ranging from the influence of a family member patient advocate present during check-ups (Petronio, Sargent, Andea, Reganis, & Cichocki, 2004) to diabetes patients’ communication with a physician (Burke, Early, Dixon, Wilke, & Puczynski, 2006). In some cases, family members are the ones providing “health care services,” via their own knowledge and opinion. Popular in this area of the literature (mostly targeting women and their daughters) is research on breast and other types of cancer communication (e.g., Anderson & Martin, 2003). Research showed that female family members, especially mothers, were the most likely candidates for women to talk to regarding questions and concerns about breast cancer (Jones, Denham, & Springston, 2007). Individuals who discover particular symptoms (e.g., possible tumors) often turn first to family, who then provide encouragement to visit the doctor (Freimuth, Stein, & Kean, 1989).

**Adherence to treatment recommendations.** Although not directly related to physiological functioning, the presence or absence of familial social support as a factor in an individual’s compliance with treatment recommendations is important: Kulik and Mahler (1993), for instance, demonstrated that couples who supported each other also
showed greater compliance to health regimens, while Trevino, Young, Groff, and Jono (1990) discovered that marital distress led to poor treatment adherence. The impact of a younger family member or caregiver on older adult patient compliance is especially significant (see Thompson, Robinson, & Beisecker, 2003). Morgan and Zhao (1993), for instance, found that family companions who accompany the older adult patient to the medical encounter can help the older patient to adhere to appropriate medical regimens.

**Individual health behaviors.** Finally, family and health studies typically look at individual health behaviors. Family members’ may positively or negatively influence individual member health behaviors, both directly and indirectly (see Pecchioni, Thompson, & Anderson, 2006). For example, Klein (2004) looked at the physical health consequences women suffer after a spouse’s battery, including injuries and illnesses related to cardiovascular, gastrointestinal, muscular, and neurological systems. But often times, familial influence transpires in the “everyday” communication processes and patterns of family members by which family interactions serve to enhance, debilitate, or maintain an individual member’s health. Researchers have paid particular attention to the impact of family communication on an individual member’s (a) substance abuse, (b) reproductive health, and (c) dietary health and related consequences.

The most documented area of family distress and health behavior research pertains to a family member’s abuse of drugs, alcohol, tobacco, and/or addictions to prescription drugs (hereafter referred to as substance abuse). Extensive research by Le Poire and her colleagues (Le Poire, 1992; 1994; 2004; Le Poire, Hallett, & Erlandson, 2000) has shown that the family, and a spouse in particular, actually serves to increase the substance abusing behaviors of a dependent family member, despite having opposite
intentions. However, marital support has been found to be a positive influence on healthy behaviors and decisions regarding substances. Couples with support from their partners, for example, were more successful at combating alcoholism and quitting smoking (Horwitz, Hindi-Alexander, & Wagner, 1985; Sobbell, Sobell, Toneatto, & Leo, 1993). Children and adolescent alcohol and drug abuse correlated with cold, unsupportive, or neglectful family environments (Barnes, Reifman, Farrell, & Dintchef, 2000; Doherty & Allen, 1994), while Miller-Day and Dodd (2004) noted that the drug talks most memorable to youth were those in which the parents discussed the topic, “proactively and reactively, at home, providing personal examples, and offering tools for healthy living while also establishing clear rules and consequences for violations” (p. 88). Even when controlling for age, sex, race, family history of substance abuse, single-parent status, amount of parental monitoring, and use of substances by peers, adolescents were still less likely to use alcohol when their mothers were highly supportive (Barnes & Farrell, 1992).

A second area of interest to those studying the influence of family members’ communication on individual health is reproductive health behaviors. Considering the deleterious repercussions of sexually transmitted infections, it is no surprise that the presence of reproductive health communication also has been documented vigorously in both Caucasian families (e.g., Dilorio et al., 2000; Troth & Peterson, 2000) and minority families (McKee & Karasz, 2006). Although results demonstrate mixed outcomes, studies do agree on one thing in particular: mothers play an important role in their child’s reproductive health. Mother-child communication about sex led to a decreased likelihood of sexual risk for girls in one study (Henrich, Brookmeyer, Shrier, & Shahar, 2006), but Fingerson (2005) found that mother-daughter communication about sex
predicted the daughters’ likeliness to have a greater number of sexual partners (fathers were not included). Kao, Guthrie, and Loveland-Cheery (2007) called for an increase in maternal communication regarding mother-daughter discussion on sexual activity, despite finding that frequent conversations about sex already occurred among their sample of Taiwanese women. Heisler’s (2005) study found that mothers communicated about reproductive health with offspring significantly more than fathers. Finally, Coffelt (2010) observed a dialectical tension involved with mother-daughter sexual communication; interviewees discussed the conversations as both easy and challenging.

Advancing to a third area popular in family and individual health behavior studies, healthy eating research has exploded on the academic scene, particularly in the psychology discipline (Thompson, Heinberg, & Altabe, 1999) due to eating disorders’ ties with body image (Chrisler, 2001). Most body image studies in communication focus on the media (e.g., Harrison & Fredrickson, 2003; Holmstrom, 2004) and, therefore, found their place in media journals. Much less research has been dedicated to the influence of family communication on one’s body image and/or eating disorders (for exceptions, see Prescott & Le Poire, 2002). This is unfortunate, given the important extant findings on body image and family research.

Overall, literature contends that mothers seem to play a prominent role in communication regarding body image and healthy dietary practices. For instance, a group of European researchers discovered that, as young as in preschool, boys and girls receive messages from their mothers about building muscle and losing weight respectively (McCabe et al., 2007). Pike and Rodin (1991) found that mothers’ problematic eating behaviors related to their daughter’s disturbed eating behaviors. Men and women both
ascribed their mothers as offering the most encouragement for controlling their weight (Thelen & Cormier, 1995); interestingly, other research points to parental encouragement for weight loss as a significant predictor of eating disorders (Wertheim, Mee, & Paxton, 1999). Mothers’ body dissatisfaction directly predicted their sons’ body dissatisfaction (Fritz & Carnett, 2007). Furthermore, direct communication about a daughter’s weight was more likely to lead to the development of eating disorders than modeling behaviors (Baker, Whisman, & Brownell, 2000), and negative parental communication significantly predicted body image issues in sons, when compared with communication from peers and the media (Stanford & McCabe, 2005). In a role play experiment conducted by Humphrey (1989), mothers of daughters with eating disorders exhibited more neglectful and ignoring communication during these dyadic interactions than mothers of healthy daughters. Mothers often unwittingly assist in sustaining their daughter’s eating disorders (Prescott & Le Poire, 2002). From this body of literature, we see the common trend of a mother’s influence on her child’s health.

Related to family communication about body image is research on family communication regarding diet and physical activity—the primary focus of the current study. Although nutritionists, medical specialists, and psychologists appear well aware of the importance of continued research on this topic, communication scholars—and family scholars in particular—have yet to tackle this realm thoroughly; few studies exist. The literature just reviewed provides evidence that health topics in family communication studies receiving the most attention are those affecting a minority of families, as opposed to the majority of families (e.g., family discussion about a member’s diabetes), or, those topics that present an imminent threat to an individual member’s health (e.g., excessive...
tobacco use). What remains understudied are those “everyday” topics that families discuss that can, over time, improve, maintain, or debilitate health. Arguably, two of the most important health behaviors (that combat two of the most important health-related problems today: childhood obesity and diabetes) are eating a nutritious diet and incorporating physical activity into one’s lifestyle (CDC, 2004). Because family communication on these topics usually arises due to happenstance rather than by planned, deliberate discussion, and because issues like dietary changes or additional exercise rarely have a significant, immediate impact on the individual’s health, family communication about diet and exercise is both more challenging to assess and less “dramatic” than other health topics. As such, the dearth of such studies is unsurprising and an investigation of the family’s influence on these “everyday” health elements is a logical next step in family and health literature.

Some research efforts in this area have been fruitful. The majority, however, possess three specific limitations that future scholars in family and health communication must address if we ever hope to reach a deeper understanding of family communication’s role in individual’s eating and physical activity habits. Each limitation is discussed below.

**Limitations of Family and Health Research on Nutrition and Physical Activity**

**Communication’s limited contributory role.** A first limitation of current literature in this topic area is that studies proclaiming the significant impact of the family on individual health often fail to incorporate communication fully, if at all. In some cases, variables such as a family or a family member’s characteristic (e.g., individual’s sex, personality trait, cognition) are used to explain the variance in individuals’ health
outcomes. For instance, Turman (2007) looked at same sex vs. opposite-sex parent-child dyads and found no significant differences between the groups in regards to parental influence and encouragement of child’s sports participation, supporting earlier investigations (Anderson et al., 2003). Mothers’ expectancies of daughter’s physical activity performance predicted the daughter’s own competency perceptions one year later, despite the child’s *previous* physical ability and perceived competence (Bois, Sarrazin, Brustad, Trouilloud, & Cury, 2002).

Furthermore, many health-related family communication studies tend to focus on the presence or absence of communication as a predictor or correlate of individual health attitudes, beliefs, or behaviors, but do not offer any other specifics of the communication (e.g., intentions of the source, content of the message, facilitation of the message, etc.). For example, in Rimal and Flora’s (1998) longitudinal study, adults’ dietary behaviors were found to significantly influence children’s dietary behaviors even after controlling for individual behaviors and health campaign effects. Moreover, adults’ healthy behaviors served as cues for children’s subsequent behaviors, demonstrating that “the observation of adults’ health practices may socialize children for behaviors they anticipate to perform in the future” (p. 631). Although the authors measured family communication to some degree, family communication deserves much more detailed exploration (in the previous study, “Household discussion” was measured with two questions: “How often does your household discuss the foods you are going to eat?” and, at follow-up, participants were asked if they had discussed heart disease in the last week and with whom).
Similarly, Bruss and colleagues (2005) captured the complex process of parental messages sent to children about appropriate eating behaviors. The authors identified the importance of sociocultural attitudes, beliefs, and values that acted as a “logical force” by which adult caregivers rendered the normalcy of their child’s dietary habits and current weight. Although the study offered great depth into how parents negotiated meaning about children’s eating, what was not as clear from the study was the frequency and intensity of healthy eating conversations, the evident impact of the parents’ communication on these children, how these conversations occurred, etc.

In short, communication (ironically) rarely plays a central role in literature that aims to investigate relationships between families and individual member health behaviors. To truly assess communication’s influence on family member health behaviors, studies must incorporate communication assessment as an integral part of the methodological design, as opposed to an afterthought.

**Reliance on single informant data.** Second, the majority of the family and health communication literature relies on an individual’s perceptions and reports of his or her family’s influence but rarely includes reports from a family member or members. Health and family communication research specific to diet and physical activity is no exception. For reasons of methodological complexity, scholars choose to forego studying family patterns of health communication. The use of dyadic family data, however, is becoming increasingly popular, often with spouses as the dyad of choice (Fincham, 2004). Very little research has been conducted on parent-child health interactions and those that have revealed mixed results (Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001). Nearly all of the nutrition and physical activity studies reviewed up to this point
(and many to follow) have included a dyadic relationship within the family; however, while a definite improvement from just individual-level data, even these studies fail to capture the whole picture. Many do not include measures that acknowledge the family system (e.g., Flora & Schooler, 1995; Pugliese and Tinsley, 2007; Rimal & Flora, 1998; Sallis, Prochaska, & Taylor, 2000). Thus, a primary goal of future studies on family members’ communication and individual health behaviors should be to include measures that assess family communication at both systemic and dyadic levels.

**Failure to account for family members’ mutual influence.** A final limitation of family communication literature regarding diet and physical activity (and the broader realm of family communication literature in general) is the tendency to assume/observe the unidirectionality of family interactions, and particularly of parent-child interactions. In other words, scholars quickly point out parental influence over children, but pay far less attention to how children may be influencing their parents. Given that “children serve as socialization agents of their parents simply by their existence” (Stafford, 2004, p. 322), it comes as no surprise that influence on families’ healthy eating and physical activity-related attitudes and behaviors involves mutual reciprocity. However, we know little about the degree to which children’s communication influences parents and other family members, and we know even less about how children socialize family members into healthful (or harmful) diet and physical activity behaviors.

For example, in studies like Flora and Schooler’s (1995) demonstration of how family communication directly influenced children’s ideas about healthy eating and exercise, influential power was implicitly bestowed to the parents. Although the authors discovered worthwhile findings, such as the predictive power of schools, parental
knowledge, and health campaigns on children’s knowledge about dietary cognitions and attitudes, children’s influence on their parents was never analyzed nor mentioned as a possibility. Even studies with a clear communicative focus, such as Sallis and colleagues’ (2000) investigation of the role of family members’ social support of children’s physical activity—including direct communication about the child’s physical activity—only looked at one-way influence. Future studies that explore a child’s agency in the parent-child interaction and thus, the mutually influential communication between parent and child, could contribute greatly to our knowledge of health interventions promoting improved diet and physical activity habits.

Noting these three major limitations, the present study on family communication about diet and physical activity aims to fill these lacunae by (a) stressing the importance of family communication, with an eye toward the content and facilitation of the interactions, as well as message sources, (b) incorporating a holistic analysis of a family’s communication about health in addition to dyadic interaction data, and (c) acknowledging the two-way, influential flow of family communication on these health topics. In the section to follow, a detailed explanation of how the current study will address each limitation is woven into an argument justifying the study’s research questions.

**Research Questions**

In the current study, Koerner and Fitzpatrick’s (1997) family communication patterns theory (FCPT) and social cognitive theory (SCT) provide a sound theoretical grounding that emphasize the importance of a family communication environment as opposed to just isolated interactions. Considering the amount of scholarly attention paid to FCPT on a variety of individual and relational outcomes, it is remarkable that little
One such example exists in the work of Booth-Butterfield and Sidelinger (1998). Observing relationships between family communication patterns and attitudes and actions regarding sex and alcohol, the authors discovered that although attitudes did not predict behavior, children were more likely to engage in safer alcohol and sex practices the more they discussed these topics with parents. In another representative study, Baxter et al. (2005) utilized a merger of family communication patterns and marital types to investigate the relationship between family interactions and adolescent health behaviors. Specifically, the authors looked at parents’ articulated healthy lifestyle rules and children’s compliance to those rules. Expressive families indicated adolescents’ lower compliance to family rules while Structural Traditionalists possessed more agreement between parents and children about family rules. Taking leads from these studies then, this research aims to capture how young adults’ reported health attitudes and family communication variables influence members’ nutrition- and physical activity-related behaviors.

Together, FCPT and SCT provide insight into how individuals’ current nutrition and physical activity behaviors may be learned from watching and communicating with family members. For instance, an individual who continuously observed family members with beneficial eating and exercise habits may opt for a similar lifestyle modeled by the family members. However, it is crucial to remember that social influence is not merely a one-way process, but a two-way process, in that caregivers can also be influenced by
children (Bell & Chapman, 1986; Kunkel et al., 2006). Parents and children especially mutually influence each other in interactions—interactions which in turn shape the future of both parties (Lollis & Kuczynski, 1997; Socha & Stamp, 1995). Thus, a first research question is posed:

RQ1: Does a relationship exist between the young adult’s and the influential family member’s attitudes and behaviors regarding eating/nutrition and physical activity?

Moreover, the similarity between individuals’ and primary care givers’ behaviors concerning nutrition and physical activity may be a function of communication-related variables. For instance, Booth-Butterfield and Sidelinger (1998) discovered that adolescents practiced safer sex and alcohol use when parents frequently and openly discussed these issues. It seems logical to conclude that frequent and open family discussions about diet and physical activity might guide family members toward healthy eating and physical activity practices. On the other hand, if the bulk of those conversations are perceived by the young adult as nagging or condescending, the recipient may find these conversations disconfirming and may be less likely to discuss or embrace the other’s ideas. The confirmation aspect of the relationship occurs on the relational level of communication (Watzlavick, Beavin, & Jackson, 1967) and is concerned with the way one’s messages validate the other (Sieburg, 1976). In contrast to openness and frequency then, confirmation “focuses on the collective of messages in relationships, or more specifically, how the messages create a relational climate” (Dailey, 2006, p. 437). While an unsatisfactory relational climate and subsequent communication may lead to friction and unhealthy conflict (Thomas, Booth-Butterfield, & Booth-
Butterfield, 1995), one study suggests a link between unsatisfying conversations and unhealthy behaviors: Daughters who have dissatisfying interactions with their fathers were more likely to surround themselves with troubled peers and make poor or life-threatening decisions than daughters satisfied with a father’s communication (Leonard, 1982). Little else is known about the effects of confirming communication on health. Thus, it is important to take confirmation levels, as well as frequency and openness of communication, into account when examining young adult health outcomes. Finally, in family communication studies, the influence of family conformity is difficult to predict (Schrodt et al., 2008). If a relationship is discovered between young adults’ attitudes toward eating/nutrition and physical activity with influential family members’ attitudes and behaviors, the strength of the relationship may rely on the degree of similarity in ideals and values about health (i.e., high conformity) within that family. Therefore, another research question is posed:

RQ2: Do levels of (a) Openness of Health Conversations, (b) Frequency of Health Communication, (c) Perceived Confirmation (from a family member) and (d) Family Conformity moderate the relationship between young adults’ and family members’ health attitudes and behaviors?

The impact of self-efficacy is also worthy of investigation. Bandura (1998) argued for an assessment of self-efficacy/perceived competence, particularly in health-related studies, positing that “Attitudes are usually predictive, especially of intention, but normative influences vary widely in their contribution across different types of health behavior. Efficacy beliefs are consistently predictive” (p. 4). Importantly, when one family member experiences another member’s diet or physical activity-related
behaviors—whether through observation or conversation—these vicarious experiences serve as a method for creating and influencing the individual’s efficacy beliefs regarding those same behaviors. Efficacy, the individual’s belief in his or her own capabilities “to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2), may play a mediating role in the relationship between health communication interactions between young adult and family member, and the young adult’s subsequent health behaviors. For instance, if an adolescent’s capability to jog five miles was continuously encouraged by a parent and the adolescent witnessed the parent succeed in jogging five miles, SCT would predict that this child would feel more confident and competent in performing the behavior (and thus, more likely to jog) than the child who received less encouragement and watched a parent’s failed attempt at jogging. The same effect may hold when examining self-efficacy’s mediating effect on the relationship between health communication and family members’ health behaviors. Therefore, a final research question is posited:

RQ3: Will respondents’ health self-efficacy play a mediating role in the (assumed) relationship between health communication and respondents’ health behaviors?

Literature specifically on the parent-child interaction has clearly shown the prominent role parents play in the social and emotional development of children (Laursen & Collins, 2004; Socha & Stamp, 1995; Stafford, 2004). One common problem in parent-child communication research is the underlying assumption that parents and children fall into a typical pattern of communication that remains stable across topic areas (Perry-Jenkins, Pierce, & Goldberg, 2004). It remains to be tested (thoroughly and
empirically) whether parent-child communication will vary in frequency, intensity, and/or choice of specific parent or child target when the topic of conversation turns to health-related matters.

In almost all other cases, research documenting parent-child communication reveals differences between parents, with mothers receiving much more attention in academic literature than other parent-child pairings (Galvin, 2004a; Stafford, 2004). Mothers generally talk more and talk about a wider range of topics with their families than fathers, especially topics that are social and personal in nature (Stafford & Dainton, 1995). Perhaps it is because of this difference that more adolescents report being closer to their mothers and share feelings with them more often (Steinberg & Silk, 2002).

Adolescent children approach mothers for advice on careers, schooling, and romantic relationships, more frequently than fathers (Fingerman, 2000). These findings, however, do not discount the importance of fathers: Other research adds that children are more likely to obey their fathers than mothers (Grusec & Lytton, 1988) and that mothers are more successful compliance gainers when her attempts are reinforced by the father (Lytton, 1980).

Family communication scholars are not the only ones to notice this communication trend: A pool of evidence from multiple disciplines (e.g., Chodorow, 1978; Douglas & Michaels, 2004; hooks, 2000; Wilkinson, 2001) suggests that in the family, women’s and men’s roles and responsibilities are not created equal. In particular, feminist scholars and those researching work-life balance have noted the discrepancy (often referred to as the “second shift”; Hochschild with Machung, 2003) between mothers’ and fathers’ responsibilities associated with housework and child caregiving.
(Bird, 1999; Craig, 2006; Deutsch, 2004; Zarit, Todd, & Zarit, 1986). Moreover, research indicates that relationship maintenance within the family also occupies much of mothers’ time (Buzanell et al., 2005). Mothers frequently engage in relational repair (or, the “third shift”) with spouses and children who feel neglected because of a woman’s “hectic” work schedule (Hochschild with Machung, 2003).

These findings are echoed vaguely when the conversation narrows to mothers’ roles in family health care (see Tardy, 2000). Caring for one’s family’s health also tends to be a woman’s domain. Although little empirical evidence has looked exclusively at mothers’ family health care work, some studies strongly suggest it. For instance, research previously reviewed has demonstrated how mothers’ communication, more so than fathers (though testing for this difference was not always the primary intention of the research) appears to produce the most significant impact on their children’s health (e.g., Barnes & Farrell, 1992; Henrich et al., 2006; Thelen & Cormier, 1995). This may help explain why studies looking at “parental influence” (that is, measurements from both the mother and father) on health behaviors are overwhelmingly nonsignificant. In her content analysis of women’s magazines, Barnett (2006) found articles that framed medical health as women’s work; women not only had responsibilities to keep themselves healthy, but also their loved ones. Anecdotally, gender-role socialization encourages women to put family health care at the top of their priority lists, whether by taking children to the doctor, or by purchasing the “healthy” brand of peanut butter seen in commercials (Chrisler, 2001). Commonly (and perhaps strategically), a mother’s family health responsibilities (e.g., caring for children’s illnesses) is often subsumed under “housework” or “child care.” Although evident from current literature, the mass of
health care work taken on by women compared to men is dramatically different than traditional “housework” and has yet to be tackled as a unique area for research.

Based on this evidence, it is likely that in a study assessing influential family member communication about nutrition and physical activity attitudes and behaviors, mothers will be cited most frequently as fellow interlocuters and a primary influence in this area. What remains to be known is how these nutrition and/or physical activity conversations develop, what exactly family members discuss, and why family members discuss these topics. These details are important to note, as one or more factors may lead to more positive health outcomes for individual family members more often. Thus, gathering information on (a) the message source and (b) the content of the message, and (c) how the message is facilitated are additional goals of this study; these results will be included in the initial descriptive statistical analysis.

Thus far, results from the hypothesis and research questions presented here will surely offer researchers a more comprehensive view of the family communication environment’s relationship to individual member health behaviors that has been long overlooked. From these findings, a broader picture of how these variables operate will emerge, enabling scholars to generalize findings and, perhaps, to begin making concrete predictions regarding the link between family communication and physical health. Still, despite the thorough quantitative investigation proposed here, no combination of Likert scales will ever be able to adequately or directly address the importance of personal meaning and family context. To isolate family communication environments, and family communication about eating/nutrition and physical activity in particular, from related gender and power issues (e.g., the family patriarchy) would not only encumber any
comprehensive conclusion, but also would be nonsensical, as gender and family are so closely intertwined, understanding one nearly necessitates understanding of the other (DeFrancisco & Palczewski, 2007; Wood, 2007). From casual conversations to in-depth discussions, it is logical to assume that family communication about health-related topics may play an important role in one’s understanding of what it means to be healthy. Furthermore, scholars must pay attention to not only what occurs within the family, but also what goes on in the broader, ongoing social contexts surrounding families (e.g., political climate; Walker, 1999).

As noted previously, one major power issue arising in families is evidenced by the overwhelming presence of mothers in literature on family caregiving. Although the unequal division of labor alone is worthy of research attention, other research argues that failing to attend to fathers’ involvement in family caregiving silences this collective and only reinforces the expectation that women act as the primary caregivers (DeFrancisco & Palczewski, 2007). Instead, research calls for mixed-method approaches to study the contribution of both mothers and fathers in the development and socialization of children (Parke, 2004). That is the quintessence of the second phase of this research project, which will dig more deeply into the understood (and often negotiated) meaning of “healthy living” and the mutual influence family members have on each other’s understanding. Additionally, this follow-up project aims to better understand how socialization and family context serves to inform family members’ ideas about health as it relates to gender. Naturally, because this study focuses on a more inclusive definition of family (i.e., not limited to the traditional, two-parent and biological children nuclear family definition), other influential family members besides mothers and fathers will be
included. In sum, two central research questions embody the phenomenological nature of this study’s second phase:

RQ4: How does family communication (re)shape and inform each individual’s understanding of what it means to be healthy, in regards to nutrition and physical activity?

RQ5: Does family members’ health communication (re)create (socialized) power and gender norms?

RQ 5a: What dyadic patterns are revealed in this health communication?
CHAPTER III
PHASE ONE: METHODS, RESULTS, & DISCUSSION

This study was comprised of two separate phases of investigation, utilizing a mixed methods design. In accordance with the dialectical stance toward mixed method research (Greene & Caracelli, 1997), the choice of mixed methods in this study stemmed from recognizing the inability of one lone paradigm to contribute comprehensive, insightful results. That is, the return of quantitative results in this study could do little to explore meanings behind the conversation content while qualitative interview data alone could not begin to address issues at the macrolevel of understanding. Furthermore, the use of mixed-methods in a family and health study allows for a plurality of voices and values from different paradigms—differences typical of academia and society at large—to be heard (Bradbury, 2002; Segrin, 2006). In accordance with Morgan’s (1998) Priority-Sequence model of combined-method designs in health research, this study primarily used a “qualitative follow-up” design: that is, the predominant use of quantitative methods in the first phase of study (principal method) with qualitative methods playing a complementary role in the second phase. The study was approved by the University of Missouri Institutional Review Board.
Method: Phase One

Design

In the first phase of this study, a series of quantitative assessments were administered to participants to analyze relationships and differences among the variables tested. Participants also specified a family member who influenced their nutrition and physical activity attitudes and behaviors and this individual completed a set of indices as well.

Procedure

Young adult participants were recruited from undergraduate courses and offered a commensurate amount of extra credit for their time completing an online survey and their recruitment of a family member to participate in an online survey. Specifically, I informed the young adults that that they would be identifying and then recruiting an “influential family member”—one who had the greatest amount of influence on their current attitudes and behaviors regarding eating/nutrition and physical activity—to participate in a brief online survey. Young adults contacted their influential family members prior to beginning the online survey to confirm participation agreement. Then, they provided the name, phone number, and e-mail address of the influential family member. An alternative extra credit assignment was offered to those unable to meet the terms of recruitment.

Using the contact information provided by the young adults, the researcher contacted the influential family members via e-mail. In the body of the e-mail, the study’s purpose was explained, participants’ confidentiality was assured, and a separate survey link was embedded. Family members consented to the study by completing the
online survey questions. Then, family members indicated whether or not they would be interested in receiving more information about a follow-up interview study. Finally, family members gave the name of the young adult who recruited them so that the researcher could match the family member’s data to the young adult’s data for analysis purposes. Once matched, names were deleted and responses of both young adults and family members were identifiable only by a matching numerical code. When the researcher received confirmation of a family member’s survey completion, a similar e-mail containing the second survey link was sent to the corresponding young adult.

Young adult participants answered basic demographic questions, including self-reported height and weight (for BMI calculation). Then, they completed the measures assessing their (a) family communication patterns, (b) openness of family health conversations, (c) relation to the family member who played the most prominent role in influencing and communicating about nutrition- and physical activity-related attitudes and behaviors, (d) nutrition-related attitudes and behaviors, (e) physical activity-related attitudes and behaviors, (f) perceived level of confirmation during nutrition- and/or physical activity-related communication with the influential family member, (g) perceived level of health competence (efficacy), (h) frequency of health communication, and (i) additional characteristics of these health-related conversations. The order of the measures reflected my concern that participants complete the main measures first, prior to answering more detailed, qualitative information about their health communication. Appendix A displays all of the young adult measures.

Completion of both the young adult and family member online quantitative assessments was voluntary. Completion of the family member and young adult surveys
took approximately 10 and 45 minutes, respectively. Within the assessments, key terms such as family (“a group of intimates who generate a sense of home and group identity and who experience a shared history and a shared future”; Koerner & Fitzpatrick, 2002a, p. 71), moderate physical activity (caused small increases in breathing or heart rate), and vigorous physical activity (caused large increases in breathing or heart rate) were defined.

To ensure veracity in family member reporting, 20% of the family members who completed the surveys were called randomly to confirm their participation in the online survey (see Afifi, Olson, & Armstrong, 2005). Other precautions included the following: (a) students did not receive additional incentives for the family member’s survey completion, (b) students were made aware of the plan to randomly call family members for confirmation, and (c) students were made aware of the severe consequences of academic dishonesty if they attempted to create a false identity to earn extra credit.

**Participants**

Appropriate sample size was determined using a power analysis (Cohen, 1988) and samples from past research on family communication and health-related topics (e.g., Avtgis, 1999; Baxter et al., 2005). As such, a goal of 300 student participants and each student’s influential family member (600 participants total) was targeted to produce the expected small effect sizes (.10-.30). Approximately 900 students from two different schools in the Midwest (one suburban university, one rural community college) were recruited for this study in return for a commensurate amount of class extra credit. Of the 900 recruited, 435 young adults participated in the first phase of this study. Young adult participants were between the ages of 18-40 with a mean age of 19.75 years (SD = 1.78)
and were 67.4% female ($N = 292$). Caucasians comprised roughly 84% of the sample, but other races including African American (8.5%), Asian (2.5%), Hispanic (2.3%) and Other (2.3%) were represented also. Young adults reported being heterosexual (97.7%), with only a few claiming to be homosexual (1.4%) or bisexual (.9%). Mainly, young adults reported growing up in homes with married parents (83.7%) with incomes in the range of $65,101 - $131,450 (40.5%). A bachelor’s degree was the most commonly reported degree for the most highly educated in the household (40.5%). Finally, young adult BMI reports included underweight (2.8%), normal weight (71.9%), overweight (18.7%), and obese (6.7%).

Similar demographic patterns emerged among the 435 family member participants. Females comprised 75.4% of the family member sample, which represented Caucasians (85.9%), African Americans (8.8%), Asians (2.8%), Hispanics (1.1%), and other races (1.5%). Family members’ ages ranged from 18-87 years with a mean age of 46.25 years ($SD = 10.28$). Ninety-nine percent of the respondents were heterosexual, and BMIs within all four categories were represented (underweight = 1.5%, normal weight = 46.7%, overweight = 30.4%, and obese = 21.3%). Reported marital status, income, and education levels closely mirrored reports from the young adults. All together then, 435 dyads (870 respondents) participated in this study.

I also calculated additional characteristics of family health conversations, including the family member who most often communicated to the young adult about health, the family member who had the most influence on the young adult’s health, and health conversation initiation statistics. Approximately 66.2% of the young adult surveys indicated that their mother was the family member who most often communicated to
them about diet and physical activity. Other family members with the most communicative influence was father (21.3%), sister (6.0%), brother (2.5%), grandfather (.9%), grandmother (.5%), and “other” (e.g., aunt, legal guardian; 1.8%) and three respondents did not specify an answer. Similar trends emerged for the overall influential family member: mother (68.0%), father (20.7%), sister (4.8%), brother (3.0%), grandfather (.2%), grandmother (.5%), and “other” (2.8%). When it came to initiating conversations about diet and/or physical activity, 56.1% of the young adult respondents believed that they and their influential family member initiated conversations equally. Exactly 25.5% believed that the family member initiated health conversations more often. About 9.0% believed they initiated health conversations more often than the family member and another 8.7% were unsure. Three individuals did not report on this question.

**Instrumentation: Young Adults**

**Demographic variables.** A series of demographic variables, including participant’s age, sex, and race, were measured. Caregiver/s marital status during the young adults’ childhood and adolescence was also requested. A BMI calculation was completed (based on participants’ self-reported height and weight), and participants were categorized as either underweight (below 18.5), normal weight (18.5-24.9), overweight (25.0-29.9), or obese (30.0 and above) (CDC, 2008). Socioeconomic status (SES) was assessed, despite mixed findings: research contends that low-SES and minority groups have a higher prevalence of obesity and overweight (e.g., McLaren, 2007; Paeratakul, Lovejoy, Ryan, & Bray, 2002; Sobal & Stunkard, 1989), although recent investigations indicate this disparity has decreased over time (Zhang & Wang, 2004): higher SES brackets are “catching up” to lower brackets. Participants indicated their primary
caretakers’ combined income bracket and highest level of completed education by a family member. Finally, young adults were asked to list people in their life they would consider “family members.” This question was used as a prime for later completion of the family communication scales (see Appendix A, Part I).

**Family communication patterns: Conversation and conformity.** Family communication orientations were assessed using the *Revised Family Communication Patterns* instrument (Ritchie & Fitzpatrick, 1990). Participants responded to 26 Likert scale items that ranged from 1 *(strongly disagree)* to 5 *(strongly agree)*. Specifically, the *Revised Family Communication Pattern scale* (RFCP) divides into conversation and conformity orientations, such that high scores on items 1-16 *(w/ one item reverse coded)* and high scores on items 17-26 indicate high conversation and high conformity orientations, respectively. Thus, two new variables were created to assess conversation and conformity separately. Sample statements included “I can tell my parents almost anything” and “In our home, parents usually have the last word.” Wording, however, was adapted to reflect a more inclusive definition of family (“My parents/primary caregivers feel it is important to be the boss.”). Several studies have found this scale to be valid and reliable, and further advocate that not all family members need complete the scale to ensure an accurate depiction of family communication behaviors (Avtgis, 1990; Koesten, 2004; Punyanunt-Carter, 2008). Young adults were asked to keep in mind the family members previously listed when answering these questions. In this study, alpha reliabilities were .88 for conversation-orientation and .84 for conformity-orientation (see Appendix A, Part II).
Openness of health conversation. Relevant questions from the conversation-orientation subscale were adapted to measure the degree of openness individuals perceived that their families discussed matters related exclusively to health. Respondents answered on a 5-point Likert scale their level of agreement to statements like, “My parents/caregivers often ask my opinion when the family is talking about eating and/or physical activity-related topics,” and “My parents/caregivers encourage me to express my feelings about my eating and/or physical activity.” A total of 13 items comprised the scale. Again, students used the family members previously mentioned when responding to these questions. Cronbach’s alpha was .91 (see Appendix A, Part III).

Influential family member identification. Respondents were asked, “Over the course of your childhood and adolescence, please indicate the one family member—still living—who a) most often communicated to you about eating/nutrition and physical activity, and b) had (has) the greatest influence on your current attitudes and behaviors regarding nutrition and physical activity.” Participants supplied the name of and their relationship to this family member (see Appendix A, Part IV).

Frequency of health communication. Two items assessing frequency of young adult-influential family member communication about eating/nutrition and physical activity, were adapted from Booth-Butterfield and Sidelinger’s (1998) health study. I used the same Likert scale ranging from 1 (never discussed) to 5 (very frequently discussed). Scores for frequency of communication about eating/nutrition and frequency of communication about physical activity were summed for an overall frequency of health communication score. Reliability analysis revealed a Cronbach’s alpha of .71.
**Perceived confirmation.** Participants’ self-reported perceived level of family member confirmation was assessed using an adaptation of Ellis’s (2002) *Perceived Parental Confirmation* measure. Participants were asked to respond to the scale’s items, which assessed a family member’s confirming or disconfirming statements or nonverbals during interactions, with the most influential family member in mind. Wording in the introductory directions was slightly altered to fulfill this goal. Moreover, respondents were primed to think about conversations with that family member that concerned eating/nutrition and/or physical activity and report answers based on those conversations. Respondents reported answers on a 7-point Likert-type scale (1 = never, 7 = always) to items such as “(Family member) Asked my opinion or solicited my viewpoint,” and “(Family member) Made statements that communicated that my feelings were valid and real.” Four of the scale’s original 28 questions were removed due to their lack of relevance with this study’s purpose (e.g., “(Family member) Attended the sports events, music events, or other activities in which I participated.”), resulting in a total of 24 items. Cronbach’s alpha was .95 (see Appendix A, Part VI).

**Characteristics of eating/nutrition- and physical activity-related communication.** I wanted to garner additional information about the content of young adults’ family health conversations for future analysis. To assess how often young adults initiated eating/nutrition and physical activity conversations, participants indicated the circumstances surrounding conversation initiation (i.e., conversations were initiated more often by the family member, the young adult, conversation initiation was equally handled, or young adults were unsure of who initiated most). I gave respondents a list of potential subtopics that might have occurred in their conversations about (a)
eating/nutrition and (b) physical activity with the influential family member (e.g., “getting more (less) physical activity”; “eating more (less)”)
Respondents checked all applicable subtopics and an “other” response category collected additional topics from young adults. Finally, respondents were asked to recall and describe influential eating/nutrition and physical activity conversations with the family member—one in which the family member was most influential, another in which the young adult was most influential—for future content analysis (see Appendix A, Part IV).

**Health attitudes: Nutrition-related and physical activity-related.** I read copious studies in an effort to find a measure testing individuals’ nutrition and physical activity-related attitudes. Noting that no single measurement of attitudes toward nutrition or physical activity fit best with the goals of the current study (i.e., not attempting to predict or increase weight loss), nutrition and physical activity-related attitudes were assessed by adapting questions and surveys from multiple health attitude studies (e.g., Adams & Nettle, 2009; Benedict, Evans, & Calder, 1999; Blanchard et al., 2005; Boutelle, Birkeland, Hannan, Story, & Neumark-Sztainer, 2007) and from theoretical review. Some items were taken directly from these studies; in others, wording was changed slightly to reflect the goals of the study. Attitudes towards nutrition and physical activity were measured using a series of Likert scale questions from 1 (*strongly disagree*) to 7 (*strongly agree*). For example, items stated, “I am concerned with eating nutritious foods,” and “I enjoy physical activity.”

A smaller pilot study (*N* = 30) tested this index using a total of 20 items from the literature and prior scales—10 assessing attitudes on eating/nutrition and 10 assessing physical activity attitudes. An exploratory factor analysis was conducted using MPlus
statistical analysis software. Factor inter-correlation was assumed; thus, an oblique rotation was utilized. A scree test indicated a five-factor model. Based on the analysis, two items were deleted, resulting in 18 items (see Reise, Waller, & Comrey, 2000). A confirmatory analysis concluded this factor model to be an acceptable fit \( \chi^2 (100) = 124.57, p = .05; \text{RMSEA: .08; CFI: .93; NFI: .90; TLI: .87} \). Small sample size most likely influenced the chi-square statistic; thus, the fit indices are a more representative indication of fit here (see Bentler, 1990). The overall reliability of the scale in the pilot study was .81. In the formal study, the reliability increased to .88 for both young adults’ and family members’ reports (see Appendix A, Part V).

**Health behaviors: Nutrition-related and physical activity-related.** Block’s (1992, 2009a, 2009b) *Food Screener* is a useful and reliable tool for monitoring individuals’ diets (Block, Clifford, Naughton, Henderson, & McAdams, 1989). The scale was created to meet the needs of health care providers who lacked a simple, fast, and valid tool producing a snapshot of a patient’s diet and has been continually updated. Unlike other abbreviated dietary measures, Block’s *Food Screener* offers a more comprehensive and detailed view of an individual’s diet, as opposed to testing a specific area of the diet (Calfas, Zabinski, & Rupp, 2000). Currently, a brief, fat-intake section (15 items) and fruit and vegetable-intake section (7 items), each including the top sources of fat or fruit and vegetables (as denoted by national surveys and recent research) comprise the *Food Screener*. Sample items asked respondents to use a 5-point frequency scale to report how often they consume a particular food (e.g., once per month or less, 3-4 times per week). The fat-intake scale was reverse coded so that a higher score indicated
better nutrition habits; therefore, to alleviate confusion, the individual variable of fat intake was renamed “low-fat diet intake.”

Impressively, when compared to Block’s 1995 (for original see, Block et al., 1986) full-length Food Questionnaire—an 100-item, eight-page assessment validated and widely used in epidemiological studies (e.g., Mares-Perlman et al., 1993; Subar et al., 2001)—the brief *Food Screener* produced excellent correlations ($r = .60 - .71$) with its predecessor for a number of important nutrients (Block, Gillespie, Rosenbaum, & Jenson, 2000). The results related also to detailed, 4-day food records assessing frequency and portion size (Block et al., 2000). Cronbach’s alpha for the low-fat intake scale in this study was .80 (.82 for family members), and, for fruits and vegetable intake, .74 (.71 for family members).

Physical activity behaviors were measured using an assessment by Blanchard and colleagues (2005). Respondents were asked to report duration and frequency levels of moderate and vigorous physical activity. Moderately intense activity examples included “walking at a brisk pace,” while vigorous activity examples included “fast cycling” and “swimming laps.” Specifically, participants were asked, “During the past 7 days, how many days per week did you participate in a sport or activity that was moderately intense (caused *small increases* in breathing or heart rate) for 10 minutes or more?” and, “During the past week, how many days per week did you participate in a sport or activity that was vigorously intense (caused *large increases* in breathing or heart rate) for 10 minutes or more?” On the days respondents participated in both moderate (and vigorous) activities, they were asked to recall the average number of minutes they spent doing those activities each day (see Appendix A, Part V).
**Health competence.** Bandura (1977) and colleagues argue that competence in one’s health abilities, or, self-efficacy, is most appropriately measured at very specific levels for specific behaviors. In other words, “unlike other concepts related to the self, self-efficacy is defined and measured not as a personality trait, but as specific cognitions about specific behaviors in specific situations or domains” (Barone, Maddux, & Synder, 1997, p. 290). Three items should be included when creating self-efficacy items: the behavior, the level of situational demand, and the time frame (Maibach & Murphy, 1995). Some areas of functioning, like nutrition and physical activity for instance, may require the incorporation of multiple skills. Measuring self-efficacy at very general levels could potentially skew results, as one may feel very confident in his or her ability to complete one task in a particular domain (e.g., nutrition), but not another (e.g., physical activity regimen).

Controversy exists, however, regarding the level of specificity that self-efficacy ought to be measured. In particular, some posit the utility of a less specific assessment of the construct (e.g., Schwarzer, 1993). For instance, such a scale would be useful when attempting a larger study assessing a more heterogenous population; this is especially true for populations comprising men and women. Maibach and Murphy (1995) offered the (problematic) example of a self-efficacy scale developed to assess HIV prevention. Relevant self-protective behaviors for women, such as the ability to say no to high-risk sex, differed from men’s relevant behaviors (e.g., obtaining a condom). Thus, a more general self-efficacy measure would be pertinent for “studies in which the subjects have had little experience with the behaviors and have not had a chance to develop more specific expectancies” (Smith, Wallston, & Smith, 1995, p. 52).
Similar differences within the sample of this study have potential to emerge. For instance, the respondents may differ in their health situations (i.e., their overarching goals concerning nutrition and physical activity). Some may be intentional in their healthy eating and physical activity behaviors, while others view their healthy decisions as relatively inconsequential. Moreover, age and sex differences in the sample may also prevent self-efficacy measurement applicability to all population members (e.g., measuring competence associated with one’s muscle strengthening behaviors may look very different for men than for women). Finally, in relation to expectancies, young adults accustomed to their family’s eating patterns and their level of physical activity dictated by participation in a high school sport, for instance, may now find themselves on their own and needing to make independent choices about diet and physical activity.

Although it is certainly worthwhile to assess the cognitions of a young adult population in relation to a multitude of nutrition and physical activity-related health behaviors in myriad situations, this task is outside the scope of the present study. Thus, a health-specific measure that assessed competence at a more intermediate level of specificity was required. As such, the Perceived Health Competence Scale (PHCS), a measure assessing self-efficacy/competence beliefs concerning one’s health, was used. The PCHS, developed by Smith and colleagues (1995) has been utilized in different studies and with different populations returning strong reliability coefficients (ranging between .82 and .90) and stability over time. The scale’s 8 items assess one’s self-efficacy/competence on health and well as outcome perceptions. A sample item states, “I handle myself well with respect to my health” and “I succeed in projects I undertake to improve my health.” In this study’s instructions, respondents were asked to answer the
eight items with their dietary and physical activity health in mind. Respondents indicated answers using a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The 8 items returned reliabilities of .88 for young adults and .90 for family members (see Appendix A, Part V).

**Instrumentation: Influential Family Member**

**Demographic variables.** An identical set of demographic variable questions given to young adult respondents was given to the influential family members. Additionally, marital status and occupation were assessed (see Appendix B, Part I).

**Influential family member’s attitudes and behaviors toward nutrition and physical activity.** An identical copy of the attitudes and behaviors measures—for both eating/nutrition and physical activity—was completed by the influential family member (see Appendix B, Part II).

**Influential family member’s health competence.** An identical copy of the health competence measure was completed by the influential family member (see Appendix B, Part II).

**Data Analysis**

Data in phase one were analyzed using SPSS and MPlus statistical software. A Pearson product correlation was used to look at the relationship between family conversation orientation and family conversations about eating/nutrition and physical activity (H1).

For Research Question 1, the data were analyzed using structural equation modeling (SEM) and, specifically, the Actor-Partner Interdependence Model (APIM; Kashy & Kenny, 2000), which allows the researcher to measure interdependence between
two people in a relationship. SEM allows one to estimate and test more than one equation simultaneously, as well as control the relations between parameters in these equations (Cook & Kenny, 2005). The APIM is gaining popularity in the social sciences, and in family studies in particular (Kashy, Jellison, & Kenny, 2004; Weigel & Ballard-Reisch, 2008). Model fit was examined using a maximum likelihood chi-square statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI), normed fit index (NFI), and the Tucker Lewis index (TLI).

SEM was used to test the moderating and mediating effects inquired about in Research Questions 2 and 3. All variable values were standardized prior to analysis. Because variables were measured on different scales, I chose to standardize variables to allow for a more accurate examination of variables’ relationships. This decision was especially pertinent to health behavior variables, which were measured in different units of measurement but needed to be summed together for one composite score. In sum, my goal was to obtain a broader picture of health behavior outcomes; thus, I was able to interpret the data analysis results more clearly.

Results: Phase One

Descriptive Statistics

I ran correlations between the independent variables (Young Adult and Family Member Health Attitudes) and the four moderators and one mediator, as well as correlations between the dependent variables (Young Adult and Family Member Health Behaviors) and the moderators and mediator. The independent variable Young Adult Health Attitudes positively correlated with Frequency of Health Communication ($r = .34, p < .001$), Openness of Health Conversation ($r = .36, p < .001$), and Perceived
Confirmation ($r = .29, p < .001$); no significant relationship was found between Young Adult Health Attitudes and Family Conformity. Family Member Health Attitudes positively correlated with Frequency of Health Communication ($r = .25, p < .001$), Openness of Health Conversation ($r = .19, p < .001$), and negatively correlated with Family Conformity ($r = -.12, p = .02$); no significant relationship surfaced between Family Member Health Attitudes and Perceived Confirmation. Next, correlations between the dependent variable Young Adult Health Behaviors and the moderator variables yielded similar results: Frequency of Health Communication ($r = .25, p < .001$) and Openness of Health Conversation ($r = .17, p < .001$) were positively related. However, no significant relationships surfaced between Young Adult Health Behaviors and Family Conformity or Perceived Confirmation. Finally, Family Member Health Behaviors correlated positively with Frequency of Health Communication ($r = .24, p < .001$) and Openness of Health Conversation ($r = .11, p = .04$). No significant relationships emerged between Family Member Health Behaviors and Family Conformity or Perceived Confirmation. A summary of these correlations appears in Table 1.

Analyses of variance were conducted to assess significant differences on study variables within the two different respondent groups (young adults and family members). Variables were respondent sex, race, and income, and young adult Health Attitudes, Health Behaviors, Health Competence, Conformity Orientation, Conversation Orientation, Frequency of Health Communication, Openness of Health Conversation, and Perceived Confirmation. I assessed differences among family member respondents on the following variables: Health Attitudes, Health Behaviors, and Health Competence. Tables
2-7 display an overview of these results. All statistics reflect variables in their standardized form. I used an alpha level of .05 for all statistical tests.

**Young adults.** I first investigated whether young adults of differing sexes, races, and income brackets would report significant differences on any of the health and communication variables. Using independent sample t-tests, I discovered differences between young adult men and women on Health Competence, Conversation Orientation, Frequency of Health Communication, and Perceived Confirmation (see Table 2).

Although young adult females felt significantly less competent regarding their health than males (Males: \(N = 142; M = .30, SD = .89\); Females: \(N = 291; M = -.147, SD = 1.02, t\) (431) = 4.47, \(p < .001\)), they reported significantly higher levels of Conversation Orientation (Males: \(N = 140; M = -.14, SD = .92\); Females: \(N = 290; M = .07, SD = 1.03, t\) (428) = -2.08, \(p = .03\)), spoke more frequently about their health (Males: \(N = 141; M = -.16, SD = 1.07\); Females: \(N = 289; M = .08, SD = .96, t\) (428) = -2.30, \(p = .02\)), and perceived more confirmation from a family member than did young adult males (Males: \(N = 142; M = -.16, SD = .97\); Females: \(N = 291; M = .08, SD = 1.01, t\) (431) = -2.27, \(p = .02\)).

Next, I assessed differences between races (see Table 3). Results of a one-way ANOVA test revealed differences in Young Adult Health Behavior (\(N = 429, F(5, 424) = 2.52, p = .03, \eta^2 = .03\)). A Tukey post hoc analysis showed significant differences between Caucasians (\(M = .09, SD = 1.86\)) and African American young adult participants (\(M = -.93, SD = 2.10, p = .03\)), suggesting that Caucasian young adults performed more positive health behaviors than African American young adults; effect sizes, however, were modest.
Finally, I tested for differences between income groups on the variable income (see Table 4). When a one-way ANOVA test was run, results revealed that income groups differed only on the variable Frequency of Health Communication ($N = 429$, $F (5, 424) = 2.32, p = .04, \eta^2 = .03$); a Tukey post hoc criterion for significance found significant differences (but modest effect sizes) between those reporting more than $357,701 (M = .55, SD = .84)$ and those reporting $65,101-131,450 (M = -.03, SD = .97, p = .03)$ and $131,451-200,300 (M = -.11, SD = 1.02, p = .02)$.

**Family members.** I conducted analyses to assess sex differences (Table 5), race differences (Table 6), and income differences (Table 7) on family member variables also. An independent sample $t$-test revealed that, like the female young adults, female family members ($N = 327$, $M = -.05, SD = 1.03$) reported feeling significantly less competent in their health abilities than male family members ($N = 98; M = .22, SD = .89, t (423) = 2.37, p = .02$). Second, I proceeded to test race differences using a one-way ANOVA. Family member respondents of different races did not significantly differ on any variables.

Finally, I assessed differences on variables based on income utilizing a one-way ANOVA and Tukey post hoc analysis. Respondents from various income groups significantly differed on three variables: Health Attitudes ($N = 394$, $F (5, 389) = 3.23, p = .01; \eta^2 = .04$), Health Behaviors ($N = 361$, $F (5, 356) = 5.51, p < .001, \eta^2 = .07$), and Health Competence ($N = 424$, $F (5, 419) = 2.58, p = .03, \eta^2 = .03$). Effect sizes were modest. Tukey post hoc analyses found that those earning less than $16,050 (M = -.74, SD = .82)$ reported significantly less positive health attitudes than those in other income bracket ranges ($65,101-131,450: M = .04, SD = .94, p = .02; 131,451-200,300: M =
.01, SD = 1.01, p = .04; $200,301-357,700: M = .22, SD = 1.01, p = .01; > $357,701: M = .35, SD = .83, p = .02). Individuals earning $16,051-65,100 (M = -.79, SD = 2.01) reported significantly less positive health behaviors than those in the three highest income brackets ($131,451-200,300: M = .48, SD = 2.03, p = .001; $200,301-357,700: M = .61, SD = 2.08, p = .01; > $357,701: M = 1.29, SD = 2.29, p = .01). Last, those earning more than $357,701 (M = .47, SD = .88) reported significantly higher levels of health competence than those earning less than $16,050 (M = -.20, SD = .91, p = .04), $16,051-65,100 (M = -.22, SD = 1.11, p = .01) and $65,101-131,450 (M = -.04, SD = 1.00, p = .01). Also, those earning $16,051-65,100 reported significantly lower health competence scores than those in higher income brackets ($131,451-200,300: M = .11, SD = .92, p = .03; $200,301-357,700: M = .26, SD = 1.04, p = .01).

**Preliminary Analysis: Conversation Orientation and Openness of Health Conversations**

First, it is important to identify the relationship between overall family conversation orientation and Openness of Health Conversation. That is, it is logical to conclude that families with high conversation orientations will also show greater openness in discussing health-related issues, whereas those families with low conversation orientations may not view open conversations about nutrition and physical activity as a necessity. Still, some evidence suggests topics relating to health are often “taboo” in a family and, thus, frequent and open disclosure of health issues should not be taken as a given (e.g., Anderson & Martin, 2003). A bivariate correlation was run on the variables Family Conversation Orientation and Openness of Health Conversations (that is, family conversations about eating/nutrition and physical activity). The correlation was
significant \( r (422) = .53, p < .001 \). Consistent with my expectation, the more open the communication in the family in general, the greater the level of Openness of Health Conversation.

**Research Question 1: Actor-Partner Interdependence Model**

The first research question inquired about the relationships among the young adult’s health variables (attitudes and behaviors) and the family member’s health variables. To test this, I used structural equation modeling (SEM) within an Actor-Partner Interdependence Model (APIM) framework (Cook & Kenny, 2005; Kashy, Jellison, & Kenny, 2004; Kashy & Kenny, 2000). Specifically, the APIM estimates actor and partner effects in dyads. Partner effects take place when the score of one member of the dyad affects the second member’s score (also referred to as the occurrence of “nonindependence of observations;” Cook & Kenny, 2005, p. 101).

Generally, I assessed both actor and partner effects in the associations of health attitudes with health behaviors in young adult-family member dyads (dyads being the unit of analysis). The three manifest behavior variables (low-fat food intake, fruit and vegetable intake, and physical activity) were summed to form the overall health behavior variables (i.e., young adult health behavior and family member health behavior). Health research demonstrates that simple summation is a frequently used approach comparable to the weighting of items (Fayers, Hand, Bjordal, & Groenvold, 1997). Furthermore, each behavior variable loaded highly onto the Health Behavior variable when tested as a latent construct, thus providing additional justification for simple summation. Alternatively, a weighting method could have been used; however, weighting one of the three behavior variables more heavily than the others would make little sense given
obesity research: an overwhelming amount of literature specifically states that it is the totality of eating behaviors and physical activity behaviors that triggers one’s overweight or obesity risk (CDC, 2009; Eckel, 2008; Jakicic & Otto, 2006).

Naturally, the decision to use summated variables impedes my ability to draw very specific conclusions about one’s specific diet or physical activity. However, the goal of this study, for instance, is not to demonstrate why one individual eats more fruits and vegetables than another. Rather, the goal is to examine the role of communication variables in the overall health behaviors of an individual. As such, a composite of these variables, as opposed to entering each individual behavior variable into each model, is theoretically (see Bollen & Lennox, 1991) and practically (see Phelan, Wyatt, Hill, & Wing, 2006) appropriate. In sum, assessing eating habits alone or physical activity habits alone may bring light to those individual areas, but fails to demonstrate the broader health communication picture that I aim to discover.

Continued justification of the hypothesized model arises from family and health theory. To begin, the very notion that families are regarded as systems indicates family members’ interconnectivity and interdependence (Vangelisti, 2004). As such, any model explaining family health behaviors ought to account for the fact that family members do not operate individually but “as parts of overall patterns….Interdependence implies that a change in one part of the system affects the entire system” (Galvin, Dickson, & Marrow, 2006, p. 312). Moreover, according to Bandura’s (1986, 2000) theoretical arguments, SCT specifically explains how family members might come to observe, discuss, and eventually adopt the health behaviors of other close family members, such as their parents or siblings. Research using FCPT illustrates that family communication may
influence and shape others’ health attitudes and behaviors. In sum, these theories support a model that captures the process of family members’ discussion and/or modeling of particular health behaviors, and the outcomes of the communication on individual members. Importantly, this APIM takes into account that the family members in this study act as an interdependent system, with one influencing the other’s behaviors and vice versa.

A depiction of the full predicted model appears in Figure 1. After fitting a base, just-identified APIM in the initial analysis, both actor and partner effects were constrained in the final model (see Cook & Kenny, 2005). Chi-square difference tests revealed nonsignificance, indicating that the models constraining the actor paths ($\Delta \chi^2 (1, N = 410) = .27, p = .60$) and partner paths ($\Delta \chi^2 (1, N = 410) = 1.11, p = .29$) could be treated as equal to the base model without worsening model fit. With the actor and partner constraints in place, a maximum likelihood chi-square statistic was estimated and it indicated excellent model fit ($\chi^2 (2, N = 410) = 2.40, p = .30); RMSEA: .02; CFI: 1.00; NFI: 1.00; TLI: 1.00$). The constrained model appears in Figure 2.

The actor effects, which assessed whether (a) health attitudes of the young adult would influence health behavior of the young adult and (b) health attitudes of the family member would influence health behavior of the family member, were positive and statistically significant (Young Adult: $b = .96, \beta = .50, p < .001$; Family Member: $b = .96, \beta = .49, p < .001$). Partner effects examined whether young adults’ health attitudes would relate to family members’ behavioral outcomes, and whether family members’ health attitudes would relate to young adults’ behavioral outcomes. Results indicated that young adults’ attitudes had a significant impact on the health behaviors of their family members.


(b = .13, β = .07, p = .02), and family members had a similar impact on the health behaviors of young adults (b = .13, β = .07, p = .02).

Overall, $R^2$ for Young Adult Health Behaviors was .27, and for Family Member Health Behaviors, $R^2 = .26$.

**Research Question 2: Moderating Variables**

The moderation goals of the second research question asked whether varying levels of (a) Openness of Health Conversations, (b) Frequency of Health Communication, (c) Perceived Confirmation (from a family member), and (d) Family Conformity, moderated the relationship between young adults’ and family members’ health attitudes and behaviors. To analyze these associations, I ran multiple predictor APIMs within the SEM framework in order to assess moderated effects on the two dependent variables, Young Adult Health Behavior and Family Member Health Behavior, simultaneously.

I completed the moderation analyses to account for how the four moderating variables potentially altered actor and partner paths. Each model contained a centered moderating variable entered individually (to look at main effects), and also entered as an actor and actor-partner interaction variable. For example, Openness of Health Conversations (moderator), Family Member Health Attitudes (independent variable), and the product of these variables (interaction variable) were included in the model to determine their individual and joint effects on Young Adult and Family Member Health Behaviors. Then, I ran Openness of Health Conversations (moderator), Young Adult Health Attitudes (independent variable), and the product of these variables (interaction variable) to determine the effects on the same two dependent variables. I analyzed the remaining three moderator variables in this fashion (see Table 8 for all RQ 2 moderation
results). Thus, two models were used to assess each of the four moderating variables for a total of eight models. Model fit indices are included below.

**Openness of health conversation.** Results returned no significant interaction effects on either dependent variable. However, the model using the interaction variable Young Adult Health Attitudes*Openness of Health Communication indicated excellent model fit [Model 1a: ($\chi^2 (2, N = 410) = 2.85, p = .24); RMSEA: .03; CFI: 1.00; NFI: .99; TLI: .98)], as did the model using Family Member Health Attitudes*Openness of Health Conversation [Model 1b: ($\chi^2 (2, N = 410) = 2.43, p = .29); RMSEA: .02; CFI: 1.00; NFI: .99; TLI: .99)]. Chi-square difference tests were used to examine whether these two models were significantly improved from the original APIM in the first research question. A significant chi-square would indicate that the model(s) inclusive of the moderation variable would indicate a significant effect on Young Adult and Family Member Health Behaviors beyond what was predicted by the original APIM. A chi-square test of difference indicated that model 1a ($\Delta \chi^2 (13) = .45, p = 1.00$) and model 1b ($\Delta \chi^2 (13) = .03, p = 1.00$) fit the data no better than the original base model. In sum, Openness of Health Conversation did not moderate in this analysis; its inclusion in the model created excellent model fit, but did not produce any unique effects.

**Frequency of health communication.** The interaction variables of Young Adult Health Attitudes* Frequency of Health Communication and Family Member Health Attitudes* Frequency of Health Communication did not produce any significant moderating effects on the relationships between either set of independent and dependent variables. Model fit for both the Young Adult Health Attitudes*Frequency of Health Communication interaction [Model 2a: ($\chi^2 (2, N = 410) = 1.58, p = .45); RMSEA: .000;
and the Family Member Health Attitudes* Frequency of Health Communication [Model 2b: (χ² (2, N = 410) = 1.35, p = .51); RMSEA: .04; CFI: 1.00; NFI: 1.00; TLI: 1.00] was excellent. However, model 2a (Δ χ² (13) = 1.27, p = 1.00) and model 2b (Δ χ² (13) = 1.35, p = 1.00) fit the data no better than the original base model, according to chi-square difference tests.

Although moderation analysis on this variable returned nonsignificant findings, I noted that when Frequency of Health Communication was present in the model, the partner effects in the APIM disappeared. Restated, when Frequency of Health Communication was entered into the model, Young Adult Health Attitudes no longer predicted Family Member Health Behaviors (b = .09, β = .04, p = .14), and Family Member Health Attitudes no longer predicted Young Adult Health Behaviors (b = .09, β = .04, p = .14). This finding suggested that Frequency of Health Communication may actually mediate—not moderate—the relationship between the actor’s health attitudes and the partner’s health behaviors. Thus, a mediation analysis was conducted to observe whether Frequency of Health Communication partially mediated the relationship between actor Health Attitudes and partner Health Behaviors. Using SEM, I ran a model including the two initial variables, Young Adult and Family Member Health Attitudes, the two outcome variables, Young Adult and Family Member Health Behavior, and the potential mediating variable, Frequency of Health Communication. The model fit was excellent: (χ² (2, N = 434) = 1.56, p = .46); RMSEA: .000; CFI: 1.00; NFI: 1.00; TLI: 1.00).

A variable is said to be a mediator when it carries the influence of an independent variable to a dependent variable. According to Baron and Kenny (1986) three steps are needed to establish partial mediation; four are needed to conclude full mediation. First,
the initial variable must be correlated to the outcome variable. Second, the initial variable must be correlated with the mediating variable. Third, the mediator must affect the outcome variable. Finally, to establish that the mediator completely mediates the relationship between the initial and outcome variables, the effect of the initial variable on the outcome variable when controlling for the mediator should be zero. However, noting that Frequency of Health Communication appeared to diminish the significant relationship required for Baron and Kenny’s first step, Preacher and Hayes’ (2008) explanation of mediation was more intuitive. In general, the authors suggest that mediation occurs when (a) the initial variable significantly affects the mediator variable, (b) the initial variable significantly affects the outcome variable in the absence of the mediator, (c) the mediator has a significant, unique effect on the outcome variable, and (d) the impact of the initial variable on the outcome variable diminishes when the mediator is introduced to the model. The analysis indicated that Frequency of Health Communication did not significantly correlate with Young Adult Health Behaviors and, thus, Frequency of Health Communication was not a mediator in the relationship between Family Member Health Attitudes and Young Adult Health Behaviors. However, Young Adult Health Attitudes correlated positively with Frequency of Health Communication \((b = .30, \beta = .30, p < .001)\), and Frequency of Health Communication correlated positively with Family Member Health Behaviors \((b = .25, \beta = .12, p = .008)\). From the original APIM tested in Research Question 1, results showed that Young Adult Health Attitudes also correlated positively with Family Member Health Behaviors \((b = .13, \beta = .07, p = .02)\). However, with Frequency of Communication entered into the model, this relationship diminished greatly, and was no longer significant \((b = .05, \beta = .03, p = .41)\).
The significance of the indirect effect of the mediator was assessed with a Sobel test. Use of the Sobel test is well-established and widely used, particularly when dealing with a larger sample size (Preacher & Hayes, 2008; Sobel, 1990). The Sobel test was significant ($z = 2.52, SE = .03, p = .01$). Thus, Frequency of Health Communication partially mediated the relationship between Young Adult Health Attitudes and Family Member Health Behaviors (see Figure 3). In other words, Frequency of Health Communication appeared to carry the influence of Young Adult Health Attitudes to the variable Family Member Health Behavior.

**Perceived confirmation.** The interaction effect of Young Adult Health Attitudes and Perceived Confirmation was significant for Young Adult Health Behaviors: ($b = -.15, \beta = -.08, p = .03$). This finding indicated that young adults who perceived lower levels of confirmation (1 SD below the mean: $b = 1.02, p < .001$) had a stronger association between health attitudes and health behaviors than those reporting higher levels of perceived confirmation (1 SD above the mean: $b = .91, p < .001$; see Figure 4). Once again, model fit for both the Young Adult Health Attitudes*Perceived Confirmation interaction [Model 3a: ($\chi^2 (2, N = 410) = 2.77, p = .25$); $RMSEA: .02; CFI: 1.00; NFI: 1.00; TLI: .99$] and the Family Member Health Attitudes*Perceived Confirmation [Model 3b: ($\chi^2 (2, N = 410) = 2.98, p = .23$); $RMSEA: .04; CFI: 1.00; NFI: 1.00; TLI: .98$] indicated excellence. Chi-square tests of difference indicated that neither model 3a ($\Delta \chi^2 (13) = .37, p = 1.00$) nor model 3b ($\Delta \chi^2 (13) = .58, p = 1.00$) fit the data better than the originally predicted model.

**Family conformity.** No interaction effects were significant. However, both Family Conformity models displayed excellent fit: Young Adult Health Attitudes*Family
Conformity interaction [Model 4a: \( \chi^2 (2, N = 410) = 2.12, p = .35 \); RMSEA: .01; CFI: 1.00; NFI: 1.00; TLI: 1.00]); Family Member Health Attitudes*Family Conformity [Model 4b: \( \chi^2 (2, N = 410) = 2.83, p = .24 \); RMSEA: .03; CFI: 1.00; NFI: 1.00; TLI: .98]). Chi square tests of difference indicated that model 4a did not fit the data any better than the original base model (\( \Delta \chi^2 (13) = .28, p = 1.00 \)) and similar findings resulted for model 4b (\( \Delta \chi^2 (13) = .43, p = 1.00 \)).

In summary, of the four potential moderating variables, only Perceived Confirmation demonstrated a significant moderating effect. Surprisingly, Frequency of Health Communication partially *mediated* the relationship between Young Adult Health Attitudes and Family Member Health Behavior.

**Research Question 3: Health Competence**

Research Question 3 considered whether Young Adult and/or Family Member Health Competence played a mediating role in the relationship between family health communication and Young Adults’ and Family Members’ Health Behaviors. Specifically, I conducted two mediation analyses using SEM. Again, running this analysis in a SEM framework allowed me to examine two outcome (dependent) variables simultaneously. The first model contained Openness of Health Conversation as the initial variable, the second contained Frequency of Health Communication as the initial variable. I included the same potential mediators (Young Adult and Family Member Health Competence) and outcome variables (Young Adult and Family Member Health Behaviors) in each model. I created two mediation models assessing initial (communication) variables’ direct and indirect effects on the outcome (behavior) variables. Assuming that Openness of Health Conversation and Frequency of Health
Communication might still affect health behaviors despite the influence of health
cOMPETENCE, partial mediation seemed most likely (that is, the effect of the initial variable
on the outcome variable when controlling for the mediator would not equal zero; Baron
& Kenny, 1986).

Prior to running the mediation analyses, I ran model fit statistics for both the
OPENNESS OF HEALTH CONVERSATION model and the FREQUENCY OF HEALTH COMMUNICATION
model. Surprisingly, despite the many significant paths within each model, both the
model using Openness of Health Conversation and the model using Frequency of Health
Communication returned borderline model fit statistics: Openness of Health
Conversation: \( \chi^2(2, N = 434) = 11.10, p = .01 \); RMSEA: .10; CFI: .95; NFI: .91; TLI:
.78; Frequency of Health Communication: \( \chi^2(2, N = 434) = 10.52, p = .01 \); RMSEA:
.09; CFI: .96; NFI: .85; TLI: .82].

Path results from the model using Openness of Health Conversation as the initial
variable confirmed the steps of mediation (as established by Preacher & Hayes, 2008) for
young adult variables: Openness of Health Conversation correlated positively with
Young Adult Health Competence \( (b = .16, \beta = .16, p = .001) \) and Young Adult Health
Competence also correlated positively with Young Adult Health Behaviors \( (b = .82, \beta =
.41, p < .001) \). Openness of Health Conversation significantly related to Young Adult
Health Behaviors when the mediator was included in the model \( (b = .18, \beta = .09, p =
.04) \), but this was a diminished relationship compared to the correlation of the two in the
absence of the mediator \( (b = .29, \beta = .15, p = .002) \). The significance of the indirect effect
of the mediator was assessed with a Sobel test. The Sobel test was significant \( (z = 3.09,
SE = .04, p = .002) \). Thus, Young Adult Health Competence partially mediated the
relationship between Openness of Health Conversation and Young Adult Health Behaviors (see Figure 5). No mediation was discovered for Family Member behaviors, as Openness of Health Conversations failed to correlate with Family Member Health Competence ($b = .06, \beta = .06, p = .19$).

The second model used Frequency of Health Communication as the initial variable (Figure 6). This time, results were flipped: Family Member Health Competence partially mediated the relationship between Frequency of Health Communication and Family Member Health Behaviors. Specifically, Frequency of Health Communication correlated positively with Family Member Health Competence ($b = .12, \beta = .12, p = .01$). Frequency of Health Communication had a positive relationship with Family Health Behaviors in the absence of the Family Member Health Competence ($b = .41, \beta = .21, p < .001$). A positive association also existed between Family Member Health Competence and Family Member Health Behaviors ($b = .81, \beta = .41, p < .001$). Finally, Frequency of Health Communication had a positive but diminished relationship with Family Health Behaviors after accounting for the mediator ($b = .38, \beta = .19, p < .001$). Again, the Sobel test confirmed this finding ($z = 2.36, SE = .04, p = .02$). Frequency of Health Communication was not significantly associated with Young Adult Health Competence ($b = .07, \beta = .07, p = .14$), and thus failed to meet one of the steps required for mediation.

**Post-hoc Analysis**

Given a long list of studies depicting the mother as one of the most influential family members when it comes to health-related issues (e.g., Barnes & Farrell, 1992; Bois et al., 2002; McCabe et al., 2007; Pike & Rodin, 1991), I was curious as to whether the overall APIM tested in Research Question 1 would look different for two distinct
groups: the first group containing only those dyads which included young adults and their mothers, and the second containing those dyads which included young adults and any other relative (e.g., father, sister). I conducted a multi-group growth model in MPlus, to examine how paths and model fit would differ between the two groups (“Mother” versus “Other”). Overall model fit with these two groups was excellent \((\chi^2 (4, N = 433) = 8.18, p = .09); \text{RMSEA: .07}; \text{CFI: .98}; \text{NFI: .94}; \text{TLI: .96})\) and individual contributions were also indicated: “Mothers:” \((\chi^2 (4, N = 296) = 1.98, p = .74)\); “Others:” \((\chi^2 (4, N = 137) = 6.20, p = .18)\). Path analyses revealed another important difference: although both models showed significant attitude-behavior actor effects, only the “Mothers” group revealed significant partner effects. Specifically, within the “Mothers” group model, Young Adult Health Attitudes predicted Family Member Health Behaviors \((b = .14, \beta = .07, p = .05)\) and Family Member Health Attitudes predicted Young Adult Health Behaviors \((b = .14, \beta = .07, p = .05)\). These same variable relationships in the “Others” group model were nonsignificant \((p = .97)\). Muthén and Muthén (2007) assert that differences in parameters, such as these, are sufficient to conclude measurement invariance. Thus, it appears that mothers were responsible for a good portion of the partner effects demonstrated in Research Question 1.

**Discussion: Phase One**

The first quantitative phase of study, grounded in FCPT and SCT, explored the relationships between the health attitudes and behaviors of family members. Little research has examined family communication in the health context of diet and physical activity; thus, this investigation was one of the first of its kind. Specifically, a series of research questions investigated, (a) initial relationships between young adult and family
member health attitude and behavior variables, (b) the moderating effects of communication variables, including Openness of Health Conversation, Family Conformity, Frequency of Health Communication, and Perceived Confirmation, and (c) the mediating effects of health competence on the relationship between health communication variables and individuals’ health behaviors. The following section discusses each of the research questions’ results individually as well as holistically. I offer practical application of the findings as well as areas for future research. Limitations of the study conclude this section.

A preliminary analysis tested for an existing correlation between the variables Conversation Orientation and Openness of Health Conversations. The rationale for testing this was based on the chance that not all family communication is “created equal.” That is, I was leery of using the results of Conversation Orientation—a variable assessing openness of family communication in general—in lieu of a variable that strictly assessed family health conversations. Although I suspected a significant correlation, the chance of some respondents viewing health as a more private issue, and thus, not communicating about it as openly, existed (see Pecchioni et al., 2006 for a review of health disclosure issues). A positive relationship was identified. Thus, the Openness of Health Conversation variable was used in the data analysis instead of Family Conversation Orientation.

Usage of an adapted communication variable to fit a specific context in this study begs an examination of the continued contribution of both FCPT and the Revised Family Communication Patterns scale in future family studies. For instance, a quick glance at the correlation table in this study (Table 1) reveals that while Openness of Health
Conversation significantly (positively) related to young adults’ health behaviors and health competence, the general measure of Family Conversation did not. Similarly, Openness of Health Conversation correlated positively with family members’ health attitudes and health behaviors but the general measure did not. Certainly, while conversation orientation in general is a helpful, telling variable, perhaps using the Revised Family Communication Patterns scale adapted for the communication context of interest would give researchers the most accurate read on the relationships between family communication (in context) and target outcome variables.

**Research Question 1**

Next, the first research question asked whether relationships existed between a young adult’s and his or her influential family member’s health attitudes and behaviors regarding nutrition and physical activity. The APIM demonstrated the interdependent nature of health attitudes and behaviors in family member dyads. Not only did one’s own attitudes positively impact one’s health behaviors (actor effects), but both young adults’ and family members’ attitudes impacted their partner’s health behaviors also. The findings offer continued support for the use of SCT (Kunkel et al., 2006) in family health studies and support research investigating family member’s mutual influence (Lollis & Kuczynski, 1997; Socha & Stamp, 1995): not only did family members have an impact on the young adult, but young adults influenced their family members (largely parents), in this sample.

Interestingly, a post-hoc analysis following up on the results of Research Question 1 indicated that when the data set was organized into two groups by family member relationship, those young adult-family member dyads which included a mother showed
significant partner effects, while dyads including other relatives did not. In other words, mothers accounted for much of the variance in the partner effects discovered in Research Question 1. The association between mothers’ attitudes and young adults’ health behaviors echoes past research in adolescent (health) risk behavior studies which demonstrate mothers’ influence on adolescents’ sexual behaviors (Fingerson, 2005; Henrich, Brookmeyer, Shrier, & Shahar, 2006) and substance abuse behaviors (Barnes, Farrell, & Banerjee, 1994).

Interestingly, the relationship between attitudes of other family members, such as fathers and siblings, and young adults’ health behaviors was nonsignificant. Given that research identifies a link between family/parental support and adolescent substance abuse (e.g., Barnes, Reifman, Farrell, & Dintchef, 2000; Doherty & Allen, 1994; Miller-Day & Dodd, 2004), these findings at first appear unexpected. On the other hand, the findings of the present study may help explain who in the family is significantly contributing influence in these adolescent substance abuse studies: while it is important to gain insight into how overall family and parental involvement affects adolescents’ behavior, perhaps greater understanding could be gained—and solutions proffered—by measuring individual family members’ impact (e.g., mother’s influence juxtaposed with father’s influence, in addition to integrating measurements). Moreover, path analyses also revealed that young adults’ health attitudes predicted their mothers’ health behaviors, while possessing little influence on the health behaviors of other family members. This finding should urge those studying the intersection of persuasion and family communication toward continuing to examine the mutual influence of family members. Limited attention has been paid to families by persuasion scholars, and persuasion studies
addressing family communication typically focus on parental requests to children or persuasion in marital relationships (Wilson & Morgan, 2004). We know little of the special circumstances involving persuasive communication within the mother-child dyad. The notion that children and adolescents also influence their mothers and/or fathers is acknowledged in family studies (e.g., Lollis & Kuczynski, 1997; Socha & Stamp, 1995) but is, empirically, a relatively untapped area. Continued work on this topic would make an exciting and useful contribution to family communication studies.

**Research Question 2**

Four follow-up inquiries analyzed whether the relationships discovered in Research Question 1 would hold when moderated by the following variables: Openness of Health Conversation, Frequency of Health Communication, Perceived Confirmation, and Family Conformity. Of these variables, only Perceived Confirmation returned a moderating effect. The analysis results indicated that when young adults perceived lower levels of confirmation and possessed increasingly positive attitudes about health, they reported more positive health behaviors than those individuals with similar health attitudes, but higher perceived confirmation levels. To my knowledge, this study is the first to examine perceived confirmation in relation to physical health outcomes. Still, based on past findings (observing mostly psychosocial and communicative outcomes of perceived confirmation), the results appear very counterintuitive. Most research (e.g., Dailey, 2006; Reis, Clark, & Holmes, 2004) states the opposite: when individuals perceive lesser levels of confirmation, the individual receives more negative outcomes for self (e.g., poor sense of self worth) and for one’s relationships (e.g., lower intimacy
levels). One study looking at children’s stress levels and (poor) mental health found these to correlate inversely with perceived confirmation (Schrodt et al., 2007).

On the other hand, it is highly plausible that one’s perceived lack of confirmation in a conversation regarding health could actually serve to increase one’s positive health behaviors. In his early discussion on confirmation, Buber (1965) posited that one could not assist another in reaching his or her true potential with kind words and warm acceptance alone. Ipso facto, family members may also need to push and challenge each other in order to help the other achieve positive health outcomes. For example, if, during health conversations, a young adult felt confirmed and assured by the family member, the young adult most likely would not feel a desire to improve or increase the frequency of positive health behaviors because his or her current health status (reflected in these health conversations) is “approved” by the family member. However, if one perceives less confirmation during a health-related conversation, it is likely that the partner’s lack of empathy, belittling statements, or discounting of feelings, for instance, might contribute to a poorer sense of self in relation to health. In an attempt to improve this outlook, the young adult might take action to improve health performance.

Additional insight on this outcome stems from social support studies. Arguably, the perceived confirmation and social support constructs relate, given that many confirming communicative behaviors tapped in the perceived confirmation scale could double as socially supportive behaviors. Although much research contends that social support benefits one’s health (see Albrecht & Goldsmith, 2003 for a review; Segrin & Passalacqua, 2010), other reports indicate this is not always the case (e.g., Brashers, Neidig, & Goldsmith, 2004; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). One
explanation given for the mixed findings on social support, taken from stress research, states that those who receive the most support are usually those who may need it the most (i.e., those who typically encounter highly stressful situations; see Bolger, Zuckerman, & Kessler, 2000). Considering that the perceived confirmation findings here were correlational, this explanation might also extend to the current study. Perhaps individuals perceiving the receipt of high family member confirmation in regards to their health, were those already experiencing negative health outcomes. Still, more research is needed on the specific content of the health conversation in which confirmation is in question to draw concrete conclusions.

A noteworthy observation from the Frequency of Health Communication moderation analysis revealed that when Frequency of Health Communication was entered into the APIM, partner effects became nonsignificant. A mediation analysis confirmed that, in fact, Frequency of Health Communication served as a mediating variable between Young Adult Health Attitudes and Family Member Health Behaviors. This relationship did not hold for the other set of partner effects (i.e., Family Member Health Attitudes and Young Adult Health Behaviors). One possible reason for this finding might be that as young adults engage family members in health discussion or vice versa, family members are reminded of the importance (and perhaps, responsibility) of modeling the associated positive health behaviors. This finding suggests that one’s health attitudes may be less important in their relationship to the other’s health behaviors if attitudes are not discussed frequently. That is, it is not enough for individuals to possess pro-health attitudes, but rather family members must also discuss their pro-health attitudes.
This finding lends support to research integrating social constructionist perspectives to health communication (see Sharf & Vanderford, 2003): through frequent health communication, family members speak into existence—and come to their own understandings of—their individual health attitudes, competencies, behaviors, etc., as well as those of others. Past research has examined the direct relationship between frequency of communication and health behaviors finding similar, positive health behavior outcomes (e.g., Booth-Butterfield & Sidelinger, 1998).

**Research Question 3**

Results of the final Research Question, which investigated the mediating effects of Young Adult and Family Member Health Competence, indicated mixed results: Young Adult Health Competence partially mediated the relationship between Openness of Health Conversation and Young Adult Health Behaviors, but this result did not hold for Family Member Health Behaviors. Furthermore, the relationship between Frequency of Health Communication and Family Member Health Behavior was partially mediated by Family Member Health Competence, but this finding did not extend to Young Adult Health Behaviors. Studies on communication and sexual health also show that open, quality communication produces less risky sexual health behaviors for adolescents (Guzman et al., 2003; Wilson & Donenberg, 2004). Interestingly, the young adults in a smoking behavior study by de Leeuw, Scholte, Harakeh, van Leeuwe, and Engels (2008) exhibited a pattern similar to the young adults in this study: Although high *quality* of smoking-specific conversations with a parent related to a lower likelihood of adolescent smoking (a positive health behavior), *frequency* of communication with a parent about smoking did not.
The discrepancies in this study, however, are not surprising, given the measurements and scale instructions. Young adults responded to the Openness of Health Conversation scale with *all* family members in mind. Therefore, it makes sense that a number of family members conversing with the young adult about health would most likely contribute to the young adult’s health competence levels, but perhaps not necessarily to the influential family member’s competence. Contrastingly, young adults responded to the Frequency of Health Communication scale with *only* the specific influential family member in mind. Thus, it is logical to assume that this variable would tie closer to the influential family member’s competence levels. Moreover, as previously mentioned, perhaps the more frequently young adults engage family members in health communication (or vice versa), the more family members are reminded of the importance (and perhaps, responsibility) of modeling the associated positive health behaviors.

All together, these findings support past research citing the importance of self-efficacy in health studies, particularly as a mediating variable (Bandura, 1998; Hagler et al., 2007; Trost et al., 2003). Bandura (1998) cited the specific need to highlight the influence of self-efficacy in health behavior research, claiming that self-efficacy was “consistently predictive” (p. 4). The health competence results of Research Question 3 continue to highlight the variable’s significance and the importance of teaching internal skills, such as health competence, in health intervention research. The following conclusion summarizes theoretical and practical implications. Limitations and recommendations for future research are also included.
Conclusion

Phase 1 uniquely contributes to extant communication research in that it is (a) one of the few family communication studies on the health topic of nutrition and physical activity, and (b) to my knowledge, the first family communication study on this topic guided by FCPT, as well as SCT.

Research traditionally utilizes SCT in guiding health behavior research. Not surprisingly, these results supported premises of SCT, including the importance of self-efficacy and communicative behaviors involved in the socialization process (Bandura, 1998). However, rarely do scholars turn to FCPT to ground their health communication studies. Hopefully, this study has demonstrated FCPT’s relation to SCT, its scope, and its ability to not only extend to communicative behavior outcomes (see Schrodt et al., 2008), but also health behavior outcomes (in this case, eating and physical activity behaviors). This extension is most clearly witnessed in the association of communication variables (e.g., Openness of Health Conversation, Frequency of Health Communication, Perceived Confirmation) with health behaviors.

The variables directly connected to FCPT—Family Conformity, and, in this study, Openness of Health Conversation—showed no moderating effects on the attitude-behavior relationship. However, Openness of Health Conversation and Frequency of Health Communication did relate to behavioral outcomes when controlling for the (partially) mediating effects of Health Competence. Thus, I interpret family communication to be playing a foundational, direct role in health behaviors, but also an indirect role, by providing a link to health self-efficacy, which in turn associates with more positive health behaviors.
Relatedly, this study paves the way for opportunities to widen the reach of the Revised Family Communication Patterns (RFCP) instrument (Ritchie & Fitzpatrick, 1990). Because the variables assessed in the RFCP were not initially intended to find links between conversation and conformity orientations with health outcomes, an updating of the scale for a particular context (e.g., nutrition and physical activity) and for the current times (the scale was last revised over two decades ago) might be in order.

Last, this study offers practical implications for health interventions (see Sparks, in press, for review) and obesity prevention programs. A family-based intervention might be particularly useful, given that most health campaigns based on SCT often forget that “environmental influences” (including one’s social environment, such as one’s family) play an important role in one’s ability to change his or her behaviors: individuals do not live in a vacuum (Bandura, 2000). Much of the adolescent health intervention work conducted today takes place in the school system and focuses on the individual student, with family (usually parents) playing a trivial role, if any (Donato, 2006). Unfortunately, a school-based campaign to increase students’ fruit and vegetable consumption for instance, will be relatively unsuccessful on a child whose family consistently eats highly fattening foods, and we know little about how this intervention impacts the peripherally-involved family members.

Therefore, based on SCT, FCPT, and the young adult-family member associations discovered here, I would recommend the development of a nutrition and/or physical activity communication-based intervention that originates in the home and includes the whole family. Specifically taking the current study’s findings into account, future researchers in this area might consider implementing an intervention that: (a) emphasizes
increasing individual family members’ overall quality and quantity of health conversation; (b) teaches family members strategies to encourage positive health behaviors genuinely and critique negative health behaviors constructively; and finally, (c) integrates a special focus on using family health messages not only to foster positive health attitudes (see Meyerowitz, & Chaiken, 1987) but also to establish and continually build one another’s competence in nutrition and physical-activity related performances (Bandura, 1977).

Limitations existed in this study. First, although I made several efforts to tap a diverse population, those individuals eventually participating comprised a rather homogenous group in terms of age, race, and SES. Continued attention to health issues such as these among minority populations and other marginalized groups is imperative. Moreover, I chose not to include scales assessing detailed specifics of family health communication in order to capture a broader outlook. Thus, some of the findings here may require additional research with more specific variables and/or family member dyads to accurately gauge variable relationships. Finally, the analyses here identified associative links between variables, and thus, causality cannot be claimed.

Taken all together, these Phase 1 findings necessitate the continued importance and use of communication variables in family health studies. Not only do the data demonstrate the important role of communication in family members’ health behaviors, but also the data highlight opportunities for researchers to create communication-based interventions to improve individuals’ health behaviors related to diet and physical activity.
CHAPTER IV
PHASE TWO: METHOD, RESULTS, & DISCUSSION

Method: Phase Two

The purpose of the second phase of this study was to explore in greater depth a person’s lived experience associated with their family communication about eating/nutrition and physical activity. These goals coincided with the guiding philosophical framework of hermeneutic phenomenology, which systematically attempts to uncover meaning from retrospection and reflection upon one’s lived experiences. Phenomenology, according to van Manen (1997), searches for meaning, not a solution, and focuses on the uniqueness of human experiences as opposed to producing generalizations. Moreover, it juxtaposes an interpretation of experience with a description of experience, thus allowing for a more cyclical means of validation. That is, “a good phenomenological description is collected by lived experiences and recollects lived experiences—is validated by lived experiences and it validates lived experience” (p. 27).

Admittedly, my own family communication about health-related topics such as nutrition and physical activity provided the starting point for this research and catalyzed the main goal: to obtain a more complete understanding of how individuals talk about and create meanings associated with healthy living. Health is not only my area of study, however, but a life choice. In addition to valuing and making time for my health, I also
seek to improve the health of others (and have even obtained a national, group fitness certification in order to do so). Thus, because I am so closely wedded to the topic of health and health improvement, I find it unlikely that I could completely separate my own experiences from the investigation at hand. Transcendental forms of phenomenological methodology (e.g., Moustakas, 1999), which urge researchers to “bracket out” (“Epoche”) their personal experiences, judgments, and knowledge in order to perceive phenomena “freshly, as if for the first time” (Moustakas, 1999, p. 34), would make little sense here.

**Design**

A deeper understanding of nutrition- and physical activity-related communication between family members was desired; thus, interviews were conducted. Specifically, based on results of the previous study, 15 young adults and their corresponding “most influential family member,” were interviewed to provide more detailed information on the phenomena in question: the derivation of meaning associated with healthy living, and the inherent gender and power issues embedded in family member communication about eating/nutrition and physical activity.

Naturally, the gender-focused goals of this study—and of the second (qualitative) research question in particular—necessitated a feminist lens in addition to my phenomenological approach. Stewart (1994) contends that qualitative feminist researchers ought to explore women-centered omissions in social scientific writing while keeping themselves and their own societal position in perspective during the investigation. Furthermore, Stewart suggests exploring how women understand their gender and how various power relationships impact women. This “procedure” was
central to me throughout data collection and analysis and jibed well with my overall phenomenological approach.

Participants

Thirty-one participants were interviewed in this study. During interview recruitment, one young adult participant’s family member stopped returning phone calls and emails and, thus, never completed the interview process. With this omission then, 30 individuals, or, 15 dyads, contributed to this analysis. Young adult participants’ ages ranged from 19-24 years (Mean age = 20.87 years). Four of the fifteen young adults were men. Nine respondents were Caucasian, three were Hispanic, one was African American, one was Asian American, and one was Chinese. Most young adult respondents were still University students, although two had graduated with Bachelor’s degrees. Only one young adult was engaged; the rest were single. Family member participants’ ages ranged from 27-59 years (Mean age = 46.93 years). Only one man participated in an interview, the father of a young adult female. Fourteen female family members (12 who were mothers of a young adult, 2 who were older sisters of a young adult) were also interviewed. Family members’ races mirrored the young adults. Ten family members reported that the highest level of education completed by a provider in the home earned a Bachelor’s degree (Masters = 3; PhD/MD/JD = 2). Most family member respondents were married (9), but a few were divorced (2) or single (2). One respondent was separated from a partner.

Procedures

Young adults from a Midwestern university enrolled in communication classes were recruited for an interview study on their health-related communication. Most young
adults and their influential family member participated in phase one of this study and expressed their interest in continuing in the study at that time. This purposeful sampling strategy (i.e., selecting specific individuals for interviews based on their ability to inform on the phenomenon in question, Creswell, 2007) seemed a natural fit for the goals of this study: numeric data from young adults previously concurred that some form of influential communication occurred between the young adults and family members (Schwandt, 1997). As such, it was reasonable to assume that each participant would have much to offer on the topic. Furthermore, I attempted to obtain maximum variation (e.g., drawing from varying income brackets, selecting a variety of family member pairings, etc.) as much as possible within this interview sample to increase the likelihood of differences in the data that still reflected common patterns (Creswell, 2007).

An e-mail was sent to those interested, explaining the general purpose of the interview, the approximate length of the participation process (estimated between 45 min. to 1 hr 30 min.), risks and benefits to the participant, assurance of the participants’ confidentiality, and the contact information of the primary investigator and the campus IRB. Furthermore, I informed respondents that their participation would enter them into a drawing for a chance to win a $100 check. Participants were asked to respond with several potential interview dates and times and a location preference, if applicable. Participants indicated also whether they preferred a face-to-face or telephone interview. Interview dates and times were scheduled and confirmed via e-mail or telephone.

Interviews—a method congruent with hermeneutic phenomenology and particularly well-suited for the goals of this second phase of study—took place in a location comfortable for the participant (e.g., home, office, coffee shop) or via phone. In
the former situation, interviewees read a consent form explaining that their participation was voluntary and that any information given would remain confidential (note: in one instance a respondent specified a preference to answer the interview questions thoroughly via e-mail due to residence in a foreign country with limited telephone access; consent was gained via written, electronic consent). Once oral consent was given, the researcher used a semi-structured interview guide (see Appendix C) to conduct the interviews. Semi-structured interviews allowed for greater breadth and data richness by allowing participants to narrate their experiences without a structured interview guide’s limitations. The semi-structured guide included introducing questions, such as “What sort of things, if any, do you do in life to maintain or enhance your health?” to ease participants into the process (see Kvale, 1996). Planned and spontaneous probes were used throughout the interviews to pursue content brought up by the participant and interpreting questions were used to clarify and/or rephrase participant responses (Kvale, 1996). As often as possible, however, I attempted to let the participants’ descriptions and stories unfold without interruption. For over-the-phone interviews, the consent form was read to the participant and oral consent was gained before conducting the interview with the same semi-structured interview guide used in face-to-face interviews. Both young adults and influential family members completed a demographic information form (approximately 5 min.).

Rarely did I dive right into the interview questions with a respondent; thus, when accounting for time spent in informal/greeting conversation, rapport building, completing demographic forms, etc. the total interview process lasted between 45 min.-1 hr. 30 min.,
on average. The average interview lasted 56 minutes. All interviews were audio-taped, transcribed, and immediately checked for accuracy.

**Data Analysis and Interpretation**

Interview transcripts were typed single-spaced and totaled approximately 516 pages. Interview data were analyzed using data analysis procedures outlined by Lindlof and Taylor (2002), namely, a constant-comparative method (Corbin & Strauss, 1998). The term *constant-comparison* originated in the grounded theory literature; however, it should be noted that only the constant comparative analysis feature was used in this study; I did not desire to create a theory from the analysis results (Corbin & Strauss, 1998). My goal was to uncover meaning and lived experience from these interviews.

van Manen (1997) contends that phenomenological analysis allows the researcher and participant to co-construct a reality, as opposed to uncovering meanings lurking in the data.

During and immediately following each interview, I recalled and reflected on the interview and the situation described by the participant, creating journal notes on paper and/or in a computer document (an effort toward “hermeneutic alertness”; cf. van Manen, 1997). These notes were stored for later use and aided me in a cyclical model of data analysis (i.e., collect, analyze, collect, analyze; Lindlof & Taylor, 2002). I reached saturation (that is, no new ideas were arising during data collection; Creswell, 2007) after approximately 12 family pairs were interviewed. Then, I continued data analysis with an open coding process. Specifically, after reading through the transcripts several times, portions of data that seemed similar when compared were highlighted or compiled electronically to suggest a forming category (Lindlof & Taylor, 2002). In some cases,
these categories were formed based on particular phrases participants used; other times, categories emerged based on entire paragraphs, or a collection of interactions. This entire process was repeated for a dyadically-focused analysis: transcripts of a young adult and the corresponding family member were laid side-by-side and analyzed concurrently. This juxtaposed style of analysis was useful for identifying, understanding, and interpreting instances of similarity and/or contrast in respondents’ interviews. For example, I compared whether young adults’ reasons for selecting the particular family member aligned with the family members’ thoughts as to why they were selected.

Continued data reduction took place by labeling and separating data and relating them meaningfully to the articulated categories. In some cases, in-vivo codes—or, those words or phrases actually spoken by the participants—supplemented the analysis (Lindlof & Taylor, 2002). For instance, I noted early on that several respondents mentioned the informality of health communication with their family members. One participant in the latter half of my interviews also discussed this, brilliantly coining it as health communication “on-the-go.” Throughout this coding process, I continued writing asides and longer, detailed commentaries in the margins of the transcripts to help compare and contrast data. Eventually, I created so many codes that I needed a codebook to keep everything organized. The code book contained the following: (a) code names and definitions (as they related to the original category), (b) location of the example in the printed transcriptions (participant number, page number, and line number), and (c) a brief explanation of how the participant’s statement linked to that code. Eventually, it was clear—both conceptually and visibly—that several of the codes overlapped. Thus, I integrated several of these together during the process of axial coding for a total of nine
codes (Corbin & Strauss, 1998). The final part of my analysis process, interpretation, allowed me to move past an understanding of the remaining first-order codes to a more holistic “translation;” that is, I began to “build a structure that interrelates the key parts of the data set” (Lindlof & Taylor, 2002, p. 232). In this process, codes continuously converged as I realized two dimensions to my respondents’ interviews: a health meaning-making dimension and a gender role dimension. This first dimension became the first overarching theme and included three subthemes. The gender role dimension also became a theme, organized into four subthemes.

**Validation**

According to Creswell (2007), an author must demonstrate how his or her interpretations provide a justifiable explanation of the phenomena under investigation. Thus, three types of validation were used in this study. First, rich thick descriptions from the interviewees were used to convey findings. My goal entailed using as detailed descriptions as possible with the hopes of guiding readers’ decisions regarding whether the findings here could transfer to other families or settings. Second, at the conclusion of the interviews, member checking was employed to determine the accuracy of the findings. That is, I rearticulated some of the main points gathered during the interview and asked for the interviewee’s feedback and any other relevant information he/she wanted to offer (Kvale, 1996). This was done particularly when examining respondents’ definitions of health to ensure participants’ views of the credibility of the findings. Most of these member checks in particular took place during the interview, and just after the interview. In four isolated cases, I contacted the interviewee via email to reconfirm the data and my analysis of the data. Finally, peer debriefing, in which a second person
reviews the thematic interpretation of the data for an external “check” of the research, was used (Creswell, 2007). In this case, the peer reviewer was a female colleague who also engages in qualitative research, but from an organizational communication perspective. Thus, she understood the method and but had little background in health communication. I found this desirable, however, as her “outsider’s perspective” on a health topic challenged some of my preconceived ideas about meanings; in several ways she served as my devil’s advocate. In addition to challenging some of my earlier assumptions, she (very) graciously served as my main sounding board, allowing me to disorientate after interviews and share my insight, feelings, and occasional frustration during the analysis process.

Results: Phase Two

Two research questions guided this second phase of study. The first asked, “How does family communication (re)shape and inform each individual’s understanding of what it means to be healthy, in regards to nutrition and physical activity?” The second question was concerned with socialization practices and inquired, “Does family members’ health communication (re)create (socialized) power and gender norms?” A subquestion inquired: “What dyadic patterns are revealed in this health communication?”

Overall, thematic analysis results separated into two overarching themes to answer each of the questions: “Views” on the meaning of health: Seeing, watching, and looking and Motherhood and family health advocacy: “Doing the tradition”. Within each main theme, subthemes further organized patterns of ideas. Although distinguishable, these two themes were not mutually exclusive: each influenced the other. That is, a respondent’s understanding of the meaning of health (re)created his or her
description of the health communication interaction, just as family interactions (re)shaped respondents’ definitions of health.

“Views” on the Meaning of Health: Seeing, Watching, and Looking

The first research question in this study asked “How does family communication (re)shape and inform each individual’s understanding of what it means to be healthy, in regards to nutrition and physical activity?” This theme explored respondents’ meaning-making process and connotations of “being healthy.” Specifically, during the interviews, I asked respondents to explain what “being healthy” meant to them personally and how they came to this meaning, why they felt being healthy was important (or unimportant), the consequences of pro-health behaviors, etc. In other words, I examined their philosophies toward health. Respondents talked broadly on the meaning of health but largely three areas continued to surface in the conversations: learning about health, or, the socialization process as it relates to health, continued maintenance of health, and finally, assessing one’s health. These three experiences are each discussed as a separate subtheme: “Got it from example”: Health as learned, “Watching it”: Health maintenance and awareness, and “Looking good”: Health assessment and diagnosis.

Within “Views,” two separate but important commonalities circulated throughout. First, health was communicated as a predominantly visual experience. Respondents described learning about health behaviors, for instance, by seeing and watching other family members’ actions. Mostly, this visual dependency arose in the literal sense; that is, respondents actually saw or watched a family member’s behavior enacted and thus, learned and/or continued in the behavior themselves. However, the presence of visual metaphors was also prevalent. Those instances are noted throughout the analysis (mostly
in the second subtheme) and also receive more dedicated attention in the discussion section.

Second, in addition to evidence of the family’s influence, the theme loudly proclaimed the significance of family influence *within a context*. The interviewees conveyed the tremendous impact of individual media usage, the family’s media usage, and general societal influences on their health experiences—each interview was a constant reminder that family communication does not exist within in a vacuum.

With these ideas stated, I now turn to the first subtheme entitled, “*Got it from example*”: *Health as learned*.

**“Got it from example”: Health as learned.** Admittedly, during the interviews, and even during the early phases of this thematic analysis, I tended to want to privilege the idea of *verbal* health communication within the family and its impact on individual member health. In so doing, I almost lost “sight” of the obvious: respondents overwhelmingly reported that the way they first learned about health was not via family members’ verbal communication, but through members’ *nonverbal* communication. In particular, respondents vocalized that any health education they received from the family was less the result of something said, and more of something *seen*. Young adults particularly mentioned that they understood and learned about health as they grew up while watching an influential member. For instance, Kasey, a female respondent 20 years of age, stated the following about her influential family member/mother, Pat:

She’s the one that like, cooks for you and who you're around and you see their habits and like how they like eat and cook and how active or not active they are. So you kind of just like take after the person that you are around or learn from. (8: 331-333)
Kasey implied here that it was not only what behaviors of her mother’s she did see, but also, what behaviors she did not see that mattered and taught her about health.

Susan, another 20-year-old young adult confided that her older sister Elizabeth most influenced her health. Using visual language, both figuratively and literally (italicized for emphasis), Susan briefly explained why she chose Elizabeth as the most influential family member on her health: “I guess since she is my older sister, I've always looked up to her. And I really admire like how successful she is in general. And so I guess I just kinda look at the things that she does” (3:138-139). Interestingly, in my conversation with Elizabeth, Susan’s older sister by six years, it was evident that not only did young adults report learning about health through visual means, but also influential family members explained their influence in similar terms:

I wasn’t really a really big exerciser when I was in college I’ve been out of college for um, almost five years. I can’t believe it’s already been that long! So for the last part, for the better part of those five years I’ve been better about exercising and I’ve made that change in my diet [vegetarianism] so I think that maybe she’s picked up on that and seen, maybe just seen that I’ve changed my ways for what ever reason and maybe decided that she wants to know why I’m doing it or wants to figure out maybe what the benefits have been for me. (3:92-97)

Elizabeth’s quote indicated that Susan’s viewing of Elizabeth’s behaviors triggered the learning process for Susan. Elizabeth believed it was not until Susan witnessed Elizabeth’s dietary and physical activity changes that Susan became curious and wanted to learn more about the benefits of making those changes. This sister dyad was rare in that both Elizabeth and Susan later commented on the same verbal discussion about Elizabeth’s vegetarianism. Most dyads, however, found it difficult to recall any sort of specific health conversation at all. In fact, most perceived an absence of verbal communication entirely—at least at first—while clearly acknowledging the impact of
family members’ visual examples. Jack was one such example. A successful executive for a construction company, Jack, 48, was selected by his daughter Marisa as her most influential family member. In addition to his daughter Marisa, Jack and his wife raised three other daughters; he explained his influence on each child’s health education in this quote:

I mean, I can’t—I’m having a hard time thinking of any specific—I mean, because, you know, they [daughters] would even, you know, all the teams that I'd be on, they would be at those events when they were toddlers and babies. So they saw that I enjoyed sports and competing and things. Starting, you know, you know, heck, I played softball up ‘til a couple years ago. And so they, you know, so 20 years ago, when I was playing baseball and softball, they would be at stuff that I was doing…Never sat, never sat down and said that, you know, “You should do A, B, and C.” Um. And then I would say as it relates to a healthy diet, I think that was probably more just by watching how we all handle our own situation. (5: 271-274; 6: 299-301)

Jack’s quote demonstrates two important things. First, Jack repeated the idea that his daughters, including Marisa, saw his love of sports and watched his eating habits and thus, derived ideas about how to be healthy people. Second, Jack struggled to recall specific instances of verbally communicating these ideas to his daughters. Later in the quote he stated that he never “sat down” with Marisa or his other girls and explained the importance of getting physical activity and eating a balanced diet. In other words, it appears Jack believed that his daughters learned about health from watching, and later emulating, his example. This reliance on nonverbal example in lieu of verbal communication about health is even clearer when I juxtaposed my interactions with Sally, a 59-year-old mother, and her 20-year-old daughter Cathryn. Sally began:

You know, I don’t know that we’ve really just discussed it formally. [Pause]. I mean I think she has seen that we both feel like the exercise is real important just because she grew up in the household with us, you know, with it being part of our lives. Um, I don’t really know that her and I have ever really discussed the nutrition part, you know, as far as eating right. I just don’t know if we’ve really
talked about that, but I’m hoping that she just kind of got it from example. (2, 3: 69-73)
Sally expressed to me—three times, in this particular 4-sentence quote—that she did not recall speaking with Cathryn about Cathryn’s health. Each time she mentioned this perceived lack of verbal communication, it was accompanied by, “I don’t know.” Although the repetition of this phrase might suggest that Sally really just could not remember a health-centered interaction with Cathryn, the way this phrase was littered throughout Sally’s and other influential family members’ entire interviews led me to believe otherwise: The very idea of speaking to your family member frequently about health *without any provocation* to do so, appeared very foreign to most interviewees.

Similar to Sally and Jack, most hoped that their family members learned from their examples. In Sally’s case, her daughter did just that. Cathryn described a time when she did recall a conversation with her father about her health, following a traumatic health event:

> I uh had a a um what's it called? A pulmonary kind of thing when I was in middle school. Like a problem--I had to go to the hospital for a while. And it was really like, um, it was really hard to breathe after that. Even though it's better, like I have some scar tissue so it was kind of hard to like do activities and stuff. And my dad was--like that was probably really the only time in my life that that one of them--my dad in this case--was like, "You know, you gotta like--maybe you should start like walking or running to like build that up and like help your breathing and stuff like that." But it, it was kind of more for a specific reason than for like general health. I mean obviously, he knew that it was good for that too. But um. I don't, I don't think my parents have ever really like, you know, said to me, "It's important to stay healthy." I guess I just kind of *saw* that it was important to them so. (6: 236-246)

The rarity of Cathryn’s breathing condition was the only reason for the rarity of verbal communication from her father. Ultimately, Cathryn reported that she *saw* the way her parents lived and the importance of health in their lives. Later in the interview, I was
able to begin to understand how nonverbal health communication influenced not only Cathryn’s learning of positive health behaviors, but her overall philosophy associated with health:

But, you know, I mean I, there are a lot more important things in life and I feel like the way that my mom has kind of like, I don't know, illustrated that to me or communicated that to me is good. Like it was never really like a huge huge thing but was always just kind of like an underlying like, you know, don't make your life about it but just...have it. (22: 1002-1006)

Cathryn explained that the “illustration” of health in her family—while hardly reliant on verbal expression—still strongly communicated something to her: health is important, but not something to obsess over.

In summary, this collection of quotes indicated that individuals learned about health from their family members’ (mostly nonverbal) communication on two different levels: a functional level (e.g., what to eat, how to exercise) and a philosophical level (e.g., the value of health, health as a priority/not a priority). From this knowledge base, respondents continued to enact behaviors that aligned with these two levels. This continued application of the knowledge witnessed and learned here is discussed in the following subtheme.

“Watching it”: Health maintenance and awareness. The employment of visual rhetoric continued in the second subtheme: “Watching it”: Health maintenance and awareness. Like the first subtheme, respondents used visual language to explain another element of the health experience—health maintenance. Specifically, these quotes revolved around the idea of controlling and maintaining a current level of health that built upon previous health knowledge. However, an additional and noteworthy difference between the two themes was how visual rhetoric was manipulated to describe the
respective health experience. Whereas respondents literally watched and saw family members’ health behaviors in “Got it from example”, respondents mostly “watched” in the figurative sense in this second subtheme. For instance, Susan shamed me within the first minute of her interview when she explained that vegetables were her favorite food. When I lightheartedly questioned the veracity of this statement, she replied: “I just pretty much like to eat um--I eat junk food sometimes but I--it's minimal and so I just like to watch what I eat mostly” (1:17-18).

I often took the use of the “watching” metaphor, such as Susan’s usage in reference to weight or eating habits, for granted, as it is so commonly applied in our everyday health rhetoric. In fact, I am quite sure I have used it myself several times. However, typing it repeatedly during interview transcription caused me to question the choice in phrase and its wide-spread usage. Further justification for closely examining the metaphor came from Lakoff and Johnson (1980):

Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities. If we are right in suggesting that our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor. (p. 3)

As such, a clearer understanding of how respondents perceived health maintenance and how they discussed the concept of health maintenance with me and their family members, necessitated an investigation of the meaning(s) behind the “watching” metaphor used during interviews. Interestingly, (a) respondents never specifically stated what they meant by “watching my weight” or “watching what I eat” and (b) I never asked them to clarify. Somehow, the meaning of the metaphor was just assumed to be a shared one. However, as this subtheme will demonstrate, “watching” took on different meanings
for different participants and helped me to understand their unique health experiences at a deeper level.

First, for many respondents, “watching” one’s diet or food intake equated to cognizant consumption. Sandra, a young adult interviewee who recently lost 85 lbs since coming to college, explained how the task was excessively difficult at times. In particular, Sandra playfully observed that she could quickly glimpse a friend’s dinner plate and easily compute its caloric value, just based on her careful scrutiny of her own calorie intake during her months of weight loss. Sandra never referred to herself as ever watching her weight, however. She reserved this metaphor to describe the difference between herself and her influential family member—her older sister, Sofia. “She [Sofia] kind of like, watches what she eats but she doesn't count her calories or anything like that. She just eats a salad for lunch and then she'll have like, you know, a bigger dinner” (14: 601). In this case, Sandra’s usage of the watching metaphor suggested that her sister’s salad lunches and bigger dinners were merely attempts to consume consciously, but not to the point of obsession. Compared to her own behaviors (“Like I think I know every single calorie of every food, like, on Earth!” (13:584)), Sandra perceived Sofia’s “watching” as somewhat status quo—doing just enough to maintain her health.

Mike’s usage of the metaphor differed. A first-year college student, Mike reluctantly confided that despite several disagreements between his and his mother’s views on healthy eating (she banned sugar from the house during his childhood years, much to his chagrin), he agreed that a balanced diet was necessary for being healthy: “Um, I mean I guess I agree with her. If someone is going to be like, the top athlete or something, if they want to be in the best shape, they have to totally, you know, watch
their diet” (4:110-111). Within this quote, two important ideas emerge in regards to Mike’s use of “watch their diet.” First, he implied that a goal preceded “watching.” That is, someone first had to possess the desire to achieve something— in this case, the title of “top athlete” or, just being in “the best shape”—before it was necessary to “watch their diet.” Second, Mike did not use (nor did he ever use) the metaphor in relation to himself. “Watching a diet” is a task reserved for those who desire to achieve peak athletic status or top health and form— only then would something like diet watching become requisite. This is a far cry from the normal standard of “watching” that Sandra depicted.

Contrary to Mike’s “watching” connotations, I certainly did not gather from Elizabeth’s interview that she strove to be a top athlete or was in the process of attempting to attain the best shape of her life. Still, Elizabeth, Susan’s older sister, employed the watching metaphor about herself.

I don’t eat meat and aside from that try to eat as much fresh food as I can so, I try to stay away from the prepackaged process stuff whenever I have the option to, um, and I really just try to watch what I eat, I mean, of course if I’m a guest somewhere and I don’t have a lot of control over what I’m eating or I am in a situation where I can’t make my own food and I need to eat out then you know I’ll have to give up a little bit of that control. (3:74-78)

From this quote, we see that Elizabeth learned the basics about healthy eating already: she has chosen vegetarianism, knows to avoid prepackaged foods, and when possible she mostly selects fresh foods. She described these behaviors as watching what she eats. What is interesting, however, is what follows the metaphor: control of diet. Elizabeth associated her “watching” with being able to control her food consumption. When she is a guest in someone’s home or in a context that precludes her from cooking her own meals, she must forfeit some of this control and thus, may not be able to “watch” her food
intake as closely. Therefore, the watching metaphor for Elizabeth equated to staying in control of her eating.

The watching metaphor garners plenty of use in this final quote from Lisa, the influential mother of Jennifer. Lisa, a 47-year-old nurse, believed that her health and the health of her children was exceedingly important. She mentioned finding numerous health statistics and facts from various news outlets and magazines in order to share them with her kids. One such source was a recent DVD release of a movie entitled, *Food Inc.*, a documentary about the food industry. She stated:

> It's a documentary that was put out on the process of uh chickens and beef, um, vegetables. I mean that was so informative. And that, that's what kind of--I mean even though we've always watched what we eat, and we tried not to eat junk food and a lot of processed food, but that even more so opened our eyes to, you know, how our--where we buy our foods and how they're prepared and um, you know, what exactly goes into our bodies each and every time. So I'm just trying to get [daughter] to watch it. [laugh]... But oh yeah. 'Cause that really opens your eyes, in going, "My gosh! You know, anything can go into foods." Um. It's, you know, they’re, just the major companies, are more looking at a profit and not really caring what they put out for the consumer. And so yeah. *We really* watch it now. (2:62-72)

Again we see that Lisa and her children already have learned the health basics and, prior to viewing the documentary, watched what they ate in an effort to maintain their health. But after viewing the documentary (whose impact Lisa ironically described using another visual metaphor: *eye-opening*), “watching” takes on a different meaning. The final sentence “*We really* watch it now” moves beyond awareness and maintenance and into defensiveness. Lisa described food and profit-driven food companies in adversarial terms. The former need to watch for continued health maintenance morphed into the need to actively protect one’s health, and in this case, the health of the whole family.
This subtheme, although mainly showcasing the differences between respondents’ understanding of health maintenance and awareness, certainly highlights one obvious similarity: a focus on the external versus a focus on the internal. Arguably, such a focus is not a positive one. That is, by gauging our health maintenance and awareness based on what we see, and communicating about health maintenance and awareness in visual terms, we conceptualize these health experiences while omitting any notions of feeling or internal cues. This seeing/feeling disconnect is further exemplified in the final subtheme.

“Looking good”: Health assessment and diagnosis. The final shared experience between respondents focused on the assessment of health. Again, respondents laced visual language into almost every description and explanation of the assessment experience. This final subtheme illustrates how respondents continued to evaluate their health and the health of others based on what they saw, or, more specifically, based on looks. I very quickly learned that for most respondents—young adult or family member—being healthy was strongly associated with “looking good.” In some instances this relationship was so pronounced, that respondents used the two terms—health and appearance, or, health and looks, for instance—interchangeably.

The undercurrent of media influence in these interviews was impossible to ignore. Several respondents mentioned that what they viewed in the media influenced their health assessment. Young adults and family members, men and women—all seemed to mention some influential aspect of the media, with most particularly focusing on the influence of popular magazines, television, and film. Early in her interview, Amy, a college-aged female, mentioned that observing “healthy celebrities” on TV influenced her assessment
of her eating and exercise habits. Probing further, I asked Amy to give an example of
one such celebrity she found inspirational:

Well, like I feel like it—yeah, when I was younger, it was always like Britney Spears. You know? Because she had the perfect body. I guess. And now like she doesn't have the perfect body, that makes me make—that frustrates me too. Because uh I feel like she's, she does a lot of exercise now and now she cannot have the body she used to. So it's like, "Well, if she can and she does like a lot—
she--she has a lot--spends a lot of hours at the gym and she doesn't get it then
that's why I'm not going to get it." And yeah, it frustrates me. And she probably
eats healthy. And she's not being able to [lose weight]. So that scares me. And I
sort of, like, "Well, maybe that's why I cannot get in shape." (19: 787-794)

To ensure I understood Amy’s response, I clarified her answer:

R^4: OK. And so would you say then--would you say that, like, Britney and some
of those other celebrities, would you say they're healthy?

I: [pause] Yeah. I think--well, I think it b- [pause] before, maybe she was
healthier. And now maybe sh-, she eats a lot of junk food.

From this quote, we see that Amy linked the pop star’s former slim and trim
figure with good health. Truthfully, Britney Spears’ actual health is dubious to her fans
at best, but for Amy, Britney’s looks and fall from “perfect body” grace (never mind the
celebrity’s recent pregnancies) equated to a decline in health. In sum, based on her visual
assessment of a pop star’s body, Amy diagnosed the star’s health, and assessed her own
health (or her chances at improved health). Amy’s description of Spears’ body led her to
believe that Spears’ was healthy. She even associated healthy eating behaviors with
Spears based on this description. However, having viewed Britney Spears’ now imperfect
body, Amy concluded that Spears’ health had deteriorated and that meant Spears
probably ate less healthy than before.

Similarly, this pattern emerged in my conversation with Sandra. Within five
minutes of speaking with Sandra, I realized she had a lot to say! Much of her discussion
of health focused on her impressive weight loss accomplishment. During the course of the interview, I asked Sandra what influenced her health evaluations and her choices to eat balanced foods and stay physically active. She responded:

I guess I'd say--I mean really, society, you know, makes you want to stay thin. 'Cause people really say like, you know, “I look really good” and that's kind of what people like. And I guess the way like, when I watch television, all the girls have like, the same body type as me, it makes me feel like, "OK. I'm doing something right." Even though I don't know if that's exactly true. But I'm like, "OK. This is what I need to look like. If I want to get a professional job, I just want to look really nice and look like I take care of myself” and things like that. (29, 30:1330-1338)

Immediately noticeable in this quote is Sandra’s linkage of health to thinness. She cited important benefits—fitting in with other girls, landing a good job—of thinness, but not necessarily benefits of staying healthy. Then, Sandra explained how she assessed her health status: she watched girls on television. The girls she viewed shared a similar body type to hers and thus, Sandra was able to conclude that she was “doing something right.”

Even the older adult family members conceded that media portrayals of fit and toned models caused them to question their own health status. Sofia, a banker in her mid-thirties, stated that while her own parents’ health behaviors were far from influential, she was able to evaluate her health best from watching television:

Um, for me you know, it has probably been like, people I see on TV, you know? When you watch those personal trainers with their AM work out shows and you see how perfect their bodies are, those people are-- those are the people I’ve been trying to emulate. I haven’t been successful but those are the people that I am like, “Wow she looks great they’re doing this and this and they’re eating this way” and I wish I could do that too you know? (5:124-128)

Again, the same themes arise in this quote that arose in Amy’s discussion of Britney Spears. Sofia assessed the health of a TV personal trainer based on the trainers’ looks. Interestingly, Sofia talked specifically about a.m. work out programs, which generally
just depict trainers leading their television audiences in a workout—no eating or meal preparation is involved with this type of show. Still, Sofia mentioned that the trainers’ eating behaviors are something she wishes she could emulate. Sofia then assessed and diagnosed her own health in relation to another.

But what about the gentlemen? Lest any reader assume that the health-appearance relationship and media-based health evaluations typified only women respondents, the following demonstrates otherwise. In fact, men’s answers differed from women’s only in that, with the men, I scarcely needed to probe: they immediately mentioned looks as something related to—and in some ways synonymous with—their health. Dave and Kurt, two young adult men I interviewed, both seemed to have a similar take on how the media obscures “being healthy” and “looking good.” Ironically, they even used the same film star—Taylor Lautner—to demonstrate how health and looks become synonymous with each other. Kurt, a nutritious eater and avid snowboarder, explained:

The huge part of it is—and I think again it's overlooked a lot with guys--they always stress how, the media--it's all, it's all about the media. You know, the media, they say, they give these girls these unattainable goals with all the models and all the actresses. But the same could be said for guys, you know. You go and watch, for instance, the new Twilight. All the girls are obsessed with, you know, Jacob Black or whatever. And, you know, you see the girls ooh and awe over that, so you, you know, try and get that for yourself. (9:486-491)

I did not ask Kurt how the media influenced his perceptions of his appearance. I did not ask Kurt how body image issues differed or streamlined for men and women. I simply asked Kurt why he continued to maintain his health by eating nutritiously and getting physical activity on the slopes. And his response was dominated by appearance concerns and “look”-related reasoning. Moreover, Kurt’s last statement, “try and get that for
yourself…” implied that other young men who saw the film star’s body (and, perhaps more importantly, witnessed girls ogling over the film star’s body), would compare themselves with this (impossible) standard, come up short, and take action to resolve the difference. Dave, a recent college graduate, responded to my health inquiries in a similar fashion:

Like I don't know, maybe girls might want to, I guess date Jake Black and there's like, you know, models who just have water bowls or whatever. [chuckle] Uh. And uh, you know, guys may want to uh uh, you know, maybe get, I don't know, steroids or whatever to help pump themselves up. But um. I mean that's really uh [pause] just uh, I guess [pause] uh bad sometimes when you uh I guess see like the kinda people that are, you know, being por- portrayed as healthy on the media, so. (7:344-361)

According to Dave, the prevalence of muscular, hulky bodies on television may actually cause some men to realize they are so far from measuring up to this standard, that steroid usage might be a justifiable fix. Of course, we also see another similarity to Kurt’s statement here: both young men claimed that media influence men’s evaluations of health, but also claimed women’s evaluations of a man’s healthy body men influenced men. Evaluation of one’s health based on the assessment of a member of the opposite sex suggests an undercurrent of evolutionary theory. Again, the comments went both ways: women’s health assessments were equally influenced by what they perceived men would find “healthy.” Healthy, in most cases, equated to thinness. A young adult named Corey, a striking young lady I interviewed, stated:

But they definitely, guys definitely influence you. 'Cause like if you're, if there's a boy you like or if you have a boyfriend, like I'm sure--I don't have a boyfriend but I'm sure that, you know, you know, if they act-- You know, you know that whole like, "Oh, do I look fat?" You know, like that's just, that's always in girls' minds when it comes to dating guys. It always is there. 'Cause you're worried about what they're going to think and the girl next to you's just gonna be skinnier. (13:719-725)
Women constantly assessing and reassessing their weight to measure up to (a) men’s standard of health/weight and (b) the woman “next” to them, appeared to be a subtheme throughout Corey’s interview and the interviews of other women participating in this study.

Between one’s own standards, viewing media standards, and those standards employed by significant interpersonal relationships (or at least, a potential significant interpersonal relationship), both young adults and family members evaluated their health. Specifically, individuals’ health diagnoses were visually-based and appeared to be ongoing, never static. The cycle of viewing a standard, measuring one’s health against that standard, assessing one’s health status, and then taking/not taking action, continued over and over again.

Interpersonal relationships within the family take center stage in the second overall theme, which answered the second research question and subquestion guiding this study. Detailed analysis is offered via four subthemes.

**Motherhood and Family Health Advocacy: “Doing the Tradition”**

The second research question in this study asked:

RQ6: Does family members’ health communication (re)create (socialized) power and gender norms?

And a subquestion inquired: What dyadic patterns are revealed in this health communication?

Overall, communicating about health within the family appeared to be an overwhelmingly gendered experience. Once again the following four subthemes take us through the various patterned thought-processes of the respondents: The “balance” of

The “balance” of family healthcare. The first subtheme illustrates how respondents viewed health communication in the family as coming from several family members, but from mothers and fathers especially. The quotes in this section all pinpoint the mutual influence of both mother and father on one’s health. This applied to both young adults reporting on their mother or father (several of whom participated in the study also) as well as family member participants reporting on their own influential family members. It is important to note that despite my focused interest on communication between the dyad at hand, I still inquired as to how each participant viewed health communication in the family. Thus, participants not only commented on the other interviewed family member, but also were asked to explain the influence (or lack of influence) of every family member (e.g., sibling, grandparent, other parent, caregiver). It quickly became apparent that mothers and fathers were influential but in very different ways. Generally, in regards to diet and nutrition, respondents reported that mothers did the most communicating. Fathers influenced the family in the physical activity arena. On the surface, interviewees reported that the caring for and communicating about family members’ health was a joint task between mother and father. However, a deeper investigation revealed that this “shared approach” was anything but balanced.

In the following statement, Marisa, Jack’s daughter, explained the mutual yet differing influence of her mother and her influential family member, her father:

Um I guess she was definitely more influential in the food aspect because she was usually the one who goes to the grocery store and buys the food and stuff but um,
exercise? I guess when I was younger she would take me to all my sports practices and stuff and made sure I kept doing those but she’s not really on top of me and like, into running and stuff. (3:69-73)

Jack concurred with his daughter. He concluded that Marisa most likely chose him as her influential family member because of his encouragement during her cross-country participation. She was an avid runner all through high school, and Jack often found himself playing the “coach” role. However, Jack explained that his wife, Marisa’s mother, also influenced the family. The differences between he and his wife when it came to health influence, he asserted, allowed Marisa and his other daughters an opportunity to “see a couple of different ways of how things are going on.”

Uh. I coached her a lot. Um. I probably pushed her in her athletic career more, certainly more than her mom has. Um. And her mom’s very competitive too. Her mom uh is not as, you know, she's she's she's even uh thinner than I am. I mean she's about [11:01] or something like that. But it's as much from exercise as it is for her case diet. I mean she's [wife] probab-, she's probably in some ways like [Marisa] on the more organized side of eating. So not as likely to eat way too much. You know, I mean and I I don't eat that much but I, more so than my wife does. You know, she's always under [chuckling] control, I'd say. Um. She, you know, she worries about things more than I do. Uh. [daughter] doesn't worry about, I think…You know, just things that in the big scheme of things are not a big deal. Thank goodness she does, because those, some of those are day to day things that do help your kids do good in something or… you know, all these little things that are day to day stuff. Uh. But but she's more likely to worry about, I think little things that I would say, "They'll work out." I'll be the first one to say that, you know, it wouldn't all work out sometimes that, it would, it could cause a problem for somebody. But, you know, it's it's a balance in that regard. (3:159-162; 10:511-518)

The balance that Jack referred to here represents two dimensions. From a task-oriented perspective, balance refers to his wife’s handling of the quotidian tasks associated with organizing family nutrition (i.e., those things that “are not a big deal”) and his ability to communicate encouragement and advise his daughter in her sport. However, balance also reflects his wife’s careful attention to the details of healthy eating and concern for
her children’s intake, versus his more relaxed, laid-back approach to the family’s healthcare. In fact, several interviewees mentioned that their fathers, brothers, or other males in the family espoused a very easy-going approach to health and also influenced their early interest in sports and recreational activities. Mothers typically reigned in the kitchen and the grocery store.

In another example, I asked Elizabeth, the influential older sister of Susan, who her influential family member was and why. She reported that both parents influenced her physical activity to some degree (“See my mom works out on a regular basis but it’s not an issue she talked about, and my dad doesn’t- I mean, he makes it clear that he doesn’t want to (laughing) and so that has always been the case”; 10:313-314) but eventually she spoke specifically to their individual influences:

Well like I said my mom does try to work out on a pretty regular basis so she, I kind of was always influenced by that and that maybe was indicated to me that that is something that is good to do, that is important, a good habit to get into and she also is usually the one that cooks too. Um, and so when she cooks most of the time that she does she’ll cook a pretty healthy meal um, so those kinds of habits I think I are the priorities I think I have gotten from her. And then from my dad um, I’ve kind of gotten the sense that you know exercise is not, you don’t have to call it exercise. You just have to be active and have fun with it and it doesn’t have to be a workout class or um, some set regimen that you dread because he’s just more the type of person where he’s not in great shape but he stayed active because he makes it a priority to actually go out and do things and enjoy it. So I’ve tried to always kind of be mindful of that, um, so I think that’s—that’d probably be influence from him. (10:315-322)

Elizabeth demonstrated the emerging pattern of mothers’ influence in all things nutrition and fathers’ influence in the physical activity domain. Interestingly, we also see through Elizabeth’s language usage (mother’s “habits” vs. father’s ability to “have fun”) that her parents’ philosophical approach to health differed. One final piece of information Elizabeth offered was that although her mother was most influential in terms of eating
and nutrition, she still influenced Elizabeth in the physical activity arena. No such comment about her father’s influence in nutrition arose. In fact, only one participant out of the thirty interviewed mentioned that a male family member had any positive influence on their eating habits at all (Amy stated her father—who also happened to be a family practice medical doctor—encouraged her to eat protein and drink milk). A closer inspection of interview transcripts revealed that fathers influence on family members’ eating behaviors—if influence existed—was largely headed in an unhealthy direction. Even Jack, in his earlier quote, acknowledged his tendency to overeat. Here are just a few additional, brief examples:

Rachel: So she [mom] did a pretty good job of balancing out those meals. Um. My dad, I don't know, if he was hungry, he'd grab McDonald's on the way home and he'd have like fries and shakes and then ruin dinner by the time he got home, and mom's all angry. (3:155-157)

Sandra: He like--He always was the one to buy me the bad food. [laugh] 'Cause he'd be like--he just wanted to make me happy and stuff. You know, so he'd be like, "Oh, what do you want to eat today?" And my dad would eat bad too but he, since he was a man, I guess, he never gained weight. Or he has like a really fast metabolism or something. He's like, "What are we gonna eat today? Like McDonald's or Wendy's or are we going to Pizza Hut?" I was like, "Pizza Hut." [both laugh] I was like so horrible. So we'd have pizza together. Then my dad--mom would go, "Why are you doing this to her? This is gonna hurt her in the long run." (16-17: 735-740)

All together, these quotes demonstrate that the apparent “balance” of family healthcare perceived by respondents was a task largely shouldered by mothers. Fathers’ influence existed, but unlike mothers’ focus on health care, fathers focused on health play. This difference is paralleled in much of the feminist family literature that compares and contrasts mothers and fathers’ roles in child rearing (Goldberg & Perry-Jenkins, 2004). Moreover, a mother’s influence was constant: meal planning and preparation were daily responsibilities, whereas bouts of physical activity often came and went. Respondents
concurred that influence from their mother was consistent (or, habitual). Fathers behaved inconsistently. Some evidence even suggested that mothers had to react to and counteract the health “damage” created by fathers (e.g., communicate anger) to illustrate how his behavior was unhealthful. A more detailed examination of these reactions follows in the second subtheme: The health (en)forcer: “Typical mom”.

The health (en)forcer: “Typical mom.” In the previous theme, I identified that fathers’ predominant health influence was linked to physical activity, while mothers’ influence was associated with nutrition. Unlike dad’s invitation to engage in enjoyable physical activity (e.g., sport participation, fun runs, bike rides), mom’s requests to eat nutritiously and moderately were not always regarded with the same keen interest, to say the least. Thus, this subtheme pertains not only to the mother’s “patrolling” nature and desire to compel obedience to a certain “family law” regarding health, but also to the enactment of that desire, as perceived and communicated by the respondents. Finally, the subtheme addresses the relational repercussions of these dyadic communication exchanges.

When I asked Mike why he selected his mother as his influential family member, the mom-as-health-enforcer theme undergirded his response:

Because she kind of forced it on me I don’t know, she she always talked about nutrition or like, she stopped eating like, chips and sweet stuff so you know she would always tell me like, during wrestling season and stuff to cut weight “you have to do it this way” and stuff so I mean I’d try not to listen for a while but it soaked in so I kinda know a little bit about it now…She made me and my little brother stop [eating sweets] and then it just kind of progressed to where we would get in trouble if we, if we started eating it, so it was kind of like, forbidden, like, we don’t have any sweets in our house so I’d always like, get food like, I would start eating chocolate muffins every day at lunch and stuff. (1:23-26; 29-32)
From Mike’s perspective, his mother forced him—unfairly, from his point of view—to eat nutritiously. Although it appears that much of her influence “soaked in”, we also see that Mike often resorted to passive aggressive attempts to undermine his mother’s wishes: attempting “not to listen” and sneaking sweeter snacks from the school cafeteria. His usage of the word “forced” indicated that these conversations were trying ones, and most likely did not contribute to heightening satisfaction within the mother-son relationship at the time. When I spoke with Mike’s mother Maria, a woman in her mid-40s who works as a researcher, I immediately sensed a nervous tension in the air at the mention of Mike and his eating habits. Specifically, when I asked why she believed Mike selected her as her influential family member, she replied:

And you probably never heard of this but and he will get mad so don't tell (laughing), you know, He doesn't handle sugar well and it's like an allergy. And his ability to focus has decreased and how nice he is is impacted by it. In fact both my kids are like this. And it's like Dr. Jekyll and Mr. Hyde. And so our operating--raising him, we had to steer away from eating sugary stuff. And it's really hard to do! I mean Halloween, you gotta buy the candy, you got to let him trick or treat, and then you had to buy some form to replace the candy because they weren't gonna eat it. He can't, he can't function. He went to his dad's and his dad doesn't know, doesn't believe he [Mike] doesn't handle sugar. Of course he's never tried to get him to do homework! So he's supposed to write a story with his spelling words. Now granted, he's done at least 10 of these through the year. He has his arms crossed like this at 10:00 at night. "I'm not gonna do it. I don't know how." And I'm like the the meanest mom! But I know early on, we had an impact 'cause we we'd drive him and we'd stop at a 7/11 to get gas and he'd ask for an apple instead of some junk. (2:113-117; 3: 121-130)

Within this quote, Maria communicates two things: First, she justified why she prohibited sugar in the house. Although it would certainly be well outside my jurisdiction to judge Maria’s decision, regardless of the reason, she spent ample time describing her logic, even providing an example of Mike’s allergy in action. Second, she stressed that despite the interpersonal conflict created by the no-sugar rule, it was worth it because she
influenced her son’s health positively. She provided an example of this also—
sometimes, in order to be a good mom, one had to be a “mean” mom.

From the content of this quote and Maria’s nonverbal cues, I interpreted these to
be very defensive communication moves. Maria felt the need to defend her reason for
employing the rule and then based on her son’s positive health behaviors (displayed in
the 7/11 example) defended her reason to continue enforcing it. Another noteworthy
aspect of this quote is Maria’s usage of “we” in her last sentence. Even though she
appeared to be the one enforcing the rule most often—even mentioning that dad
disbelieved her son’s sugar allergy in the first place—and Mike clearly views her as the
enforcer, Maria stated that she and her husband eventually positively influenced Mike.
Thus, she shared the positive outcome of her “good” mothering with her husband, but did
not share the health care responsibility or the relationship turmoil.

A similar pattern emerged in my conversation with a Hispanic mother-daughter
dyad: Angelina and Amy. Amy explained that health communication with her mother
looked more like frequent, quick reminders, rather than lengthy conversations every so
often. Amy discussed the contents of her mother’s “friendly reminders” that usually
surrounded the importance of a healthy weight:

Well, yeah, um. It's the same about my body, like how I should take care of
myself and that that I should not be eating certain things and I should be like
more, healthy. And that that I should exercise. She always like reminds me like,
"You should exercise like every day, blah blah." I mean yeah. That's basically the
talk we have. It's basically like exercise more to have a nice body. (5, 6: 228-236)

With a roll of the eyes, Amy listed the usual talking points she heard when in
conversation about health with her mother. Amy’s use of “blah, blah” indicated a degree
of dismissiveness reserved normally for inconsequential conversations and/or tirelessly
repeated conversations. Amy’s mother Angelina saw the conversation play out much differently. However, this time, I had to probe for it. At first, Angelina only mentioned conversations with Amy that regarded more “scientific” aspects of health: her genetic tendency to develop high blood pressure, practicing safe sex, the advantages of protein vs. carbohydrates, etc. As such, I asked her:

R: Definitely another thing that came up in my interview with [Amy] was sort of this idea of not wanting to be overweight? Is that something that has come up in your conversations with her?

I: (laughing) Yes and- but- I try, uh, really to emphasize that because I think that the overweight is a source of a lot of problems, no? And so there is a lot of reasons-- it is not just because of your appearance though that is important for a woman much more really, because if you are right around your right weight you're going to feel much more comfortable and I think that you can avoid several of the most frequent diseases, no? I try to talk with her about that maybe every other week and maybe she is listening, that she is hearing these things but I think that is something that we’re trying to do and I think that she listens and she tries to do everything about that, and I- I’m sure that sometimes when she doesn’t have time or something maybe she is not as disciplined as I would like but I think that she is doing pretty well. (8:257-269)

Angelina began with the same defensively patterned reaction that Maria gave: nervous laughter, reasons for her emphasis on Amy’s weight (eschewing, of course, appearance as the sole reason), and finally, justification for communication (overall, Amy was “listening” and “trying” and “doing pretty well”). In this case, however, Angelina went a little further in her defense. She related that Amy’s tendency to fall off the aerobic wagon typically occurred due to her lack of time. At first, this struck me as an odd inclusion. It seemed as if Angelina was extending her defense to cover Amy, too. However, after several more mother interviews, I realized that perhaps Angelina felt the urge to reassure her capable mothering abilities to not only me, but also to herself.

Again, it is hard to overlook that even though both Amy and Angelina reported these
conversations as being between the two of them, Angelina’s usage of “we” occurred at the end of the quote, while discussing the positive outcomes for Amy.

The final example comes from a second mother-daughter dyad, Lisa and Jennifer. Jennifer, like most college seniors her age, finally began to realize the toll her 2 a.m. Taco Bell runs and heavy drinking habits took on her health. Still, continuous reminders of that impact annoyed Jennifer considerably.

I feel like my mom always talks about my health whenever she talks to me 'cause she's concerned about uh me going out too often…So I feel like that's one of the main things that she's concerned about for me. Um. However, I never really mention it. I think I don't ever mention it to her because I know she's just gonna give me crap about it. She's just gonna like criticize and say, you know, "You go out way too much. Blah blah blah blah blah." And I don't want to sit there and listen to it. So that's probably why I never bring it up. So she's the one that's always going to bring it up because she is concerned. So yeah.… And then when it comes to like eating, she always tries to make me eat something healthy whenever I'm home 'cause she knows I probably, you know, don't eat healthy here. So yeah. And it's mainly gross stuff. [laugh] I wish she could cook. [laugh] 'Cause she's just being, you know, a typical mom, trying to look out for me… (23:1037-1053)

Jennifer’s frustration during these health conversations with her mother was apparent. At times, Jennifer believed her mother’s criticism of her unhealthy behaviors was so great that she preferred to avoid communicating about the topic all together. She even dismissively explained the conversations exactly as Amy described her conversations with Angelina: “blah, blah, blah.” However, in the last sentence, we see that Jennifer, although perturbed by her mother’s close inspection of her drinking behaviors, seemed to understand her mother’s intentions: “typical” motherly concern. When I asked Lisa, a divorcee and now single mother, why she thought Jennifer selected her as her influential family member, she replied:

Because I probably nag her the most [laugh] on healthy eating. Because when she's away at college, you know, that age group, they don't tend to worry so much
about what they're eating. They're more worried about, you know, what they're going to do that night, you know, and so, um, she's the one that I--and and they--and then when they do eat, they don't really eat the right foods. So I always try and teach her, you know, "When you do eat, try to eat healthy. More vegetables, eat fruits. You know, and watch what you eat. Don't eat fast food." And and so I will uh, um, you know, talk to her about, you know, "If you do go out, watch what you do. You know, and and don't overindulge anything." And she's listened because she will say to me. She goes, "You know, that's one thing that I don't do. You know? I I really try and watch what I eat. I do exercise. You know, if I do have a few drinks, I make sure I'm hydrating myself with water." So yeah. She looks at it, you know, she she listens and and tries to stay healthy. (3:121-127; 5:230-236)

Lisa’s response floats through each of the stages previously mentioned in Maria’s and Angelina’s quotes: justifying the health communication with her daughter, explaining alternative reasons for her daughter’s poor health behaviors, and citing evidence of her own successful parenting.

These three dyadic analyses identified that mothers felt the need to defend their pro-health behavior enforcement. In their minds it provided support for why they were “good moms” both to me, and as reconfirmation for themselves. This conclusion, however, begs the question: If mothers link the title of “good mother” to “health enforcer”, what happens when the son or daughter (or husband!) stops “listening” and “trying”? Who is to blame? The next subtheme attempts to provide an answer to these questions.

The “wow factor”. This subtheme represents how family members’ dueling health expectations for mothers—more so than any other family member—were idealistic and resulted in irreconcilability. On one hand, family members expected mothers to be the typical mom discussed in the previous subtheme, overseeing the healthcare of all family members. On the other hand, family members appeared to hold mothers to higher standards when it came to the maintenance of their own health. Respondents who had
selected females as their influential family members often mentioned this was because of how their family member—usually their mother—was able to maintain her health while keeping up with a busy lifestyle: work, school, children. Even Lucy, an avid marathon runner, held herself to this pristine standard, citing how her inability to remove weight after pregnancy—her 4th pregnancy to be exact—was really the motivating factor behind her newfound love of running. Interestingly, her 20-year-old son Kurt picked up on this too:

So I mean yeah. There's like between, you know, having four kids. Like my uh, my oldest sister, her first kid, she was I think like 98 pounds when she was pregnant. And then like a month after she was pregnant, she was back down to her normal weight, you know. And, you know, a lot of women eat for two while they're pregnant and gain more weight than they actually should. And, you know, they have trouble losing that. But, you know, after having kids, she always got back in shape. And then she had cancer for a while. And then once that was cleared, she got back into running, and she built that back up. And just, you know, no matter what life throws at her, she she always emphasized—like she always ends up getting back in shape and, you know, maintaining her health. So I'd say um just the wow factor that she has has influenced me. (13:691-791)

For Kurt, his mother’s ability to work through cancer and the weight accompanying four pregnancies (not to mention the children accompanying four pregnancies!) contributed to his mother’s “wow factor.” Certainly, overcoming these life events and balancing those with a penchant for marathon running, all while dealing with the ins and outs of life is remarkable—but this was a rare case indeed. Unfortunately, more participants, like Rachel, expounded on how their mothers cared very much for the family’s well-being and managed to maintain their health well, considering their busy lifestyles. However, most mothers did not completely meet respondents’ “standards,” or, in other words, failed to attain the “wow factor.” Rachel commented on her mother Donna’s health “flaws:”
I mean she knows that I want her to be really healthy. And um, you know, I just, I want her to probably lose, you know, losing a little bit of weight would probably be healthier for her. Um. But I understand where she's at. And I know that she's doing the best that she can with as busy as she is. Um. I mean “proud” is not the right word. I mean content with where she's at is fine, by me. I mean um I don't think I could do any better if I was her. But um, you know, in, I think in a few years, you know, when things have settled down as far as family goes, I'll probably be on her a little bit more. Like, "OK. You have a little bit of time yourself now. Let's- let's pick some different foods” or, you know, when I'm home, “let's go for a walk or something.” You know, I'll probably try and push a little bit more. But um I think she knows that I want her to--one of my biggest things is I want her to eat breakfast. Um. [chuckle] Uh. 'Cause I know my dad does. And I think her not eating it probably influences my brother and sister 'cause then they can say, "Oh, well, she doesn't eat breakfast so why do I have to?” I'm like, "No. That's not OK.” (15:789-800)

In the same breath, Rachel confirms her understanding of her mother’s busy, hectic lifestyle (in this case, working full time and caring for Rachel’s two younger siblings) and attributes her younger siblings’ poor health behaviors to her mother’s poor health behaviors. Herein lies the double bind of the “wow factor”: family members expected mothers to take care of the family’s health, including playing the role of nutritionist, chef, and shopper, and occasionally, something physical activity-related. However, if, in between the time and effort spent to accomplish these tasks, mothers were unable to take care of their own health—such as grabbing a bite for breakfast—they incurred modest criticism (at best), but as we see in this quote, received the blame for a problem they were trying to correct in the first place: a family member’s poor health habits. (On a different note, Rachel’s lofty standards appeared to only apply to her mother. Interestingly, her father, although apparently a breakfast eater, was mentioned earlier in the first subtheme as the dad who made McDonald’s runs prior to family dinner. This behavior, however, receives no judgment from Rachel). Blaming the mother, however, was something even mothers ascribed to:
I’m sure people get less exercise so, probably what they eat doesn’t get worked off. Um, like I said more crazy schedules and um, well I could probably really get into it: more women working and I have been lucky enough to get home at 5:00 or six or 7:00 PM or whenever and and have to throw something together for dinner, you know, if you have a little time to put something together it’s easier to put something together healthy so, women are busy they don’t have as much time to do that. (8:267-272)

Again we see here how women’s busy lifestyles apparently inhibit family member health.

Some of the mothers I spoke with commented on the strain of day-to-day life and taking care of a family’s health needs, in addition to their own. The exasperation Donna felt about this issue showed plainly on her face and in her body movements during our interview, but her words conveyed it too:

But yeah you know, you do the tradition: you do the family and you work and then you know you have the husband and all they’re doing is working, so you got to take care of all this and be the model and for everything they see or read… it’s horrible it’s like it takes you a long time to sit there and say “You know, that’s not right to do to my body.” (9: 489-494)

I selected Donna’s reference to “doing the tradition,” as an in vivo term for this overarching theme because of how eloquently she captured exactly what the tradition of a mother’s role in family health care is: another time-consuming, effortful, constant task that must fit in around other family responsibilities, a women’s own career, her husband’s career, and of course, serving as a role model for her children throughout all of it. But Donna’s quote is especially important here because through it we are able to catch a glimpse of the result of “doing tradition”: physical repercussions. Donna acknowledged that her “horrible” daily to-do list took a physical health toll on her body that was “not right.”

Dave, a young adult male freshly graduated from college, also selected his mother, Rena, as his influential family member and the person with the most health
influence on him and his siblings (“and my dad too”). Dave highlighted Rena’s “wow factor” throughout the interview, describing her abundant energy and her emphasis on—and commitment to—eating in moderation. Dave respected the way she conducted herself when it came to health and “looked up” to her for those reasons. Later, in my interview with Rena, I was curious to hear her speak about these topics, and again, I found that Rena experienced the same conflict as Donna:

I: Well, I try and eat um as healthy as I can. And uh try and get as much exercise as I can. Which is hard but I try and make it a point to do it at least every day, something. I used to go to um Jazzercise. Which is along the lines of aerobics. More like dance stuff. So so it's not as intense on an old lady like me. But anyway, I haven't um been able to do that. And um, so I just work out at home like with an exercise tape or um, you know, lifting hand weights and things like that, jump rope, walk/run the treadmill.

R: Why haven’t you been able to?

I: Well, just because of, you know, other commitments with our children. So, and I'm not a morning person but I try to get up in the morning. But, you know, it's just very hard for me. I'm better at night. And they don't have any night sessions. So, you know, every day, they're [children] somewhere. Um. Between that and making dinner. Well, and I, and I'm that type of person too that I always put others in front of me, where so many people, you know, um put themselves first. Like, you know, they're not gonna let anybody keep 'em down from exercising, you know, at 8:00 in the morning. But I would never do that. I would always put other people ahead of me. See what I'm saying? (1: 18-48; 2: 61, 69-72)

Rena’s quote again illustrates the paradox facing mothers concerned with the health of their families. In the effort to improve the health of their family members—running ragged to transport their kids to sporting events, cooking meals, etc.—a mother’s own health deteriorates. I tried to probe about this fear of physical neglect or repercussion to her own body, assuming Rena wished she could exercise more and eat better because of the toll it took on her physically. Instead, to my surprise, Rena replied that her primary concern about not having enough time to eat right or exercise was not about herself, but
about the continued health of her family! I asked Rena, “What was the number one reason” she took such great lengths to try to maintain her own health, despite the load of caregiving. She responded:

Um. My, well, my #1 concern is just because I don’t have um, you know, parents and, you know, your siblings are married and they have their own families. You know, I just worry about our own family. Like um, you know, but I think they’re old enough now where I think they, you know, can make it work. Um. They wouldn't be to my standards but, but they could survive. (11:564-567)

Here, we see that Rena’s main concern is for her family. Any fear or discomfort associated with a decline in her physical health is realized only in light of the potential precariousness of her family’s well-being.

So far, the first three subthemes clearly depict the presence and power of gender role norms in the family when it comes to family health communication. However, the picture would be incomplete without answering the question, why? Why do these norms exist? How do they continue to thrive? The final subtheme, Carrying on the tradition, addresses these questions.

Carrying on the tradition. When families communicate, they constantly create and recreate their realities. The creation and recreation of family health communication as a gendered experience is no different. From the interview data, a hint of a cycle began to emerge that demonstrated how young adults ascertained and carried on the “tradition” of the established mother-as-healthcare-provider role.

Twenty-one year-old Derek recruited his influential family member, his mother Myra, to complete the interview study. When I asked Derek about additional health influence from his father, he shook his head:

My dad, um, in college was extremely fit and healthy, and then once uh my brothers and I came along, he kinda went downhill after that. He just just eats
whatever he wants when he wants it. And my mom tells him he needs to work out and he just doesn't put any effort towards it. He tries to but it doesn't really happen for him. (2:90-93)

I thought very little of this comment, “And my mom tells him…” until I conducted my interview with Myra. Myra spoke with great hesitancy at the beginning of her interview. Doctors diagnosed her with Type I diabetes as an adult seven years ago. Discussing her health was obviously inseparable from discussing her illness, a subject that was still painful and difficult. Even after listening to her retell the story of her near-death experience prior to diagnosis and all the trials she experienced due to diabetes since that time, I heard Myra become the most anxious and overwhelmed…while discussing her husband’s health:

OK my husband used to be active and fit he was an amazing athlete OK? And so he’s still wrestling. But his eating habits are not the best and I think the boys—I have three boys—I think they are more um, they get on it more about their dad’s eating habits because- and I don’t know if that is because they are males and maybe they see themselves down the road you know, like, their dad? Not that he is way overweight but he could probably lose 35 pounds or something I think, um, those are the conversations that probably come to mind the quickest you know, they will say “Mom dad is eating this!” “Well, what do you want me to do about it?” (4:126-133)

These two quotes demonstrate an ongoing socialization process regarding women’s role in family health. At some point, Derek and his brothers learned that his father’s unhealthy eating and exercise behaviors could and should be resolved by their mother. Between mothers and daughters, the socialization process was even clearer, as daughters began to understand their mother’s position as the role they would one day inherit. Lena was a vivacious young woman I interviewed, enjoying her first year of post-college life, complete with a new career and an upcoming wedding. Lena’s bubbling energy quieted momentarily, however, when discussing her fiancé and her concerns about his health.
And he takes that seriously, but it's like it's so hard for him [fiancé]. And I want him to want it for himself, and I just try to encourage him. Like today, I'm going to do P90X with him. And um, and it's funny because that's actually the role that my mom has in my dad's life. They don't actually exercise together. They go on walks together. Um. But because it's so important to her and they're in such a late time--well, not a late time in her life--but, you know, they've been married for 28 years. And like my dad actually, every single day, goes downstairs in the basement and gets on the bike, you know, and does it for an hour. And then my mom will go out and run. But it's like they're doing it at the same time. They just like to do different things. So I think that that's been very influential--My mom has been a very good encouragement to my dad for that. (10: 526-547)

Lena observed and/or communicated with her mother (Yvette) about Yvette’s influence on her father’s exercise regimen; in turn, she now attempted to help her own partner adopt better exercise habits. Later, I inquired how, or even if, Lena would handle things when she was married and had her own kids someday. She replied: “I think it's my role. It's like I need to make sure that my kids are being healthy. But I want to do it very similar to the way my mom did it. As in like, ‘This is not just something I say but it's something I do’” (21:1231-1232).

Lena not only accepted this role whole-heartedly, but in totality. In just four sentences, Lena evoked each of the previous three subthemes. She explained that family health care was her role (balance?), and her duty included ensuring (enforcing?) her children’s health while simultaneously maintaining her own health (wow factor?).

Rachel, on the other hand, witnessed the time and effort necessary to fulfill the responsibilities of her mother’s role in family healthcare with disdain. As Donna’s eldest daughter, Rachel often found herself “next in command” when it came for caring for the family’s health—a mother-in-training. Rachel’s language revealed the smallest hints of contempt for the active, demanding lifestyle her mother led. Sensing this, I asked Rachel how she would do things differently from her mom with her own family one day. Her
answer surprised me. Instead of citing emancipatory changes to her future family situation, Rachel—sighing—succumbed to an alternative solution: avoid it all together.

[Sigh] Um. I think about this a lot. Um. Well, for me, now I know I don't want children. I mean everybody's like, "Oh, you're gonna change your mind." I'm like, "No, really! You don't understand." [chuckle] I don't want children. I kind of helped raise my brother and sister. I think um, you know, I just, I kind of cooked for a family of five for four years straight. I I learned that, like, I don't want to do this with my life. (15:831-835)

This statement strikes me for two reasons: First, Rachel stated that she *learned* the mother’s role in family health care, clearly indicating the family socialization process. More importantly, however, is Rachel’s response to what she learned. At some point, this daunting future role became such a dismal reality that dodging its effects required one to circumvent the situation entirely. In other words, it appeared that it never occurred to Rachel to advocate for change in matters of family health care in the future: there was a hopeless finality surrounding “doing the tradition.”

Therefore, in sum, family communication constructs not only our present-day realities, but also our “future realities.” That is, in this subtheme, how young adults saw themselves several years from now with their own families directly reflected their current family structure. If children learn that the responsibility of improving or maintaining the entire family’s health is mainly the mother’s function, then it seems reasonable to assume that (a) they will fulfill this role in the future, or (b) they will expect another to fulfill the role and claim the responsibilities.

Naturally, the contents of each of these main themes highlighted several discussion points, both for practical application and theoretical implication. These issues are discussed in the next section.
Discussion: Phase Two

The second, qualitative phase of study used interviews to explore the family health communication at a deeper level. Specifically, an initial research question asked “How does family communication (re)shape and inform each individual’s understanding of what it means to be healthy, in regards to nutrition and physical activity?” The second question highlighted the family socialization process and inquired, “How does family members’ health communication (re)create (socialized) power and gender norms?” A subquestion inquired: “What does this health communication look like dyadically?” This study contributed to the minute collection of health studies examined from the phenomenological tradition (Babrow & Mattson, 2003). A discussion of the thematic results of this study follow, with practical considerations for family health researchers.

Research Question 4

The first overall theme contributed a great deal to research investigating individuals’ meaning of health. Moreover, the theme specifically demonstrated how family communication—both verbal and nonverbal—contributed to individuals’ meaning making. The subtheme “Got it from example”: Health as learned revealed the importance of nonverbal communication as young adults learned to differentiate healthy and unhealthy behaviors. Importantly, many of the interviews showed that young adults did not just follow these examples blindly, but included mention of psychological factors (e.g., cognized goals, self-efficacy statements) that further induced the learned behavior; this supports the processes outlined in SCT (Bandura, 1998). Furthermore, family members assumed that young adults learned about health by watching them. This is an especially important finding for family communication scholars and for broadening the
scope of SCT. Most family literature citing SCT uses the theory to explain behaviors, but not necessarily to explain how and why individuals teach those behaviors (Kunkel et al., 2006). In this case, if family members perceive that young adults initially learn pro-health behaviors merely by watching, then the need to communicate verbally appears superfluous and/or irrelevant. Could greater amounts of family verbal communication about health (in addition to nonverbal communication) augment one’s positive health outcomes? Arguably, the first phase of this study, which showed the importance of Frequency of Health Communication, affirmatively answers this question.

The meaning of health also included the notion of maintaining health. The second subtheme illustrated the reliance on visual metaphor—and the “watching” metaphor in particular—to discuss and understand proper health maintenance. Ironically, in these interviews, the popular metaphor helped respondents explain very different realities about health maintenance. Use of the “watching” metaphor becomes even more curious when one considers what respondents did not say: each “watching” instance pertained to food consumption rather than physical activity. Why is “watching” used only in reference to nutrition as opposed to levels of physical activity? The uncommonness of the latter suggested that controlling a diet takes a greater level of cognizance than going out for a jog, for example. For the majority of Americans, physical activity must be planned and “fit” into one’s schedule, whereas food intake is tied to our day-to-day lifestyle. Future research might also investigate additional metaphors we use to explain health and related topics such as weight loss as a way of understanding others’ meanings of health.

Findings in the final subtheme, “Looking good”: Health assessment and diagnosis, illustrated the powerful influence of the media and practically begged for
additional empirical and theoretical exploration from a media standpoint. Health communication scholars wishing to examine health images in the popular mass media have chosen channels of mass-mediated health messages, such as pharmaceutical literature, popular magazines, and the internet (see Kline, 2003, for a review). Herein lies the tie binding these studies: the messages studied were intentionally created as health messages and researchers could thus conclude that the information gleaned by consumers was health related. In this study, however, only a handful of respondents reported learning about health from “health” media outlets. Instead, most respondents rearticulated (what I coin) “unintentional health messages” they received from the media—mostly television and film. (According to these interviews, for instance, scholars interested in significant health messages sent to young men might opt to investigate the movie *Twilight: New Moon* before examining magazines such as *Men’s Health* or *FH*!).

This, naturally, reminds health and media researchers the large, daunting task before them: to truly capture the types and effects of media health messages, scholars must be willing to examine artifacts outside of popularized as “health mediums.” Moreover, the links respondents drew between health and body image were overwhelming. Fortunately, a great deal of theorizing surrounding body image and media already exists; current theories such as social comparison theory (Festinger, 1954) and objectification theory (Fredrickson & Roberts, 1997) could assist in the continued exploration of these qualitative data. However, theorizing addressing the confluence of *health* and body image that runs rampant in this study is scarce. Why are the words *health* and *body image* used synonymously? Why does “recalling conversations about health” often lead to the retelling of conversations about toned muscles and thinness?
How do answers to these questions help explain individuals’ meanings of health? Some theoretical musings, such as Zook’s (1994) discussion of the biopsychosocial turn, illustrates the complexity of this body-mind awareness. Babrow and Mattson (2003) expound on Zook’s investigation of “authentic health communication”:

> Physical dis-ease shapes communication, from a pointed cry of pain to grumbling complaints and from information and diagnosis seeking to support seeking. In turn, these communication acts and processes influence bodily states, which in turn influence communication and so on. (p. 40)

In a similar vein, perhaps one’s perceptions of one’s body image shapes one’s communication about health attitudes and behaviors, and in turn this communication may actually lead to physical effects on the body.

> In sum, all three subthemes revealed interviewees’ reliance on understanding health experiences by viewing the external. Health behaviors were learned, judged, and evaluated largely based on what respondents saw, as opposed to what respondents felt. We need continued research on this dualism in order to understand just what kind of an impact the disconnect has on an individual’s physical and mental health. Taken all together, these findings lend support to biopsychosocial discussions of health communication (Zook, 1994), but extend it by emphasizing the verbal and nonverbal aspects of communication.

**Research Question 5**

The theme *Motherhood and Family Health Advocacy: “Doing the tradition”* ushered in an analysis comprised of four subthemes, all depicting an aspect of gendered family health roles. Notably, quotes underscoring the second theme were largely dyadic in nature, demonstrating how a respondent’s reality was shared with the other family member interviewed.
Studies about problematic, traditional gender roles, women’s household labor overload, and child care discrepancies are continued reminders that critical feminist thought is merited in family communication studies (Wood, 2006). Indeed, important findings from past, feminist family studies parallel the findings here. For instance, the “balance” of family health care (i.e., that is, mom as nutritional caregiver and dad as sports playmate) mirror findings that mothers often spend more time caring for children while fathers spend more time playing with their children (Craig, 2006). And just as Jack in this study believed the health care role to be balanced, evidence suggests most fathers believe their time spent caring for children equates to their wife’s time (Milkie, Bianchi, Mattingly, & Robinson, 2002). Past literature suggests “women’s” chores (such as cooking, in this study) must be done at particular times, whereas men’s tasks can be completed at his discretion (Baxter, 2002). The mental health taxation on the mothers in this study echo the concerns of other exhausted women (Hochschild with Machung, 2003).

On the contrary, the results of the data analysis demonstrate the gendered health experience as a unique, paradoxical problem ripe for continued examination. To begin, health communication studies on gender are rarities, but those that do exist focus more on biological, functional differences (e.g., sex differences in morbidity rates; Marcus & Seeman, 1981) or communication differences in professional healthcare settings (e.g., female patient-physician vs. male patient-physician communication; Nussbaum et al., 2003). When briefly reviewing the Handbook of Health Communication, information regarding women and health existed only as paragraphs couched within other chapters—and these mostly contained sex difference data. Overall, in health communication
literature, critical attention to *gendered*—that is, not biologically-based—differences in health remain mostly overlooked or unmentioned.

Second, the consequences for women in this study—physically, emotionally, and mentally—were concerning. The impact of fully taking on the role of health enforcer left mothers with consequences slightly more involved than consequences associated with, for example, dusting and mopping. This, of course, does not discount the hours lost to household chores, but these interviews displayed serious, interwoven repercussions. Mothers struggled to fulfill incongruous health goals for themselves as well as their family members, at the expense of (a) their familial relationships (particularly with their children), (b) their stress and anxiety levels, as mothers attempted to meet the family’s and society’s traditional standards for mothering, and of course, (c) their own physical health. The latter, naturally, is especially problematic and deserves continued research attention.

Third, while most “second-shift” type literature admittedly focuses on mothers’ reports of involvement (Mikelson, 2008), this study diverges from the norm and acknowledges reports from not only mothers, but also a husband, daughters, and sons. Participants’ reports on gendered health roles were fairly consistent and defined. Furthermore, the socialization process—particularly between mothers and daughters—was evident. Young adults recognized the role mothers were expected to play in family health care and most young adults fully accepted that role personally or conceptually. The co-construction of gender roles evident in this study mirrors other research at the intersection of family and gender that used family narratives to illustrate how parents helped their children interpret and enact traditional gender norms (Blume & Blume,
2003). As such, this study exemplified how mothers’ role in family health care has managed to remain an unquestioned norm decade after decade.

Finally, although the greater portion of this discussion has focused on consequences for women, the findings present a concern for men’s health as well. Globally, life expectancy of men is lower than that of women (Central Intelligence Agency, 2010). Men eat fewer servings of fruits and vegetables than women (Baker & Wardle, 2003). According to the U.S. Department of Health and Human Services (2005), men fail to meet recommendations for fat intake as well. Based on the reported family communication in this study, these statistics are far from surprising. Fortunately for women, the socialization into salubrious diet and eating habits at a young age serves them well as they advance in years. Men in this study, however, appeared to possess little regard for nutrition as young adults, and reports indicated that men later in life ate rather poorly from a nutritional standpoint. If generation after generation of men neglect—i.e., are socialized to neglect—adequate nutrition, then we can surely expect to see more statistics like these—and unfortunately, the ailments associated with them. Future research ought to attend to other aspects of men’s gendered health roles. For instance, some scholars suggest that society is less accepting of men in the sick role, whereas for women, reporting more frequent illnesses or playing the sick role is more acceptable (Gabbard-Alley, 1995; 2000).

Conclusion

In summary, the findings associated with these two research questions put forth an important empirical argument for continued phenomenological approaches to health
communication studies, and even more so for dyadic, family health communication studies. Both implications and limitations are discussed below.

First, according to my knowledge, a theory or model specifically explaining the gendered nature of health does not exist. Future theoretical contributions are needed to address the unique relationships between gender and health experiences—and even more specifically, the relationships of gender, health, and family communication. As a result of diligent theorizing and empirical study, we might learn how individuals’ family communication about health (re)shapes their understanding of its meaning and how the meaning of health (re)forms their understanding of family gender roles. Identity-related studies and theories may offer a fruitful starting point for future investigations. For instance, Lambert and colleagues (1997) eloquently stated,

Identities are created and sustained in interaction. Health is an aspect of identity. Therefore, health is created and sustained in interaction. Similarly, interpretations and meanings are interactional creations. Health behavior is mediated by meanings and interpretations. Hence, health behavior is a consequence of symbolic interaction….Our identity is the prime mover in health cognitions and behaviors, and because identity is itself the product of communicative interactions, communication must be at the very core of what it means to be healthy. (p. 32)

Two theories, Lambert and colleagues’ (1997) work on patient-centered care and health’s inextricable ties to identity, and West and Zimmerman’s (2002) theory of “doing gender”—begin to scratch the surface of understanding the family-health-gender intersection.

Lambert and colleagues’ (1997) proposed that when individuals experience a threat to their health (“destabilizing resistance”), they restabilize (or, accommodate) by modifying their self-image (role-identity), performance (embodied action), or interpretive accounts (link between self-image and performance; i.e., answers the question, “How
should a person such as I behave?” p. 34). However, the concept falls short when applied to this study.

First, the authors’ theory emphasizes the stage of falling ill and then regaining health, which is not always the case in the nutrition/physical activity health context. Second, the theory is based mainly on individual perceptions and cognitions about the derived meaning of health through interactions (see example below). Thus, the theory is difficult to apply to a study using dyadic data. Third, the authors fail to situate the concept in an historical, social context, which naturally leads to a final shortcoming: the options offered for accommodation would put mothers in an impossible situation.

Consider the following example, which is based directly on the interview data.

Imagine a woman strongly identifies with her role as a mother (self-image). In order to fulfill her role as a good, healthy mother (interpretive account), she must keep herself in excellent physical condition (we might call it the “wow factor”) and help to keep her family in the same condition (as the family “health enforcer”). As such, she attends aerobic classes weekly, takes the stairs at work, and buys and cooks healthy meals for her husband and two young children (performance). During one particular busy month of work and family life, she gains a significant amount of weight which begins to trigger pain in her lower back (resistance). According to Lambert and colleagues (1997), the woman can easily correct her situation by taking one of three actions: alter her identity as mother, modify her interpretive account of what it means to be a good, healthy mother, or change her performance.

In the first instance, the woman could alter her identity as a mother, minimizing this role in favor of another. However, with at least two dependents, this is probably an
unlikely choice. The woman could also modify her interpretive account. Thus, if the woman believes a good mother maintains her wow factor while also maintaining her family’s health, she may modify this interpretive account to perhaps a more “toned-down” version of healthy. Unfortunately, societal pressures, other family member expectations, and comparisons with other do-it-all moms make this a difficult choice as well. Finally, she could modify her performance (for instance, attend extra yoga classes to limber her back muscles), but to do this would (a) take time away from the other important aspect of good motherhood—family healthcare and (b) could very possibly renew the injury (i.e., increase the resistance).

Relatedly, West and Zimmerman’s (2002) theory of “doing gender” provides a second helpful comparison point. The authors argue that we perform our gender in every aspect of everyday interaction because it is only through that performance that we may be found legitimize (or, be found “accountable”): thus, we fulfill, reproduce, and legitimate the predetermined, sexually dichotomized roles mapped out by society. Where findings of this study diverge from the theory, however, lay in the outcomes of the gender performance. For starters, accounting for materiality in this study (i.e., for the very real, physical health effects of “gender done”) sits outside the scope of West and Zimmerman’s theory (grounded in a social constructivist perspective). Additionally, the theory fails to tease out an important socialization element showcased in this study: family members did not just independently perform their gender roles, but consistently took cues from other family members to decipher how to or how not to perform their role effectively: In this way, the “not doing” was just as important as the “doing”.
In sum, communication scholars interested in studying the intersection of family, health and gender and the issues which surfaced in this study have the option of applying theories from one of those three areas. In this study, for example, I drew heavily from SCT family literature and feminist thought. However, a theory incorporating the depth of each of these three areas would be a most welcomed contribution.

Limitations of the current investigation included a female-dominated family member sample. Even though family member respondents contributed information not only about their own roles but of other family members’ roles as well, more input from fathers would have been welcomed. This study reiterates the recurring challenge scholars face in recruiting fathers for family study research (e.g., Mikelson, 2008).

On the other hand, very few young adult survey respondents interested in the interview study reported their fathers as influential family members, leading to a relatively small sample of young adult-father dyads from which to recruit. In some ways, perhaps the involvement of only one father in the interview study aligns more closely with the percentage of influential fathers reported in the quantitative study. Still, we must continue to improve the recruitment and retention of fathers in family communication studies so as not to inadvertently silence this important voice.

Similar to the first phase of study, the sample also reflected a more homogenous population. Again, although I made an effort toward maximum variation within the pool of interested survey participants, the end result was a sample that was predominantly heterosexual, college educated, and middle to upper class.

Last, it is impossible to digest these findings without asking a question of praxis: How might mothers be emancipated from (or at least share) a role that social structures
have been normalizing for years? Importantly, this role appears to go beyond “unfair,” to actually taking a toll on mothers’ physical health. Lorber (2006) suggests engaging in degendering, which encompasses a reflection on the practices that remain in place decade after decade, and questioning these practices. In doing so, one enacts a form of resistance that “targets the processes, practices, and outcomes of gendering—gendered people, practices, and power” (p. 473). Of course, this is much easier said than done, but research designed to reach the general public may well achieve this goal.

Interestingly, one other possible solution stems from health campaign and promotion research. According to Murray-Johnson and Witte (2003), anything that negatively influences one’s perceived ability to perform an action is considered a barrier to self-efficacy. This includes the typically discussed internal self-efficacy barriers (e.g., pain) as well as external self-efficacy barriers (e.g., finances). Consequently, results from Phase 2 revealed that mothers’ physical health risks often stemmed from the burden associated with family healthcare. Thus, these fears and stressors act as barriers to self-efficacy. However, Murray-Johnson and Witte (2003) claim that health promotion messages addressing these specific barriers will increase the chances of obtaining the desired health changes. In sum, creative health promotion message design could improve the health of mothers by targeting these particular worries.
The following chapter provides a thorough summary of outcomes evolving from the quantitative (Phase 1) and qualitative (Phase 2) investigations. Some are unique to this study while others build on extant research. In each of the four sections below, I articulate an important, shared contribution of both phases, and then provide a suggestion (or two) for how scholars can continue to develop this line of research and impact the lives of the individuals they study.

**Making a Difference in Family Health Communication Research**

Both Phase 1 and 2 demonstrated that families’ communication played a role in the eating and physical activity-related health behaviors of family members. This study, however, merely scratched the surface of questions related to family communication and health behaviors. As such, much more work is needed in this area to decipher how specific family member messages, settings, nonverbal displays, etc., contribute to one’s health. Despite the existing studies that enmesh family and health communication, continued networking and collaborations between the subdivisions will be necessary if communication scholars truly want to make a difference in family health studies.

One obstruction to this vision, however, exposed in Phase 1’s discussion, is the limited variety of resources available to scholars interested in measuring family health communication. Currently, available family communication measurements, while
undoubtedly valuable, fail to capture health-specific communication contexts and theory. Adapting the items of the RFCP Conversation scale to a health context (and to a diet and physical activity context specifically, as done in this study), is one way to combat this limitation, allowing scholars to draw conclusions about the relationship of communication within a specific context to a target behavior.

A second obstacle to the adjoining of family and health communication studies is the current focus on “dramatic” family health, versus the more “mundane” family health communication. From adolescent substance abuse (e.g., LePoire, 2004) to reproductive health conversations (e.g., Coffelt, 2010), to breast cancer coping strategies (e.g., Anderson & Martin, 2003), “sexy” family health topics populate journals and intrigue readers. In contrast, communication scholars are relatively silent on the day-to-day health interactions of family members that ultimately help shape and form one’s general philosophy toward health and well-being. Therefore, I ask communication scholars the same question I posed to my interview participants: why are we not speaking more about this topic? Are the day-to-day family health conversation topics and interactions not as important as other areas of health?

Considering 1 out of every 8 deaths in America is linked to overweight and obesity, certainly, the study of communication related to preventing such a situation is a worthwhile undertaking (Office of the Surgeon General, 2003). Perhaps the shortage of studies is due to methodological difficulties or financial constraints. However, I believe a more likely reason involves the ideas of interviewees in this study that are, perhaps, unwittingly shared by scholars: the “communication-less” conceptualization of family health socialization. That is, interviewees stated that watching—not talking—was the
method most relied upon for learning and teaching about health. In fact, when asked why verbal communication presumably played a lesser role in the learning process, participants were rather dumbfounded. They agreed the topic to be of crucial importance, and yet could not pinpoint reasons for rarely discussing it.

Actually, we learned that verbal communication variables (Openness of Health Conversation; Frequency of Health Communication) associated with positive health behaviors in Phase 1. Other interview data suggested the same in Phase 2. Thus, if frequent, open family health communication relates to more positive behaviors regarding diet and physical activity, communication researchers’ have an exciting opportunity (and maybe even responsibility!) to provide parents, caregivers, and other family members the skills to discuss issues related to diet and exercise with their loved ones.

In sum, those scholars striving for continued refinement of methods, assessments, and topic selection in the ever-growing area of family health communication will make the most significant theoretical and practical applications to their cause.

The Mutual Influence of Family Members

Another take away message from this study warrants scholars’ attention to the mutual influence of family members (and the mother-adolescent family dyad in particular). It is crucial to remember that social influence is not merely a one-way process, but a two-way process, in that caregivers can also be influenced by children (Bell & Chapman, 1986; Kunkel et al., 2006). Parents and children mutually influence each other in interactions—interactions which in turn shape the future of both parties (Lollis & Kuczynski, 1997; Socha & Stamp, 1995). This was clearly seen in Phase 1, as both sets of partner paths (from attitudes to behaviors) were significant. Several young
adult interviewees also discussed how they influenced their family members’ health in the interviews conducted in Phase 2.

Naturally, the mutual influence of family members’ contribution goes hand-in-hand with an increased need for dyadic data analyses. In Phase 1, the dyadic analysis and APIM enabled us to see the full picture of young adults’ and family members’ health attitudes and behaviors; we held on to that wide angle lens even when looking at potentially moderating and mediating variables. In Phase 2, the significance of dyadic data was witnessed again. Separate interviews with members of family dyads allowed family members to speak openly and honestly about their family members, but still offered the benefit of juxtaposing transcripts for a dyadic data analysis. That is, we often read quotes from one family member that the partnering family member seemed to corroborate in the next paragraph. Thus, for the potential benefits demonstrated by Phase 1 and 2, scholars ought to pay continued attention to the reciprocal influence of family members in health-related matters and explore other methods that support this goal (e.g., conversation analysis).

**Spotlight on Gender**

The increasingly popular idea that sex and gender differences in interpersonal communication have not been adequately validated (e.g., Canary & Emmers-Sommer, 1997) gives some scholars pause when investigating gender and sex differences in health contexts (Gabbard-Alley, 2000). Still, the overwhelming research outside of the communication discipline demonstrating biological, sociological, and economical differences in men’s and women’s health justify continued investigations of health and
gender (Norsigian et al., 1999). Both the quantitative and qualitative investigations showcased pronounced gendered findings.

Overwhelmingly, young adults in Phase 1 selected their mothers as the family member they considered most influential on their health, and this was mirrored by the number of young adult-mother dyads in Phase 2. Ironically, however, only those young adults claiming a mother as their most influential family member showed significant relations between their own health behaviors and the mother’s health attitudes (and vice versa). Second, preliminary analyses in Phase 1 revealed that young adults’ more frequently selected women (again, mothers in particular) as the family members who frequently communicated about health. These results were echoed in Phase 2’s Research Question 5 which identified family health communication as a gendered—if not “mothered”—experience all together.

The issue of gendered health competence surfaced in both studies. In Phase 1, although men and women (i.e., both young adults and family members) showed no signs of difference in their health attitudes or behaviors, significant differences did emerge on health competence. Young adult women and women family members’ health competence scores were significantly lower than men’s scores. Notably, mothers’ perceptions about their own health (unearthed in Phase 2), practically mirrored the health competence discrepancy in Phase 1.

The differences in competence (quantitative and discursive forms) were unexpected, given that research contends that women possess more health knowledge than men (see Gabbard-Alley, 1995, 2000 for a review). On the other hand, Nussbaum, Ragan, and Whaley (2003) reviewed studies that indicated women may be “short
shrifted” by physicians in medical interactions. Still, even if women’s experiences in medical encounters contribute to lower self-efficacy, this surely is not the sole cause.

Coupling the quantitative and qualitative data, these findings must drive communication scholars to explore how communicating gender and performing gender roles within the family context may contribute to women’s low health competence. This seems especially pertinent for the mothers in this study. Overlooking ways to assist women—and mothers in particular—in increasing their health competence could potentially result in poorer health quality for all family members, as they appear to be the one’s looking after the health of the family. Moreover, research identifying how men’s personal mastery experiences, vicarious learning experiences, physiological feedback, and verbal persuasion differ from women’s experiences would be especially useful (Bandura, 1977, 1986). Of course, communication researchers are uniquely suited to investigate the latter.

Thus, devoted research—and in particular, critical, emancipation-driven research—would be a valuable asset at the intersection of gender, family, and health communication. Although numerous scholars argue that family studies cannot be separated from critical gender studies (see Allen, Lloyd, & Few, 2009 for a review), studying gender roles within specific family contexts, such as health, would give scholars a much clearer idea of how these roles form and why they persist.

**Good Physical Health…At What Relational Cost?**

It is difficult to ignore the evidence in these studies suggesting not only the influence of family communication on health, but the influence of negative family communication. Interview data (particularly in the subtheme *The health (en)forcer*) and the Phase 1 Perceived Confirmation moderation analysis, indicated that, sometimes, to
help family members achieve optimum health behaviors, relationship satisfaction might (temporarily) suffer. Specifically, in the interviews, mothers who “nagged” over health behaviors, repeatedly voiced health suggestions, or prohibited certain foods in the house were not exactly received with open arms from their young adult children. In most cases, the young adults’ recollections of these interactions were supplemented with eye rolling, mocking, and at times, hostility. Still, the outcome of these interactions usually involved young adults taking healthy action (or refraining from unhealthy action). Similarly, the quantitative outcome of the Perceived Confirmation moderation analysis revealed that less confirmation from a family member actually related to more positive health behaviors.

I use the term negative loosely in an attempt to capture the studies’ findings. However, although young adult respondents loathed their mothers at the time, mothers did not describe their interactions as intentionally hurtful or harmful, but on the contrary, as motherly attempts to be helpful. Moreover, several young adult respondents acknowledged that despite the frustration and anger they endured, in retrospect, their health habits improved largely due to these interactions. Although it is outside the scope of the current study to investigate these intricacies at a deeper level, an examination of the dark side of family health communication would be a welcomed addition to the current body of literature (I would direct interested researchers toward the current theorizing of Baiocchi-Wagner, Olson, Mbure, Wilson-Kratzer, and Symonds (2010), who offer a Darkness Model of Family Communication that is well-suited to explore the phenomenon).
Over a decade ago, Kreps (1994) implored scholars to actively investigate families, communication, and health. Nearly fifteen years later, this mixed-methods study has contributed to this call and illuminated the complex, interwoven relationships between these factors. The completion of this investigation could not exist without the work of past communication scholars in those years in between. In turn, I hope that this study serves as a jumping point for future family and health scholars who seek to improve the lives of others with communication at the forefront of their cause.
References


Le Poire, B. (2004). The influence of drugs and alcohol on family communication: The effects that substance abuse has on family members and the effects that family members have on substance abuse. In A. Vangelisti (Ed.), *Handbook of family communication* (pp. 609-628). Mahwah, NJ: Lawrence Erlbaum.


Figure 1. Proposed Actor-Partner Interdependence Model. Single-headed arrows represent predictive paths. Curved lines indicate correlated variables. Paths labeled as $a$ indicate actor effects, and paths labeled as $p$ indicate partner effects.
Figure 2. Constrained Actor-Partner Interdependence Model. *p < .05, **p < .01, ***p < .001
Figure 3. Parameter Estimates: Effects of Frequency of Health Communication on the Relationship between Health Attitudes and Health Behaviors; *p < .05, **p < .01, ***p < .001
Figure 4. The Interaction Between Young Adult Perceived Confirmation and Young Adult Health Attitudes on Young Adult Health Behavior.
Figure 5. Parameter Estimates: Effects of Young Adult and Family Member Health Competence on the Relationship between Openness of Health Conversation and Health Behaviors; *p < .05, **p < .01, ***p < .001
Figure 6. Parameter Estimates: Effects of Young Adult and Family Member Health Competence on the Relationship between Frequency of Health Communication and Health Behaviors; *p < .05, **p < .01, ***p < .001
Table 1
Correlations Among Young Adult and Family Member Health and Communication Variables

<table>
<thead>
<tr>
<th>Measure</th>
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<td>YA H Comp.</td>
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<td>.35*</td>
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<td>YA Conform.</td>
<td>-.10</td>
<td>-.04</td>
<td>-.10*</td>
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<tr>
<td>YA Convers.</td>
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<td>.08</td>
<td>.08</td>
<td>-.45*</td>
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<td>YA Freq.</td>
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<td>.25*</td>
<td>.09</td>
<td>-.10</td>
<td>.31*</td>
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<tr>
<td>YA Open.</td>
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<td>.17*</td>
<td>.17*</td>
<td>-.19*</td>
<td>.53*</td>
<td>.49*</td>
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<tr>
<td>YA Per. Conf.</td>
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<td>.06</td>
<td>.16*</td>
<td>-.34*</td>
<td>.41*</td>
<td>.25*</td>
<td>.34*</td>
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<td>.10*</td>
<td>.14*</td>
<td>-.12*</td>
<td>.06</td>
<td>.25*</td>
<td>.19*</td>
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<tr>
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<td>.06</td>
<td>.64*</td>
<td>.52*</td>
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Note. YA = Young Adult; FM = Family Member. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence; Conform. = Family Conformity Orientation; Convers. = Family Conversation Orientation; Freq. = Frequency of Health Communication; Open. = Openness of Health Conversation; Per. Conf. = Perceived Confirmation from Family Member. Family Member respondents only completed reports of health attitudes, health behaviors, and health competence. * p < .05, **p < .01.
Table 2
Descriptive Differences Between Male and Female Young Adults on Health and Communication Variables

<table>
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<td>Female</td>
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<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
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<td>.89</td>
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<td>4. YA Conform</td>
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<td>-.06</td>
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<td>5. YA Convers.</td>
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<td>.92</td>
<td>.07</td>
</tr>
<tr>
<td>6. YA Freq.</td>
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<td>1.07</td>
<td>.08</td>
</tr>
<tr>
<td>7. YA Open.</td>
<td>-.07</td>
<td>.90</td>
<td>.03</td>
</tr>
<tr>
<td>8. YA Per. Conf.</td>
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<td>.97</td>
<td>.08</td>
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</tbody>
</table>

Note. YA = Young Adult. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence; Conform. = Family Conformity Orientation; Convers. = Family Conversation Orientation; Freq. = Frequency of Health Communication; Open. = Openness of Health Conversation; Per. Conf. = Perceived Confirmation from Family Member. \(^a\) = significantly differs from Female Family Conversation Orientation, \(p < .05\); \(^b\) = significantly differs from Female Frequency of Health Communication, \(p < .05\); \(^c\) = significantly differs from Female Perceived Confirmation, \(p < .05\), *** = significantly differs from Female Health Competence, \(p < .001\).
Table 3
Descriptive Differences Between Young Adult Ethnic Groups on Health and Communication Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>A</th>
<th>AA</th>
<th>C</th>
<th>H</th>
<th>NA</th>
<th>O</th>
<th>F (df, df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. YA H Att.</td>
<td>-.04(1.06)</td>
<td>-.42(1.21)</td>
<td>.03(0.97)</td>
<td>-.08(1.09)</td>
<td>.37(0.72)</td>
<td>.67(1.01)</td>
<td>2.15(5, 421)</td>
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<td>2. YA H Beh.</td>
<td>-.42(2.07)</td>
<td>-.93(2.10)</td>
<td>.09(1.86)</td>
<td>-.40(2.48)</td>
<td>.07(3.10)</td>
<td>1.02(2.45)</td>
<td>2.52(5, 424)*</td>
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<tr>
<td>3. YA H Comp.</td>
<td>-.16(0.89)</td>
<td>-.12(0.94)</td>
<td>.00(1.01)</td>
<td>.17(1.12)</td>
<td>-.28(1.32)</td>
<td>.79(0.40)</td>
<td>1.19(5, 425)</td>
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<tr>
<td>4. YA Conform</td>
<td>-.11(0.76)</td>
<td>.47(0.969)</td>
<td>-.03(1.01)</td>
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<td>.10(0.51)</td>
<td>2.01(5, 416)</td>
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<td>5. YA Convers.</td>
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<td>-.22(1.01)</td>
<td>.02(1.00)</td>
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<td>.26(0.22)</td>
<td>-.21(1.39)</td>
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<tr>
<td>6. YA Freq.</td>
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<td>.83(5, 422)</td>
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<tr>
<td>7. YA Open.</td>
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<td>-.01(1.02)</td>
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<td>1.02(0.49)</td>
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<td>1.24(5, 418)</td>
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<tr>
<td>8. YA Per. Conf.</td>
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<td>.03(1.00)</td>
<td>-.01(1.00)</td>
<td>.44(0.00)</td>
<td>-.16(0.44)</td>
<td>.37(5, 425)</td>
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Note. A = Asian; AA = African American; C = Caucasian; H = Hispanic; NA = Native American; O = Other. YA = Young Adult; H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence; Conform. = Family Conformity Orientation; Convers. = Family Conversation Orientation; Freq. = Frequency of Health Communication; Open. = Openness of Health Conversation; Per. Conf. = Perceived Confirmation from Family Member. *p < .05, a = significantly differs from Caucasian young adult Health Behaviors
Table 4
Descriptive Differences Between Young Adult Income Groups on Health and Communication Variables

<table>
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<tr>
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<td>4</td>
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<td>.99(5, 423)</td>
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<td>-.01(0.99)</td>
<td>.06(0.97)</td>
<td>.27(0.95)</td>
<td>.69(5, 427)</td>
</tr>
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<td>4. YA Conform.</td>
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<td>5. YA Convers.</td>
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<td>-.01(1.03)</td>
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<td>.86(5, 424)</td>
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<td>-.03(0.97)</td>
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<td>.03(1.16)</td>
<td>.55(0.84)</td>
<td>2.32(5, 424)*</td>
</tr>
<tr>
<td>7. YA Open.</td>
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<td>-.07(0.95)</td>
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<td>8. YA Per. Conf.</td>
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<td>-.18(1.14)</td>
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<td>.02(0.93)</td>
<td>.05(1.09)</td>
<td>-.02(1.22)</td>
<td>1.17(5, 427)</td>
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</table>

Note. 1 = < $16,050; 2 = $16,051-65,100; 3 = $65,101-131,450; 4 = $131,451-200,300; 5 = $200,301-357,700; 6 = > $357,701
YA = Young Adult; H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence;
Conform. = Family Conformity Orientation; Convers. = Family Conversation Orientation; Freq. = Frequency of Health
Communication; Open. = Openness of Health Conversation; Per. Conf. = Perceived Confirmation from Family Member. *p <
.05. * = significantly differs from “> $357,701”. 
Table 5
*Descriptive Differences Between Male and Female Family Members on Health Variables*

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<td>2. FM H Beh.</td>
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<td>3. FM H Comp.</td>
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*Note. FM = Family Member. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence. ** = significantly differs from Female Health Competence, p < .01.*
Table 6
Descriptive Differences Between Family Member Ethnic Groups on Health Variables

<table>
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<th>Measure</th>
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<th>NA</th>
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<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
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<td>-.05(1.00)</td>
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<td>.52(0.35)</td>
<td>.29(0.74)</td>
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<tr>
<td>2. FM H Beh.</td>
<td>.15(2.07)</td>
<td>-.69(2.61)</td>
<td>.07(1.99)</td>
<td>.16(1.86)</td>
<td>.25(1.52)</td>
<td>-.17(2.27)</td>
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<tr>
<td>3. FM H Comp.</td>
<td>-.04(0.97)</td>
<td>-.41(1.20)</td>
<td>.05(0.99)</td>
<td>-.10(0.70)</td>
<td>.41(1.14)</td>
<td>-.14(0.49)</td>
</tr>
</tbody>
</table>

Note. A = Asian; AA = African American; C = Caucasian; H = Hispanic; NA = Native American; O = Other. FM = Family Member. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence. *p < .05.
Table 7
Descriptive Differences Between Family Member Income Groups on Health Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Income 1</th>
<th>Income 2</th>
<th>Income 3</th>
<th>Income 4</th>
<th>Income 5</th>
<th>Income 6</th>
<th>F (df, df)</th>
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</thead>
<tbody>
<tr>
<td>1. FM H Att.</td>
<td>-.74(0.82)</td>
<td>-.15(1.13)</td>
<td>.04(0.94)$^+$</td>
<td>.01(1.01)$^+$</td>
<td>.22(1.01)$^+$</td>
<td>.35(0.83)$^+$</td>
<td>3.23(5, 389)**</td>
</tr>
<tr>
<td>2. FM H Beh.</td>
<td>-.51(1.76)</td>
<td>-.79(1.99)</td>
<td>-.18(1.89)</td>
<td>.48(2.03)$^a$</td>
<td>.61(2.08)$^a$</td>
<td>1.29(2.29)$^a$</td>
<td>5.51(5, 356)***</td>
</tr>
<tr>
<td>3. FM H Comp.</td>
<td>-.20(0.91)$^b$</td>
<td>-.22(1.11)$^b$</td>
<td>-.04(1.00)$^b$</td>
<td>.11(0.92)$^c$</td>
<td>.26(1.04)$^c$</td>
<td>.47(0.88)</td>
<td>2.58(5, 419)*</td>
</tr>
</tbody>
</table>

Note. 1 = < $16,050; 2 = $16,051-65,100; 3 = $65,101-131,450; 4 = $131,451-200,300; 5 = $200,301-357,700; 6 = > $357,701
FM = Family Member. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence. *p < .05, **p < .01 ***p < .001; $^+$ significantly differs from < $16,050; $^a$ significantly differs from $16,051-65,100; $^b$ significantly differs from > $357,701; $^c$ significantly differs from $16,051-65,100.
Table 8
Research Question 2: Main & Interaction Effects on Young Adult and Family Member Health Behaviors

<table>
<thead>
<tr>
<th>Variable</th>
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<th>S.E. b</th>
<th>Beta</th>
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<td>DV: Young Adult Health Behaviors</td>
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<td>.06</td>
<td>.51***</td>
<td>16.0</td>
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<td>YA Open.</td>
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<td>.08</td>
<td>-.05</td>
<td>-1.23</td>
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<tr>
<td>YA H Att*YA Open.</td>
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<td>.07</td>
<td>.02</td>
<td>.65</td>
</tr>
<tr>
<td>FM H Att</td>
<td>.15*</td>
<td>.06</td>
<td>.08*</td>
<td>2.33</td>
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<td>.06</td>
<td>.07*</td>
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**Note.** YA = Young Adult; FM = Family Member. H Att. = Health Attitudes; H Beh. = Health Behaviors; H Comp. = Perceived Health Competence; Conform. = Family Conformity Orientation; Freq. = Frequency of Health Communication; Open. = Openness of Health Conversation; Per. Conf. = Perceived Confirmation from Family Member. Family Member respondents only completed reports of health attitudes, health behaviors, and health competence. * $p < .05$, **$p < .01$, ***$p < .001$. 
Appendix A: Young Adult Participant Survey

Part I. Demographic Information
1. What is your sex? M F
2. What is your age? _______
3. Please select your ethnicity: Asian American African American
   Caucasian Hispanic Native American Other
   __________
4. Please enter your height, in feet and inches (example: 5ft 1 in): __________
5. Please enter your weight, in pounds (example: 154) ____
6. Please select your sexuality: Heterosexual Bisexual Gay/Lesbian/Trans.
7. The following three questions ask about the primary caregiver(s) (e.g., parents, grandparent) that lived with you in the home in which you grew up. Please indicate your answers with these individuals in mind, even if you no longer reside in your home.

Please circle the COMBINED income of your primary caregivers:
Less than $16,050
$16,051-65,100
$65,101-131,450
$131,451-200,300
$200,301-357,700
$357,701 or more
8. Consider the caregiver with the highest completed level of education. Please circle the highest level of education COMPLETED by that caregiver:
High School Diploma
Associates Degree
Bachelors Degree
Masters Degree
Ph.D./J.D./M.D.
9. Please indicate your primary caregiver's marital status for the majority of your childhood and adolescence:
Married
Single
Divorced
Separated
Engaged
Other ___________
10. In the box below, list the people in your life you would consider your close family members. (Note: these people may or may not be blood relations.)
Part II. Family Communication Patterns

Instructions: The next section of the survey asks you about your family communication. In this scale, I am interested in knowing how you and your family members AS A WHOLE communicate with one another. For this study, “family members” are those individuals you just typed into the box. Please keep them in mind as you answer these questions.

Answer the questions according to how much you agree with the statement. The responses range from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree).

1. In our family, we often talk about topics like politics and religion where some persons disagree with others.
2. My parents/caregivers often say something like "Every member of the family should have some say in family decisions."
3. My parents/caregivers often ask my opinion when the family is talking about something.
4. My parents/caregivers encourage me to challenge their ideas and beliefs.
5. My parents/caregivers often say something like, "You should always look at both sides of an issue."
6. I usually tell my parents/caregivers what I am thinking about things.
7. I can tell my parents/caregivers almost anything.
8. In our family we often talk about our feelings and emotions.
9. My parents/caregivers and I often have long, relaxed conversations about nothing in particular.
10. I really enjoy talking with my parents/caregivers, even when we disagree.
11. My parents/caregivers like to hear my opinions, even when they don't agree with me.
12. My parents/caregivers encourage me to express my feelings.
13. My parents/caregivers tend to be very open about their emotions.
14. We often talk as a family about things we have done during the day.
15. In our family, we often talk about our plans and hopes for the future.
16. My parents/caregivers often say something like, "You'll know better when you grow up."
17. My parents/caregivers often say something like "My ideas are right and you should not question them."
18. My parents/caregivers often say something like "A child should not argue with adults."
19. My parents/caregivers often say something like "There are some things that just shouldn't be talked about."
20. My parents/caregivers often say something like "You should give in on arguments rather than risk making people mad."
21. When anything really important is involved, my parents/caregivers expect me to obey without question.
22. In our home, parents/caregivers usually have the last word.
23. My parents/caregivers feel that it is important to be the boss.
24. My parents/caregivers sometimes become irritated with my views if they are different from theirs.
25. If my parents/caregivers don't approve of it, they don't want to know about it.
26. When I am at home, I am expected to obey the parents'/caregivers' rules.
Part III. Openness of Health Conversations (Family Communication Patterns Related to Health Eating/Nutrition and/or Physical Activity)

Instructions: In this scale, I am interested in knowing how you and your family members communicate about HEALTH as it relates to EATING/NUTRITION and/or PHYSICAL ACTIVITY (abbreviated as "E/N/PA health"). Conversations may relate to these areas broadly (e.g., the importance of good nutrition or getting daily exercise), or they may be more specific (e.g., advice to cut ice cream out of your diet, or why you dislike jogging). Answer the questions according to how much you agree with the statement. The responses range from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree).

1. In our family, we often talk about topics related to E/N/PA health.
2. My parents/caregivers often ask my opinion when the family is talking about E/N/PA health.
3. In our family, we often talk about our plans and future goals related to E/N/PA health.
4. My parents/caregivers encourage me to challenge their ideas and beliefs regarding E/N/PA health.
5. I usually tell my parents/caregivers what I am thinking when it comes to E/N/PA health.
6. I can tell my parents/caregivers almost anything in regards to my E/N/PA health.
7. In our family we often talk about our feelings and emotions associated with E/N/PA health.
8. My parents/caregivers and I often have long, relaxed conversations about E/N/PA health.
9. I really enjoy talking with my parents/caregivers about E/N/PA health, even when we disagree.
10. My parents/caregivers like to hear my opinions about E/N/PA health, even when they don't agree with me.
11. My parents/caregivers encourage me to express my feelings about my E/N/PA health.
12. My parents/caregivers tend to be very open about their emotions regarding their own E/N/PA health.
13. We often talk as a family about E/N/PA health.

Part IV. Influential Family Members

Over the course of your childhood and adolescence, please indicate the one family member—still living—who most often communicated with you about eating/nutrition and physical activity:

Name of family member_____________________
Relationship to you _______________________

Over the course of your childhood and adolescence, please indicate the one family member—still living—who had the greatest influence on your current attitudes and behaviors regarding eating/nutrition and
physical activity. (Note: this answer may differ from above answer. This person should match the "individual family member" who took the survey for you):

Name of family member ___________________
Relationship to you _______________________

Instructions: I am interested in knowing about the frequency of communication with your INFLUENTIAL family member (noted above) about eating/nutrition and physical activity. Answer the questions according to the frequency with which you and the family member discussed these topics. The responses range from 1 (never discussed) to 5 (very frequently discussed)

Never
Seldom
Sometimes
Often
Very Frequently

1. Frequency of discussion about eating/nutrition with this family member:
2. Frequency of discussion about physical activity with this family member.

Next, please answer the following question about who initiated these conversations. Please check the appropriate box:

I initiated conversations with my influential family member regarding nutrition and physical activity more than she/he with me.

My family member initiated conversations with me regarding nutrition and physical activity more than I did with him/her.

My family member and I both initiated conversations equally.

I do not know/I’m unsure who initiated conversations more frequently.

Now tell me about the content of these conversations. Below are a list of potential subtopics that might have arisen in your conversations with your influential family member about a) eating/nutrition and b) physical activity. Please check all applicable subtopics, and feel free to add in others not listed here.

___ Eating healthier
___ Eating less
___ Eating more
___ Unimportance of healthy eating
___ Importance of healthy eating
___ Getting more physical activity
___ Getting less physical activity
___ How to perform a certain physical activity
___ Unimportance of getting physical activity
___ Importance of getting physical activity
___ Body image/Appearance
___ Other _____________________. _____________________

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In the space provided below, describe an eating/nutrition or physical activity-related conversation you had with your influential family member where the family member influenced YOU. Please be as specific as possible in regards to the purpose (why did the conversation begin?), content (who said what?), and outcome of the conversation (for example, did you and the family member feel positively about the conversation? Did someone implement something new after the conversation?).

Now, in the space provided below, describe an eating/nutrition or physical activity-related conversation you had with your influential family member where you influenced your FAMILY MEMBER. Please be as specific as possible in regards to the purpose (why did the conversation begin?), content (who said what?), and outcome of the conversation (for example, did you and the family member feel positively about the conversation? Did someone implement something new after the conversation?).

Part V. Eating/Nutrition and Physical Activity Attitudes and Behaviors and Perceived Health Competence

Instructions: In this scale, I am interested in knowing about your attitudes related to eating/nutrition and physical activity. Carefully answer the questions according to how much you agree with the statement. The responses range from 1 (very strongly disagree), 2 (strongly disagree), 3 (disagree), 4 (neutral), 5 (agree), 6 (strongly agree), and 7 (very strongly agree).

1. I think nutrition has an important role in preventing future health problems.
2. I think I often make “bad” food choices.
3. I am concerned with eating nutritious foods.
4. I think I eat certain foods because they’re available—even though I shouldn’t.
5. I personally care about eating healthy food.
6. The incorporation of physical activity into my lifestyle has an important role in preventing future health problems.
7. Physical activity is not something I enjoy.
8. I make an effort to have a physically active lifestyle.
9. I believe daily physical activity should be a priority in my life.
10. I personally care about implementing physical activity into my lifestyle.
11. Eating a well-balanced diet is not a major sacrifice for me.
12. I like healthy foods.
13. I am not very concerned with eating more nutritiously.
15. I like physical activity.
16. I look and feel my best after I’ve been physically active.
17. I think exercising is overrated.
18. I am concerned with making sure I get enough physical activity.

Instructions:
Meats and Snacks: I am interested in knowing about your eating habits. Think about your eating habits over the past month or so. About how often do you eat each of the
following foods? Remember breakfast, lunch, dinner, snacks and eating out. Select one answer per line.

Scale: 1/mon. or less  2-3/mon.  1-2/week  3-4/week  5+/week

Hamburgers, ground beef, meat burritos, tacos  
Beef or pork, such as steaks, roasts, ribs, or in sandwiches  
Fried chicken  
Hot dogs, or Polish or Italian sausage  
Cold cuts, lunch meats, ham (not low-fat)  
Bacon or breakfast sausage  
Salad dressings (not low-fat)  
Margarine, butter or mayo on bread or potatoes  
Margarine, butter or oil in cooking  
Eggs (not Egg Beaters or just egg whites)  
Pizza  
Cheese, cheese spread (not low-fat)  
Whole milk  
French fries, fried potatoes  
Corn chips, potato chips, popcorn, crackers  
Doughnuts, pastries, cake, cookies (not low-fat)  
Ice cream (not sherbet or non-fat)

Fruits and Vegetables: Think about your eating habits over the past month or so. About how often do you eat each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out. (Please note the response scale is slightly different from the previous scale.) Select one answer per line.

Scale: less than 1/week  1/week  2-3/week  4-6/week  1/day  2+/day

Fruit juice, like orange, apple, grape, fresh, frozen or canned. (Not sodas or other drinks)  
How often do you eat any fruit, fresh or canned (not counting juice?)  
Vegetable juice, like tomato juice, V-8, carrot  
Green salad  
Potatoes, any kind, including baked, mashed or french fried  
Vegetable soup, or stew with vegetables  
Any other vegetables, including string beans, peas, corn, broccoli or any other kind  
Fiber cereals like Raisin Bran, Shredded Wheat or Fruit-n-Fiber  
Beans such as baked beans, pinto, kidney, or lentils (not green beans)  
Dark bread such as whole wheat or rye

Physical Activity: The following four questions measure your moderate and vigorous physical activity levels. Moderately physical activities include things like walking briskly, bicycling for pleasure, and weight training. Vigorous physical activities include things such as running, swimming laps, soccer, and fast dancing. Please note: questions will ask for your response in either DAYS or MINUTES. Please respond with a number (e.g., "2" instead of "two").
During the past seven days, how many DAYS per week did you participate in a sport or activity that was moderately intense (caused *small increases* in breathing or heart rate) for 10 minutes or more?

On the days you performed these moderately intense activities, please tell me, on average how many total MINUTES you spent doing those activities each day. (For example, if you walked briskly 3 out of the 7 days, each time for approximately 25 minutes, you would report 75 minutes total.)

During the past seven days, how many DAYS per week did you participate in a sport or activity that was vigorously intense (caused *large increases* in breathing or heart rate) for 10 minutes or more?"

On the days you performed these vigorously intense activities, please tell me, on average how many total MINUTES you spent doing those activities each day. (For example, if you swam laps 3 out of the 7 days, each time for approximately 20 minutes, you would report 60 minutes total.)

Instructions: In this scale, I am interested in knowing how competent you believe you are in regards to your health. For the eight items below, please keep in mind your health as it relates to your EATING/NUTRITION and PHYSICAL ACTIVITY ("abbreviated E/N/PA health"). Answer the questions according to how much you agree with the statement. The responses range from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). The only correct responses are those that reflect your confidence in your capabilities as of right now.

1. I handle myself well with respect to my E/N/PA health.
2. No matter how hard I try, my E/N/PA health just doesn’t turn out the way I would like.
3. It is difficult for me to find effective solutions to the E/N/PA health problems that come my way.
4. I succeed in projects I undertake to improve my E/N/PA health.
5. I’m generally able to accomplish my goals with respect to my E/N/PA health.
6. I find my efforts to change things I don’t like about my E/N/PA health are ineffective.
7. Typically, my plans for my E/N/PA health don’t work out well.
8. I am able to do things for my E/N/PA health as well as most other people.

Part VI. Perceptions of Confirmation

Instructions: These questions ask you to remember typical conversations about EATING/NUTRITION and/or PHYSICAL ACTIVITY-RELATED topics (abbreviated as E/N/PA) with your specified influential family member. Indicate the extent to which the family member did the following things using a scale of 1 (never) to 7 (always).

During these E/N/PA conversations, the family member…(repeated before each question)

1. Made statements that communicated to me that I was a unique, valuable human being.
2. Demonstrated that he or she was genuinely listening when I was speaking.
3. Made statements that communicated that my feelings about the issue were valid and real (e.g., statements like, “I’m sorry that you’re so disappointed, angry, etc.”)
4. Gave me undivided attention.
5. Maintained meaningful eye contact with me.
6. Gave appropriate facial responses such as smiling or nodding.
7. Allowed me to express negative feelings.
8. Gave clear, direct responses to me.
9. Asked my opinion or solicited my viewpoint.
10. Went off on unrelated tangents.
12. Gave impersonal responses (e.g., loaded with clichés or responses that did not truly respond to me).
13. Sent double messages (verbal and nonverbal messages that differed).
15. Ascribed motives to my actions (e.g., made statement like, “You’re only doing this because…”).
16. Avoided physical contact such as touching, hugging, pats on the back, etc.
17. Discounted or explained away my feelings.
18. Engaged in monologue (continued on and on with whatever he or she had to say, failing to acknowledge anything I said or tried to interject).
19. Used killer glances (put-down looks).
20. Criticized my feelings when I expressed them.
21. Ignored my attempts to express my feelings.
22. Belittled me.
23. Engaged in negative name calling.
24. Made statements that communicated that my ideas didn’t count (e.g., “Can’t you do anything right?” or “What do you know about this anyway?”).

Part VII. Completion

I am seeking young adult-family member pairs (estimated 30 total participants) to participate in a follow-up interview study on family communication and health attitudes and behaviors. I will be conducting separate interviews (1 with the family member, 1 with you) that would last approximately 30 min. to 1 1/2 hours, depending on how much you have to say. Interviews will be conducted at times and in locations convenient for the
participant (e.g., in a cafe, on campus, over the phone). Participants will be entered into a raffle for a chance at a monetary prize ($100). Would you be interested in participating? (Expressing interest does not necessarily mean you will be interviewed.)

Yes, I’d like to learn more about the interview opportunity and how I could receive $100.

No thanks.
Appendix B: Influential Family Member Participant Survey

Part I. Demographic Information

1. What is your sex?    M    F
2. What is your age? __________
3. Please select your ethnicity: Asian American    African American
   Caucasian    Hispanic    Native American    Other ________________
4. Please enter your height, in feet and inches (example: 5ft 1 in): __________
5. Please enter your weight, in pounds (example: 154) ______
6. Please select your sexuality: Heterosexual    Bisexual
   Gay/Lesbian/Trans.
7. Please circle the COMBINED income of the providers (e.g., yourself and a spouse) in your current household:
   Less than $16,050
   $16,051-65,100
   $65,101-131,450
   $131,451-200,300
   $200,301-357,700
   $357,701 or more
8. Consider the provider in your household with the highest level of education. Please circle the highest level of education COMPLETED by that provider:
   High School Diploma
   Associates Degree
   Bachelors Degree
   Masters Degree
   Ph.D./J.D./M.D.
9. What is your profession? ___________________
10. Please indicate your marital status:
    Married
    Single
    Divorced
    Separated
    Engaged
    Other __________

Part II. Eating/Nutrition and Physical Activity Attitudes and Behaviors and Perceived Health Competence

Instructions: In this scale, I am interested in knowing about your attitudes related to eating/nutrition and physical activity. Carefully answer the questions according to how much you agree with the statement. The responses range from 1 (very strongly disagree),
2 (strongly disagree), 3 (disagree), 4 (neutral), 5 (agree), 6 (strongly agree), and 7 (very strongly agree).

1. I think nutrition has an important role in preventing future health problems.
2. I think I often make “bad” food choices.
3. I am concerned with eating nutritious foods.
4. I think I eat certain foods because they’re available—even though I shouldn’t.
5. I personally care about eating healthy food.
6. The incorporation of physical activity into my lifestyle has an important role in preventing future health problems.
7. Physical activity is not something I enjoy.
8. I make an effort to have a physically active lifestyle.
9. I believe daily physical activity should be a priority in my life.
10. I personally care about implementing physical activity into my lifestyle.
11. Eating a well-balanced diet is not a major sacrifice for me.
12. I like healthy foods.
13. I am not very concerned with eating more nutritiously.
15. I like physical activity.
16. I look and feel my best after I’ve been physically active.
17. I think exercising is overrated.
18. I am concerned with making sure I get enough physical activity.

Instructions:
Meats and Snacks: I am interested in knowing about your eating habits. Think about your eating habits over the past month or so. About how often do you eat each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out. Select one answer per line.

Scale: 1/mon. or less 2-3/mon. 1-2/week 3-4/week 5+/week

Hamburgers, ground beef, meat burritos, tacos
Beef or pork, such as steaks, roasts, ribs, or in sandwiches
Fried chicken
Hot dogs, or Polish or Italian sausage
Cold cuts, lunch meats, ham (not low-fat)
Bacon or breakfast sausage
Salad dressings (not low-fat)
Margarine, butter or mayo on bread or potatoes
Margarine, butter or oil in cooking
Eggs (not Egg Beaters or just egg whites)
Pizza
Cheese, cheese spread (not low-fat)
Whole milk
French fries, fried potatoes
Corn chips, potato chips, popcorn, crackers
Doughnuts, pastries, cake, cookies (not low-fat)
Ice cream (not sherbet or non-fat)
Fruits and Vegetables: Think about your eating habits over the past month or so. About how often do you eat each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out. (Please note the response scale is slightly different from the previous scale.) Select one answer per line.

Scale: less than 1/week 1/week 2-3/week 4-6/week 1/day 2+/day

Fruit juice, like orange, apple, grape, fresh, frozen or canned. (Not sodas or other drinks)
How often do you eat any fruit, fresh or canned (not counting juice?)
Vegetable juice, like tomato juice, V-8, carrot
Green salad
Potatoes, any kind, including baked, mashed or french fried
Vegetable soup, or stew with vegetables
Any other vegetables, including string beans, peas, corn, broccoli or any other kind
Fiber cereals like Raisin Bran, Shredded Wheat or Fruit-n-Fiber
Beans such as baked beans, pinto, kidney, or lentils (not green beans)
Dark bread such as whole wheat or rye

Physical Activity: The following four questions measure your moderate and vigorous physical activity levels. Moderately physical activities include things like walking briskly, bicycling for pleasure, and weight training. Vigorous physical activities include things such as running, swimming laps, soccer, and fast dancing. Please note: questions will ask for your response in either DAYS or MINUTES. Please respond with a number (e.g., "2" instead of "two").

During the past seven days, how many DAYS per week did you participate in a sport or activity that was moderately intense (caused small increases in breathing or heart rate) for 10 minutes or more?

On the days you performed these moderately intense activities, please tell me, on average how many total MINUTES you spent doing those activities each day. (For example, if you walked briskly 3 out of the 7 days, each time for approximately 25 minutes, you would report 75 minutes total.)

During the past seven days, how many DAYS per week did you participate in a sport or activity that was vigorously intense (caused large increases in breathing or heart rate) for 10 minutes or more?

On the days you performed these vigorously intense activities, please tell me, on average how many total MINUTES you spent doing those activities each day. (For example, if you swam laps 3 out of the 7 days, each time for approximately 20 minutes, you would report 60 minutes total.)

Instructions: In this scale, I am interested in knowing how competent you believe you are in regards to your health. For the eight items below, please keep in mind your health as it relates to your EATING/NUTRITION and PHYSICAL ACTIVITY ("abbreviated E/N/PA health"). Answer the questions according to how much you agree with the statement. The responses range from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). The only correct responses are those that reflect your confidence in your capabilities as of right now.
1. I handle myself well with respect to my E/N/PA health.
2. No matter how hard I try, my E/N/PA health just doesn’t turn out the way I would like.
3. It is difficult for me to find effective solutions to the E/N/PA health problems that come my way.
4. I succeed in projects I undertake to improve my E/N/PA health.
5. I’m generally able to accomplish my goals with respect to my E/N/PA health.
6. I find my efforts to change things I don’t like about my E/N/PA health are ineffective.
7. Typically, my plans for my E/N/PA health don’t work out well.
8. I am able to do things for my E/N/PA health as well as most other people.

Part III. Completion and Identification

Thank you so much for your participation! Please complete the final two questions below:

1. Please type the first and last name of the student who informed you of this project (e.g., Jane Smith):
2. Please type the relationship of that student to you (e.g., daughter, brother):
3. I am seeking approximately 15 student-family member pairs (30 total) to participate in a follow-up interview study on family communication and health attitudes and behaviors. I will be conducting separate interviews (1 with the student, 1 with you) that would last approximately 30 min. to 1 1/2 hours, depending on how much you have to say. Interviews will be conducted at times and in locations convenient for the participant (e.g., in a cafe, over the phone). Participants will be entered into a raffle for a chance at 1 of 2 fifty dollar gift certificates to the restaurant/store of their choice. Would you be interested in participating? (Expressing interest does not necessarily mean you will be interviewed)
   Yes, I am interested in participating and having a shot at a $50 giftcard. Please e-mail me later with more information.
   No Thanks.
Appendix C: Semi-Structured Interview Guide

1. What sort of things, if any, do you do in life to maintain and enhance your health? (Follow up: obstructions?)

2. What health topic areas did [family member] most often talk with you about? (Probe: Conversations on nutrition and/or physical activity specifically?)

3. Let’s talk more on the formal or informal discussions you and [family member] would have regarding nutrition and physical activity. What sorts of subtopics came up during these conversations? (Follow-up on particular subtopics of interest. Probe for reasons for topic’s importance/value)

4. Is there any conversation in particular that stands out to you? Could you describe the conversation from start to finish?

5. What does “being healthy” mean to you?

6. How do you think (family member) would answer that question?

7. Do you think [family member] is pleased and satisfied with your current attitudes and behaviors regarding your diet and physical activity levels? (Follow up: Explain why.)

8. (For Infl. Fam member) Who was your “influential family member” when it came to shaping your attitudes and behaviors about nutrition and physical activity? Why?

9. (For Infl. Fam member) How do health conversations you have had with [family member] compare to health conversations you had with your own parents/caregivers growing up? (Probe for typicality and differences in health concerns as well as any mutual influence in advice giving).
10. How have other family members been influential on [family member’s] attitudes and behaviors regarding nutrition and physical activity?

11. Of what other aspects of your communication with [family member] about physical health issues should I be aware?
Footnotes

1. Obesity occurs with severe weight gain (BMI index, i.e., weight divided by square of the height, is $\geq 30 \text{ kg/m}^2$, CDC, 2008; Kim & Kawachi, 2008).
2. Names of participants have been changed to protect confidentiality.
3. For interview data citations, the number preceding the colon refers to the page number of the transcript, and the numbers following the colon refer to the line numbers of the quote.
4. R = Researcher; I = Interviewee
VITA

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