

AN ABSTRACT THESIS OF

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Abstract approved:

Alexis J. Walker

Women's health affects women and society as a whole. In addition to paid employment, women provide unpaid labor as they care for their families, their homes, and ailing relatives. Only by staying healthy can women provide care to their families. Using a feminist perspective, this study examined how women manage both their family responsibilities and their personal health.

A sample of 13 women participated in this study. These women ranged in age from 35 – 55 years of age and in educational levels from 12 – 18 years. All but one of the participants were employed outside the home, and all were Caucasian. All 13 women who participated in this study were at risk for developing metabolic syndrome, which is a combination of health problems including diabetes. The participants attended a 12-week intervention that consisted of weekly classes on nutrition and the benefits of exercise. Qualitative interviews with the participants occurred 2 to 5 weeks after the intervention was completed. The interview questions were focused on the experiences the women had while trying to make diet and exercise changes

and how their families responded to those attempts at change. This study used qualitative analysis to look for themes and patterns regarding women's attempts to make diet and exercise changes to decrease their risk of diabetes.

Three factors were found to influence changes in diet and exercise. First, family support influenced the participant's ability to make positive changes. Family support for this study included support from any family member, including extended family members, and was in the form of encouragement, interest in what the participant was learning, and exercising with the participant. Second, women from families in which exercise was part of other family members' routines demonstrated more change in exercise than those from families where exercise was not a routine part of family life. Finally, family demands negatively influenced some women's ability to make diet and exercise changes as shown by three women who had disabled family members living in their homes.

The women in this study experienced both structural and psychological ambivalence when trying to fulfill multiple roles of wife, mother, employee, and so forth. In terms of structural ambivalence, women from complicated families seemed unable to meet both the needs of their family members and their own health needs. Such women are vulnerable to failing when attempting to make health behavior changes. The women also experienced psychological ambivalence within their relationships with family members when trying to prioritize their own needs above those of others. The results of this study

should help in designing interventions that increase the likelihood of women's success in balancing family needs with needs regarding their own health.

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How Women Negotiate Family Responsibilities and Personal Health

by
Verna E. Zehner Ourada

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APPROVED:

Major Professor, representing Human Development and Family Studies

Chair of the Department of Human Development and Family Sciences

Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Verna E. Zehner Ourada, Author

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How Women Negotiate Family Responsibilities and Personal Health

Introduction

Traditionally, women have been the caregivers of family members and the “keepers of the home.” Despite changes in the workforce, with 60% of women in paid jobs, women continue to be relied on to maintain households and family well-being. Although their participation has increased somewhat, men do not have the same level of family responsibilities that women have.

Although women are now a large part of the paid work force, expectations for women have not changed. Women continue to have the major responsibility of caring for the household, the children, and other family members in addition to paid work (Coltrane, 2000; Hochschild, 1989). This complex set of responsibilities leaves women little time to care for themselves. In addition, women often feel selfish and conflicted if they respond to their own needs rather than the needs of their family members (Strang, 2001).

Edwina is a 43-year-old woman who is overweight and has high cholesterol and elevated glucose levels. At her last appointment with her physician, she was told she is at high risk for metabolic syndrome, which can lead to diabetes. She was instructed that if she changes her diet and adds daily exercise into her schedule, she could decrease her risk for diabetes and for other health problems such as stroke and coronary artery disease.

Edwina is married and has two teenaged children. She works full time as an office manager but her flexible work schedule allows her to attend her

children's athletic games and take them to appointments with the orthodontist. She prides herself in being available to her children when they need her. Although Edwina is interested in finishing her bachelor's degree through evening classes, she feels her children need her now and that her goal can wait. She wants to be the kind of mother her "stay at home" mother was, but she must work to help support her family financially. To meet her family members' needs, she tries to do everything her mother did, but she must do these things in the evenings and on weekends, when she is not at work.

Edwina's husband, Spencer, works full-time as an accountant. His work hours can vary depending on the time of the year. He is willing to do housework, but only when asked and when given a specific job. Edwina believes that he works hard all week and should be able to relax when he is at home. Her mother did not rely on her father to help around the house, which Edwina believes added to the strength of her parent's marriage. Like her mother did, she tries to make special dinners for her husband, and she tends to prepare only the food he likes, not considering her own likes and dislikes.

Edwina's parents are slowly beginning to rely on her more and more for household assistance such as changing light bulbs and dusting hard-to-reach places. She provides transportation to doctors' appointments when her father does not feel up to driving. She is happy to help with these kinds of tasks; she finds it rewarding to help them out, feeling it is a way to return the favor of them having raised her. Because Edwina lives in the same town as her

parents, they rely on her more than they rely on her brother for help. She hints that she knows she is the sibling better suited to provide this kind of help, as her brother would not be as patient with their parents as she is.

Edwina is concerned about her health risks, and she understands that her physician's recommendations are meant to help her stay healthy. She is uncertain how to add exercise to her already busy schedule. Her physician has explained to her how exercise lowers blood sugar, and she believes that exercise could help her. Between work, attending games and school events, helping her parents, and maintaining a proper home, she has little time to exercise.

The recommended dietary changes are challenging, too, as her husband loves "meat and potatoes" and is not fond of fresh vegetables. According to Edwina, the children eat "anything and everything," so they may not complain about a change in meals, but they also enjoy eating chips, baked goods, and candy bars. Edwina worries that having these things around the house may make it difficult for her to resist eating them. She feels the children deserve to have treats because they are physically active and have no weight issues, and she enjoys baking cookies for them on the weekends. Edwina realizes that she could make separate meals for her family and for herself, but she worries both that her limited time and energy may be prohibitive and that the temptation of foods not on the new diet may be overwhelming.

Edwina is representative of women who are relied on to care for their family members. She works full time and she also provides family care. She has postponed her personal goal of furthering her education so that she can give her children the attention she believes they deserve. She wants to help her parents as much as she can, not only from a sense of obligation, but also because she cares about them. Her husband plays a passive role in their family, allowing Edwina to prioritize his needs and wants, without providing her with the same consideration. He does not purposely stand in the way of her making changes in her lifestyle, but he does not offer to help or to participate in the changes. Edwina wants to take care of her own health, but she does not know how to prioritize her own needs above those of others. Given her relatively traditional view about women's responsibilities, she has always put her family's needs above her own, as did her mother when she was raising Edwina.

This study examined how women negotiate their health needs around their family responsibilities. By negotiate, I mean how women prioritize, compromise, and comply with recommendations to decrease health risks while also meeting the demands of their social roles. This issue is important not only for the health of individual women but also because of broader social issues related to women's family responsibilities. Society relies on women to provide unpaid family care. Women who are unable to address their own health needs now may have severe health consequences in the future that will lead to high

health care costs for themselves and also that will interfere with their ability to provide family care. If family members were required to hire caregivers, insurers and government agencies would be highly burdened to finance the care that is currently being given without charge by women (Hooyman, Browne, Ray, & Richardson, 2002).

The study on which this thesis was based targeted women in midlife who were at risk for metabolic syndrome. Left unmanaged, metabolic syndrome can lead to diabetes, stroke, and cardiovascular disease. Current health care recommendations are for those at risk to change their diet and to exercise, changes that have been shown to decrease the health risks of metabolic syndrome. Unfortunately, women's lives are complicated and full. The diet and exercise recommendations assume that women are able to change their daily lives, and do not take into account their family responsibilities or their personal obligations to others. Without looking into women's daily obligations, feelings, and attitudes, the recommendations are unlikely to lead to changes.

This study examined how women negotiate their own health needs around their family responsibilities, both successfully and unsuccessfully. It studied the lives of the participants, not to determine the success of their dietary and exercise changes, but to discover what interfered with or assisted them in their ability to make changes that were primarily for themselves. The results of this study have implications for the ability of women to improve their

own health as well as societal implications of women's focusing on their own well-being.

Literature Review

Theory

Feminist Perspective

In a country where women make 75 cents for every dollar that men make (Seccombe, 2001), and medical research for women lags far behind that for men's health issues (Ramasubbu, Gurm, & Litaker, 2001) it is apparent that women are not considered as important as men. This disparity between women and men is not deemed acceptable by all people. People who use a feminist perspective assume that women and men are of equal importance in social action, that the structures and processes that are at work in the larger social arena also impact the relations of intimate environments and vice versa, and that personal experiences cannot be separated from professional experiences (Fox & Murry, 2000). The feminist perspective defines gender as a social construct that embodies the cultural meanings of masculinity and femininity. Gender is a principle element of social structures, interweaved with other elements of social construction such as race and class (Fox & Murry, 2000).

Social construction of gender. Gender is socially constructed (Fox & Murry, 2000; Osmond & Thorne, 1993; Thompson, 1993; West & Zimmerman, 1987), which means that gender is not a result of biology, but rather a social creation that makes biological differences appear to predict the ways in which men and women will present themselves (Osmond & Thorne, 1993). Society

decides which characteristics will be construed as masculine and which as feminine. These characteristics are usually dichotomous behaviors and attitudes such as men should be daring and women should be meek. These socially accepted differences are not based on biology or nature, but rather are socially determined to be acceptable traits for each sex (Osmond & Thorne, 1993; West & Zimmerman, 1987). Socially constructed traits reinforce gender, a term that describes ways in which sex characteristics differentiate women and men from each other. These differences lead to a polarity that continues to keep women in secondary roles (Guendouzi, 2006; West & Zimmerman, 1987) by elevating men's needs, such as independence, health, and family support above those same needs of women and by placing women in supportive roles.

It is through individual experience beginning in childhood that gender is learned through social reinforcement, but it is constructed, reconstructed, and sustained as a result of daily interactions throughout the life course (Osmond & Thorne, 1993; Potuchek, 1992; Thompson, 1992; West & Zimmerman, 1987). For example, a young girl within a family learns from her mother the expectation to participate in family care, as well as the sense of what her duties and feelings as a woman should be with regard to family. She learns her family role by observing how her mother cares for her father, how her father cares for her mother, whether her brothers have the same chores as her sisters, and by watching the work her mother does for her family. As she

grows older, her role as “woman” is reinforced by teachers, the media, and social interactions with others who model acceptable behaviors, such as prioritizing the needs of others above her own, caring for others, and deferring decision making to others. Thus, gender is produced through social actions and interactions from family to culture (Thompson & Walker, 1995). Girls may start out as “helpers” to their mothers when a new baby is born into a family; they then become babysitters in their neighborhoods, and then become mothers themselves.

The culture one lives in determines the dichotomous sex categories of woman and man and the gendered characteristics of feminine and masculine (Osmond & Thorne, 1993). West and Zimmerman (1987) use the phrase “doing gender” to explain how roles are learned and enacted in specific contexts. The construction of roles within a family is ongoing and is structured by each family’s culture and the larger social settings of religion, politics, and economic arrangements (Dressel & Clark, 1990). Many older family members, teachers, and social role models continue to promote the convention of a breadwinning father, homemaker mother, and children as the perfect family. This prevalent ideal perpetuates the subordinate role of women. Respect and privilege are given to individuals on the basis of gender. Men continue to earn higher wages than women and are not expected to participate in housework and childcare the way women are expected to, regardless of paid work hours. Women are expected to perform the majority of housework and care for

children even if they are employed for the same, or more, hours as their husbands. Differential gender privilege reinforces the establishment and maintenance of culturally constructed, shared understanding of the ways women are different from men (Fox & Murry, 2000), thus leaving women in the role of caring for others before caring for themselves.

The lower wages and disadvantaged positions in the labor force for women are justified by the normative societal belief that women's income is supplemental to that of men (Potuchek, 1992; Thorne, 1982). Furthermore, in their choice of training for as well as the specific jobs they typically take, women are influenced by the assumption that they are well suited for domestic and nurturing jobs as they are "natural" caregivers. Such beliefs lead women to take jobs similar to those of family work (Thorne, 1982), such as day care providers, office assistants, teachers, and nurses. These jobs are usually held in lower esteem, as evidenced by lower wages, than the jobs held traditionally by men, such as physicians, engineers, and business owners.

The challenges for women working outside the home are not limited only to types of jobs available. Although many women are unable to earn equal economic compensation or to engage equally in occupational pursuits with men, they also carry a greater burden of care and responsibility for family caregiving (Maume, 2006). Family obligations such as working around school schedules, preparing meals, and doing housework systematically restrict their opportunity for paid work hours (Hooyman, Browne, Ray, & Richardson, 2002;

Maume, 2006; Thompson & Walker, 1989). The reduction in paid work hours affects more than present income for women; it also affects retirement savings, social security savings, and potential for advancement, as women make less money and are unable to contribute as much into retirement accounts and social security (Herd & Harrington Meyer, 2002; Harrington Meyer, Wolf, & Himes, 2005). Because women are on the job for fewer hours, their opportunities for promotion and advancement are reduced. Thus, women's economic stability across the lifespan is less certain than men's. In this way, women become dependent on their spouses for current as well as future livelihood.

Through repeatedly doing the work of "wife" and "mother," women create family life. The "naturalness" of the established roles within a family is reinforced by family members as they "do family" in traditional ways. A feminist perspective explains how women are relied upon for daily caregiving, often suppressing their own needs and wants (DeVault, 1991). By studying women's everyday experiences, researchers find that women do much unseen and uncompensated work that is taken for granted, often by the very women doing the work (DeVault, 1991). A result of women not realizing their own contributions to family labor is that few women have a sense of entitlement to care for themselves. Women typically do not ask for help or time off from family work for either leisure or health.

Women's daily experiences are valuable. Much of gendered work is taken for granted, rendering it invisible (Gerson & Peiss, 1985). Although the work is still being done, if it is not acknowledged as work, then it is not valued as a contribution to a family or society. The invisibility of housework and the management of that work, which is often done by women when they are at home alone, leads to an assumption that "work" has not been accomplished (DeVault, 1991). The "work" is completed, such as cleaning and shopping or thinking about what to make for dinner, but no one sees it performed. Because the work is not seen, it is not acknowledged as meaningful effort. An example of this is the myth that full-time homemakers watch television and relax all day. No one is around to see the work these women do within their homes, so these homemakers are assumed to be inactive or lazy, and not productive. The work many women perform is invisible not only to their families, but also to society in general. Invisible work such as housework is not reinforced by pay, not kept track of by organizations that study "work," and not acknowledged by government agencies such as Social Security or the Census Bureau.

In a structure where women's work has been made invisible, the feminist perspective asserts that the everyday, personal experiences of every woman have worth and should be appreciated for their complexity. Women have certain experiences such as caring for others and doing uncompensated work, because gender is used to structure society (Thompson, 1992). By

recognizing women's experiences, women become visible, thus valuable, in the structure of family and society.

Gender relations. Gender distinctions perpetuate hierarchical power relations between women and men (Osmond & Thorne, 1993). Women are socialized to believe they are better suited than men to work within the home. By accepting their prescribed role, women lose power in the male-dominated world by shaping their careers and work lives to fit around family responsibilities (Hochschild, 1989). Because women reproduce socially constructed roles, men can assume the socially constructed roles of leader, decision maker, and financial provider. This separation of roles by gender gives men control and relegates women to secondary roles that involve family and support work instead of independent paid work. Women have the role of supporting others, which often results in no one to provide them with support.

Although gender constructs vary across cultures and historical times, they are always embedded in ideology and related to disadvantage, stratification, and hierarchy (Potuchek, 1992; Thompson, 1993). Not only does gender express cultural values, but it also organizes the social distribution of societal resources (Fox & Murry, 2000). Thus, gender is tied to distributions of merit, privilege, power, autonomy, and the resources they command (Fox & Murry, 2000).

Gender relations are essentially power relations. The feminist perspective directs attention to the overt and covert processes that distinguish

women from men and then assign value and privilege on the basis of biological sex (Fox & Murry, 2000). These distinctions are evident in almost all areas of society including the work force, family structure, politics, and medicine. We see women's subordination in that women are paid less than men even when working with men at jobs that are considered traditionally "women's jobs" (Cohen & Huffman, 2003), that 80% of family caregivers are women (Brewer, 2001), and that women's health research is not as extensive as that on men's health.

Justification of women's subordination is not caused by female biology itself but rather by men's control of that biology. Similar to the ways in which the biological dimension of skin color has been used to justify subordinating racial minorities, so, too, have biological sex differences been used to justify subordinating women (Osmond & Thorne, 1993). For example, for years girls were told they could not be good at math merely because they were girls. This belief deterred many girls from even attempting higher-level math courses, which in turn eliminated them from many high-paying, technological jobs in adulthood. Male dominance within families is part of a wider system of male power that exists in communities, institutions, and nations. Feminist theorists argue that this male dominance is neither natural nor inevitable but continues and occurs at women's cost (Ferree, 1990).

Social arrangements leading to obligation and responsibility. Scholars who study gender look at the social construction of housework as "women's

work” and how it symbolizes women’s way of showing love and care (DeVault, 1991; Ferree, 1990; Hochschild, 1989). When women care for their families both in housework and caring work, this work reflects and perpetuates the cultural understanding of women’s family love and personal fulfillment (Coltrane, 2000). By adopting gendered cultural understandings, women come to believe that by not doing housework they show that they do not love their families. The obligation for women to continue gendered work is reinforced because they do not wish to be perceived as unloving. They also experience pleasure by doing things for others (DeVault, 1991; Di Leonardo, 1987; Risman, 2004).

For most girls, learning about housework begins early in life, and by the time they are women they have learned that housework is a “womanly” activity (DeVault, 1991). The very concept of family strongly instills the idea that women will do housework and associates caring activity with women’s family place (DeVault, 1991). Relative to husbands, wives are both responsible for and accomplish most routine household labor and childcare. Women demonstrate an increased sense of obligation to perform household labor when they marry, and again when they have children (Wharton, 1994). An example is that a woman living alone may not cook for herself. When she marries, she may learn to cook to provide meals to her husband. If children are added to her family, she may then give more attention to the nutritional content of meals. When children are added to a household traditional roles are

likely to follow, and women find themselves even more responsible for household work (Baxter, Hewitt, & Haynes, 2008; Wright, 2007). Even when they are working outside the home, women are considered the primary housekeeper. Women's work includes not only housework, but caring work as well. Caring work is defined as the care people do for others (Dressel & Clark, 1990; Sulik, 2007), and is typically done by women. This work can range from something as simple as checking in with an aging relative, to something as difficult as caring for an ailing or disabled family member. It is not that men cannot do caring work, but the majority of it falls to women. Men may have learned caring skills from their mothers, but they do not have the same compelling sense of caring duty as women (DeVault, 1991). The construction of family has not included men in primary caring roles, and men have not questioned that construction. Women also are delegated the job of caregiver to ailing family members as another type of caring work.

Through wage work, men receive more recognition for providing than women, but women receive little acknowledgment for family work. In the majority of two-earner households, wives are seen by themselves and others as supplemental earners rather than coproviders. This disparity leaves the role of "provider" to husbands. As a result, only men are treated as entitled to the support that the provider role assumes (Ferree, 1990). This support is demonstrated in that men receive leisure or rest time after work and are often excused from helping with household labor. This disparity prevents women

from adopting a sense of entitlement to solace in the home (Thompson & Walker, 1995). A woman also may benefit from a work break, but if she does not do housework, it will not get done. Because she does not feel entitled to the same benefits as her husband, she will not ask for benefits.

A feminist perspective is helpful for understanding women's responsibilities for others. As shown, it also highlights why women may not see themselves as entitled to attention and care from others, and why they are likely to put their own needs last, after they have satisfied those of other family members. Combined with a feminist perspective, the concept of ambivalence further elucidates the unique situation of women with health problems.

The Concept of Ambivalence

According to Connidis and McMullin (2002), there are two types of ambivalence: sociological and psychological. Sociological ambivalence is ambivalence from "structurally created contradictions that are experienced by individuals in their interactions with others" (Connidis & McMullin, 2002, p. 559). Sociological ambivalence is rooted in the differential distribution of power and resources throughout society. For example, women have fewer resources than men and also have more demands placed on them. Women are thus often in the position of being unable to meet their many obligations or of having to reconcile situations in which they face competing requirements. The contradictions and paradoxes embedded in sets of structured social relations

create ambivalence as rights, opportunities, and privileges are differently distributed (Connidis & McMullin, 2002).

Sociological ambivalence also helps to explain the occurrence of conflicting normative expectations of attitudes, beliefs, and behavior (Merton & Barber, 1963). The incompatible expectations involved in performing social roles may be assigned or incorporated into social status, or to a role within a social rank (Luescher & Pillemer, 1998). A person may feel ambivalence because of competing roles, when performing a role that has different expectations depending on with whom interaction occurs, or from having insufficient resources (e.g., time) to meet role demands.

Psychological ambivalence is defined as simultaneously held mixed or opposing feelings or emotions experienced in relationships with others (Connidis & McMullin, 2002). This type of ambivalence involves emotions and subjective feelings on a personal level. Psychological ambivalence can be experienced in spousal relationships when one spouse wants to please the other, but does not agree with a specific plan of action. Connidis and McMullin (2002) look beyond the relational and posit that the experience of mixed feelings or psychological ambivalence results from the contradictions rooted in structured social relations. In other words, the contradictions in society are experienced within the individual as mixed feelings.

We see structural sociological ambivalence in the lives of women every day. The role of daughter of an aging mother is an example. These women are

in a position of trying to give their mothers autonomy and respect while at the same time watching out for their health and well-being. Daughters with aging mothers experience structural ambivalence as they try to meet the roles of both “daughter” and “caregiver.” Further, adult caregiving daughters who are married and employed mothers, are pulled between being a caregiving daughter and tending to their family and paid work responsibilities. Although the women may want to care for their mothers, they also want and need to care for their husbands and children, and to fulfill their job requirements.

A different example of mothers of children with disabilities shows how structural ambivalence can lead to social action. These mothers may take on roles in the political arena, lobbying for benefits and rights for the disabled. The role of lobbyist develops from that of mother trying to support her children. Mothers may extend that role by trying to help other children with the same or similar kinds of disability.

Those who study ambivalence recognize that ambivalence is an ongoing feature of social relations that must be negotiated and renegotiated over the life course (Connidis & McMullin, 2002). This view of ambivalence is derived from conflict theory. Conflict theories of family acknowledge that social relations privilege certain groups, that individuals attempt to exert control over their lives, that social life is negotiated through interaction, and that society is based more on conflicting interests than on consensus (Connidis & McMullin,

2002; Farrington & Chertok, 1993). There is a conflict between structured societal expectations and individuals trying to act for themselves.

Society's expectations shape roles, leaving individuals seemingly powerless in choosing which roles they are obligated or able to perform, and how they should perform them. Because cultural expectations become taken for granted over time, those in power remain in power, and power imbalances are perpetuated into greater power imbalances (Connidis & McMullin, 2002). The expectations of social roles over time become understood as fact, instead of something created by society. Once society perpetuates these roles as fact, it becomes difficult to change them, as any changes would be outside of the known structured system and would require creating a new system. Roles rooted in gender are an example of roles that are difficult to change. As noted earlier, traditionally men have held more power than women. As women learn the existing power structure, it becomes harder for them to break out of their secondary role, thus reinforcing men's power. Women experience ambivalence as they try to establish new social norms when they also feel the need to fulfill old expectations.

Women who experience ambivalence carry many social roles. The socially constructed roles of wife, mother, and daughter are loaded with expectations of women caring for others. Women carry contradictory feelings toward family work because it is burdensome and oppressive. At the same time, however, family work is meaningful as it provides a means of connecting

with others (DeVault, 1991; Di Leonardo, 1987). Women who pursue careers take on job expectations in addition to the societal expectations for women; they are not relieved of one set of expectations to take on another. The employed woman often feels guilt as a result of social pressure to be always accessible to her children (Guendouzi, 2006). Because of wanting to be accessible to their children, women who are mothers may find it difficult to give full attention to work, may decrease their hours spent in waged work, and may struggle to complete quality work, which may lead to feelings of failure, desperation, and powerlessness. The desires both to succeed at work and to care for their families lead women to ambivalence.

Not all ambivalence for women is related to jobs or family care. Although women are expected to care for others, they are not expected to care for themselves. Women with health issues have to negotiate societal expectations to care for their families and for themselves. And they may feel guilty if they prioritize their own health needs over the needs and wants of their family members.

Empirical Research

Gender Ideology

Gender ideology is the belief people hold about the “appropriate” roles and responsibilities of men and women. Gender ideology is linked to how individuals identify themselves with regard to marriage and family roles that are traditionally linked to gender (Greenstein, 2000). These beliefs reflect

ideas that people have specific roles rooted solely in their biological sex. Gender ideology is so basic to a person that it is often an unconscious assumption (Wharton, 1994).

Gender ideology refers to a spectrum of beliefs ranging from traditional to egalitarian. People with a traditional gender ideology believe that men should provide family income (i.e., provider role) and that women should care for the home and family members (i.e., wife and mother roles). Women are expected to set the needs of others above their own, and men are expected to provide adequate family income. People with an egalitarian gender ideology believe that men and women are equals, both in the workplace (i.e., coprovider role) and at home (i.e., spouse and parent roles); that is, the privileges and burdens of each domain should be shared by women and men.

Gender ideology tends to be more traditional among the working class and more egalitarian among the middle class (Hochschild, 1989). Across all classes, women tend to be more egalitarian in their views than men (Hochschild, 1989). Psychological and sociological theories would suggest that men and women with traditional gender ideologies would not share housework, whereas those with egalitarian attitudes would share family responsibilities (Coltrane, 2000), in part because women with traditional ideologies perceive the unequal division of labor within the home as fair (Greenstein, 1996).

There is not always a close association between one's beliefs about gender and how one behaves in regard to family and housework (Hochschild, 1989). Blaisure and Allen (1995) found that the actual sharing of family work does not automatically result from a stated ideology of marital equality. Other researchers also have found a contradiction between couples' stated beliefs that they should share gendered work equally and the actual division of household labor (Fox & Murry, 2000; Thompson & Walker, 1989). Studies have shown that regardless of the belief system a couple has, over time, the roles within marriage gravitate toward a traditional model (Maume, 2006). This shift toward traditional roles emerges when a couple has children, and increases as the number of children within the household increases (Baxter, Hewitt, & Haynes, 2008; Wright, 2007).

Paid Work

Women are now a large part of the labor force, and they divide their time between home and work. Women have always contributed significantly to the household economy doing paid work both in and outside the home (Ferree, 1990; Osmond & Thorne, 1993). Throughout history, women have worked in service positions in communities. Women also have done work for pay from their homes such as sewing, laundry, and selling fresh vegetables and fruit. Even when women are employed, however, they continue to do the majority of household tasks (Artazcoz et al., 2004; Demo & Acock, 1993).

By contrast, the number of hours a man works for pay has little to do with the amount of time he works at home (Hochschild, 1989). Husbands whose wives work for pay typically do much less domestic work than their wives (Bianchi, Milkie, Sayer & Robinson, 2000; Bird, 1999; Bittman, England, Folbre, Sayer, & Matheson, 2003). Until recently research had shown that unemployed men sometimes did less housework than men who were employed (Coltrane, 2000). However, a recent report from the Bureau of Labor Statistics (2008) shows that unemployed fathers of children under the age of 18 are now involved in household labor more than employed fathers.

The number of hours women are employed has the strongest and most consistent effects on women's absolute levels of housework and the share of housework done by men. Women who are employed do one third less family work than women who do not work outside the home (Coltrane, 2000). When women enter full-time paid work they decrease their household labor from four to eight hours per week, and their husbands increase their household labor time approximately 2 hours (Gershuny, Bittman, & Brice, 2005). Men whose wives work outside the home do a larger portion of family work, not because they do much more actual housework, but because their wives do less housework than women who are not employed (Bianchi et al., 2000). Artazcoz et al. (2004) found that men's involvement with household tasks was low, even when their wives were employed. This involvement decreased as household size increased.

Despite the amount of housework performed by either spouse, paid work for women with families involves more than their desire to work outside the home. Family obligations involve *job tradeoffs*; that is, they limit options for women's work hours and the jobs they take, and determine whether they keep a job. Women more than men consider family needs when they enter or exit the labor force, decide the number of hours to work, and choose which work shifts they can manage (Thompson & Walker, 1989). Whereas men's job tradeoffs are largely unrelated to family characteristics, women's work restrictions increase as the number of children increases and as the age of children decreases. Ironically, women face increased tradeoffs when their husbands have higher education levels, as well as when their husbands are employed as professionals or managers (Maume, 2006). These job tradeoffs suggest that women change their work efforts to meet the needs of children and husbands (Maume, 2006) more than husbands change their work restrictions. Typically, if there is an increase in demand for family work time, it is wives rather than husbands who cut back on paid work (Berk, 1985). Wives cutting back on work hours makes some sense as women have fewer occupational opportunities compared to men (Thompson & Walker, 1989), and are less likely to earn the same or higher pay. Although this method of choosing who compromises their careers may be logical, it does not take into account the career goals and desires of the women who lose advantages such as retirement funds, bonuses, and promotions.

One can begin to see that women are likely to experience ambivalence around paid work and family life. Because women are considered the primary family carers, regardless of their interest in a job or a career, they feel the need to negotiate paid work around family needs. These negotiations do not take into account women's desire to succeed or advance in their career choices, nor do they consider job demands. In a study of 40 employed married parents (Simon, 1995), most women reported feeling "pulled in different directions," "constantly needed," and "confused." Eighty-five percent also reported feeling guilty about working outside the home as they sometimes slighted their children and neglected their husbands. None of the men reported these emotions (Simon). Along with paid-work negotiations, women face the unpaid family work that falls to them much more often than to men. Women are constrained by the specific character of work that produces family (DeVault, 1991). For example, a woman who has a husband and children may find furthering her education difficult as she is still expected to perform family work in addition to the studying she needs to do for school.

Unpaid Work

Women have felt obligated to perform family work, and men have assumed that domestic work is the responsibility of women (Coltrane, 2000). Research on unpaid family work rarely defines explicitly what family work entails (Coltrane, 2000), and no one term is used to describe it. The terms *family work*, *family care*, *household labor*, and *household chores* are all used

to describe work within the home. Some researchers include caring for children in their definitions (Lee & Waite, 2005; Ross, Mirowsky, & Huber, 1983; Thompson & Walker, 1989); others separate childcare from housework (Artazcoz et al., 2004; Mederer, 1993), and some do not include caring for children at all (Demo & Acock, 1993). For purposes of this thesis, the terms *family work* and *household labor* will be used interchangeably, and will include typical household chores such as laundry, cooking, housecleaning, and shopping, caring for children, as well as the invisible management of household labor (Mederer, 1993).

One thing researchers agree on is that the family work women typically do is repetitive, routine, boring, and must be repeated the next day or sooner (Berk, 1985; Dressel & Clark, 1990; Thompson & Walker, 1989). Their household labor is often accompanied by a sense of urgency in that meals need to be served regularly, and upset children need to be attended to right away. These types of urgent tasks are called low-schedule-control tasks by Barnett and Shen (1997), and have been found to be positively related to psychological distress. Unlike gardening, auto or home maintenance, which men tend to do, “women’s” household chores are less able to be postponed (Coltrane, 2000). Along with these physical tasks, family care requires an element of interpersonal relations, which is often unnoticed and unacknowledged not only by others, but also by the women performing the work (DeVault, 1991). Women also spend time thinking and planning what

needs to be done and how it will be accomplished (Mederer, 1993). This planning work is invisible, as it includes time thinking what to serve for dinner to satisfy everyone's food choices, making grocery lists, keeping track of family members' likes and dislikes, and so on. Planning work is often done at the same time other activities are being performed.

Although family work does not have to be performed only by women, research consistently finds that women do the bulk of the work (Bianchi et al., 2000; Coltrane, 2000; Hochschild, 1989; Johnson & Johnson, 2008; Lee & Waite, 2005). Women are still expected by society to manage home and family. Wives spend two to three times as many hours doing housework as their husbands (Bianchi et al., 2000; Coltrane, 2000; Lee & Waite, 2005). This disparity is true whether or not the wife works outside the home. Hochschild (1989) used the phrase "second shift" to describe the household labor women do after working for pay. In her study, Hochschild found that most men did not share the second shift, although they may be subjected to occasional pressures from their wives to help more with housework.

In the last 30 years, there has been a shift in the number of hours of household labor performed by both women and men. Overall, women have steadily decreased the amount of time spent doing housework and men have increased their time in household labor. Bianchi et al. (2000) found that in general, the time men spend doing housework weekly has increased from 4.9 hours in 1965 to 9.8 hours in 1985, and leveled off in 1995 at 10 hours per

week. Conversely, women's time spent on housework has decreased from 30 hours per week in 1965 to approximately 18 hours per week in 1995. These statistics are slightly different for married women and men, with women demonstrating increased time to housework after marriage (Bianchi et al., 2000). These findings factor in not only household labor as defined in this thesis, but also auto repairs, animal care, and outdoor chores, which men are more likely to do and that are less likely to be done on a daily basis. Baxter et al (2008) found the amount of household work done by women is 3 times that done of men; their study included only regularly performed household tasks such as cooking, laundry, and cleaning, but did not include low-schedule activities such as gardening and home maintenance. Despite these changes, women are still responsible for the majority of family work (Bianchi et al., 2000; Coltrane, 2000; Wright, 2007).

The imbalance of time spent doing household labor is a result of multiple factors. Many women appear to give more importance to their husband's wage work than their own paid and unpaid work. Believing their husband's work is more important than their own, wives have no sense of entitlement to help with family labor (Thompson, 1991; Webber & Williams, 2008). Men share the responsibility for not engaging in household labor. Husbands use strategies to avoid household labor including waiting to be asked to help while hoping they will not be asked, and doing tasks in a distracted, half-hearted way, resulting in a less than optimal outcome and

leaving their wives to complete the tasks. These strategies result in men not being asked to do another task by their wives in the near future (Hochschild, 1989; Townsend, 2002). Finally, both women and men are socialized from childhood to live by prescribed roles that include housework as women's responsibility.

Along with daily household labor, women are relied upon to do caregiving work for ailing family members. The expectation for women to do caregiving work is universal, resulting in women taking these responsibilities more than men regardless of the circumstances (Forssen, Carlstedt, & Mortberg, 2005; Traustadottir, 1991). Collins and Jones (1997) found that both husbands and wives view women as better able to give care, which those interviewed attributed to an innate skill or past parenting experience. In families, the mother is seen as the "natural" caregiver in terms of both work and love (Traustadottir, 1991). Caring is considered equivalent to love and commitment, but not work (Forssen et al., 2005).

Although caring may be considered "natural" in women, it is taught within families. Forssen, Carlstedt, and Mortberg (2005) found that women caregivers reported experiencing social pressure since childhood to take on many kinds of caring work. Women were expected to do caring jobs or they were not considered "good" women. Because of the societal expectation to provide caring work, women felt guilty when relinquishing care and spoke of

being “without a choice” when asked why they continued to provide care (Collins & Jones, 1997; Forssen et al., 2005; Strang, 2001).

Women’s Health Behaviors

Health behaviors are any behaviors performed with the intent of decreasing potential health risks (Zanjani, Schaie, & Willis, 2006) such as exercising, eating nutritionally, getting adequate sleep, and following health care recommendations. Participating in health behavior activities not only decreases health risks, but also positively influence cognitive processes, morbidity, mortality, and disability outcomes (Zanjani et al., 2006). Regular visit to health care providers can be a type of health behavior. Women between the ages of 18 and 44 years seek medical care twice as much as men of the same age. These visits are largely for medical care associated with female reproduction. As women age, the difference in the frequency of medical visits between women and men decreases and by age 65 disappears all together (National Center for Health Statistics, 2005).

Although women may be more likely to seek medical care than men, they are more likely to neglect health promoting activities (Forssen et al., 2005) as they are relied upon for multiple family responsibilities, and lack the time and energy to care for themselves. Women living in multimember households exercise less and eat more fatty food than women who live alone (Bae et al., 2007). Researchers conclude that this may be because of the increased family demands of women living in multimember households.

Time constraints and family responsibilities have been shown to interfere with women's attempts to choose healthy behaviors. The obligations women have for others can interfere with their ability to care for themselves (Carter-Edwards, Skelly, Cagle, & Appel, 2004; Lee & Porteous, 2002; Walcott-McQuigg & Prohaska, 2001). In an exercise and wellness intervention study designed to promote exercise behaviors and to educate the participants on healthy living, 50% of the women did not complete the intervention because family responsibilities were a higher priority than exercise (Erickson & Gillespie, 2000). The women who dropped out cited time constraints and lack of family support as reasons for not continuing in the study.

Health behaviors with family support. Studies that examine family support in health behavior change, such as adjusting diet or adding exercise to one's daily routine, have found that supportive family relationships provide people with ongoing motivation to comply with lifestyle changes (Carroll, Naylor, Marsden, & Dornan, 2003; Carter-Edwards et al., 2004; Rempel & Rempel, 2004). When partners participate in an intervention for health behavior changes, the person receiving support is more successful in maintaining changes over time (Blanke, Stanek, & Stacy, 1990; Carmody, Fey, Pierce, Connor, & Matarazzo, 1982; Leong, Molassiotis, & Marsh, 2004). In health issues that are serious enough to require a medication regime, correlations have also been found between medication adherence and partner support (Doherty, Schrott, Metcalf, & Iasiello-Vailas, 1983). Most of these

studies were conducted with both women and men as participants. Because gender was not considered in the analysis, however, the results were stated in a gender neutral manner, suggesting that both women and men benefit from partner support in the same way, and that both women and men are more successful in complying with health behavior recommendations if they have partner and family support. None of the studies focused on the unique situation of women in families.

Markey, Gomel, and Markey (2008) found that although both women and men attempted to regulate their partners eating behaviors, women were more likely to do so than men. Further, women's but not men's attempts to influence the eating behaviors of their partners were linked to partners' concerns about weight and healthy dieting and also to partners' reports of healthy dieting behavior. The findings suggest that women are more successful than men in influencing health behavior change in their partners. Perhaps men are not as effective at influencing health behavior change as women are, or perhaps women do not respond to partner's influence as men do. Although the study did not collect data on how partners perceived such influences, the data on gender and caregiving suggest that women have more experience than men monitoring and influencing the behavior of others (Collins & Jones, 1997; Forssen et al., 2005). This literature suggests that the problem is more likely to lie in men's behaviors than in women's receptivity to those behaviors. Experience may result in women being better able than men

to influence their partners' health behaviors. In any case, because of this discrepancy of influence, the health benefits of family support, although present, may not be as great for women as for men.

Women's health around paid work schedules. Examining the relation between women's health and paid work is challenging. The health effects of paid work are influenced by the number of hours worked, family obligations, desire for the job, and so on (Schnittker, 2007). Women who work outside the home, in general, have better health than homemakers; employed mothers with children under the age of six, however, report worse health than those who do not work outside the home (Schnittker, 2007). Similarly, mothers who work full-time have a significantly increased risk of poor health compared to women who are not employed or who work part-time (Artazcoz et al., 2004). But mothers who work part-time have better self-reported health than those who are not employed (Artazcoz et al., 2004; Schnittker, 2007).

Some research suggests that women who work outside the home have better overall well-being (Verbrugge, 1983) because of having multiple sources of potential gratification, whereas others suggest the combination of parent and employee has a negative impact on women (Kushner & Harrison, 2002; Simon, 1995). Because children under the age of six require much direct supervision and contact, the hours women dedicate to caring for preschool children are greater than those dedicated to caring for older

children, which may lead mothers with young children to have less time for self care, even more so when they are working outside the home.

Women's health around family obligations. Women find it difficult to participate in healthy activities because they do not prioritize activities that take them away from their families. Activities that interfere with family involvement are often viewed as “selfish” by women (Warin, Turner, Moore, & Davies, 2008). Family responsibilities, time constraints, and lack of support were reasons given by women for not continuing an exercise and wellness program designed specifically for child care providers (Erickson & Gillespie, 2000). Kushner (2007) found that employed mothers openly discussed prioritizing family health actions over their own health. Moreover, they also remarked that they relied on their generally good health status to buffer their lack of healthy pursuits.

In general, women delay in seeking medical advice when they have a health issue. This delay is believed to occur not only because women prioritize their own health needs below the needs of their families, but also because their family obligations are prioritized over seeking medical care (Emslie, 2005). Similarly, after experiencing a cardiac event, women are reluctant to change their eating habits as recommended because they do not want to cook two separate meals, nor do they want to make their family members eat the low-fat meals suggested by health care providers (Emslie, 2005).

Women's commitments to caring for others place them in an increasingly fragile situation. Women continue to care for severely disabled family members for long periods of time even when experiencing declining health themselves (Forssen et al., 2005). Similarly, grandmothers who live with and care for grandchildren without their adult child living in the same home experience health decline (Hughes, Waite, LaPierre, & Luo, 2007). If they do not learn to value and care for their own health as a priority, these women may eventually face the condition of no longer being able to help family members and needing care themselves.

Conclusion

Research about women's health behaviors in midlife is limited. The research on the relation between women's health and family obligations is sparse and contradictory. Some studies have found that family life improves women's health, and others have found that family involvement decreases women's health. Few studies have used qualitative approaches to determine how family obligations influence women's health behaviors. This study used a qualitative design to allow research participants to use their own words to explain their actions, thus providing insights that may not be available through quantitative research. This thesis examined middle-aged women's health behaviors in light of their family responsibilities using a qualitative research design.

Method

This research was part of a multifaceted, multidisciplinary study that included researchers from the Departments of Human Development and Family Sciences, Public Health, and Nutrition and Exercise Sciences. Each investigating team collected data for its own specific research questions. The larger study had two major goals: (a) to evaluate the effectiveness of an intensive nutrition, exercise, and biomarker-based intervention with middle-aged women to reduce metabolic syndrome risk factors; and (b) to identify informal support factors that enhance or diminish intervention effectiveness with these women. Consistent with the first goal, a major aspect of the intervention was assisting sedentary women at risk for diabetes in changing their lifestyles. The larger study used a pre / post design around a 12-week intervention consisting of diet and exercise recommendations.

Below, I first describe the design of the larger multidisciplinary study, including details of the recruitment and intervention process, as well as general information collected by each investigator. Following the general description, I provide details regarding the design of the proposed thesis research, including specific details regarding data collection and analysis.

Population and Recruitment

The population for the larger study was women at risk for developing metabolic syndrome (see Table 1). The sample was recruited from employees of a large state university in the Pacific Northwest as well as from a local

Table 1

Comparison of Metabolic Syndrome Diagnosis in Women and Study Criteria

Criteria	Metabolic syndrome	Proposed study
Age	Not a criterion	35 – 60 years
Abdominal Obesity		
Waist circumference	> 35 inches (women)	> 35 inches
Body mass index		overweight and obese
Triglycerides	> 150 mg/dL	not a criterion
Blood pressure	> 130/85 mmHg	not a criterion
Fasting glucose	> 100 mg/dL	95 – 125 mg/dL
High density lipoprotein	< 50 mg/dL	not a criterion
Sedentary lifestyle	Not a criterion	<1 hour of moderate exercise per week

Note. To be diagnosed with metabolic syndrome, individuals need to meet at least three of the criteria of abdominal obesity, high triglycerides, high blood pressure, high fasting glucose, and/or low levels of high density lipoproteins.

nonprofit health service corporation (i.e., hospital, medical clinics, laboratories) located in the same city as the university. An e-mail containing a flier describing the study and participant requirements (Appendix A) was sent to all university and health services employees. This method was selected because both organizations have a large number of women employees in the targeted age range. Recruitment fliers were also posted in select campus buildings, both on community bulletin boards and in women's restrooms.

Only women aged 35 to 60 were recruited. The age inclusion criteria were determined by the common ages at which a metabolic syndrome diagnosis is made and the age at which it is no longer considered safe to do physical assessments without a physician present. Women who exercised less than one hour per week were included in the study. The exercise criterion was included because one of the intervention goals was to get women judged to be sedentary to exercise. Participants were required to have fasting blood glucose levels that were on the high end of or above normal, but who were not yet diabetic. Because women with higher than normal blood glucose levels are likely to develop metabolic syndrome, women who met this criterion may have been most likely to benefit from this study. Because the prevalence of metabolic syndrome increases with increasing body weight (Deen, 2004), especially abdominal obesity, only women in the overweight and obese categories as determined by Body Mass Index (BMI) and with a waist circumference of 35 inches or more were included. Potential participants who had complicating health factors (e.g., asthma, cardiac disease) were ineligible as no physician would be present during the testing to ensure their safety.

Potential participants initiated contact with the research team by calling the telephone number listed on the fliers and e-mails. When phone contact was established, potential participants were screened as to their eligibility using a predetermined script (Appendix B). Specifically, potential participants were asked about their height, weight, and health history. Exclusion criteria included

cardiac, respiratory, liver, and renal disease; thyroid dysfunction; untreated asthma; diabetes; and exercising more than one hour per week. Potential participants were asked to give their fasting blood glucose levels, but few knew them. Therefore, glucose screening was deferred to the first campus visit.

Of the 75 women who called in response to the recruitment fliers, 15 (20%) met the inclusion criteria and were eligible to participate. Initial phone screening resulted in 41 potential participants being excluded because their BMI was too high ($n = 17$, 23%) or too low ($n = 4$, 5%), they had thyroid disease ($n = 4$, 5%), they were not sedentary ($n = 8$, 11%), they had complicating health issues ($n = 5$, 7%), or they had scheduling difficulties (e.g., unable to come to first visit during times staff was available, only able to participate on weekends, $n = 3$, 4%). Data from the first visit eliminated another 10 women (13%) because their fasting blood glucose was normal ($n = 8$, 11%) or their fasting blood glucose was too high ($n = 2$, 3%). One woman (1.3%) withdrew because her supervisor did not allow her sufficient time to complete the screens and another (1.3%) withdrew because family caregiving responsibilities competed with her ability to complete the intervention. Several women ($n = 7$, 9%) began the screening process but did not complete it for personal reasons, which only some disclosed.

Three of the 15 women enrolled did not complete the study. One stated she was too busy because of her job to participate in the postintervention tests and the interview. One who attended the sessions sporadically finally contacted

a researcher to say that she no longer wished to continue because of family issues and her own noncompliance with the study's requirements. The third participant stopped coming to the intervention. When contacted, she agreed to complete a postintervention interview, although she did not complete any of the other tests.

Procedures

Potential participants who met the initial inclusion criteria were asked to come to the study office for the next screening. They were instructed to fast 12 hours before the visit. At this time, the informed consent form (Appendix C) was given to and reviewed verbally with the potential participant. Once all concerns were addressed and the consent form was signed, initial fasting blood glucose level was determined by applying a test strip in a glucose meter to a finger prick blood sample. If the fasting blood glucose reading was in the range of the inclusion criteria, the participant was accepted into the study. If the fasting blood glucose reading was below the minimum criterion, the potential participant was screened out of the study, as the value was considered to be "normal." Those potential participants with fasting blood glucose levels higher than the maximum criterion were referred to their physician, as this reading could indicate diabetes. During the first visit, height, weight, and blood pressure were measured and a blood test was given by a phlebotomist. A fasting general biochemical analysis, including assessment for glucose, insulin, HgbA1c (average blood glucose level over four months), lipids, vitamins, inflammation, and homocysteine was

performed on the blood sample. (High levels of homocysteine increase the risk of heart disease, stroke, and peripheral vascular disease.)

During the first visit to the study office, participants were given both verbal and written instructions (Appendix D) to record all food and water intake as well as all activity for four days in the following week. Participants were sent home with record forms, written directions, and a food scale. Participants were also given a packet of questionnaires to fill out and return at the second visit. The questionnaires included general demographics, health history, diet and exercise history, weight history, family history, home environment, relationships with spouse/partner and other family members, depressive symptoms, relationships with health care providers, possible selves, health locus of control, gender ideology, and glucose knowledge. The visit concluded with scheduling the second visit; participants were instructed to fast four hours prior to this second visit.

The second visit consisted of a blood pressure check after a 10-minute resting period, and testing with the BODPOD[®], which uses displaced air to determine body composition. Glucose tolerance testing was performed with the participant arriving to the visit having fasted for four hours. Fasting blood glucose level was tested using the glucose meter; participants then drank glucola (75 gram glucose solution). After a 30-minute wait, the blood glucose level was tested again. Participants then walked on the treadmill for 30 minutes at moderate intensity, as determined by the participant. Heart rate and

perceived level of exertion were monitored throughout the walk. Blood glucose levels were checked a third time after the treadmill test. This second visit typically lasted 90 minutes. Once all potential participants completed the second visit, the intervention (described below) began.

Following the intervention, participants were scheduled for post-testing. This testing repeated the biochemical blood tests given before the intervention, asked the women to fill out a number of the questionnaires they had completed before the intervention, and included a body composition test, a glucose tolerance test, and a 30-minute treadmill test. Postintervention interviews were scheduled at the conclusion of the intervention. Interviews were open-ended, which was ideal for this study for two reasons. First, because little is known regarding how women reconcile their responsibilities to others with their responsibilities for their own health (Fontana & Frey, 2005), it would be difficult to construct paper-and-pencil measures or structured interviews that adequately reflect women's decision making in this regard. Second, the free format of the open-ended interview allowed the participants to describe the various aspects of their lives and experiences (Matthews, 2005) that made it possible for them to make changes (or not) and to make them easily (or not).

The Intervention

The intervention began with the 15 women who met all of the study criteria. Participants received a 12-week intervention consisting of education about exercise, diet, and glucose monitoring (see Appendix E). Intervention classes

were offered at two different times during the week, early Wednesday evening and early Friday morning, to accommodate their work schedules. The women were able to switch freely between classes. Researchers from each of the disciplines involved in the study were present at the intervention classes. These classes were informal, with time for questions and answers, and lasted approximately 90 minutes each. During the first class, each participant in the group received a glucose meter and test strips for regular blood glucose checks, and a pedometer to monitor daily activity. Detailed instruction was given on how to use the glucose meter safely and correctly, as well as how to use the pedometer. The class content was approximately 65% diet recommendations, and 35% exercise education. The dietary and exercise instructions were provided by the nutrition and exercise science researchers. Dietary lessons included topics such as the benefits of whole grains, eating foods with high antioxidant content, and combining foods to slow the increase of glucose into the blood stream. This information was presented in a technical manner. Because participants were exercising less than one hour per week before starting the intervention, the physical activity instruction focused primarily on walking as exercise. Classroom instruction included the benefits of exercise for blood glucose levels, problem solving around obstacles that kept participants from exercising, and integrating exercise into the participant's lifestyles. Several times classes ended with a group walk in the surrounding area.

Participants were offered the opportunity to have weekly contact with the researchers by e-mail for motivational purposes. Those who selected this option received weekly or bimonthly e-mails from either the public health researcher or the human development and family sciences researcher. These researchers provided motivation, answered questions the participant may have had (i.e., how to interpret glucose readings), and helped to solve any unexpected problems (i.e., the pedometer stopped working). Motivational interviewing is a method of interaction that promotes nonjudgmental, collaborative, and empathetic communication between clients and health care professionals, and has been shown to be effective in changing lifestyle behaviors (Schoo, 2008). Participants in this study often expressed doubt about their ability to comply with the study requirements, but were encouraged by the researchers to continue to the best of their abilities.

Participants were asked to keep a diet and exercise log for each week of the intervention that was less detailed than the original record at the first visit. They were also instructed to monitor their blood glucose level immediately upon awakening 5 mornings a week, and before and after exercise 3 times a week. Participants were instructed to exercise at least 90 minutes a week, in whatever time schedule worked best for them. Participants who attended class, turned in their logs, and checked their blood glucose as instructed had their names placed in a weekly drawing for a \$50 gift certificate at a local large retail store with a large variety of merchandise.

During the course of the intervention, researchers made notes of all communication with participants. Participants asked questions regarding diet and exercise recommendations, made comments about why they were successful or were having difficulty with compliance, and so on. For example, several participants had questions about monitoring their glucose levels early in the study.

Thesis Study Design

This thesis used information from the demographic questionnaires, a gender ideology measure, the postintervention interviews, and field notes to explore how women negotiate their family obligations as well as their personal health needs. As noted, the postintervention interviews used an open-ended format, allowing the women to talk about what was important to them within the context of this study.

Sample

The sample for this study included 13 women, each of whom completed the intervention and pre- and post-testing described above. The average age of the participants was 47 years with a range of 35 – 55 years. (See Table 2.) All the participants were White and all but 1 were employed; their occupations ranged from office support staff to university administrator. The 1 who was a homemaker learned about the study from her husband, a professor at the university who forwarded the e-mail about the study to his wife. Two participants were students but were also employed. Of those who were

Table 2

Demographic Sample Characteristics (n = 13)

Participant	Age	Education (years)	Work status ^a	Occupation	Household income	# in household	Marital status
Starla	50	12	FT	Office manager	50,000 – 74,999	4	Married
Joy	45	12	FT	Accounting technician	75,000 – 99,999	3	Married
Collette	44	14	PT	Massage therapist	100,000+	5	Married
Monica	55	14	FT	Chef	100,000+	4	Married
Zena	52	14	FT	Office manager	50,000 – 74,999	1	Divorced
May	52	14	none	Homemaker	withheld	5	Married
Genevieve	35	14	PT	Student, researcher	75,000 – 99,999	4	Married
Ann	50	16	FT	Administrative assistant	100,000+	4	Married
Grace	48	16	FT	University administrator	75,000 – 99,999	4	Married
Cleo	48	16	FT	Science lab preparer	50,000 – 75,000	3	Married
Cindy	46	16	FT	Clerical	25,000 – 34,999	1	Never Married
Linda	44	16	FT	Student, clerical	16,000 – 24,999	2	Married
Laurie	47	18	FT	Program manager	withheld	4	Married

^aFT = full-time, PT = part-time.

employed, 10 (77%) worked full-time and 2 (15%) part-time. Although 2 (15%) of the 13 participants lived alone, 9 (70%) lived in households that included

children. One woman had no children and had never been married. One woman also had the responsibility of overseeing care for her parents who lived in separate assisted living facilities.

Measures

As noted, multiple measures were administered to the participants at the first meeting. Of these, only the demographic and gender ideology measures were used for this thesis, along with data from the postintervention interviews and field notes taken throughout the study.

Demographic survey. The general demographic questionnaire included items measuring year of birth, primary occupation, weekly hours of employment, gross total household income during the previous 12 months, number of children and number of adults living in the household, relationship status (i.e., married, partnered, divorced), type of living situation (i.e., own home, rent, live with a friend), projected ability to maintain current lifestyle if household income was lost, and race-ethnicity.

Gender ideology. Traditional gender ideology was measured using five items (Appendix F) with responses ranging from 1 (*less traditional*) to 5 (*more traditional*). Items asked participants to indicate their beliefs about women's and men's family roles including who should make the most income, whether mothers should work outside the home, whether children should be in daycare, who should have decision-making authority, and whether couples should stay married for the benefit of the children. These items are commonly

used in studies of gender ideology and women's family labor (Coltrane, 2000; Erickson, 2005; Greenstein, 1996) and were drawn from the National Survey on Families and Households. The women's responses were reviewed to determine whether they were more or less traditional in their ideas about women's and men's family roles.

Interviews

A set of open-ended questions (see Table 3) was designed to obtain the participants' perspectives about the experience of trying to change their diet and exercise patterns. These questions were determined through an iterative process. Questions were generated and shared with the research team for review. Changes were made to the original questions on the basis of input from the team. The questions were then reviewed by an expert in qualitative research, and changes were made in response to her input.

Postintervention interviews occurred between two to five weeks after the conclusion of the intervention, as the participants' schedules allowed.

Participants were asked to choose a pseudonym for the study, and the name they chose was used accordingly during the interview and in reporting the study's findings. The average length of the interviews was 39 minutes with a range from 14.5 minutes to 66 minutes. The shortest interview was with a participant who withdrew from the study but was willing to be interviewed. The interviews were recorded on a digital recorder and then transcribed verbatim. Transcripts were checked against audiofiles for accuracy.

Table 3

Postintervention Interview Guide

1. What's a typical day for you right now? Probe: Typical weekday then typical weekend day.
 2. Since you began our study, what are you doing differently? Tell me about that.
 3. What's it been like to try to make changes in what you eat and in your activity level?
 4. Tell me about the people in your family. How are they reacting as you have tried to make changes? Follow up:
 - a. Give me an example of how your family members have been helpful. What's that been like?
 - b. Give me an example of how your family members have not been helpful. What's that been like?
 5. What's it like to put yourself first? Can you tell me about a time when you did that? How did it feel?
 6. In this study, you've been asked to focus on you and your health. How have you handled this new demand on your time and energy? In other words, how do you manage what you need to do for yourself with what you need to do for others?
 7. What could people do to make it easier for you?
 8. In what ways, if any, has this program changed things for you? Probe: Give me an example.
 9. Over the past couple of months, has anything surprised you about yourself? Tell me about that.
 10. Tell me about a word or image or idea that described you before you started the program. Okay. Tell me a word or image or idea that describes you now.
-

Field Notes

Field notes were taken by the researchers who had contact with the participants throughout the study. Notes were taken as interactions occurred or

as observations were made. For example, participants would e-mail researchers regarding concerns they were having with their ability to make changes, observations they may have made about food in the grocery store, or questions about glucose readings. Further, researchers who served as motivational support contacted the participants regularly; often, participants would respond to these e-mails. All interactions were logged by researchers in an Excel file, and they were integrated with the interview data to provide insight into the experiences of the participants.

Analysis

The transcripts from the postintervention interviews, along with the field notes and any other written communication from the participants filled 287 single-spaced pages. A notebook was made containing each participant's interview, field notes, and any email communication for each reader.

The qualitative content analysis was guided by my theoretical perspectives and by my research question (Bogdan & Biklen, 1998) of how women negotiate their family obligations as well as their personal health needs. The transcripts, field notes, and saved e-mail communication from correspondence with the participants were used to study how women prioritized, or did not prioritize, their health needs. Data were read multiple times to find patterns, discourses, and tensions in the women's narratives. I looked for the connection between women's sense of responsibility for and

obligations to others and their ability to make changes in their lives that would enable them to improve their own health.

The coding process was routinely discussed with a colleague and the themes were developed during this phase. Codes emerged from commonalities in the participant's responses, and not from specific questions asked, as relevant responses overlapped questions. In addition to commonalities, variabilities were also found among the participants. Coding was done line by line (Goldman et al., 2006). As the analysis progressed, detailed coding notes were written at every step. These notes serve as a trail to how the final coding scheme (see appendix G) was developed, and provide an ongoing reminder of ideas that developed during the coding process. A second reader confirmed the coding. Coded data also were reviewed in relation to the women's gender ideology scores to determine whether the women's ability to change their diet and exercise patterns was connected to their gender beliefs.

Results

The participants in this study were asked to make diet and exercise changes over the course of the 12-week intervention. The information on food and exercise changes used for this thesis came from interviews with participants after the intervention was completed.

Dietary Changes

Participants were asked to include in their daily food intake three servings of whole grains and five servings of fruits and vegetables. They were not asked to eliminate any foods although they received nutrition education each week. A group visit to a local grocery store helped the women learn how to identify whole grain products from food labels. With regard to fruits and vegetables, the women were advised that fresh products were the best source of nutrition. Frozen fruits and vegetables were a second choice for getting adequate nutritional benefit. Although better than none at all, canned fruits and vegetables were the least desirable option. Participants were instructed to eat breakfast, lunch, and dinner as well as two snacks each day. They were given ideas for healthy snacks designed to keep blood glucose levels from rising, such as combining a protein (e.g., cheese) with a carbohydrate (e.g., an apple).

Participants were asked what it was like trying to make changes in their eating and activity levels, and how their families had reacted to their efforts to change. All of the women attempted to change their diets but not all were able

to maintain those changes. Women reported various stumbling blocks to making dietary changes. For example, one woman did not like vegetables, two had difficulties fitting snacks around their work schedules, and two reported that finding healthy food options was difficult when they were traveling. Additionally, four people mentioned higher cost of healthier foods as an obstacle.

During the interviews, women described diet changes ranging from no change to maximal change. *No change* in diet indicated that, at the end of the intervention, the participant was eating in the same fashion she was before the intervention began. Women in this category may have attempted to change during the intervention but were unable or unwilling to continue with the changes. For example, Monica told of trying to make changes in both diet and exercise until getting out of the routine at Christmas. She said, "I think after that it just kind of all went to hell."

Seven women made *minimal changes* in their eating habits. These women had different eating habits at the end of the study than before the study began, although they did not make major changes. These women tended to be either inconsistent in their attempts to change the food they ate, or they took the recommendations and changed them in a way that was not intended. For example, Collette reported, "Um, so then I'm a little more hungry and I might eat more junk. Chips or something but usually I will have hummus

or something with them.” And, Cindy explained how she turned something from unhealthy to healthy,

...the other day when I felt like you know, I had to have some dessert, at least I decided if I had some ice cream I had to put some bananas and some walnuts on it to get some food value.

One phrase used by two participants is that they were now “more conscious” of the food they eat. For one of those participants, this consciousness was the only change she reported.

Of the seven women who made minimal changes in their eating patterns, five reported that they were already eating healthily prior to the study. Collette stated, “I didn’t really make that many changes. We were, we were doing some pretty good stuff.” Joy reported her family was a “meat and potato family,” but added that it was easy to incorporate vegetables into the meal. She said,

...for the most part, you know we’re kind of meat, you know like a meat, starch, and a vegetable, and then I’ll have like applesauce or cottage cheese and pears. That’s kind of how we do it, we don’t have a lot of casseroles, you know things that can probably be very high in fat.

As the interview progressed, Joy admitted to not liking brown rice and that she still struggled with vegetables. She felt her family was already eating well, yet she found it was not easy to comply with some of the basic recommendations. Also, she substituted applesauce for a fresh vegetable.

Two women made moderate changes. A moderate change was a consistent food change including adding regular healthy snacks, and, in one

case, eating breakfast daily. Ann reported eating more fruits and vegetables and choosing whole grain breads and pastas over other less healthy options.

The two women who made maximal change not only consistently ate food that was recommended, they also changed their lifestyle. Genevieve stopped snacking late at night, which was difficult as her husband liked to bake cookies in the evening. Linda began limiting her portions of food at mealtime and actively sought healthy food choices on campus. She also avoided going to coffee shops to avoid the temptation of unhealthy food.

Women experienced varying levels of difficulty when trying to make food changes. For some, the challenge was too great; for others, it was manageable. The women responded to the challenge in different ways ranging from not making any changes to making lifestyle changes. Most of the women were able to make at least minimal changes by increasing the number of fruits and vegetables they ate and introducing more whole grains into their diets.

Exercise Changes

One requirement for participating was exercising less than one hour per week prior to the study. Once the study began, the women were asked to exercise 90 minutes each week initially, and to progress to 150 minutes of exercise per week by the end of the study. Because the participants were sedentary prior to the study, walking was proposed as the exercise of choice. Each participant was given a pedometer to monitor the number of steps she took each day. It was suggested that the women build their walking to 10,000

steps a day. The women were not limited to walking, however, and they could pursue other exercise options as they wished. They also had the freedom to decide how they wished to meet the total number of minutes for each week; they could exercise in blocks of time of their choosing, and times per activity could vary as needed.

As with dietary changes, exercise changes spanned a range from *no change* to *maximal* changes. No change indicated that the participants were doing no more exercise at the end of the study than before the study began. Three women made no change in their exercise habits. These women may have attempted exercise during the study but they were not able to maintain the level of exercise. Grace was dealing with plantar faciitis, a painful foot condition that made walking and being on her feet uncomfortable. She purchased an elliptical trainer believing that that type of exercise would avoid the high impact of walking or running. She had not begun using the trainer by the time the study had ended. Monica tried adding walking to her schedule. She walked on weekends and just before the class meetings of the study. By the end of the study, she was no longer exercising at all. When asked what it was like trying to add activity to her schedule, she replied, "Um, it's hard for me to make time for myself."

Three women made *minimal changes* in their exercise habits. Minimal change was defined as doing some exercise, but not consistently, or being vague in responding to the inquiry. Cindy reported walking to get her lunch

and at break time. She had a friend who would walk on break with her. Cindy states, "...and so on the days she's not there, you know, she's too busy whatever, then those are the days when I don't go out and walk." It appeared that her commitment to walking was connected to her friend's participation.

Women exercising regularly several times a week demonstrated moderate changes. Cleo walked daily on her lunch break. She shared an insight of how this new habit developed for her:

Um, the exercise is kind, you know, is always easy to say, 'ah, I can do it tomorrow . . . but then tomorrow keeps coming and you don't do it. But then once you got going on a routine, it became easy.

Ann enrolled in an exercise class for university staff that met during the lunch hour three times a week. She also added walking, sometimes on a treadmill, sometimes on campus, and sometimes around her neighborhood. She made sure her walks were 30 minutes in duration.

Three of the participants progressed to exercising daily. These women made maximal change. Genevieve initially struggled to find time to exercise around her family needs. She attempted to walk in the morning before her children arose, but darkness and her husband leaving for his job early made that difficult. Genevieve then started exercising while watching exercise videos in her home, but she found this unappealing. Ultimately, she purchased a treadmill and used it daily.

Linda was a graduate student who worked part time. She made time to exercise within her day,

...like today I'll have an hour between um, this meeting and going to work so I'll take a walk, I'll stroll around campus instead of going to sit somewhere and, you know, read. So, I'm, you know, my pedometer has helped because I see how much I sit. And so um, it has helped me to see, well when my numbers are low that I need to get out and walk more. So, I, that has helped and then on the weekends, you know, stopping, stopping my homework and getting out. There are a lot of walking trails. I nee-, you know, um get out and walk just even 20, 30 minutes and I come back and I'm more refreshed.

Linda also told of purposely rearranging her schedule to allow for exercise during the day,

...I think that um, even scheduling my days, my work is flexible around my school work, but I also was able to create a schedule that was more flexible this term, um, to include time for myself and for exercise.

These women who made maximal change not only adopted exercise habits, but also worked hard to determine what would work best for them. They have been consistent in following through with their exercise plans. These women were able to overcome any barriers to exercise.

Combining Dietary Changes With Exercise Changes

To determine how much change women made, the amount of change in diet was cross-tabulated with the amount of change in exercise. Changes in diet were arranged on a continuum, from the least amount of change to the most. Each woman was then placed on this continuum with regard to the changes she had made. The same procedure was followed for exercise changes. These two continua were then arranged on a table with diet changes plotted horizontally and exercise changes plotted vertically (see Table 4). This table illustrated the total amount of change each woman made.

Table 4

Diet and Exercise Changes Over the Intervention

Exercise change	Dietary Changes			
	None	Minimal	Moderate	Maximal
None	Monica Xena	Grace		
Minimal		Cindy Starla May		
Moderate		Laurie Joy	Cleo Ann	
Maximal		Collette		Linda Genevieve

The table shows that 9 of the participants made the same amount of dietary changes as they did exercise changes. For example, Linda made maximal change in both exercise and diet. Similarly, Cindy, Starla, and May made minimal exercise changes and minimal diet changes.

The information in this table was used to determine what factors aided or hindered the women's progress as reported below. By overlaying the factors used in the analysis, such as family structure, on the table, it was possible to see which factors facilitated change, which hindered change, and which did not seem to make a difference. For example, if all the women who

made moderate to maximal changes in diet had a similar family structure, it might be assumed that family structure was influential. Conversely, if there was no pattern of change reflected in family structure, it could be determined that family structure did not influence change for these women.

Different factors helped or hindered the participants in making both diet and exercise changes. These factors were identified after multiple readings of the interview transcripts. Patterns emerged from the data, which led to closer examination of these factors.

Factors That Influenced Change

Changes were influenced by family support, family exercise culture, and family demands. Family support and family exercise culture had positive influences on the participant's ability to change her diet and exercise behaviors. Family demands interfered with the ability to change when demands were great.

Family support. Family support was determined by the women's reports of the efforts of their husband, children, and extended family members to encourage them to achieve the study goals of exercise and diet changes. Family support ranged from *none* to *family involved*. No support included women with no family members in the area as well as those who received no support of any type from their family members, including encouragement or offers of help. Cindy had no family members living in the area. She was single, had no children, and her parents lived hundreds of miles from her. She stated

that she did not talk with her parents often and they were not a source of support for her.

Three other participants also had no family support. These women reported a lack of awareness by their family members that they were trying to make changes. For example, Monica reported of her husband and two teenage sons, "it's out of everyone's realm at home." Women with no family support received no encouragement or assistance in making diet and exercise changes.

One level of support reported was family members either being interested in what the participant was learning or noticing that she was making changes. May had one child living at home. She did not report any support from her husband or daughter, but she did say her mother and sister asked her to teach them about the dietary changes she was making, "So my mom has really caught hold. Every week I came, went [to class, then went home] from class, . . . she would call and want to know everything we talked about." Collette's 15-year-old son showed interest in what she was learning,

But my son Connor has a, a girlfriend who is type one diabetic, so he was interested in and I was explaining to him what I was learning, and how, I don't know how it would relate to type one diabetes for a 15-year-old.

Finally, family support was seen in family members who actively helped the participants make changes. These women reported variously that husbands and children exercised with them some of the time, the husband tended the children while the participant exercised, and the participant's son

sometimes cooked when she arrived home late from exercising. Although family members did not necessarily do these things everyday, their help was enough to give the participants feelings of support.

Of the seven women who made moderate to maximal changes in exercise, six had family support as demonstrated by interest or active support. Three of these women reported that their husbands sometimes walked or exercised with them. Three reported their family members were interested in the information they were learning about dietary changes. Genevieve's husband did not exercise with her, but he tended to their two young children while she exercised. Linda was the only participant who made maximal exercise changes without family support. Her children were grown and did not live in the area. She made no mention of her husband supporting her exercise activities, and actually discussed how, although he was the family cook, he would not make the food changes that were recommended. She explained that he was "steeped in his traditions" about cooking and that he found some of the study food recommendations "nit-picky." Linda managed this situation by monitoring her portions carefully and not eating as much as she may have eaten in the past. Although Linda's husband did not provide support for her diet and exercise changes, he took on much of the family work to help her finish graduate school. By being relieved of these chores, she had time to devote to exercise and diet changes.

As stated above, family support influenced the women's ability to change diet and exercise. Conversely, of the six women who made little or no changes with their exercise, four had no family support. Grace reported of her family members, "they haven't paid attention one way or another." She received no support or even acknowledgement of the changes she was trying to make. Starla said of her teenage grandchildren who live with her and her husband, "Oh, they didn't react, at all," when asked how her family reacted to food changes she had made. Her family members neither discouraged her from making nor encouraged her to make healthy behavior changes.

Family exercise culture. The family exercise culture was another influential factor in the ability of women to make changes. Family members' exercise habits were examined to see if they influenced how much the participant's exercise changed over the course of the study. Family exercise cultures were arranged in a continuum ranging from *no mention of exercise* to *regular exercise*, which indicated family members exercised routinely.

Six of the women made no mention of family exercise during their interviews. Monica reported that her husband and children would not walk with her if she asked, but she did not address whether they exercised on their own. For these women, exercise did not seem to be part of the family routine.

Three women had family members who exercised inconsistently. Ann discussed how her husband would walk with her, but not for the 30 minutes she was trying to walk, so she walked the last 10 minutes of her routine alone,

My husband comes along sometimes, and, that's fine, but he wants it too short, and I usually go a little bit longer after him, 'cause he's ready to come home and I go, "Well no, that's only been 20 minutes, I gotta do at least 10 more minutes."

Cleo had two grown daughters who were young adults. Occasionally one of her daughters would walk with her; her husband refused to walk with her. The families in this area of the exercise culture continuum may participate in some exercise, some of the time, but not routinely.

Four women described family members who exercised regularly. Two discussed their husband's regular workout schedule. May reported her husband worked out every afternoon. Collette's husband was a gymnastics coach with a physical education degree; exercise had been important to him for a long time. In fact, in the past, Collette's husband had tried to get her to exercise so often that she told him to stop.

Examining how family exercise culture influenced a participant's exercise change showed that exercise change for 8 of the 13 women reflected the family culture of exercise. Four of the women who achieved the highest level of exercise change had family members who either exercised inconsistently or had regular exercise patterns. These women were able to start an exercise program within a family that accepted if not embraced exercise.

The relation between family exercise culture and participants' change in exercise levels also was evident for those who did not make changes. Four of the women who made the least changes in exercise were from families who

had no reported exercise routine. For these women to make exercise changes, they would need to venture outside the family routine into untried or nonroutine areas.

Examining family exercise habits shows that in 8 of the 13 cases, the participants' exercise behavior reflected that of the entire family. It appears that family exercise culture can be helpful in a family with good exercise habits, but it can also be detrimental in families with no exercise habits.

Family Demands. The participants in this study varied greatly in the amount of family demands they shouldered ranging from no family members within the home to disabled family members. The responsibility of caring for family members included the routine everyday work of raising children as well as caring for a family member with a disability either living in the home or in an appropriate facility.

Two women in this study lived alone. One of these women lived near her adult daughter. She reported she had young grandchildren who visit, "They usually end up being around, you know."

Six of the participants had a husband with or without children living within the home. Cleo's 21-year-old daughter had returned home to finish college. Linda lived with her husband only; her children were grown and living in other cities. Three women had teenage children living in the home, and one had younger children. None of these participants reported any unusual

circumstances within their families, suggesting that they faced typical family obligations.

Two participants had both teenage children in their home and caregiving responsibilities for their parents. Ann was the main contact for her father who lived in an assisted living facility in town. He had been diagnosed with Alzheimer's Disease. Before his disease progressed to where it was at the time of the interview, she would see him often, "I saw him, like, twice a week. I'd have him come home to our house." During the period when the interview took place, she saw him once a week, "So, I will go see him there once in a while, and spend a little time, but he doesn't like to even go out as much anymore." She had taken on the responsibility of going to doctors' appointments with her father. When asked how the doctors' appointments tended to go, she replied,

Frustrating, 'cause whatever they try to do, he doesn't follow through, he doesn't care. He just doesn't care really, about doing anything he needs to do. 'Just let me be, I don't care, I don't give a damn about anything.'

Laurie was the main contact person for her parents who lived in separate assisted living facilities in town. Laurie's father had frontal lobe dementia and did not recognize her. Her mother had Parkinson's disease, chronic sciatica, and limited mobility. She also was beginning to have memory problems. Laurie talked about the care she provided to her parents, and how taking her husband with her could sometimes be helpful,

...sometimes it's helpful to have someone to distract my father while I'm doing some of the personal care things for him. Otherwise he tends to move around so like you're cutting his hair or you're, uh, doing his toenails or something, sometimes it's helpful to have another person there because it's a distraction. Particularly because I take my mom with [me] to go see dad, it's sort of a way of, it's a double hitter for me since I have time with mom, and she has time with dad and at the same time they're both getting their time with me.

Laurie had figured out some ways to spend time with her parents while providing personal care for them. She talked about the growing demands placed on her as her parents became older,

....I mean, so one of the things is my mom very much wants to have more time with me. And, you know, I'm looking at this and saying, she's gonna be 89, how much more time do we have? Um, you know, and just doing things like being able to go out to lunch. It's, you begin to realize that these relationships as you get more stressed for time become more mechanical.

Lastly, two participants had immediate family members with a disability of some sort. These family members lived in the same home as the participants. Grace's husband had bipolar disease, alcoholism, fibromyalgia, and depression. Something as simple as a night's rest became difficult:

But I, you know, he's got insomnia and I snore, and because he had the back surgery, he can't sleep on the couch. So I've been sleeping on the couch so that he can sleep in the bed and that's been an on-and-off-again pattern for us for a long time, but that is really, I mean I don't get well rested from sleeping on the couch and there's not another bed for us. You know and so one of us is not going to sleep well. And he's the one with insomnia and depression, and if he doesn't sleep well it's not good. So it's actually a calculated trade off from my perspective.

Grace also had a daughter with Asperger's syndrome who was sometimes inappropriate in social situations.

Monica had two teenage sons, the oldest of whom was mentally retarded. After the recorded interview, she revealed that her older son had no sense of time or money management. He would spend whatever money he had in his pocket, not thinking about what he may need the next day. He was also very generous and people have taken advantage of him. She reported that she did not think he could ever live alone, and she was not sure if he would be able to live in a group home.

Starla's two teenage grandchildren lived with her and her husband. They had been living with her since they were five- and six-years old. She preferred to discuss their developmental issues after the recorder was turned off. She said both children have Attention Deficit Hyperactivity Disorder and issues from maternal drug use during their mother's pregnancy. She took both children routinely to multiple doctor and psychology appointments. She also had been called to the school many times because of behavioral issues.

Starla reported her husband was depressed, and said that he was not as involved with the daily workings of home life as he used to be:

I don't know, I mean he does help but he's, he's slowing down too. You know, we're getting older. And he doesn't help as much as he used to, but...um. I think before he had... I was very spoiled 'cause he did a lot for me, and now he, just like in the last 5 years or so,.. But he had a lot of bad adjustments in his life where he lost his job of 26 years 'cause they just decided to quit and stuff. So he's kind of been on the depressive side I think. He hasn't worked as much. He doesn't work out anymore and he used to really work out a lot and stuff. So, now I get home and I see that he hasn't done anything, 'cause he gets home at 3:30, and I get real frustrated. And then I just start doing it.

Starla shared that she would have liked to be able to make more diet and exercise

changes but her family responsibilities limit her,

...I have only time to do what I have to do next, and so even though these are changes I want to make there, you know, I still have to cook dinner, I still have to clean up, I still have to do all that other stuff.

Diet and exercise change did not appear to be influenced by routine family demands. Rather, they seemed to be influenced by the demands of having immediate family members with disability. Starla, Grace, and Monica made very few changes with regard to diet and exercise. These women also appeared to be overwhelmed with family responsibilities.

Surprisingly, the women who provided care for their parents who lived in assisted living facilities did not have difficulties making health changes. Both of these women made moderate changes in their exercise habits. Ann, whose father had Alzheimer's Disease, also made moderate diet changes. The extra responsibility of caring for their parents was not an obstacle to change for either of these women.

Women who lived alone or who lived with their husbands and children who had no disability had no consistent pattern of diet and exercise change. Some made changes, others did not. The women with no family members in their home did not do better than those with husbands and children. Nor did the age of the children influence the participant's changes.

Family demands appeared to influence diet and exercise change, but only for those women with the most demanding families. Those participants with nuclear family members with disability made the fewest changes. Women who cared for their parents who lived outside of the participant's home did not seem to have difficulty making changes. Traditional family demands of caring for children and doing family labor combined with working outside the home did not appear to limit the women from making changes. Similarly, having no children at home or not working outside the home did not seem to help women making health changes.

Factors That Did Not Influence Changes

Not every factor examined influenced change in health behaviors. As stated above, factors were overlaid on Table 4 to see if there were consistent changes with each factor. In addition to the influential factors identified above, other dimensions examined were demographic characteristics, gender ideology, and motivation for participation. Neither demography, nor gender ideology, nor motivation for participation appeared to influence changes in exercise and diet.

Demographic factors. All of the participants in this study lived in the same college town. Eleven of the 13 participants worked at the university in some capacity. Years of education ranged from 12 to 18. No relation between education and health changes emerged. The two women who made no changes in either diet or exercise both had 14 years of education, but so did

one of the women who made maximal changes in exercise. Genevieve and Linda both made maximal changes in diet and exercise, and both were full-time students, one working toward a master's degree. Two of the participants had finished high school, but did not attend college. These two women made minimal diet changes and one made moderate exercise changes as well. Overall, there was no consistent pattern between education level and the amount of changes in diet and exercise.

Household income was another factor analyzed. Household income ranged from between \$16,000 and \$24,999 to over \$100,000. With regard to diet and exercise changes, income seemed to have no influence, although several women mentioned the high cost of healthy food as a barrier. Linda, who made maximal changes in diet and exercise, reported the lowest income of the entire group. Yet Collette, who also made maximal exercise change reported one of the highest incomes of the group. Two women who made no changes in exercise were among those with the highest household income. As is evident, there was no pattern between household income and diet and exercise change for this group of participants.

Family structure is the composition of each family. It differs from family demands, as structure looks at the composition of the family with regard to who lives within the household. Family structure does not address the roles and responsibilities of each member. The family structure of the participants in

this study included 2 women who lived alone, 10 women who lived with a husband and children, and 1 woman who lived with her husband only.

There was no relation between family structure and diet and exercise changes. The women with a husband and children living within the home exhibited a variety of changes ranging from none to maximal in both diet and exercise. The presence of children did not seem to help or hinder participants, regardless of children's ages. Of the women who lived alone, 1 made no changes and the other made minimal changes in health behaviors.

Motivation for participation. Although participants were not asked specifically what motivated them to participate in this study, most revealed their motivation during the interviews. Several participants had multiple motivations. The three common motivators were weight loss, personal health, and obligation to the study team.

Seven of the participants described wanting to lose weight, their attempts to lose weight in the past, and, for many, their disappointment that they did not lose weight during this study. Although participants were told early in the intervention that weight loss was not a study goal, they still hoped to lose weight during the study. Starla expressed her disappointment with not losing weight,

I expected that if I was doing all this stuff that I would lose weight, and that I would feel, that exercise would become easier, and all that kind of stuff. And, I haven't lost a pound, and exercise isn't any easier.

Joy expressed how she might have liked the study to run differently,

I kind of wish there would have been a little bit of a weigh in sort of thing, even if it was every other week or something. So it puts a little more accountability into it, 'cause I know they say, you know, it's not a weight loss thing, but I think if you had that people might be a little more accountable.

Despite the motivation of losing weight, there was no relation between having weight loss as a goal and diet and exercise change.

Personal health was another motivating factor for the participants.

Recall that all of the women were at risk for metabolic syndrome. Seven participants talked specifically about their concerns for their health. Both Grace and Joy were included in this group were. Although they did not say outright that they were concerned with their health, they alluded to such a concern.

Ann and Cindy were concerned about the possibility of acquiring diabetes as it ran in their families. Ann said,

I'm sure it was coming because my, both my father and his only sister both got it as older adults, and have to, you know, have, take care of it with medication and insulin, I guess. So I know it's possible that a couple of us are gonna...out of the four of us, couple of us are going to be, tend to lean that way, and I'm sure I'm one.

Surprisingly, although the study focused on blood sugar readings and the risk of metabolic syndrome, the other women who mentioned health as a motivator did not talk about diabetes. Collette shared that both of her parents died in their 50s, and her age was getting close to that. May talked at length about the health of various family members, but rarely mentioned her own health issues. She was being treated for high blood pressure and spoke at length of her efforts to reduce salt intake for herself and for other family

members. Yet no relation was seen between concern for personal health and health behavior changes.

Finally, five participants described their feelings of obligation to the study team. These women worried they would let the researchers down by not following through with the recommendations for diet and exercise. Monica, who made no changes in her diet or exercise, talked of her feelings of guilt, "...and then I felt guilty, you know, 'cause I wasn't living up to my part of the bargain, my part of the deal, or my part of the study, you know, this and this and that." When asked if she felt guilty for not doing everything she could to make herself healthier, she replied, "No! No! I was feeling guilty for all of you lovely people. Yeah, I was feeling 'oh, I'm letting them down.'"

Ann made moderate changes in both diet and exercise. She discussed that some of her commitment was to the study team,

Well, I think I made a commitment when I started to, 'okay, I'm really gonna do this' it's not...you know, I wouldn't do it if I wasn't ...wouldn't agree to, to be in the study if I...wasn't willing to do what you needed.

In spite of feelings of obligation to the study team, there seemed to be no relation between this sense of obligation and overall changes in diet and exercise. Weight loss, personal health, and obligation to the study were motivational themes expressed by the participants. None of these motivators seemed to be related to diet and exercise change. Some of the women who expressed one or more of these motivators were successful in making changes; others were not.

Gender ideology. At the onset of the study, participants were asked to complete a gender ideology scale that was used to determine participants' feelings about their family roles. The scale ranges from traditional to egalitarian. In general, participants scores clustered around a neutral ideology (i.e., mixed feelings regarding a woman's family roles), to an egalitarian ideology (i.e., where wives and husbands are viewed as equals).

None of the women evidenced a traditional ideology. Five of the participants fell into the neutral range, suggesting no strong feelings that women should be available for family members, should put husbands work ahead of their own, or that women should be equal to husbands in family commitments. Six participants leaned toward an egalitarian ideology, which suggested they put themselves on an equal footing with their husbands. Only two of the participants, Grace and Laurie, had a strong egalitarian ideology.

The three participants who had immediate family members with disability had egalitarian ideologies. These women made only minimal change, at best, in their diet and exercise. It may be that family demands trump gender ideology in these complicated families. The two women who achieved maximal change in both diet and exercise also had egalitarian ideologies. Two women with neutral ideologies made moderate changes in exercise, and one also made moderate changes in her diet. Overall, there seemed to be no relation between gender ideology and health behavior changes for this group of participants.

Discussion

Women's health behaviors are important not only to women, but also to the families that rely on them for caregiving, family labor, and support.

Traditionally it has been women who are expected to arrange their work hours and personal needs around caring for family members. Yet family obligations for women can interfere with their ability to care for themselves (Carter-Edwards et al., 2004; Lee & Porteous, 2002). Although some health issues become more likely as one ages (Schaie & Willis, 2002; Schneider, Tompkins, Blumenthal, & Mora, 2006), there is evidence that certain behaviors promote health and reduce the risk, or delay the onset, of some chronic illnesses.

These behaviors include lifestyle changes such as exercise and healthy eating (Deen, 2004; Hoyer & Roodin, 2003). Positive health behavior changes have been shown to decrease blood pressure (Drevenhorn, Kjellgren, & Bengston, 2007) and to lessen the risk of diabetes (Deen, 2004). Little research has been done on middle-aged women and their ability to change their health behaviors. This study asked the question "how do women negotiate their family responsibilities and personal health?"

The participants in this study were asked to make changes in their diet and exercise habits during a 12-week intervention. During that time, the participants received weekly education on nutrition and exercise benefits with the expectation that they would attempt to make diet and exercise changes.

Two goals of the study were that the participants would add fruits, vegetables,

and whole grains to their diets, and that they would add exercise to their daily routines.

Using a feminist perspective, I anticipated that women would have difficulty making changes because they would put the needs of their families ahead of their own needs (DeVault, 1991). Because of social norms around gender, women are placed in a caregiving role and are not accustomed to caring for themselves. I also anticipated that women with a more traditional gender ideology would be less successful at making health behavior changes than those with an egalitarian ideology, as women with egalitarian ideologies believe they are equal to men and deserve the same privileges men have.

I used the concept of ambivalence to explore how women attempted to negotiate caring for themselves and others. Sociological ambivalence was apparent for several of the women who needed to manage multiple roles but did not have the resources (i.e., time) to fulfill all of them completely (Connidis & McMullin, 2002). One study participant reported that after working a 10-hour day, she went home and did family chores. She reported feeling guilty that she went to bed early, and was often accused by family members of being selfish for doing so. This participant reported that she was unable to add exercise to her daily routine as she was already too busy. She struggled with the realization that she was at risk for diabetes and was not following the recommendations for decreasing that risk.

The women also experienced psychological ambivalence, simultaneously holding opposing feelings or emotions (Connidis & McMullin, 2002). For example, one woman in the present study talked about how she enjoyed spending time with her ailing mother, but at the same time she knew that the more time she spent with her mother, the more time her mother wanted from her. This woman enjoyed her mother's company, but dreaded the consequences of increasing time with her.

Factors Influencing Change

The participants in this study varied in their ability to make diet and exercise changes ranging from no change to maximal changes in both diet and exercise. Not all the women made the same amount of change in diet as they did in exercise. It appears that diet changes may have been more difficult to make than exercise changes, as more women were able to make moderate to maximal exercise changes than were able to make the same changes in diet. The participants varied in family support, family structure, and family demands, which influenced their ability to make changes.

Family support. Family support can provide people with the motivation to adhere to health behavior changes (Carroll et al., 2003). Markey et al. (2008) interpreted their findings to mean either that women may be more influential than men in changing their partners' eating behaviors or the support provided by women is more helpful in changing these behaviors. The positive influence of women on dietary changes may be because women have more

experience caring for and nurturing others. Unlike Markey et al.'s research, however, this study demonstrated that family support was influential in women's ability to make health behavior changes regardless of which family member provided the support. The difference in findings between the Markey study and this present study could have resulted from the different methods used. Markey et al. used romantic partners who did not have children, and focused specifically on the ways the partners supported each other. Their study was a quantitative one with the participants answering specific questions in one session only. This thesis did not focus solely on support, included participants with various family structures (e.g., some had children and some were not married), and did not limit the participants to specific questions about support. The qualitative format of this thesis allowed the participants to report on any family member who was supportive.

The finding that family support helps women to make health-related changes confirms what was found in the literature on family support. As with previous research, this study found that family support helps people to make health behavior changes such as adjusting diet or adding exercise to the daily routine. Carroll et al. (2003) found that supportive family relationships helped diabetic patients comply with lifestyle advice. Unlike the present study, however, Carroll et al.'s research was not specific to women. Instead, the researchers studied women and men together, combining the results rather than focusing separately on how women versus how men responded to family

support. Findings from the present study were similar to those of Carter-Edwards et al. (2004), who discovered that how some women with diabetes could improve their own health behaviors was to have family members change their health behaviors as well.

The present study provided several insights about family support to women. Specifically, it showed that family support for participants was defined in ways other than a family member changing her or his own health behavior. The women in this study reported it as supportive when family members showed interest in what the participant was learning, shared healthy recipes, and offered verbal encouragement.

This thesis also demonstrated that family support helped the participants to make health behavior changes. The women in this study reported support from their husbands, children, and extended family members. Many of the previous studies focused specifically on partner support, not including other family members. Not seen in this study was the effect of having participants' partners involved in the study. Previous research indicates that when partners are involved in an intervention for health behavior changes, the person receiving support is more likely to maintain changes over time. For example, Blanke et al. (1990) found that when partners accompanied their spouses to a nutrition education program, the spouses were more successful at reducing their dietary cholesterol and saturated fat intake. Similarly, Carmody et al. (1982) found that long-term weight loss occurred for those

subjects who had a spouse attend treatment sessions with them, but not for those who attended the sessions alone. Adding partners to the intervention would be useful to explore in future research.

Family exercise culture. The family culture of exercise finding was new to this researcher. Family exercise *culture* is not to be confused with having a family exercise *partner*. The women in this study reported other members of their families who exercised, although not necessarily with them. An exercise partner would be someone who exercised regularly with the participant and gave her a sense of accountability. Instead, in this study, the presence of another person in the family who exercised appeared to help the participants exercise regularly whether or not they exercised together.

The findings in this study seem to reflect the small literature suggesting that family exercise influences children's activity level (Kimiecik & Horn, 1998) and that family exercise leads individuals to make a long-term commitment to exercise (Sallis & Nader, 1990). Relatedly, Raglin (2001) found that a spouse's support either by participation in exercise or a positive attitude toward exercise helped with exercise adherence. Similarly, a study of regularly exercising couples found that people whose spouses were regular exercisers reported significantly higher levels of perceived spousal support than those with nonexercising spouses (Hancher-Rauch & Hyner, 2005). The present study, in combination with these previous findings, helps to confirm the importance of a family culture of exercise.

Women who do not have a family culture of exercise may need a different approach to health behavior change. Telling such women to add exercise to their daily routines when it is not already a normal part of life may not be enough for them to be successful at making changes. Litt, Kleppinger, and Judge (2002) concluded that for older women to enhance the initiation of a new exercise program, it would be helpful to enlist social support specifically for exercise. The framing concept of ambivalence would suggest that an exercise routine may conflict with time used to perform family work. If family members are already exercising, however, then women may have an easier time adopting exercise because they can possibly be with family members while exercising at the same time.

Family demands. Not all factors that influenced change were positive. Generally speaking, family demands negatively influenced healthy changes. This finding was expected given empirical evidence that women are the main family caregivers (Dressel & Clark, 1990; Sulik, 2007) and the ones most responsible for caring work in families (Coltrane, 2000; Ferree, 1990). Family demands that interfered with health changes were most evident for participants who had family members with a disability living within their home. All three of these women were employed. When they returned home from work, they then had to care for disabled family members who had special needs, while also caring for other family members. These women demonstrated structural ambivalence in that they could not meet all the

demands that fell to them. They seemed to fulfill family obligations first and were unable to add caring for themselves to their daily routines.

That family demands interfere with health behavior changes is well documented. Erickson and Gillespie (2000) found that one reason women did not continue an exercise and wellness program was because of family responsibilities. Similarly, Kushner (2007) reported that employed mothers prioritized their families' health needs over their own. In a patriarchal society, women are raised to put others needs above their own (Dressel & Clark, 1990); they are relied on to be daily caregivers without regard to their own needs (DeVault, 1991). In this study, however, only women with complicated family demands (such as having a family member with a disability living within the home) had difficulties making health behavior changes. Participants with more typical family demands showed no pattern of either success or failure with making recommended health changes. This finding may indicate changing family roles. Although women continue to do more of the household labor, men are doing more than they did 20 years ago (Bianchi et al., 2000). Some of the women in the present study had husbands who did some cooking and childcare, and who transported the children to sporting events. Men are helping more with family labor, but women continue to remain the managers of family life (Merderer, 1993). Whenever there is additional family stress, such as having a disabled family member, women are expected to fill in the gap (Traustadottir, 1991).

I anticipated that the family demands of women employed outside the home who had children living within the home would interfere with health behavior changes. I did not find this pattern among those participants. Two participants who lived with their husbands and teen-aged children, and who were the primary contact for care for their parents who lived in assisted living facilities, both made moderate changes in exercise. Surprisingly, two women who lived alone made among the fewest changes in the entire group. This result suggests that family support may be more important than family structure in facilitating changes. Most of the women with children living in the home reported some level of family support, whereas the women who lived alone had very little, if any, support. Unlike the women living with others, women who lived alone in this study did not receive family support. Family support has been shown in the literature and in this study to influence health behavior adherence (Blanke et al., 1990; Leong et al., 2004).

Factors Not Influencing Change

Demographic factors. The participants' attempts to change health behaviors were not influenced by demographic categories, specifically, household income, education, and family structure. That family structure did not influence change is surprising as the literature reports many studies in which women have difficulty prioritizing their own health over family responsibilities. (Bae et al., 2007; Carter-Edwards et al., 2004; Forssen et al., 2005; Lee & Porteous, 2002). Although family size might be correlated

positively with family responsibilities, it could be that the more people living in one household, the more interference with women's ability to make health behavior changes.

Although the literature suggests mothers who work full-time outside the home have an increased risk of poor health compared to women who do not work outside the home (Artazcoz et al., 2004; Schnittker, 2007), the women in this study did not appear to be influenced by employment with regard to changes in their diet and exercise habits. Most of the women with children living at home in this study had teenagers. Perhaps their being older enabled these children to be more independent than younger children, putting fewer demands on their mothers than might have been expected.

Gender ideology. I expected to find that gender ideology would be a factor in the ease or difficulty of adopting new health habits, but I was unable to find a connection between gender ideology and change in diet and exercise. All of the participants in this study had either neutral or egalitarian gender ideologies, meaning there was limited variance on gender ideology and no women with a traditional ideology. I had hypothesized that those with a traditional ideology would have a more difficult time than those with an egalitarian ideology prioritizing their personal health needs above the needs of their family (Kerrigan, 2008; Thomsson, 1999). I suspect that I was unable to discern any connection between gender ideology and health behavior

changes because there was little variation in the gender ideology of the women in this study.

Although there was no pattern in gender ideology and health behavior changes, all three of the women who had a disabled family member living within the home were egalitarian in their beliefs. These three women believed in nontraditional roles but had to stay within the confines of the traditional role of caring for others at the expense of their own needs. These women were unable to rely on their husbands to relieve them of their traditional roles, as in two of the cases the husbands also had some sort of disability. All three of these women worked full time and had to negotiate caring for others in their non-paid-work time. Traustadottir's (1991) research found that mothers of children with disabilities typically took responsibility for the extra caregiving work associated with these children. In the same vein, women who had family members with a disability, despite their egalitarian ideology, were unable to elevate their own health needs over those of their family members.

Structural ambivalence was apparent in these women with complicated family demands. Structurally, these women were unable to meet all the demands of work and family and also make health changes for themselves. As one participant explained, it was not that she did not want to make health changes, it was that household and family work needed to be done, and there was no time left for her to make changes. Much like the participants in this thesis who could not make recommended changes, Lee and Porteous (2002)

found that caregiving women had difficulties attending to their own health issues such as diabetes or hypertension in the early stages of their illness. They instead waited to seek medical care for themselves when the illness was more advanced. Carter-Edwards et al. (2004) found that among women with diabetes who were caregivers, the stress of caring for others made it difficult to manage their diabetes. The findings from the present study support those from both of these prior studies. Although the caregiving women in the present study were not yet diagnosed with diabetes, they are at risk for such a diagnosis and few were able to make health changes at this time in their lives. Although they may be able to prioritize their own health over the needs of others after they are diagnosed with a specific illness, the results of Carter-Edwards et al.'s research suggest that might not be the case.

A close association between one's beliefs and how one behaves in regard to family and household labor (Blaisure & Allen, 1995; Hochschild, 1989) is not always present. This lack of association is evidenced in the experiences of women with complicated families and in the interviews of several study participants who evidenced an egalitarian ideology but who were in relatively traditional family situations. Although all of the participants ranged between neutral and egalitarian in gender ideology, several spoke of their work at home as traditional. This inconsistency between beliefs and actions leads to both structural and psychological ambivalence. Women are often in the position of being unable to meet the expectations of all of their social roles

because they are likely to be in competition with each other (Connidis & McMullin, 2002). The women in this study had responsibilities to employers, to immediate family members, to extended family members, and to themselves. Reconciling these responsibilities required great effort and some women were more successful than others in prioritizing their health needs.

Limitations

As with all studies, this study has limitations. The interviews were brief and might have been lacking in detail that would have added useful data. Despite the concise nature of some interviews, however, all interviews contained important insights regarding the women's obligations, motivations, and challenges regarding attempts to change their diet and exercise behaviors.

The small number of participants was a limitation. The relatively small community in which the university and health service corporation were located made it difficult to recruit participants. The strict inclusion and exclusion criteria further restricted an already small group. The desired participant needed to be overweight but not too overweight; to have elevated blood glucose levels but not diabetes; and to be willing to exercise but not yet exercising. These criteria were reasonable and necessary given the study's purpose. Yet such specific criteria greatly limited the number of eligible participants.

Another limitation of this study was that none of the women evidenced a traditional gender ideology. I anticipated that, compared to a woman with a

more egalitarian ideology, a woman with a more traditional gender ideology would have challenges prioritizing her own health needs above her family responsibilities. Because all the participants demonstrated either neutral or egalitarian ideologies, I was neither able to support nor refute my expectation.

Finally, the participants were relatively homogenous, as all but one was employed and all were White. Nevertheless, although the sample in this study lacked racial diversity, a wide spectrum of family and economic situations was present among the women. The household composition of the participants ranged from living alone to living with a husband and children while providing support for and care of parents in assisted living facilities. Furthermore, household income for the participants ranged from between \$16,000 and \$24,999 to over \$100,000. These variations in family and economic situations, however, did not appear to be linked to the ability to make changes in diet and exercise.

Strengths

One strength of the study lies in its insight into women's health behaviors and the challenges women face when trying to prioritize their health needs in relation to their family responsibilities. Because society relies heavily on women to provide care for those in need, it is important to establish how women achieve, and what interferes with, a healthy lifestyle. Furthermore, because comparatively little medical research includes middle-aged women, and even less focuses on how women negotiate their own health needs

around their family obligations, this study has the potential to inform our understanding of the relation between women's health and their family responsibilities.

Another strength of this study was the study's design. The participants were interviewed within two to five weeks after completing the health intervention, while the experience was still fresh in their minds. Because I had been part of the research staff throughout the intervention, the participants were familiar with me. Of the researchers who were seen at every class, I was the only one who was married, had children, and had been employed outside of the home while my children were growing up. My experience thus reflected the experiences of most of the participants. Also, like the participants, I, too, was overweight. I believe these commonalities led the participants to be forthcoming with their responses. The participants were allowed to talk about what they found to be helpful or not, and about not only their specific home situations but about the intervention as well.

Implications

This research is important to women who need to negotiate their own health needs around family responsibilities and to the families who rely on women for family labor. Women who do not manage their health in midlife will have increased risk of serious, often debilitating health challenges in the future. If a woman is disabled because of health issues, she can no longer

provide family labor and she may need to rely on other family members for assistance.

This study shows how women responded when they volunteered to participate in an intervention that asked them to place their own health as a priority in their already busy lives. Some women were able to meet the challenge whereas others had difficulties. Two women were unable to make any changes at all. By studying how women successfully make health changes, we can learn how to support middle-aged women at risk for chronic disease in their efforts toward better health.

Establishing how family support and family exercise culture helps women to make health changes is important. These findings give insight into who might make changes easily and who might have difficulty. The insights of women who care for disabled family members are valuable for determining the best method of supporting women as they try to make healthy choices in the future despite difficult family circumstances. By realizing that women who are in a caregiving role for a disabled family member may have difficulty making changes, those who are making recommendations for change might be able to tailor the recommendations appropriately to provide for women an improved chance to succeed.

Conclusion

This study shows that family support and family exercise culture positively influenced the women in this study to make healthy changes in their

diet and exercise habits. It also shows that the demands of very complicated families can interfere with health behavior change for middle-aged women. Many women experienced structural and psychological ambivalence as they attempted to fill the multiple roles of wife, mother, employee, and so forth. This study also confirmed the inconsistency between stated gender ideology and gendered life experience by finding that although many of the participants had an egalitarian ideology, they also had traditional family roles. Further study on how women try to prioritize their specific health needs around family responsibilities is needed to illuminate how women manage their own health needs around the needs of others, especially in relation to their beliefs about gender.

Traditional recommendations to change one's diet and add daily exercise will not enable all women to achieve success. This study shows that without family support, many women will not be successful in changing their health habits. It also shows that women with complicated families are more vulnerable to failure when attempting to prioritize their own health needs. Further research holds the potential to enlighten not only researchers and participants about ways to be successful in health behavior changes, but also health care providers who often overlook family demands when making recommendations to women.

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APPENDICES

Appendix A Recruitment Flyer



**RECRUITING WOMEN FOR A RESEARCH
STUDY**



**Attention Women 35-60Years!
OVERWEIGHT?
PRE-Diabetic
WANT TO IMPROVE THE WAY YOU FEEL?**

**Researchers from the College of Health and Human Sciences
are seeking volunteer women to help them learn about
methods for reducing the risk for diabetes, heart disease, and
high blood pressure. If this interests you, *or a woman you***



***know*, please call us now at 737-4925!**



Program Includes **FREE**:

- *Personalized* Health Information
- Tailored Exercise Plans
- Nutrition Information
- Cholesterol Checks
- Glucose (blood sugar) Checks
- Body Composition Checks
- Personalized Coach-

If You Are:

- Female
- 35-60 years of age
- Are sedentary or have low activity

AND

- Are pre-diabetic
- You may qualify for this
exciting, FREE
program!**

**Don't Wait
Call Us TODAY!
737-4925**

Call NOW for more information!!!!



737-4925

PASS IT ON!

Brought to you by OSU's:
Department of Public Health
Department of Nutrition and Exercise Science
Human Development and Family Sciences
and
Samaritan Health Services

Questions or comments? E-mail us at jabsonj@onid.orst.edu or call 737-4925

Appendix B
Phone Screen

Volunteers calling or e-mailing in response to the Metabolic syndrome Study will need to complete this process before making any commitments to this project:

“Thank you for calling about the PROMIS Study led by Drs. Donatelle, Manore, and Walker. I would briefly like to give you a little information about the study. The purpose of the study is to test strategies for the prevention of the metabolic syndrome, a health condition characterized by high blood sugar, high blood pressure, high cholesterol, and being overweight. If chosen to participate, your participation *could* last up to 16 weeks, including a blood test before and after a 12 week study program. If you are chosen for the 12 week program, you will be asked to attend nutrition and exercise education class once a week on the OSU campus. Each class will be conducted in a group format and will last approximately 1.5 – 2 hours. You will also be expected to adhere to an exercise program and to record information about your exercise and nutrition for the day. Occasionally, you will be asked to record blood glucose measurements. Does this study sound interesting and potentially valuable to you?”

(If YES, continue; If NO, thank them for their time and ask them if they would like to be contacted for future studies.)

“At this point I need to learn more about you so that we can determine if you will meet the criteria for this study. I need to ask you some personal questions, including questions regarding your health. This interview is completely confidential, and will only be used for the purposes of this study. You may end this interview at any time. If we determine that you fulfill the criteria of this study, we will invite you to visit the OSU campus to learn more about the study. Are you willing to answer questions regarding your health for the purpose of this study?”

(Research Assistant to circle:)

*	*	*	*	*	*	*	*	*	*	*	*
						YES				NO	

DEMOGRAPHICS

NAME: _____ DATE: _____

ADDRESS: _____ E-MAIL: _____

HOME PHONE: _____ WORK: _____ CELL: _____

Best time to reach you: _____

DOB: _____ AGE: _____

*DOB must fall between November 1, 1947 and June 1, 1971 to be eligible.

WEIGHT: _____ HEIGHT: _____ BMI: _____

*Acceptable BMI range: 25-40 kg/m²

ABSOLUTE EXCLUSIONS

Are you premenopausal? Meaning, have you had any periods in the past 12 months?

- Yes**
- No**

Are you pregnant, or do you plan on becoming pregnant within the next 3 months?

- Yes**
- No**

Have you ever been diagnosed with cardiovascular disease, including cardiac disease such as heart attack, angina, or high blood pressure? (CIRCLE the ones that apply) Have you experienced any cerebrovascular disease such as stroke, or TIA?

- Yes**
- No**
- Don't know

Have you ever been diagnosed with asthma?

- Yes**
- No**
- Don't know

Have you ever been diagnosed with pulmonary disease, including chronic obstructive pulmonary disease or COPD, interstitial lung disease, or cystic fibrosis?

- Yes**
- No**
- Don't know

Have you ever been diagnosed with diabetes mellitus type 1 or type 2, thyroid disorder, renal disease, or liver disease? (Circle the ones that apply)

- Yes**
- No**
- Don't know

Are you currently receiving treatment for any type of cancer?

- Yes If yes, what type of treatment? _____
- No
- Don't know

Have you ever been diagnosed with cancer?

- Yes If yes, what type? _____
- No
- Don't know

INCLUSIONS

Within the past 12 months, have you been told by a doctor that you have higher than normal fasting blood glucose levels?

- Yes If yes, how high? _____ mg/dL
- No
- Don't know

INCLUSIONS (continued)

Do you consider yourself to be a sedentary individual? (Less than 1 hour of moderate to vigorous activity per week)

- Yes
- No If no, please describe current activity level (type, duration, intensity):

*EXCLUDE if too active

Are you able to walk as a mode of exercise?

- Yes
- No *EXCLUDE if unable to walk for exercise

If ELIGIBLE:

“Thank you for taking the time to answer our questions. It appears that you fit our initial criteria so I would like to invite you to the OSU campus for further screening. We will need you to come to the OSU campus for two testing visits before we can determine your final eligibility. Each visit will be approximately 2 – 3 hours in length.

The first visit will include a fasting blood draw. This means that you will need to fast for 12 hours before you come in for a small blood draw. The blood draw will be for a small amount of blood and will be performed by a highly trained phlebotomist. We will also take a finger prick test to obtain your pre- and post-meal blood glucose level. This means that we want to test your blood sugar before and after we provide you a meal. We will also take your height and weight measurements, body composition testing, resting blood pressure and resting pulse, and a set of questionnaires. Additionally, we will teach you to record your food intake and activity levels for up to 4 days. We will also give

you detailed information regarding the requirements for being a participant in our study and we will answer any questions that you may have.

Should you fit within our criteria after the first visit, and are willing to continue, we will invite you back for the second screening visit. The second visit will include another pre- and post-meal blood sugar test with the addition of a low to moderate intensity treadmill walk lasting up to 30 minutes. We will also collect the food intake and activity data from the 4 recorded days, and ask you to complete another set of questionnaires. If at the end of this second visit, you completely fulfill our eligibility criteria, we will assign you to the 12-week program and give you further instructions regarding your participation within your assigned group.

I'd also like you to know that all study procedures and information are available to you completely free of charge.

If you are still interested in participating I would be happy to schedule your first visit.”

SV1 scheduled for: _____

“For the first visit, I will be mailing specific instructions and a parking permit. If you have any questions in the meantime, please do not hesitate to call.

Do you have any further questions regarding this research project?
(IF NO) Great, well then I look forward to seeing you at your first visit, thank you for your time.”

Alternative Closure – INELIGIBLE:

Thank you for taking the time to answer our questions. It appears that you do not fit the criteria for this particular research project. Would you like us to keep your contact information for future research projects within the College of Health and Human Sciences at Oregon State University?

Research Assistant to circle: YES NO

Appendix C

Informed Consent

INFORMED CONSENT DOCUMENT

Project Title: **Prevention of Metabolic Syndrome: Intervention Strategies (PROMIS)**

Principal Investigator: **Rebecca Donatelle, PhD, Public Health**

Co-Investigator(s): **Alexis Walker, PhD, Human Development and Family Services**
Melinda Manore, PhD, Nutrition

WHAT IS THE PURPOSE OF THIS STUDY?

You are being invited to take part in a research study designed to explore two ideas: 1) how social relationships impact the development of chronic disease and 2) potential methods for reducing the onset of chronic disease. It is hypothesized that monitoring blood sugar and using techniques known as motivational interviewing will reduce the risks for chronic disease. This study aims to reduce the health risks of women aged 35-55 years who are at risk for, and/or who have the potential to develop, Metabolic Syndrome. The outcomes from this study will be used to develop a large scale project to help a larger group of women reduce their risk for chronic disease and increase their quality of life. You can help us see which methods work best from your point of view.

WHAT IS THE PURPOSE OF THIS FORM?

This consent form gives you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask any questions about the research, the possible risks and benefits, your rights as a volunteer, and anything else that is not clear. When all of your questions have been answered, you can decide if you want to be in this study or not.

WHY AM I BEING INVITED TO TAKE PART IN THIS STUDY?

You are being invited to take part in this study because you meet the following study criterion to participate in our Metabolic Syndrome Women's Study:

- Female
- Pre-menopausal or not menopausal (i.e., still having periods)
- Age range of 35-55
Birthday must fall between November 1, 1950 and June 1, 1971
- Fasting blood glucose \geq 100 mg/dL
- Body mass index range of: 25-34.9 kg/m²

WHAT WILL HAPPEN DURING THIS STUDY AND HOW LONG WILL IT TAKE?

If you agree to take part in this study within two weeks, we will schedule you for the first of two screening visits. If you agree to participate in the intervention group, you will be asked to participate in a series of classes and experiences designed to reduce your health risks. A project staff member will contact you to schedule the first education session.

These classes will take approximately 60 minutes per week. Participation in these classes will enter you into a weekly lottery to win \$100.

WHEN YOU JOIN THE STUDY:

- You will be asked to answer some written questions about me and about my health.
- You will be asked to give a blood sample (about 2 tablespoons) taken by a trained phlebotomist.
- You will have your height, weight and body fat composition measured.
- You will be asked to walk on a treadmill for 20-30 minutes at a relaxed, comfortable speed (not more than 3 mph).
- You will be asked to complete a follow-up interview about your experiences in the project.

Weekly: If you are assigned to the intervention group, when you come in for weekly classes you will be learning about glucose testing, shopping, cooking, nutrition, and physical activity. Your finger will also be pricked for a small blood sample (one to two drops of blood) to test your blood sugar.

AT THE END OF THE PROGRAM

- You will be asked to give a final blood sample (approximately 2 tablespoons) taken by a trained phlebotomist.
- You will be asked to complete a written survey to answer questions about how effective the program was, your current physical activity, and your nutrition.
- You will be asked to complete a follow-up interview with program staff about your experiences in the program. This interview will be audio taped with your permission.

If you agree to take part in this study, your involvement will last for approximately 12-14 weeks. This includes the first introductory visit, the 12-week education course and the final, follow-up interview.

WHAT ARE THE RISKS OF THIS STUDY?

Possible risks or discomforts:

- One potential discomfort might be taking the time to complete the written surveys at the beginning and the end of the study.
- You may experience temporary discomfort when the finger is pricked by the needle, and tenderness around the site where the finger prick was administered.
- There are some discomforts associated with walking for exercise, such as increased blood pressure, increased heart rate, shortness of breath, and physical discomfort (e.g. soreness, muscle fatigue, exhaustion). However, trained technicians will carefully explain treadmill activities and will allow participants to slowly acclimate to walking on the treadmill while wearing appropriate footwear and clothing.
- There are a few potential risks associated with blood draws. Among them are: temporary discomfort from where the needle is inserted into your arm, bruising around the site where the blood was taken from, and rarely infection. To minimize these risks you will be instructed to keep pressure on the site where the blood was drawn for 1 minute and keep a bandage over the area for at least 1 hour.
- Questionnaires that ask about personal substance use and depression may cause mild discomfort.

WHAT ARE THE BENEFITS OF THIS STUDY?

Benefits to be expected from the research: You will get advice, materials, and support to reduce your risk factors related to metabolic syndrome and other illnesses. All tests will be conducted FREE of charge.

WILL I BE PAID FOR PARTICIPATING?

If you are assigned to the intervention group, you can choose to participate in the 12-14 week physical activity and nutrition education class. These classes will take approximately 60 minutes per week. If you choose to participate in these classes you will be entered into a weekly lottery to win \$100 at the end of the study.

If you are assigned to the control or no-intervention group, you will receive a packet of educational materials about Metabolic Syndrome, physical activity, and nutrition. You will also be given \$5.00 for the completion of each of your questionnaires and blood draws.

WHO WILL SEE THE INFORMATION I GIVE?

Any information that you give will be kept confidential to the extent permitted by law. A code number will be used to identify any test results or other information that you provide. Neither your name nor any information from which you might be identified will be used in any data summaries or publications. All answers will be assessed on a group basis only.

AUDIO RECORDING

One aspect of this study involves making an audio recording of your final thoughts and impressions about your experience in the study. Only study investigators will have access to these recordings and your confidentiality will be maintained. These recordings will be coded to determine patterns in experiences with the program in an effort to better understand the impact of the program and to make changes that might enhance future materials.

If the results of this project are published your identity will not be made public.

DO I HAVE A CHOICE TO BE IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

You will not be treated differently if you decide to stop taking part in the study. If may skip any questions that you are not comfortable answering without adverse effects. If you choose to withdraw from this project before it ends, the researchers may keep information collected about you and this information may be included in study reports.

WHAT IF I HAVE QUESTIONS?

If you have any questions about this research project, please contact:
Rebecca J. Donatelle, PhD: 541-737-3839

If you have questions about your rights as a participant, please contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator, at (541) 737-4933 or by email at IRB@oregonstate.edu.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Participant's Name (printed):

(Signature of Participant)

(Date)

Appendix D

Food and Activity Level Log Directions

**INSTRUCTIONS FOR RECORDING 4-DAY DIETARY RECORDS**

1. Please record your food & beverage intake over three (3) week days & one (1) weekend day. Each day recorded should correspond with your 4-day physical activity records.
2. Please record each food & beverage item you consume on a separate line. Be sure to include all snacks & all beverages (including water).
3. Please record the time the food/beverage was consumed.
4. Record each item after weighing in exact amounts:
 - liquids in cups or **fluid** ounces
 - vegetables and fruits in cups, grams, or ounces
 - beans, grains, and pasta in cups **dry** or cups **cooked** (please be specific)
 - bread in slices, indicate what kind of bread (brand name and type)
 - meats, fish, poultry and cheeses in ounces
 - nuts in cups, ounces, or grams
 - chips or other snack type foods in cups, ounces, or grams
 - Spread (butter, cream cheese, margarine, etc.) in tsp or Tbs
5. Please specify if food is consumed raw. Also indicate if it was prepared from fresh, frozen, or canned products.
6. Indicate how the foods were prepared, such as fried, baked, boiled, etc.
7. If a food has a mixture of ingredients (sandwich or casserole), list the major ingredients separately in their proportions or amounts.
8. Use brand names whenever possible, or mention comparable brand.
9. For fruits and vegetables, please indicate if the skin was removed.
10. Indicate if dairy products are whole, 2%, 1%, or skim.
11. Be sure to include sauces, gravies, marinades, milk/sugar in coffee, etc.
12. Check food labels for weights, etc. Candy bars, cheeses, cookies, juices are all labeled with their weights ----Write this information down!
13. Provide any other information you feel might be helpful, such as food labels and/or recipes.

- 14. Record EVERYTHING edible that goes in your mouth.
- 15. MOST IMPORTANTLY, eat as you normally would -- please don't change your usual eating habits or modify your portion size.

4-DAY FOOD/BEVERAGE INTAKE RECORD

Please measure and weigh all food and beverages you eat throughout the day and write them down as you eat them. Remember to give as many details as possible and keep any food labels if you think it will help describe the food better than you are able to. Providing us with recipes for homemade foods is helpful for us, too. Please list any vitamin or mineral supplements or any other supplements taken on the backside of this form and attach these labels if possible. It's best to be as descriptive as possible!

Meal or Snack	Time	Food or Beverage item	Brand/source (manufacturer)	Type of preparation (bake, boil, fry, etc.)	Amount/Wt (ounces, grams, fluid ounces, cups, tsp, TBS)
Meal	8:15 am	Total Cereal	General Mills	NA	1 oz/1 cup
M	8:15 am	Light Soy milk, vanilla	Silk	NA	4 fl oz / .5 cup

List any vitamin/mineral pills or other supplements here:
 Add any additional comments here:

INSTRUCTIONS FOR RECORDING 4 DAYS OF PHYSICAL ACTIVITY

1. Please maintain your normal activity level -- do NOT increase your activity level or change your normal intensity (how difficult) or duration (how long) of activities.
2. Record all your daily activities for three (3) week days and one (1) weekend day.
3. Please record all activity for the same 24-hour periods as your food intake records, starting at 5am each day and continuing until 5am the next day. Estimate as closely as possible the length of time sleeping as well as length of time for each activity.

Example:

Wednesday 5am - Thursday 5am = day 1
 Thursday 5am - Friday 5am = day 2
 Friday 5am - Saturday 5am = day 3
 Saturday 5am - Sunday 5am = day 4

4. Be as prompt as possible when recording your activities. Try to record all daily physical activities on your activity log as soon as you have completed them in **minutes**. Also, be as specific and accurate as possible when recording intensity and length of time the activity was performed.
5. How to estimate intensity:
Resting = sleeping, watching tv, reading
Very light = desk work or activities that still allows you to sing a song
Light = Activity allows you to converse freely and breathing fine (full sentences)
Moderate = Activity allows you to converse, but you find yourself needing to take a breath every few words (partial sentences)
Heavy = unable to converse due to exertion level (minimal words)

Example of how to record in log:

Clock Time	Total Minutes	Activity Description	Intensity of Activity (record minutes)				
			Resting	Very Light	Light	Moderate	Heavy
5:00am - 7:15am	135	sleeping	135				
7:16am - 8:30am	74	Eat, shower, dress		64	10		
8:31am - 8:54am	23	House chores		4	6	10	3
8:55am - 10:59pm	848	walk to work & sit		793	50	5	
11:00pm - 5:00am	360	sleeping	360				

Appendix E

Topic Schedule

Week #	Session Topic
1	Intro to a Healthy Lifestyle Balance
2	Getting Started Being Active Barriers & Benefits of Physical Activity
3	What is Healthy Eating (focus on grains, fruits, vegetables, & healthy fat)
4	Field Trip: Food Shopping & Label Reading
5	Move Those Muscles Being Active: A Way of Life
6	Calorie & Carbohydrate Balance Throughout the Day
7	Be a Fat Detective 3 Ways to Eat Less Fat How To Choose Healthy Fats
8	Demonstration: Healthy Cooking & Recipe Modification
9	Take Charge of Your Diet & Exercise Environment (eating out & using exercise resources)
10	Jump Start Your Physical Activity Plan: Making it part of your lifestyle
11	Field Trip: Dixon Recreation Center Taking Away the Fear of the Gym (overview of equipment)
12	Problem Solving Slippery Slope of Lifestyle Change

Appendix F

Gender Ideology Questionnaire

Please indicate how much you agree or disagree with each of the following statements:

(circle your answer to each question)

	STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE
a. It is much better for everyone if the man earns the main living and the woman takes care of the home and family.	1	2	3	4	5
b. Preschool children are likely to suffer if their mother is employed.	1	2	3	4	5
c. It is all right for mothers to work full-time when their youngest child is under age 5.	1	2	3	4	5
d. Both the husband and wife should contribute to family income.	1	2	3	4	5
e. A husband whose wife is working full-time should spend just as many hours doing housework as his wife.	1	2	3	4	5
f. When a marriage is troubled and unhappy, it is generally better for the children if the couple stays together. . . .	1	2	3	4	5
g. The partner who earns the most money should have the most say in family decisions.	1	2	3	4	5

Appendix G

Thesis Coding Scheme

Family Structure

- Single with no dependent family
- Married caring for dependent children (or grandchildren)
- Married with grown children
- Caring for parents in some capacity

Family Health

- All family members in apparent good health
- Family members with health concerns
- Family members with disability

Participants Health

- Concerned about personal health issues
- Concerned about risk of metabolic syndrome/diabetes
- Weight is an issue
- Behavior reflects acknowledgement of health risks
- Knows there is a health risk, but ignores it
- No acknowledgement of health risks

Motivation for change of health behaviors

- Concern about health risks
- Wants to lose weight
- Obligation to PROMIS study
- Set an example for her children
- Reluctant participant

Family Support

- Not supportive
- They don't complain about food changes
- Verbally supportive or interested
- Behaviorally supportive (go for a walk with participant, share healthy recipes)
- Sabotages participant's attempts to change.
- "Nobody else is going to take care of me, I have to do it myself"

Husband's Support

- Not supportive
- He doesn't complain
- Verbally supportive

- Behaviorally supportive (exercises with participant, helps out so participant can exercise)
- “He’s just a great saboteur”
- Gives support in some areas, but sabotages others.
- Fixes dinner, but not food suggested in study.

Dietary Changes

- Substantial food changes
- Minor food changes
- Maintaining food changes
- Not sticking with food changes
- Changed diet, but not in manner recommended

Exercise Changes

- Substantial exercise changes
- Minor exercise changes
- Consistent with exercise
- Inconsistent or no longer exercising.

Feelings of Putting Self First

- “I don’t do that”; unable to put self first
- “A lot of times it’s uncomfortable”
- Is trying to put self first
- “It’s nice!”
- Ambivalence

Feelings of Guilt

- Guilt not mentioned
- States she doesn’t feel guilty
- Has experienced guilt feelings during the study

Barriers to Change

- Obligation to family
- Personal belief in what participant’s role is within the family
- Financial considerations
- Logistics of finding healthy food
- Personal struggle
- Work responsibilities
- Multiple minor obstacles that cannot be overcome
- Rises above obstacles

