THE EFFECT OF SOCIAL SUPPORT AND SOCIAL NETWORK CHARACTERISTICS ON THE FOOD PATTERNS OF ELDERLY WIDOWS WHO LIVE ALONE

BY

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THE EFFECT OF SOCIAL SUPPORT AND SOCIAL NETWORK CHARACTERISTICS ON THE FOOD PATTERNS OF ELDERLY WIDOWS WHO LIVE ALONE

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ABSTRACT

Social support and social networks have been shown to have a positive effect on the health of elderly widows, however very little research has looked at the effect of social networks and their supportive functions on nutrition, especially the effect of nutrition-specific support. Therefore an exploratory study was conducted to develop a nutrition-specific social support instrument to explore the effect of nutritional support and social networks on diet quality, diet diversity, interest in eating and preparing food, and appetite. The influence of health and economic variables on these relationships was considered, as these variables may exert a direct effect on diet quality and diet diversity, or they may act as moderating variables.

The sample (46 widows, living alone, 70-85 years of age) had participated in a previous study conducted by the Centre on Aging, University of Manitoba. The response rate for those eligible for this study was 67%. Using a cross-sectional survey design, data were collected with a questionnaire that included the nutritional support scale and an interest in eating and food preparation scale developed for this study. Three, food record-assisted, 24-hour recalls were collected, one at the widows home and 2 by telephone. Food records were used as a memory prompt in the telephone recalls.

Principle components analysis revealed three dimensions

of nutritional support (instrumental, informational and social companionship), and two dimensions of interest (interest in eating and cooking and interest in avoiding monotony around eating and cooking).

Most women had moderate diet quality scores of 16 (±3.0 out of 23), and consumed an average of 10(±2.4) different foods per day. Most had good or excellent appetites (n=35, 76%), were interested in eating and cooking (mean=4.3, range=1-6), and most avoided monotony around eating (mean=2.5, range=0-3).

Multivariate response surface regression analysis and three-way cross-tabulations were used to test the hypotheses. Overall, nutritional support and social network characteristics were important to consider in terms of their effect on the nutritional outcomes studied, but other variables may also be important as the R^2 was low and there was variation yet to be explained. In addition, health status, economic situation and age were important to consider as they frequently appeared to moderate the effect or had a direct effect on the nutritional outcomes studied.

Different types of nutritional support and social network characteristics appeared important for each outcome variable in this study. Instrumental support appeared important for appetite, while informational support appeared important for diet quality and diet diversity, and social companionship for the two interest variables. Of the social

network characteristics family network size and the friends and neighbours network appeared important for diet quality, while everyday contact appeared important for diet diversity. Total network size and weekly contact appeared important for interest in avoiding monotony, while family network size and daily contact appeared important for appetite. Future research should determine which types of nutritional support and network characteristics are more important in terms of their influence on the outcome variables in this study. In addition, qualitative research is needed to refine the concept of nutritional support.

Dedicated to
Robert Romance,
for his conviction that this
could be accomplished and his constant
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Introduction

Over the next 50 years there will be a substantial increase in the number and proportion of elderly in the Canadian population (Health and Welfare Canada, 1989). More significant is the reality that the majority will be women as elderly women represent the most rapidly expanding segment of Canada's population (National Council of Welfare, 1984; Stone and Frenken, 1988; Women in Canada, 1990).

For most women, living a long life means a change in marital status due to widowhood. In 1986, 43% of women 70-74 years of age were widowed, 56% of those 75-79 were widowed, and 74% of those 80+ were widowed (Stone and Frenken, 1988). This has significant implications for their living arrangements as 42% of women between 75 and 85 years of age live alone (Stone and Frenken, 1988). It is expected that this number will increase into the next century as elderly women prefer to live on their own rather than with a friend or relative (Statistics Canada, 1984; Priest, 1988).

Many elderly widows also tend to be poor. In 1992, 45% percent of women 65 years and older, spent 56.2% or more of their income on the necessities of life (food, shelter and clothing) (National Council of Welfare, 1994). Widows, especially, are at risk of living in poverty because many do not have personal economic resources and have not been part

of the paid labour force; therefore they are not eligible for private or Canadian pensions (Chappell, 1981a; Lindsay and Donald, 1988, National Council of Welfare, 1994).

Demographic data suggest that elderly women living alone are an important target group for nutrition research, purely on the basis of their numbers and their poverty situation which may increase their risk for poor nutritional health. Congregate meal programs are usually directed to the low income elderly, and are based on the assumption that social contacts improve nutritional status. Yet little nutrition literature has examined this effect (LeClerc and Thornbury, 1983; Chen, 1986). Living alone has frequently been associated with loneliness, isolation, poor nutrition and poor health (Chen, 1986). Research indicates it is not so much the living arrangement that has an impact on health as it is the lack of social contact (Berkman and Syme, 1979; Blazer, 1982; Dean, 1986; Hibbard, 1985; House, et al., 1982; Lowenthal and Haven, 1968; Lubben, 1988; Schoenbach, et al., 1986).

Currently, there is interest in not only the living arrangement but the social contacts or what is refered to as the social support and social networks of the elderly. There is increasing evidence that social support and social networks are important in terms of morbidity and mortality in both physical and mental health (Berkman and Syme, 1979; Blazer, 1982; Dean, 1986; Hibbard, 1985; House, et al.,

1982; Lowenthal and Haven, 1968; Lubben, 1988; Schoenbach, et al., 1986). The mechanisms involved are not clear (House et al.,1988).

Situation-specific measures of social support may be more strongly related to health outcomes than general measures of social support (House, 1981; Cohen and Syme, 1985) as there is some evidence that different types of support may have different effects on particular health outcomes (Wortman, and Conway, 1985; House, 1981). Also, the effect of social support and social networks may vary under certain conditions such as health status and economic situation. The importance of social support and social networks to nutrition is only beginning to be assessed.

Nutritional health is one component of health status. Social networks and their supportive functions may be key variables to consider when assessing the nutritional health of elderly women who live alone. The influence of the support that family and friends provide on the food patterns of elderly women is not clearly understood. Therefore, some understanding of the social contacts of elderly women is essential as they frequently need both physical assistance in food shopping and preparation, and emotional support (due to the loss of a spouse or the death of a friend) in order to live independently in the community.

The purpose of this research will be to address these questions: Is social support and social network

characteristics related to the food patterns of elderly widows living alone? Second, what is the relative importance of different types of social support and social network characteristics on the food patterns of elderly widows living alone? Third, does health and economic status moderate the effect that social support and social networks have on the food patterns of elderly widows living alone?

Chapter 2

Review of the literature

2.1 Social network characteristics and social support

There have been numerous investigations over the past 20 years related to the relationship between social support measures and a wide range of physiological and psychological health problems (Dean, 1986). These findings are often inconsistent. Dean (1986) and House et al. (1988) point out that there are both conceptual and methodological issues in the literature on social support and health that need to be resolved in order to clarify the role of social support in promoting health.

2.1.1 Conceptualization Issues

Presently, there is no universal agreement on the definition and measurement of social networks and social support. Chappell (1987) says: "The concept of social support remains elusive". In addition, there are many terms, often used interchangeably, such as social bonds, social networks, availability of confidants, companionship, social integration, and social contacts which refer to social support.

For the purposes of this research, a social network will refer to the people with whom the elderly widow is in contact. Assessment of a social network usually includes

the size of the network, that is, the number of people within it. It also includes a description of the relationship (children, siblings, friends, neighbours, confidants), and the frequency of contacts (daily, weekly, monthly), as well as the geographic proximity. Social support, on the other hand, is the services which the network gives to the elderly widow such as emotional support, social companionship, instrumental support (hands-on help), and informational support (Wills, 1985).

These types of support will be focus of the discussion to follow. Emotional support has also been termed esteem support, or defined as having a confidant relationship (Wills, 1985). It considers the quality of the interaction and involves love, trust, empathy and the feeling of being accepted and valued by another person in spite of personal problems (Strain, 1988; Wills, 1985). Having emotional support means having someone in whom to confide about problems and concerns (Strain, 1988).

Social companionship may provide the supportive function for social activities such as dinners, parties, visiting, and outdoor excursions (Wills, 1985). People may also be a source of support through providing hands-on assistance with instrumental tasks (Wills, 1985). Instrumental support is often termed tangible, or material aid, or the actual attention received for both basic activities of daily living, such as help with personal care

(feeding, bathing, and dressing), and instrumental activities of daily living such as help with shopping, looking after finances, mowing the lawn, shovelling the sidewalk, cooking, and cleaning house (Strain, 1988).

Providing help in times of physical injury, illness, or disability is a particularly important form of instrumental support especially for the elderly, whether it be for the short term (acute care) or long term (chronic care). At least 80% of those over 65 years of age must contend with at least one chronic disease and one-third experience some limitation of their daily activities (Chen, 1986). In spite of their illnesses, the elderly are not particularly disabled, although the need for assistance in one or another area tends to increase with advancing age since this is associated with increased functional disability (Strain, 1988). Wills (1985) indicates that ratings by respondents of instrumental support are perhaps based not so much on recalled instances of specific assistance but on the perception that network members are dependable and reliable, and that they could and would provide instrumental support if called.

Informational support is the term applied to a process through which others may provide information, advice, and guidance (Wills, 1985). Strain (1988) defined informational support in her study (Physician Utilization and Illness Behaviour in Old Age) as the availability of having at least

one person to talk to about common symptoms. This type of support provides an elderly individual with knowledge which can be used to resolve problems. Friends and family members may serve a supportive function by providing independent assessments of problems, by giving suggestions about the respondent's decisions, or by giving information about community helping agencies (Wills, 1985).

Instrumental, emotional and informational support probably come from the same sources. Other research has reported similar results. Receiving advice may be perceived as an expression of caring and concern by the other person, which may be interpreted as emotional support. It is not simple to measure informational and emotional support as completely independent dimensions. Because of this, it is important to obtain measurements of specific support behaviours and perceptions (Wills, 1985).

In addition, some researchers have looked at perceived social support as an indicator of the adequacy of the social network. Those with a small number of people in their social network may find it adequate, whereas some who have a larger number of people in their network may feel it's not meeting their needs. "Perceived social support has emerged as a prominent concept that characterizes social support as the cognitive appraisal of being reliably connected to others" (Barrera, 1986). Many measures of perceived social support incorporate two dimensions; the perception that

support is available if needed and secondly, the perception that the support they receive is adequate to meet their needs (Barrera, 1986).

Measures of perceived social support consistently show negative relationships to distress and often to measures of life stress and strain (Barrera, 1986). Dean (1986) collected data on the perception of social network support and the satisfaction with social interaction. She found that the relationship between stressful problems/events and illness was highly significant among people who report non-supportive networks. Wethington and Kessler (1986) compared both perceived support and received support in predicting adjustment to stressful life events among adults 21-65 years of age. They found that perceived support was more important than received support. They also found evidence that received support may be mediated by perceived support.

Research reported by Blazer (1982) on social support and mortality rates found that, for those aged 65 and older, perceived social support was a stronger predictor of relative mortality risks than the number of roles and attachments, and the frequency of social interaction. Perceived social support remained a stronger predictor of mortality risk even when controlling for available attachments and frequency of contact. There was a higher mortality rate for those who perceived their social support to be inadequate.

Liang et al. (1980) suggested that social integration is related to morale through one's subjective (perception) sense of integration. In their study, they controlled for such factors as financial satisfaction, socioeconomic status, and health status (sample size 962 respondents, over 65 years of age) and found that subjective interaction had a direct effect on morale whereas objective interaction had an indirect effect, mediated through subjective interaction. This means that it may be more important to assess perceived social support than actual support such as instrumental and emotional support which the elderly receive. In addition, Lubben (1988) reported that any measure of social support must also assess the need for support as the absence of support could mean that none was needed or that none was available.

2.1.2 Measurement Issues

Researchers have used a variety of instruments to measure the quantitative aspects of social networks and the qualitative aspects of social support. Thus far, there is no standardization of measurement. Social network instruments vary in terms of the network characteristics. Instruments that measure social support also vary in terms of the supportive dimensions.

Orth-Gomer and Unden (1987) assessed 17 different instruments used for measuring either social networks or

social support. Two distinct groups of instruments were identified, those that describe the quantitative aspects of the social network and social interaction, and those that describe the support, or qualitative, functions and the adequacy of social support. They found that the quantitative instruments were more easily understood by respondents, but the reliability and validity of these instruments were unknown, whereas, the qualitative instruments took longer to complete and often included questions that were not applicable to the general population, even though these instruments were often tested for reliability and validity. The investigators suggested that the 'ideal study' should include measures of the structure of the social network as well as the function of social support. Also they suggested that research is needed to define a common concept of social support, to determine its relevance for health outcomes, and to identify instruments which accurately measure the concept of social support.

2.2 The social networks and social support of elderly widows

It is important to note here that research of the specific individuals who give widows support and the types of support they receive is not as abundant as the research on people of other marital statuses. Therefore some of the research presented in the following sections is specific to

widows, whereas other researchers do not account for marital status. The following section will focus on social network components such as family, friends, and neighbours and the type of support they provide to the elderly widow.

The hierarchical compensatory model first postulated by Cantor (1979) theorized that friends and neighbours will substitute when family is not available to provide support. This model suggests that there is a ranking of particular groups for helping but if one is not available others will be called upon in rank order (Spitze and Logan, 1990).

Research reported by Chappell (1980, 1987) as well as research reviewed by Peters and Kaiser (1985) show that widows turn to different people for different tasks and they tend not to substitute for one another. In the literature, this is referred to as the task-specificity model, first postulated and investigated by Litwak (1979) and further investigated by Spitze and Logan (1990). This model suggests that family will provide assistance involving long term commitment if the widow is unable to perform some of her daily tasks. Family members, specifically daughters, would be likely to help with personal care, laundry, and cooking. Friends, on the other hand, would remain important in providing emotional support as they tend to have similar experiences and can share ways of coping with daily problems.

2.2.1 Family networks and social support

Research in Canada and the United States, in general, suggested that widows turn to family, usually children and siblings, for instrumental support such as financial aid, personal care, and help with house keeping. They tend to provide assistance involving long term commitment (Peters and Kaiser, 1985). Earlier research by Lopata (1973) suggested that siblings, and children, if they live within close proximity, were sources of comfort and pragmatic help to elderly widows in times of need. Her research strongly suggested that children were the preferred and most available resource to widows.

Research by O'Bryant (1988) also found that children were the preferred and most available resource but in their absence, sisters provided both instrumental and emotional support. Spitze and Logan (1990) found that having at least one daughter was important in predicting the number of phone calls, visits and helping behaviours. Walker and Pratt (1991) found that daughters gave both instrumental and emotional support to their mothers and that there was an increase in support with increasing age and disability of the mothers. Using paired *t*-tests, Harris and Harvey (1987) found that, among middle-aged widows, the widow's child was the most significant ($P<0.001$) source of support for decision-making and there were no significant differences in the use of other relatives, friends or professionals as

helpers.

The Ontario widowhood study confirms the active role of children in terms of providing support to elderly parents. Children are the preferred sources of support in situations where the elderly need advice, instrumental help, or emotional support (Martin Matthews, 1991).

2.2.2 Friends network and social support

Close friends also, provide emotional support. They are important to the widow's psychological well-being, that is, how good she feels about herself and her situation. They help her adapt to new roles as they tend to share common life experiences, physical limitations, common interests because of common role changes (widowhood) and cohort experiences (Chappell, 1980; Chappell, 1987). Their relationships involve reciprocity (Lubben, 1988). Chappell (1980) states that, since peer friendships rest on mutual choice and mutual need and are often voluntary, they sustain a person's sense of usefulness and self-esteem more effectively than intergenerational relationships (children).

Some researchers have found that friends will substitute when family is not available (Lopata, 1973; Cantor,1979), while other researchers have found that friends tend not to replace or substitute for a child in giving instrumental support (Penning, 1990). The elderly will make do without assistance or turn to formal

organizations for instrumental support such as house cleaning and personal care while friends still remain important in providing emotional support (Penning, 1990).

2.2.3 Neighbours network and social support

Neighbourhood ties resemble friendship in many respects but require residential proximity and are more likely to be characterized by short-term commitment (Peters, and Kaiser, 1985). Neighbours develop friendly relations more characteristic of acquaintanceships in which reciprocity is an expected behaviour. Cantor (1979) suggests that in urban areas the elderly tend to be neighbourhood bound and functional friends (friends that provide assistance) most frequently live in the same neighbourhood. Generally, neighbours provide short term assistance, meeting immediate needs such as giving a ride to the grocery store, mowing the lawn, and giving assistance in emergencies (Peters and Kaiser, 1985).

In addition to support being provided by children, friends and neighbours, siblings often provide support to elderly widows. In a Guelph pilot study, siblings emerged as an important figure in the social and emotional support systems of widows (Martin Matthews, 1991). A NewBrunswick study of elderly widows found that 22% identified a sister as being the person the widow often turns to for help.

However, the Ontario widowhood study found that siblings were rarely the first choices in terms of many types of helping situations. Widows would turn to children and friends first even though they described their siblings as "very close". Martin Matthews (1991) also reports that widowed women are more likely to depend on non-kin when worried or depressed than married women, although friends provide support across a wide range of activities and circumstances. Although some research suggested that friends and neighbours have different supportive roles, Martin Matthews (1991) reports that the Guelph study found this role distinction was blurred as both neighbours and friends were helpful resources during bereavement. She also states that widows frequently classify neighbours as friends. In short, family, friends and neighbours are all important to the elderly widow but the literature on which role each performs is not consistent.

2.3 The influence of social networks and social support on health: Evidence and possible mechanisms

A great deal of research has shown that, among the elderly, social networks and social support influence mortality and psychological well-being. However, research by Harvey et al. (1987) found that socioeconomic status, gender, age and religiosity were important variables to consider when assessing the effect of widowhood on morale.

It may be that these factors moderate the effect of social networks and social support on health outcomes. Research has only begun to explore how social networks and social support may also influence nutritional health.

2.3.1 Social network and social support effects on mortality

Several large scale, longitudinal epidemiological studies have examined the influence of social networks on mortality. One, conducted by Berkman and Syme (1979), is known as the Almeda County study. Although the data are old, this longitudinal study is a classic in the field.

Their objective was to assess the relationship between social and community contacts and mortality among independently living elderly (60-69 years of age). Their findings showed that people who lacked social and community contacts were more likely to die in the follow-up period than those with more extensive contacts. They found that women (n=387) who had fewer contacts with friends and relatives had significantly higher mortality rates. This association remained significant even when controlling for self-reported physical health, year of death, socioeconomic status, and a variety of health practises.

A more recent epidemiological study by Blazer (1982) also showed that social contact influenced mortality of the elderly. The respondents consisted of 106 men and 225 women

aged 65 and over, 152 were married and 179 were unmarried. Widows were not categorized separately from those never married. Blazer (1982) found that three parameters of social support independently predicted mortality 30 months later; roles and available attachments, perceived social support, and frequency of social interaction. The relative risk of mortality was 2.04 for those with a lack of roles and available attachments, 3.40 for those who perceived social support to be unavailable and inadequate, and 1.88 for those with low frequency of social interaction. Perceived social support had the highest predictive value of relative mortality risk, even when controlling for frequency of interaction and the number of roles and available attachments.

The author suggests three mechanisms to explain the results. First, perceived social support may affect the perception of social stressors so that they would have less of a negative effect on the individual. Stressors may not seem as severe to those with who perceive they have social support, whereas stressors may seem more severe among those persons who do not perceive they have enough social support. Second, a lack of or a low level of perceived social support may decrease the use of health services and decrease health-facilitating behaviour. Third, not having a supportive network may lead to impairment in perceived social support and may contribute directly to health risk-taking behaviours

such as smoking, obesity and alcohol consumption. Although this research did not investigate women's perceptions specifically, it suggests that it may be important to assess perception of ability of the social network to meet the needs of the elderly as well as assess the characteristics of the network. In essence, social networks seem to have an influence on mortality but the mechanism by which this occurs is still unknown.

Social networks may influence mortality through psychological well-being. The following studies presented here focus more on the qualitative aspects of social support rather than on the quantitative aspects of social networks.

2.3.2 Effects of social networks and social support on psychological well-being

Researchers have also investigated the impact of both social networks and social supports on the psychological well-being of the elderly. Research (Lubben, 1989) which focused specifically on marital status and its relationship to psychological well-being among low income elderly, included 393 widows with an average age of 78 years. One of his objectives was to determine what types of social networks are most predictive of psychological well-being as measured by the Life Satisfaction Index "A".

Lubben (1989) found that functional ability, size of the network, size of the intimate network (number of

confidants), and frequency of social contact were all significant in predicting life satisfaction scores. He also found that having more close friends seemed to moderate the effect of stress for elderly women. Widowhood had a significantly negative impact on psychological well-being once health status and social network differences were controlled.

A few researchers have focused on the role of the confidant in the psychological well-being of elderly women. Lowenthal and Haven (1968) did one of the first studies on the subject of social networks and life satisfaction. Their objective was to look at the effects of social interaction, role status and current presence of a confidant on life satisfaction among 280 elderly over 60 years of age. The majority were women who were single, either widowed, divorced or never married.

Frequent social interaction and high role status (having a number of social roles such as being a mother and an organization member) were found to be associated with higher morale scores. Seventy-five percent of widows without confidants were depressed and less than 50% of widows with confidants were depressed. Women with no confidant who increased their social interaction were more likely to be depressed (70%) than women with a confidant who reduced their social activities (44%). If a woman had no confidant and reduced her social activities, 87% became

depressed. This study seems to indicate that having a confidant, being involved in social activities, and having several roles are important to an elderly widow's sense of well-being (Lowenthal and Haven, 1968).

A Canadian study by Strain and Chappell (1982) examined the influence of social networks and psychological well-being among the elderly. Their objective was to study the interrelationship of gender, marital status, and confidant relationships and their joint effects on quality of life of 400 independently living elderly. They measured quality of life by the Life Satisfaction Index-A questionnaire. Perceived happiness, a subjective measure, was determined by a single response to the question "Taking all things together, how would you say things are these days?"

Fifty-one percent (n=205) of the sample were women, 70% were 70 years of age and older, and 34% were widowed. Fifty-four percent of widows had 2 or more confidants. Results, indicated that confidants emerged as a significant predictor of life satisfaction when demographic, health and social interaction variables were controlled. The number of confidants only explained 2% of the variance. Respondents with more confidants tended to report greater life satisfaction than those with fewer confidants. Those whose confidants were a spouse, or a child or peer family (siblings or other peer relatives) tended to report higher life satisfaction than those whose confidants were friends.

Health, as measured by the number of chronic illnesses, was the best predictor of life satisfaction and explained 8% of the variance. When they looked at perceived happiness scores, they found similar results.

Other research reported by Bloom (1990) found that social support defined as the perception that one is cared for and loved or has a confidant (intimate friend) has been related to lower levels of distress and depression. She reported on other research (not specific to the elderly) that found emotional support provided by relatives and friends to be associated with improved mental health.

The literature on the role of confidants on life satisfaction, morale, or psychological well-being of the elderly is still limited. The mechanisms are not defined for this particular aspect of the social network on well-being.

2.4 The influence of social networks and social support on nutrition: Evidence and possible mechanisms

2.4.1 Social networks and nutritional health

Few studies have investigated the relationship between social networks and nutrition among the elderly. McIntosh and Shifflett (1984) investigated the influence of a variety of social network measures on nutrient intake of 201 elderly men and women (age not reported). They found that age, sex, and income were the most important predictors of nutrient

intake. In addition, attachment to neighbours, religious salience and marital status were found to be positively related to the intake of several nutrients when controlling for sex, income, age and race. Attachment was measured by frequency of contact.

Later research by McIntosh et al. (1989) hypothesized that the risk of dietary inadequacies is reduced among elderly who have high levels of social support. In addition, it was hypothesized that the negative effects of stressful events and strain on the diet are reduced by high levels of social support. The sample consisted of 170 elderly, 82% female and the average age was 69 years. The 24-hour recall method was used to collect dietary data, nutrient intake was calculated for 12 nutrients, and principal components analysis was conducted to develop a summary of nutrient indicators. Nine vitamin and minerals loaded on the first factor and analysis on protein and calories was done separately. The stressor was financial stress and this was measured with three items that assessed the ability to afford food, clothes and medicine. Nutritional strain was defined as poor appetite and this was measured using 3 items. The validity of the "afford" and "appetite" items were confirmed with principal components analysis. Using multiple regression analysis and controlling for age, sex, race and socioeconomic status, McIntosh et al. (1989) found that the elderly with an

extensive network of friends had more adequate diets, those with greater financial stress experienced poorer appetites. Also, those with poorer appetites had less adequate diets. Companionship served as a buffer against the negative effects of poor appetite on dietary intake.

2.4.2 Social support and nutritional health

The following section will explore five conceptualizations of social support (emotional support, social companionship, instrumental support, informational support and perceived social support)and their possible link to nutritional health.

2.4.2.1 Emotional support and nutritional health

Schlenker (1984 p.113) says "Although food intake is a biological process, it has great social and emotional significance." Furthermore, Chen (1986 p.85) states that "Intimacy and morale, built around confidants, are among the more crucial symbolic concomitants of eating." Since there are changes in relationships (eg. death of a spouse, or friend) it is only reasonable to expect changes in eating patterns (Chen, 1986). Chen (1986) also states that it is erroneous to believe all old people are bereft of close friends, family ties, and daily contacts, but when breaches do occur in social networks, such as the death of a spouse or friend, they may have a profound effect on eating

behaviour.

Interaction with friends and family is a key factor in morale and life satisfaction for the elderly (Strain and Chappell, 1982; Wister and Strain, 1986; Lowenthal and Haven, 1968; Chappell and Badger, 1989; Davis and Randall, 1983), and these in turn have been linked to nutritional adequacy (Learner and Kivett, 1981; Matheson, et al., 1991). Learner and Kivett (1981) found that morale among the elderly was significantly, negatively, related ($p \leq .001$) to the number of perceived dietary problems, that is, as morale increased perceived dietary problems decreased. Although Matheson et al. (1991) did not find a direct link between morale and nutrition attitudes among the elderly, they did find an indirect link through the mediating variable, perceived social support.

2.4.2.2 Social companionship and nutritional health

Not only is social interaction linked to social-psychological well-being, but it also provides access to a wider range of eating opportunities (Schlenker, 1984). There is a general assumption that mealtime companionship and social interaction leads to improvements in food consumption and nutritional status as well as a sense of well-being of the elderly. Kinard and Kivett (1983) suggested that mealtime may be an important social event especially for the elderly population and that this may

impact on subjective well-being and eating patterns and ultimately nutritional health in later years. They attempted to link mealtime companionship and morale among rural elderly (men and women 65-99 years old). They found that the largest predictor of morale was health, not mealtime companionship. This would be expected because a large body of literature points to the importance of health to psychological well-being. Although not tested by Kinard and Kivett (1983), it may be that health also moderates the effect of mealtime companionship on morale. The effect of mealtime companionship on nutrition was not assessed by Kinard and Kivett (1983). Mealtime companionship was determined by one question, "Who eats with you at mealtimes" (family, friends, other, no one). Perhaps a stronger link between mealtime companionship and well-being would be found if several questions were used to measure this concept. An individual, living alone, may not always eat with someone but may frequently eat with others throughout a week, in a variety of settings such as home, restaurant, friend or family's home, or church event.

The loss of a spouse or friends results in the loss of eating companions for the older individual (Schlenker, 1984). It is often assumed that those who are alone are at nutritional risk, although living alone is not directly linked to loneliness. We need to distinguish between those who choose to live alone and those who are forced into the

situation (Edwards, 1983). The former is refered to as "isolates" and the later referred to as "desolates". Isolates may or may not have frequent social contact yet they like their situation, whereas desolates may not have frequent social contacts and feel very lonely. Physical isolation may be far less important than frequency of communication or exchange of messages (Schlenker, 1984).

Loneliness may contribute to the malnutrition observed in some older persons (Schlenker, 1984). Learner and Kivett (1981) found that older adults who have frequent problems with their diet had lower morale scores than population mean. They suggest that personal losses in late life can lower morale, which in turn can affect appetite and diet. The incentive to cook for oneself may be less for someone who formerly received rewards for being a food provider.

Walker and Beauchene (1991) investigated factors that may contribute to dietary inadequacies of the elderly (loneliness, social isolation, and physical health). They found that loneliness, as identified by the UCLA Loneliness Questionnaire, contributed to dietary inadequacies. Persons more socially active (measured by the social contact diary) reported less loneliness and, along with this, appeared to have higher nutrient intake. Schlenker (1984) says although it is true that a person eating alone may not feel motivated to prepare adequate meals, available evidence does not support the common generalization that older individuals

living alone have poorer diets than those with two or more persons in a household. Schlenker (1984) points out that socioeconomic status (income and education) influence both social participation and nutrition among older people living alone: urban elderly with higher incomes entertain at meals and eat in restaurants with friends more frequently than those with limited incomes. Leichter et al. (1978) in Vancouver found that those with lower incomes had fewer visitors at mealtimes.

2.4.2.3 Instrumental support, functional disability and nutrition health

Research by Walker and Beauchene (1991) investigated several factors, including health, that may contribute to the dietary inadequacy of 61 independently living elderly, age 60-94 (64% were over 70 years, 89% were women, and 56% lived alone). A physical health questionnaire was used to measure the number and the severity of disease states. Functional status analyzed by the Guttman scale analysis which included six items related to the ability of the individual to perform physical tasks of increasing difficulty. The MAR (Mean Adequacy Ratio) scores for dietary intake were negatively correlated with the health index ($r=-.35$) and positively correlated with the functional status score ($r=.28$). That is, individuals who had more diagnosed diseases of greater severity had a less adequate

diet; those with fewer functional impairments had a more adequate diet. They suggest that decreased functional ability of elderly persons resulted in poorer dietary intake, which may be related to their decreased mobility. Independently living elderly may have difficulty shopping and preparing food. The elderly may therefore begin to rely on convenience foods that are easily prepared but may be high in sodium and fat, low in vitamins and minerals, and more expensive.

So long as the elderly widow is able to do activities of daily living without help her nutritional health may not be at risk, whereas a widow who is unable to do one or several activities of daily living which specifically impact on her ability to meet her nutritional needs may be at greater risk for nutritional deficiencies. Ability to perform instrumental activities of daily living specific to food skills may have a direct impact on nutritional health. Instrumental support specific to meeting nutritional needs may buffer the impact of disabilities experienced by elderly widows.

2.4.2.4 Informational support and nutritional health

Schafer and Keith (1982) investigated the use of a social-psychological approach to the study of diet quality among elderly 60 years or older. The sample consisted of 82 elderly couples and 69 single women who lived alone. Three

aspects of the social-psychological environment and their influence on diet quality were studied: personality (self-esteem, locus of control), interpersonal relationships (between spouses) and social influences on food behaviour. Social influences on food behaviour assessed both formal and informal sources of information. Subjects were asked: "How would you rate the importance of the following decisions you make about the food you eat?" The study did not identify the decisions made by the subjects, but 11 sources of support for decisions were listed under the following headings: advertisements, government information, food classes, relatives and friends. Responses were determined using a 7-point scale ranging from "not at all important" to "very important. Diet quality, based on nutrient density scores, was assessed from diet histories of typical food intakes reported in an interview with the subjects. Only the results for single women will be discussed here. Only formal sources of food information such as government information, and food classes were significantly and positively related to the quality of their diets. Relatives and friends as sources of information had no influence on diet quality. The women in this study had a high internal locus of control and were competent in taking care of everyday needs and they may not have needed to rely on friends or family members for this type of support (Schafer and Keith, 1982). Health status and economic situation were

not controlled and these may influence diet quality as well as the need for formal informational support.

Wills (1985) says that, under ordinary circumstances, most people probably have the information necessary for effective functioning. When environmental stressors exceed the person's available knowledge and problem-solving ability, additional information and guidance becomes necessary and family and friends may provide support under these conditions. It may be that those with health problems may rely on family and friends for information about the types of foods which they should eat, and those who are widowed may rely on suggestions from family and friends on how to prepare meals for one person.

2.4.2.5 Perceived social support and nutritional health

As mentioned earlier, ratings by respondents of instrumental support are perhaps based not so much on recalled instances of specific assistance but on the perception that network members are dependable and reliable, that they could and would provide instrumental assistance if called (Wills, 1985). Also mentioned earlier, perceived social support frequently encompasses the two concepts of perceived availability of support and perceived adequacy of support. Research by Learner and Kivett (1981) focused on the perceived adequacy of support, whereas the research instrument used by Matheson et al. (1991) included items

that reflected perceived availability of support. Learner and Kivett (1981), identified discriminators of perceived dietary adequacy among the rural elderly. They categorized "satisfaction with frequency of visits with friends and relatives as generally satisfied versus somewhat unhappy as one measure of social support. They found when visiting levels were perceived as adequate, the elderly perceived fewer concerns with their diets.

Matheson et al. (1991) found that perceived social support significantly influenced both nutrition attitudes and self-efficacy when dietary changes were considered, among 132 noninstitutionalized elderly (72% were women, 73% of women were widows, and their average age was 74). Supporting their initial hypothetical model, they found that perceived social support had a direct effect on predicting self-efficacy to make dietary changes. Although not predicted initially, perceived social support was also found to have an indirect effect on self-efficacy through nutrition attitudes.

2.4.2.6 Mechanisms by which social networks and social support may influence nutritional health

It may be that social support/networks buffer the impact of being an elderly widow living alone on both psychological well-being and nutritional health. Gottlieb (1985) says people use resources in their social environment

to moderate or buffer the impact of life stressors (such as widowhood) on their health.

A recent study by Mor-Barak et al. (1991) supports earlier findings (Cobb, 1976; Cassel, 1976; and Kaplan et al. 1977) that social relationships can be protective of stressful life events. They conducted a large-scale 6-18 month longitudinal study of moderating versus direct effects of social networks on major life events and the health of low income elderly. The mean age of the subjects was 78 years. Seventy-three of the sample were women and 67% of these women were widows. After controlling for objective and self-rated health measures, functional ability, and personal characteristics they found a significant interaction between social networks and major life events. That is, the social network of the elderly may act as a buffer against the effects of major life events on their health.

Wills (1985) believes that the buffering effects of social support depends on a relationship between the specific need(s) of the user and the function(s) provided by available supporters. Bloom (1990) says that social networks may influence health outcomes directly by enhancing motivation to practise adaptive health behaviours, or indirectly by providing information. Support may encourage the individual to maintain health promoting behaviours such as exercising and eating low fat foods, or provide

instrumental support such as a ride to a medical appointment or a ride to the grocery store.

2.5 Situation-specific measures of support

Situation-specific measures may be more strongly related to health outcomes than general measures of social support (House, 1981; Cohen and Syme, 1985). Research related to social support has relied on either structural assessments of social networks, such as the size of network and frequency of contact with family and friends, or general measures of perceived support, which identifies abstract types of support (Wortman and Conway, 1985). Specificity in measurement is important as this may shed some light on the mechanisms through which support may influence health as there is some indication that different types of perceived support may have different effects on particular health outcomes (Wortman and Conway, 1985; House, 1981).

Generally, the individual receives multiple types of support from the same persons such as emotional, instrumental, informational, and social companionship. Whether the types and sources of support are important and perceived as helpful, depends on the nature of the problem under study (House and Kahn, 1985; Wortman and Conway, 1985). House and Kahn (1985) say it is important to choose or construct measures of social support according to the purpose of the research allowing for the constraints of time

and resources. This type of information may be useful to health care professionals in developing interventions that enhance the support available to the person with the health problem.

In summary, although there is no universal agreement on the conceptualization or measurement of both social networks and social support, the literature does suggest that having a network of family and friends, that provide a variety of supportive functions (emotional, instrumental, informational support), is important not only in terms of mortality rates, but also in terms of the psychological well-being and the nutritional health of the elderly. The literature also suggests, that it is not so much the actual support received that is important to the elderly, but the perception that support is available if needed.

The mechanisms by which social networks and social support influence mortality, psychological well-being and nutritional outcomes are not clear, although it is suggested, that social networks may be having an indirect effect by providing the social support that is needed. House (1981) suggested three ways in which support may reduce the impact of a stressor on health. Support may reduce the importance of the perception that the situation is stressful, it may facilitate healthful behaviours such as improved food selection, exercising, and sufficient rest or

it may subdue the neuroendocrine system so that people are less reactive to perceived stress.

Wortman and Conway (1985) and House (1981) state that specificity in measurement of supportive behaviours is needed as this may identify the mechanisms through which support can influence health. Different types of support may have different effects on particular health outcomes. Therefore, research is needed to identify specific types of nutrition-related support and network characteristics that may be important determinants of nutritional outcomes. It is also important to determine if other factors such as health and economic situation moderate this effect.

Chapter 3

Research Questions, Hypotheses, Measurement, Study Design

3.1 Research questions

The present study addressed three questions:

1. Are nutritional support and social network characteristics of elderly widows living alone related to their food patterns and to their interest in eating and food preparation?
2. What is the relative importance of different types of nutritional support and social network characteristics on the food patterns and interest in eating and food preparation of elderly widows who live alone?
3. Do the control variables (health status and economic situation) have a direct effect on food patterns and interest in eating and food preparation, or, do they moderate the effect of nutritional support and social network characteristics on the outcome variables?

3.2 Hypothetical model

Figure 1 illustrates two possible sets of hypotheses depending on the influence of the control variables, health status and economic situation. The control variable may act only on the dependent variables, as shown by the diagonal line, or may moderate the effect of the independent variable on the dependent variable, as shown by the vertical lines.

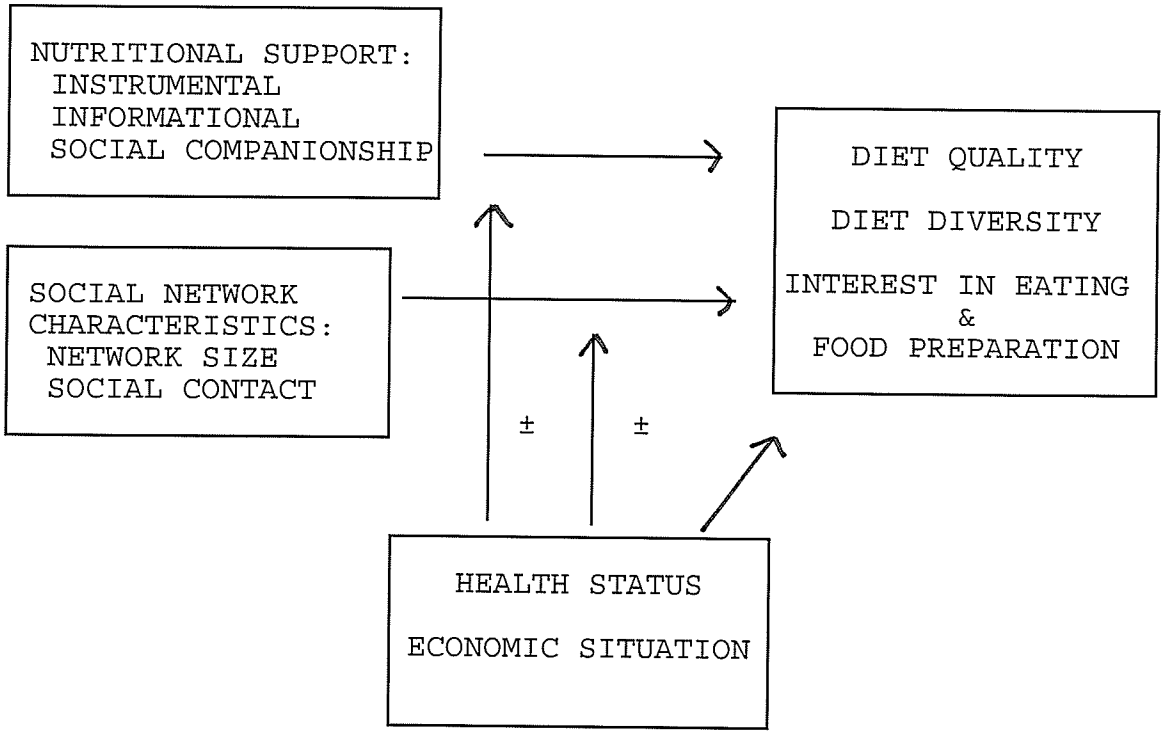

FIGURE 1. Hypothetical model of effects of nutritional support and social network characteristics on various nutrition outcome variables

The first hypothesis examined the effects of the independent variables on the dependent variables when the influence of the control variables were removed. It was hypothesized that, nutritional support and social network characteristics would be positively related to food patterns and interest in eating and food preparation, when health status and economic situation were removed.

The second hypothesis suggested that the control variables may have a moderating influence. The effects of nutritional support and social network characteristics on food patterns and interest in eating and food preparation would depend on health status and economic situation. For example, those who have greater functional disability may benefit, in terms of better diet quality, from more nutritional support and a larger network than those who have less functional disability. Secondly, more nutritional support and a larger network may have a greater impact on the outcome variables among those who have few economic resources and no disposable income than among those who have economic resources remaining after expenses are met.

It was further speculated that, nutritional support would be more strongly related to food patterns and interest in eating and food preparation than social network characteristics. In addition, instrumental support was hypothesized to be the strongest predictor of food patterns and interest in eating and food preparation.

3.3 Study Design

3.3.1 Cross-sectional design

Due to a lack of research in this area, an exploratory study was proposed using a cross-sectional survey design. A pretest was conducted to determine if there were any problems with understanding the questionnaire to be used in the study and the method of collecting dietary information. The larger, cross-sectional survey was used to test the hypotheses and model.

3.3.2 Time schedule for implementing the study design

The timetable for data collection is shown in Table 1. After initial contact was made by letter, pretest interviews were conducted to refine the questionnaire and dietary methods if needed. Time was allowed between pretest and larger survey to revise instruments. All of the study methods and procedures were approved by the Ethics Committee of the Faculty of Human Ecology, University of Manitoba.

TABLE 1

Timetable for data collection

September, 1992	Submitted research protocol to Ethics committee
October, 1992	Phase I -first contact letters sent -pretests conducted -analyze pretest -revised instruments
November - December, 1992	Phase II -second set of contact letters sent -larger survey began
December - February, 1993	-third set of contact letters sent -completed data collection

3.3.3 Selection of subjects

3.3.3.1 Selection criteria

Subjects for the pretest (n=5) and the final survey (n=41) included women who were 70-85 years of age, widowed at least 5 years, and who lived independently in the community in Winnipeg, Manitoba. Widowhood is the marital status most prevalent for women 70 and older. Married women were excluded from this study because they differ dramatically from widows as they do not live alone, have not undergone the same adjustments to widowhood, and are likely to have higher income. The presence of a spouse may have an influence on their food patterns, as well as on their perception of nutritional support and social network size. Also, married women are excluded so that the homogeneity of

the sample will be improved. It is important to have a homogenous sample when the sample size is small in order to detect a relationship between the independent and dependent variables. Too many extraneous variables may cloud the results.

Women who were widowed less than five years were excluded from this study because length of time widowed has been found to be associated with changes in both health perceptions and social support (Ferraro et al. 1984; Bankoff, 1983). Those recently widowed rate their health as negative to a greater extent than those who have been widowed for a longer period of time. Women who have been widowed one to four years are more likely to increase their involvement in friendship networks. Ferraro et al. (1984) suggest that the widow is attempting to find and test new relationships and will later settle on those most satisfying. Also, the type of social support needed differs depending on the phase of adaptation to widowhood such as the crisis or transitional phases (Bankoff, 1983). The women in this sample were selected so they would no longer be in the crisis phase of adaptation to widowhood.

Widows living with others were excluded from this study as this living arrangement may impact on their perception of nutritional support, size of their social network and food patterns. Living arrangements excluded from the study included situations where food was provided either by paying

room and board or receiving food from the formal support system such as the Meals on Wheels program and congregate meal programs. These elderly women were excluded because they do not have responsibility for their total food preparation.

Women aged 75-85 years were initially selected because this is the peak age of widows living alone and they represent the most rapidly expanding segment of Canada's population (Women in Canada, 1990; Stone and Frenken, 1988; National Council of Welfare. 1984). Also, with age there is a difference in self- ratings of health. Although the "old-old" (75+)have more health problems, they tend to be more positive in rating their health than those 65-74 years (Ferraro, 1980). It is important to obtain a homogenous sample to prevent variables such as age difference in self-ratings of health to confound the results.

Men were excluded from this study to increase the homogeneity in the sample selected. There may be gender differences in health assessments, economic situation, social networks and nutritional support and food patterns. Although analysis of gender differences would be interesting, it was outside the scope and purpose of this study. Nevertheless, in this study the age criteria of 75-85 was dropped and widows aged 70-74 were added in order to increase the sample size.

These women were selected because they may rely on

their social network for support to live independently in the community. Research indicates that this support has some impact on the nutrient intake and attitudes toward nutrition of the elderly (Matheson et al. 1991; Walker and Beauchene, 1991; McIntosh and Schifflet, 1984; Schafer and Keith, 1982; Learner and Kivett, 1981). Therefore this may be a sensitive population with respect to the impact of nutritional support and social networks on the diet quality, diet diversity and interest in eating and food preparation of the elderly.

3.3.3.2 Source of sample and selection of subjects

The sample was selected from a data base accessed through the Centre on Aging at the University of Manitoba. These women had previously participated in a study by the Centre on Aging. This research focused on living arrangements, primary care, and the relevance of each for the utilization of formal health care services (Chappell, 1991; Chappell, 1990; Penning, 1990; Penning and Chappell, 1990).

The Centre on Aging conducted the study in 1985. The subjects were randomly selected among the elderly living in Winnipeg from the Manitoba Health Services Commission. The overall response rate was 71%. In-home interviews were conducted with a stratified random sample of 1,284 noninstitutionalized respondents aged 60 and over living in

Winnipeg, Manitoba. Stratification was by living arrangement. The sample consisted of 301 (23.4%) married individuals living with their spouses, 423 (32.9%) living alone, and 560 (43.6%) living with someone other than a spouse. This was a representative sample of elderly individuals living in Winnipeg, with over half of the respondents being female (58%).

The sample for the present study was selected from the 423 individuals who lived alone in 1985. The sample size was limited to the number of women who met the selection criteria. Two hundred and seventy-four of those who lived alone were women and 64.8% of these women were widowed. One hundred and twenty-five met the criteria for this study. Addresses and phone numbers were confirmed using the Winnipeg Telephone Directory, the Henderson Directory and the Who's Called list of telephone numbers for Winnipeg. The addresses and phone numbers of 45 women could not be found. This reduced the possible sample to 80 women. Two women who were friends of one of the respondents and met the criteria were also contacted.

There are several problems with external validity using this cross-sectional survey design. External validity affects the generalizability of the results. The main problem is the selection of the sample as they were chosen from among participants of a previous study. These were second time participants. Although the original sample was

randomly chosen, individuals may or may not participate on the basis of their previous experience in a research project. Only those who had a positive response earlier may have decided to participate in this research. To encourage these women to be involved, every effort was made to make participation easy through flexibility in scheduling interviews and to prevent drop-out by keeping respondent burden reasonable.

3.3.4. Instruments

The instruments used for collecting dietary data are the food record assisted 24 hour recall. A structured interview schedule, designed for this study, was used to collect data on all other variables. This interview schedule drew on standardized questions used in other studies as well as questions developed specifically for this research. Variables were measured according to the procedures described under 'measurement' (section 3.4.). The interview schedule used in the home visits and the 24 hour recall procedure are shown in Appendix B.

3.3.4.1 Twenty-four hour recall

Food intake data was collected using the 24 hour recall method. This method recalls the actual intake of food on a specific day and is used to assess current food intake (Bingham et al. 1988). In their review of the 24 hour

recall method, the investigators found that several studies reported that this method gives acceptable group means while others found that the recall method underestimated mean intakes. These seemingly inconsistent results may be due to differences in the study design, how quantities have been estimated and how the results have been expressed. Posner et al. (1982) suggested that this method yields accurate and reproducible estimates of the mean intake of groups of individuals as long as standardized procedures are used during data gathering. In a comparison study of the 24 hour recall versus the one-day food record for 2,667 individuals 65 years and older, Fanelli and Stevenhagen (1986) found that these two methods gave similar estimates of group means for energy and nutrient intakes. They concluded that both methods appear to be equally effective for the collection of group dietary information from non-institutionalized, elderly adults who have similar characteristics.

The advantages of the 24 hour recall are that it is noninvasive as it requires little time or cooperation by the subject, does not require skill in reading and writing, should not alter eating habits, and provides a valid estimate of average nutrient intakes of a group (Sanjur, 1982; Lechtig et al. 1976).

The main disadvantages of this method is based entirely on the subject's memory of food eaten and judgement of amounts consumed. Error in measurement may occur due to

error in memory such as estimating quantities of foods eaten or the omission (or inclusion) of food items (Gary and Koehler, 1990). This can be minimized by a carefully conducted standardized interview procedure (Bingham et al. 1988). Also memory strategies can help improve the ability of the elderly to recall the foods consumed the previous day. Campbell and Dodds (1967) and Krall et al. (1988) suggested some memory strategies to be used to improve dietary recall with the elderly. Memory strategies are conscious efforts to improve the retrieval of information from memory (Krall et al. 1988). The most commonly used strategies when using a recall method are note-taking, placing an object or note in a conspicuous place and rehearsal although these have not been used previously with the 24 hour dietary recall method (Krall et al. 1988). In the present study respondents were encouraged to use their notes of foods consumed, the previous day, as a memory aid during the telephone recall interview.

A more serious problem is low precision because of large intra-individual or day-to-day variation in food intake (Gibson, 1990; Beaton et al. 1979). The reliability of the estimate of an individual's usual intake can be improved if there is an opportunity to obtain several dietary recalls for the same individual (Beaton et al. 1979). Precision can be improved by obtaining several 24 hour recalls for the same individual (Gibson, 1990).

Therefore, in this study food was recalled for three days.

3.3.4.1.1 Telephone administered 24 hour recall

The telephone administered 24 hour recall method was used because this method has been shown to be successful with the elderly and can improve cost-efficiency of collecting repeated samples of dietary data from respondents (Posner et al. 1982). Posner et al. (1982) tested the operational feasibility and validity of telephone recalls to obtain estimates of mean nutrient intakes and distributions of energy and eight nutrients among low-income elderly. The age range was 65-74 years and consisted of 162 women and 42 men.

In Posner and colleagues's study, trained interviewers rather than nutrition professionals conducted the interviews. Registered nutritionists monitored random telephone interviews in order to ensure interviewer adherence to established protocols. These data were compared with the 24 hour recall data obtained by personal interview on low-income elderly surveyed in 1973 in the Health and Nutrition Examination Survey (NHANES). The investigators found estimates of the means and distributions of nutrient intakes to be very similar. Study means were within 10% of NHANES values for the majority of the nutrients for both men and women. Posner et al. (1982) suggested that the telephone method can improve the cost-

efficiency of collecting repeated samples of dietary data from respondents although they did not do repeated recalls in their study. They also stated that repeated 24 hour recalls are important in establishing day-to-day variation in an individual's nutrient intake thereby defining the variability in a given respondent's usual pattern of nutrient intake. In addition, they suggest that repeated recalls would improve estimates of individual as well as group's nutrient intake.

Other authors have also used the telephone recall method with groups other than the elderly. Krantzler et al. (1982) validated the telephone recall and food record through observation of actual food consumption of 107 young adults. Four telephone-assisted approaches were used to measure food consumed by college students in a dormitory cafeteria. Fourteen, six hour, recalls and seven 24 hour recalls were conducted by telephone using a trained interviewer. The other two approaches were seven-day food records reported by telephone to an interviewer or to a recording device. Actual food consumption was observed in the cafeteria to validate the telephone recall and telephone record data. Their results indicated that it is feasible to collect accurate data on food intake using the telephone. The seven-day food record gave the best validity results (87% food item agreement). The 24 hour recall showed a slightly lower validity score (69% food item agreement) than

the 3 day record and 6 hour recall (75% food item agreement) although this difference was not found to be significant.

Achterberg et al. (1990) used the telephone recall with 25, 8-10 year old children. They found significant correlations between the child's 24 hour telephone recall and the parents record of their child's food intake. Achterberg et al. (1990) suggested that the telephone recall method was a reasonable means of collecting dietary information in community-based research.

3.3.4.1.2 Food record assisted 24 hour recall

To improve precision of estimating food intake in this study, standardized interview techniques were used. Three recalls were conducted on nonconsecutive days and memory strategies were used. The first 24 hour recall was collected during the home visit. The following two recalls were collected by telephone on nonconsecutive days. Nonconsecutive days are preferred for collecting several recalls rather than consecutive days because they yield greater statistical information about the usual intakes of groups of individuals (Gibson, 1987). Two recalls were collected for week days and one recall was collected for a weekend day as individuals may have different eating patterns on weekends. Failure to include weekend days can lead to underestimation of usual intake (Gary and Koehler, 1990). Recalls were collected over a period of two weeks.

To obtain an estimate of food eaten during the telephone recall, respondents were asked to indicate in their food diary the amount eaten. It was important to keep the respondent burden low so they were given the option of measuring the amount of food using their kitchen measuring utensils or using their best guess. A ruler was given to the respondents so they could actually measure at the time of eating, or estimate during the telephone recall, the length and width of foods such as cakes, pizza, fish, cheese, meats. They were also given a ring of thickness indicators (10 x 1/2cm) to estimate the thickness of foods such as meat, cakes, cheese. During the telephone recall, the investigator referred to the list of dishes and utensils used and asked the respondent which dishes she used.

3.3.4.2 Food portion estimate

To estimate food intake using the 24 hour recall method, Campbell (1992) suggested using the measurements of utensils and amounts regularly used by each respondent. She indicated that, in her experience, the elderly are more comfortable using cups, bowls, and spoons they are familiar with instead of two dimensional portion size instruments. Therefore, during the first 24 hour recall, respondents were asked to show the utensils they used. These utensils were measured by the investigator to the amount consumed as indicated by the respondent. The investigator used

standardized tools to measure amounts. For example, if a respondent had a glass of juice, the investigator asked the respondent to show the glass and the glass was then filled with water to the amount of juice she indicated. Then the investigator poured the water into a measuring cup to obtain the amount consumed. To estimate food mixtures, the total volume eaten was obtained first and this was followed by the amount of each component. Recipes were written out to determine the amount of each component in the food mixture. A ruler and food models were also used to help describe amounts.

Following the 24 hour recall, portion size estimates of foods frequently eaten were obtained. This information was used as a reference for estimating food intake during the telephone recall. For example, this question was asked: "When you have cold cereal for breakfast, which bowl do you usually use? How high do you usually fill it? I will put some water in the bowl to the height you indicated and measure the amount in this measuring cup." A description of the dishes and utensils and amounts indicated were entered into a record (Appendix B). This was done for foods difficult to estimate such as hot and cold cereals, soups, stews, and desserts that bowls are used for; beverages such as coffee, milk, and juice; rice, pasta or mashed potatoes; peanut butter, jam, honey, and sugar; butter, margarine and mayonnaise.

3.4 Measurement of variables

3.4.1 Outcome variables

Nutrient intake has often been used to evaluate nutritional health. For example, McIntosh and Shifflett (1984) used nutrient intake as their dependent variable when assessing the influence of social support on nutrition outcome measures. One of the difficulties was obtaining information about the overall quality of the diet versus intake of specific nutrients. No rationale was given as to why some nutrients have positive or negative associations with social support variables. Investigation of the overall quality of the diet and food patterns, such as diet diversity, may provide more information about the influence of network members and social support on nutritional health as there is likely to be greater variability in diet quality and diet diversity than in the intake of specific nutrients among participants. Therefore the chances of finding a significant relationship may be greater.

Diet quality and diet diversity were the outcome variables chosen for this research. Interest in eating and food preparation was also chosen as a nutritional outcome variable. There are assumptions that having company to eat with and having someone to share information about food, such as a recipe, and having a network of family and friends and frequent contact with them will help maintain an

interest in eating and preparing food. Opportunities to socialize and share meals can help rekindle an interest in eating and also lead to greater variety in food use (Coleman, 1993). Although appetite was not included in the hypotheses, there was some thought that nutritional support and social network characteristics could also influence appetite.

3.4.1.1 Diet quality

The diet quality score was based on the extent to which the diet met the recommended number and size of servings of the four food groups in Canada's Food Guide to Healthy Eating. An adaptation of the procedures of Caliendo et al. (1977) and Guthrie and Sheer (1981) was used to determine diet quality. Diet quality was calculated as the sum of the points assigned to the four food groups plus three additional categories (vitamin A, vitamin C and intake of vegetables) with a maximum score of twenty-three as calculated below:

Two servings of milk products = five (2.5 points per serving)
Two servings of meat and alternatives = five (2.5 points / serving)
Five servings of vegetables and fruit = five (1 point per serving)

Five servings of grains = five (1 point per serving)

Additional categories:
One point for including two vegetables
One point for including an amount of fruit or vegetable that contained > 200 RE of Vitamin A on at least one of

the three days
One point for including an amount of fruit or vegetable that contained > 40 mg of Vitamin C.

Scoring was truncated at a minimum of one serving per day for vitamin C and one in 3 days for vitamin A, those lower than one were given a score of zero.

This scoring system has the advantage of reflecting balance in the diet. The scores are truncated at the maximum number of servings so that an excess in one food group cannot mask a deficiency in another (Schumilas et al. 1984). Extra points for including 2 vegetables and one vitamin A rich vegetable or fruit were included as these foods had been the focus of specific statements in Canada's Food Guide prior to the release of the Canada's Food Guide to Healthy Eating in 1992. Vitamin A is stored in the body therefore one point was given if a serving was consumed on at least one of the three days. An extra point was given for including a Vitamin C rich vegetable or fruit as this increased the variability of the diet quality scores.

The dietary quality score was calculated as the sum of the points assigned to each food group and the 3 additional categories to give a maximum possible score of 23. The diet quality score was calculated as the 3-day mean and this was used for later analysis.

Canada's Food Guide to Healthy Eating (1992) recommends a range in the number of servings and for this study the lower end of the range was used in the scoring of diet quality. The size of servings can vary in all groups. In

the Meat and Alternatives group, for example, 50-100 grams of beef, poultry or fish equals one serving. Appendix E includes the recommended number of servings in Canada's Food Guide to Healthy Eating (1992) and Appendix F lists the standards used for this study.

Where possible, combination foods were separated into their component parts and included in the appropriate food group. Foods that were part of the "Other Foods" group were not included in the diet quality score. This group included fats and oils such as margarine and salad dressings; sugars such as jams, honey and sugar; and foods high in fat and/or sugar such as cookies, and chocolate bars. Other foods also included beverages such as coffee, soft drinks, and alcoholic beverages, and condiments such as pickles, mustard and ketchup.

The internal validity of this method was tested by Guthrie and Sheer (1981). Dietary quality scores were calculated from 24-hour recalls of 212 subjects. These scores were compared with the nutrient composition of the diet as calculated by computer using food composition tables and the same 24-hour recalls. The abbreviated table of food composition are described by Pennington (1976). The correlation coefficients indicated a strong association between food group scores and nutrient adequacy ratios. For each of 12 nutrients examined, as the dietary score increased, the nutrient adequacy ratio also increased. The

authors concluded that the simple dietary score can be substituted for the more complete and time consuming dietary analysis when used as an evaluation tool.

3.4.1.2 Diet diversity

Diet diversity is a measure of variety. The diet diversity score was defined as the number (variety) of different foods consumed (Caliendo et al. 1977; Krebs-Smith et al. 1987). Krebs-Smith et al. (1987) examined the effects of overall dietary variety on dietary quality. The data were obtained from the USDA's 1977-78 Nationwide Food Consumption Survey which included 3,701 individuals. Overall variety was measured by the number of different foods reported in 3 days, regardless of the food groups represented. Dietary quality was assessed in terms of nutrient adequacy and was measured by the Mean Adequacy Ratio (MAR) for 11 nutrients. Variety was also assessed among major food groups and within major food groups. The authors found that differences in nutritional adequacy was not explained any better by measuring variety among the major groups than by measuring within the major food groups. In general, the authors found that an increase in overall variety was associated with a greater increase in MAR scores. Also, when overall variety was high, choosing foods from different major groups had no effect on the MAR score as those subjects with high overall variety probably had

high levels of variety among the food groups. When the number of foods was low, choosing foods from all the food groups was associated with a substantial increase in the MAR score. The authors suggested that this indicates that, when food intake was limited, food choices should be varied from all food groups. Campbell et al. (1982) also found that the count of the number of foods consumed had the same potential to predict biochemical outcomes of vitamin status as the nutrient-based measures such as MAR scores.

The procedure adapted for this study, to calculate the diet diversity score, was developed by Sanjur and Romero (1975) and has previously been used by Caliendo et al. (1977) and Campbell et al. (1982). To measure diet diversity, all foods consumed initially were listed using minimal groupings. Foods were listed separately, with minimal grouping, and combination foods were separated into their component parts as much as possible (Appendix G).

In the second step, the number of the foods in the minimal grouping list from each day of the 3-day recalls was tallied. If the same food appeared more than once in a day it was counted only once. Thirdly, the number of 3-day recalls in which a given food was found on at least one day was counted. Lastly, a food diversity score for each subject was calculated as the 3-day mean number of all foods consumed with the exception of those listed below.

Foods not included in the diet diversity score were

concentrated sugars (jams, jellies, honey, sugar), beverages (coffee, tea, soft drinks, herbal teas, ovaltine, fruit drinks, and alcoholic beverages), condiments, and added fats (margarine, butter, oil salad dressings, gravy, and creamers) as these foods only increase energy but do not increase the nutrient intake of the diet (Krebs-Smith et al. 1987).

3.4.1.3 Interest in eating and food preparation

Interest in eating and food preparation score was conceptualized as the enjoyment or pleasure of eating and preparing meals. Although interest in eating and food preparation do not appear to have been investigated prior to this research, attitudes toward nutrition have been the focus of some research. Learner and Kivett (1981) showed a positive association between perception of social support and fewer perceived problems with the diets. Among 402 elderly, those who perceived visiting levels to be adequate also perceived fewer problems with their diets. Matheson et al. (1991) also found that perceived social support significantly influenced both nutrition attitudes and self-efficacy when dietary changes were considered among 132 noninstitutionalized elderly. Perceived social support was found to have an indirect effect on self-efficacy through attitudes to nutrition.

Interest in eating and food preparation reflect the

enjoyment or pleasure around eating and cooking whether or not one has company for meals. Interest in eating and food preparation may be influenced by the social network and the amount of social contact as well as the type of support provided. That is, those who have a larger social network and have more social contacts may have more opportunity to eat with company and exchange recipes and ideas on cooking and this may help maintain enjoyment in eating and preparing food. Also those who have someone to volunteer ideas of what to cook or someone to help with grocery shopping or friends who provide companionship may enjoy eating more and enjoy food preparation activities.

The enjoyment of eating and preparing foods was measured by a 16 item agree/undecided/disagree instrument developed by the author as previously developed instruments were found to measure this variable among elderly women. It was conceptualized that interest in eating and in food preparation were two dimensions of the overall interest concept. Initially 8 statements were developed to reflect interest in eating and 8 items to reflect interest in food preparation. Statements were worded in both a positive and a negative format. For an item a score of one indicated interest whereas a score of zero indicated a lack of interest or an undecided response. A high final score indicated more interest and a low final score indicated less interest.

3.4.1.4 Appetite

Although not included in the hypotheses there was some thought that nutritional support and social network characteristics may influence appetite. Therefore, a single item measure of appetite was included in the interview schedule and included as an outcome variable for statistical analysis.

McIntosh et al. (1989) found that the size of the social network, combined with the frequency of social contact, had a positive effect on appetite among a sample of 170 elderly (82% female, average age 69). Those with a larger friendship network had better appetites than those with a smaller friendship network. They also found that appetite declined as the amount of companionship increased among those who had financial problems. There is also the assumption that, among the elderly, appetite can be improved by emphasising the social aspects of eating (Moore, 1991).

Zeman (1983, p.558) defined appetite as a "natural desire for a specific food that is stimulated by the sight, smell, and thought of food." An assessment of appetite relies on a subjective response. The operational measure of appetite in this study was the question was "Would you describe your appetite as...". The response categories were excellent, good, fair, poor. A score of 4 was given for appetite described as excellent while a score of one was given for appetite described as poor. This item and scoring

method has been used in previous nutrition research with the elderly (Woolcott, 1991; Schlenker, 1984).

3.4.2 Independent Variables

3.4.2.1 Nutritional support

The nutritional support score was based on the responses to the nutritional support scale which assessed situation-specific perceived support. That is, the nutritional support scale was used to assess the perceived instrumental support for grocery shopping and meal preparation; perceived informational support for information on problems related to meal preparation; and perceived social companionship support for company at meal and snack times. A high total score reflected high levels of perceived nutritional support.

Perceived social support is a concept that characterizes social support as the cognitive appraisal of being reliably connected to others (Barrera, 1986). Perceived social support consists of two dimensions, perceived availability and perceived adequacy of supportive ties (Barrera, 1986). Wills (1985) conceptualized five types of support: esteem, informational, instrumental, social companionship and motivational. He also suggested that ratings by respondents of social support are based not so much on recalled instances of specific assistance but on the perception that network members are dependable and

reliable; that they could and would provide assistance if the need was identified.

The purpose of developing an instrument for this study was to determine whether support was perceived to be available for specific situations that have nutritional implications. Informational, instrumental, and social companionship support lend themselves to specific situations that could affect food intake patterns directly. Examples are having someone to talk to about a specific problems associated with eating certain foods, having someone to prepare meals if necessary due to health constraints, and having more opportunities to eat with family and friends at home or away from home.

Research on the effects of social support on nutrition outcome measures have relied either on structural assessments of social networks (McIntosh and Shifflet, 1984; McIntosh et al. 1989; Schafer and Keith, 1982; Walker and Beauchene, 1991) or global measures of perceived support (Learner and Kivett, 1981; Matheson et al. 1991). The sources of support which are important to nutrition and perceived as helpful, do not appear to have been assessed in research on social support and nutrition. Nutrition specific social support measures may be more strongly related to food patterns, interest in eating and food preparation and appetite than general measures of social support.

Informational support is a term applied to a process through which other persons may provide information, advice and guidance (Wills, 1985). For this study, informational support was defined as a process through which a widow perceives there are other persons who can provide information, advice and guidance regarding food-related issues. Instrumental support was defined as perceiving that there are other persons who can provide hands-on assistance with situations like grocery shopping and transportation to the grocery store. Social companionship may provide an important supportive function because of the possibility for social companionship for enjoyable social activities (Wills, 1985). Social companionship support was defined in this study as the perception that there is someone available to share meals or snacks with whether they be family or friends.

Having nutritional support was expected to influence food patterns and interest eating and food preparation. Those with more support were expected to have greater diet diversity and better diet quality than those without support. Also having nutritional support was expected to influence the enjoyment of eating and preparing foods. Exchanging recipes and having a friend to help with grocery shopping and having company for lunch may influence the enjoyment of eating and preparing food.

The other dimension to perceived social support is

perceived adequacy of supportive liaisons (Barrera, 1986). Not having someone to rely on for transportation to the grocery store and having to walk or take the bus may mean purchasing a smaller amount of food and this may mean less variety and poorer diet quality because of inadequate food consumption. Not having enough social companionship for meals or snacks may lead to a lack of interest in eating and preparing food and poorer appetite. Also not having someone who gives good advice about food issues may lead to poor food choices. Consequently, perception that support is not adequate may be an indicator that nutritional needs are not being met.

Perceived nutritional support was measured by a 20 item agree/undecided/disagree instrument developed by the author. The development of the instrument followed the format of the ISEL instrument (Interpersonal Support Evaluation List) used to assess perceived social support (Cohen et al. 1985). The subscales were informational support, instrumental support and social companionship support, and perceived adequacy of support.

Initially the informational support and instrumental support subscales each consisted of seven items and the social companionship support subscale consisted of six items. Each item was scored 0-1. Statements were worded in both a positive and negative format, therefore sometimes an agree would be one and for another statement an agree would

equal zero. A score of one indicated perceived support was available for that item and a score of zero indicated a lack of perceived support available for that item. An undecided response was also scored zero as it did not indicate support to be available. Scores were summed for each dimension. A high score for a subscale indicated more perceived support for that category (e.g. instrumental support); and a low score for a subscale indicated less perceived support for that subscale.

Perceived adequacy of nutritional support was assessed by asking if the respondent relied on someone for instrumental support such as help with grocery shopping. If she answered yes she was then asked two questions to assess if the assistance was adequate. This format was also used to assess adequacy of actual support for transportation to the store and meal preparation. One item assessed the adequacy of informational support, and two items assessed the adequacy of social companionship support.

Perceived adequacy of instrumental support item was scored 0-2. If the respondent did not rely on anyone for assistance, she received a score of 2. If she did have assistance, two statements were used to assess the adequacy of this support. Each item was scored 0-1; a score of 1 indicated that the support was adequate, a score of 0 indicated that the support was inadequate. Those who were undecided in their response, also received as score of zero,

as mentioned previously. The scores for each of these two statements were summed to get a total score for each instrumental item and the score ranged from 0-2. This format was used for grocery shopping, transportation to the grocery store and meal preparation.

Each item that assessed the perceived adequacy of informational and social companionship support was scored 0-1. Two indicated that the support was perceived to be adequate. A score of 0 indicated that the support was perceived to be inadequate, or an undecided response was given. The responses for perceived adequacy of support were summed to give a total score for this scale.

The need for support was not included in the questions. It may be that those who didn't rely on others for help may not need the help. On the other hand, it may be that some who didn't rely on others may need help. This needs to be addressed in future research.

3.4.2.2 Social network

Social network score was based on the size of the social network and the frequency of social contact using a scale previously developed for research with the elderly (Strain and Chappell, 1982; Strain, 1988; Chappell and Segall, 1989; Penning and Chappell, 1990). Widows who have a larger social network and who see friends and family frequently have more people on which to draw for nutritional

support. Therefore they may have greater diet diversity and better diet quality than those with small social networks and those who see friends and family infrequently. Also having more people to interact with may help maintain an interest in eating and preparing food.

Social networks were evaluated by a series of questions previously used in research of the elderly (Strain, 1988; Chappell, 1980). Social network questions consisted of two components: network size and the frequency of social contact. Size included the number of brothers, sisters, sons, daughters, other relatives, close friends and neighbours within the network. Responses for all of the above categories were summed to obtain the size of the total network. Also the size of the family network, the size of the friendship network, and the size of the friends and neighbours network was measured by adding the responses in the appropriate categories.

Frequency of social contact was measured by the number of daily and weekly contacts with network members. A distinction is sometimes made between face-to-face contact, telephone, and letter contact but Strain and Chappell (1982) found that these forms of contact are highly correlated. The frequency of face-to-face contact with relatives, and the frequency of written or phone contacts were correlated ($r=0.53$). Frequency of contact with friends by phone, letter or face-to-face was highly correlated ($r=.70$).

Individuals with a high frequency of face-to-face contact also tended to have high amounts of telephone and letter contact.

3.4.3 Control Variables

Health status and economic situation were chosen as control variables as these may exert an influence on food patterns, interest in eating and food preparation, and appetite. The conceptual model that was designed (Figure 1) indicated that the control variables may exert a direct effect on the dependent variables or may exert a moderating effect. The moderating effect suggests that, it is also likely that health status and economic situation may influence nutritional support and social network characteristics as those with greater health problems may need more nutritional support and would benefit from a larger social network. Those who are more economically disadvantaged may have a smaller network of friends and neighbours as they may be unable to maintain friendships because they may be unable to afford opportunities to entertain or to eat out with friends. A smaller network of friends and neighbours may also mean that fewer people are available to provide nutritional support when needed.

Three measures of health status were chosen: functional disability, perceived health status, and the number of chronic health problems. Two measures of economic situation

were used: perceived economic security and economic disadvantage.

3.4.3.1 Health status

Both subjective and objective measures of health were used. The objective indicators were functional disability and the number of chronic health problems. Perceived health status was used as the subjective indicator of health.

3.4.3.1.1 Functional disability

Functional disability refers to the functional limitation on the performance of normal daily activities as a result of illness or injury (Stewart et al. 1977). The extent to which the widow perceives that she has the support she needs may depend on the level of her functional disability. Those with low disability may perceive that they will have help when needed. Those with greater disability may perceive that they do not have help when needed as their needs are greater. Also diet quality and diet diversity may be directly affected by functional disability as this will influence food preparation. Walker and Beauchene (1991) found that elderly (n=61, aged 60-04) with higher numbers of and more severe physical disabilities than those persons with fewer functional impairments had a more adequate diet. This suggests that functional disability may be more a more important variable to consider

than the number of chronic health problems.

The functional disability score was based on the ability to perform various activities of daily living using the modified version of the Shanas's Index of Disability (SID) developed for use with the elderly (Shanas and Maddox, 1976) and used in research with the elderly (Chappell and Badger, 1989; Strain, 1988). Six basic and six instrumental activities of daily living were scored 1 (totally able to) to 4 (totally unable to). The index was computed by adding the scores on each item and dividing by the number of items. Possible scores ranged from 1 to 4. Higher scores reflected greater disability.

Chappell (1981b) tested the adequacy of SID to measure functional disability. She found all items to be highly correlated (r=0.84 to 0.99) with each other for those elderly living in the community. The internal consistency reliability was 0.80 indicating that the instrument measured a highly homogenous construct. Construct validity of SID was determined and found to be consistent with a valid index of disability. Those who were older, those who perceived their health as being worse, those who had spent more time ill at home during the past year, were more likely to report greater disability on SID. Later research found the Cronbach's alpha to be 0.89 for all items combined (Strain, 1988; Chappell and Badger, 1989).

3.3.3.1.2 Chronic health problems

Chronic health problems score was based on the number of health problems using a checklist of chronic health problems adapted from the Objective Health Questionnaire developed for use with the elderly (Woolcott, 1991). Widows may have a number of health problems but these problems may or may not mean that they have greater functional disability as some health problems, such as high blood pressure, may not influence their ability to do daily tasks.

The number of chronic health problems was determined by a checklist of chronic health problems adapted from the Objective Health Questionnaire used by Woolcott (1991) in research with the elderly. Chronic health problems may impact on food patterns. Two items were added to the Objective Health Questionnaire: difficulty chewing food or eating any foods because of wearing dentures and an "other" category. The number of chronic health problems was calculated by adding the number of checks on the list.

3.4.3.1.3 Perceived health status

Perceived health status was used to assess self-ratings of health. This has been shown to reflect objective measures of health among the elderly. Ferraro (1980) analyzed the validity of self-ratings of health among 3,402 elderly. He found that those who reported higher degrees of disability and higher number of illnesses also tended to

report poorer health.

Perceived health status was determined by a response to the question: "for your age would you say that in general, your health is excellent, good, fair, poor or bad?" This was scored 1 to 4 respectively with higher scores reflecting better status. This question allows for a comparison by respondents with their age peers (Strain, 1988). This question has previously been used in research among the elderly (Strain, 1988; Ferraro et al. 1984; Chappell and Haven, 1980; Maddox and Douglass, 1973).

3.4.3.2 Economic situation

Economic situation may be related to both social support and dietary intake of the elderly (Calasanti and Hendricks, 1986; Schlenker, 1984; Leichter et al. 1978). Two indicators of economic situation were used: perceived economic security and economic disadvantage. These measures were selected because they have shown greater variability among the elderly than socioeconomic indicators such as income, education, and lifetime occupation (Chappell, 1992).

3.4.3.2.1 Perceived economic security

Perceived economic security was used to assess self-ratings of the adequacy of income and assets. This measure has been used in previous research among the elderly

(Chappell and Badger, 1989; Strain, 1988; Chappell and Havens, 1980). Perceived economic security was based on the question "How do you think your income and assets currently satisfy your needs?" This was answered using a 5 point scale: a score of 1 indicated 'very well' and a score of 5 indicated 'totally inadequate'.

During the multivariate analysis, for the purposes of statistical analysis and the interpretation of results, the coding was reversed so that a high score (5) would indicate 'very well' and a score of one would indicated 'totally inadequate'.

3.4.3.2.2 Economic disadvantage

Economic disadvantage was based on the gap between average monthly income and average monthly expenses, the smaller the gap between income and expenses the greater the economic disadvantage. Along with perceived economic security this question has been used by the Centre of Aging at the University of Manitoba to replace socioeconomic status as it shows more variability within the sample (Personal Communication with Chappell, 1992).

A card was given to the respondents that listed 13 categories of income, ranging from no income to $6000 or more and one category for 'don't know', and asking them to choose a category that reflected their average monthly income. A similar card was used to determine average

monthly expenses. Economic disadvantage was determined by subtracting the average monthly expenses category from the average monthly income category and the smaller the gap between income and expenses the greater the economic disadvantage.

During the multivariate analysis, for statistical analysis purposes and the interpretation of results, the coding for economic disadvantage was reversed so that a higher score would reflect greater economic disadvantage.

Chapter 4

Implementation, Pretest, Data Preparation

4.1 Implementation

Respondents were initially contacted by letter. The letter explained how their name was obtained and the purpose of the survey, and also asked for their participation. Letters were mailed at three different times. In October, 1992, 15 letters were mailed to obtain a pretest sample. Thirty letters were mailed in November and 35 letters mailed in December for the final study. Each letter was followed by a telephone call within 10 days of sending the letter. The initial telephone call was to solicit participation; to explain what was involved as a subject; to screen among those who wanted to participate to ensure they met the research criteria; and to arrange an in-home interview with those who met the criteria and agreed to participate.

Subsequent to the telephone call, a home visit was conducted in the kitchen, when possible, since the 24 hour dietary recall procedure required estimating the portion consumed and measuring kitchen utensils. Campbell (1992) suggested the interview be done in the kitchen. The 24 hour recall was conducted first and this was followed by instruction on keeping a food diary and the administration of the questionnaire to gather data on all other variables.

Within two weeks of the home visit, two telephone calls

were conducted to collect the second and third recalls. The day prior to the target day for the telephone recalls the respondents were called to remind them to begin the memory strategy on the following day. The time of day of the home visits and telephone recalls were arranged so that they would be convenient for the respondent.

The telephone reminder call, the day before the target day, was to remind the respondents to keep the food diary for the following day and to go over the instructions for doing this. A time was also arranged for conducting the recall two days later. This method was used for each telephone recall.

At the start of the home visits the respondent was asked to sign a consent form (Appendix B). At the end of the interview, each respondent was asked if she would like a summary of the results of the study and if she would like a summary of her three day recalls which would be sent to her at the end of the study. Each woman was also given a pamphlet titled "Stay healthy for all of your life" which was developed specifically for the elderly (Manitoba Health, 1991).

All the pretest and final data was collected between late October, 1992 and late January, 1993.

4.1.1 Pretest

Prior to the cross-sectional survey, a pretest was

conducted in order to be sure the questions could be understood and to check for problems with the method of collecting dietary information. The pretest was conducted by the investigator and completed by mid November.

Because the number of subjects available was limited and the research was exploratory, it was agreed that five respondents would be enough to conduct a pretest. The respondents selected for the pretest were the first five women who agreed to be part of the study.

The respondents had no difficulty understanding any of the questions or with the method of collecting dietary information. At the end of the home visit, pretest respondents were also asked five open ended questions to determine if anything should be added to the two instruments developed for this research (i.e., interest in eating and food preparation instrument, nutritional support instrument). The five questions and responses were:

1. "What kinds of things do you think influence what elderly women choose to eat daily?"

Health concerns was the most common response. One women also said hunger and another didn't know what influenced others food choices.

2. "What type of food concerns do you have? Do you think these are concerns of other women like yourself? Who would you talk to about these if anyone?"

Two of the women had difficulty eating red meat

although they did not feel other women had the same problem. They don't talk to anyone about this. The others felt weight control was important and one women thought that others need to be more conscientious about eating good food. None of the women talk about food concerns with anyone.

3. "Where do you get your nutrition information from? Do you talk to others about nutrition concerns? What kinds of things do you talk about?"

All the women said they get their nutrition information from television and one women also said she reads about nutrition. Children and grandchildren are also a source of nutrition information for two women.

4. "What do you think motivates women like yourself to prepare meals for themselves? Do you think, in general, that other women like yourself take the time to plan and prepare good meals for themselves? What do you think hinders women from doing this?"

Two women felt that women prepare meals because it is necessary. One of these women thought that most don't bother preparing good meals for themselves. She thought boredom and inactivity hindered women from preparing good meals for themselves. The other woman thought that some women like to prepare good meals for themselves but didn't have any thoughts on what hindered others from doing this. Another woman thought women in general enjoyed preparing good meals and this was their motivation. She had no

comments on what hindered women from doing this. Two said they had no opinion on this set of questions.

5. "Do you think family, friends & neighbours influence what elderly women eat? If so, in what ways?"

All but one women thought that family, friends and neighbours influence what elderly women ate. One women thought that health concerns influenced eating choices more than the influence of other people. Exchanging recipes with others was important to one woman. Another woman enjoyed cooking for others.

6. Are there other questions I should be asking?

Three women didn't have any suggestions. One woman thought there should be a question about coupons as she exchanges coupons with her daughter and friends. Another women said that there should be a question on helping others as this was something she did. She thought it was important to help others as well as receive help. This led to the inclusion of two additional questions. A statement on coupon exchange was added to the perceived nutritional support instrument in the informational support subscale (item #23, Appendix B). After the nutritional support statements one question on helping others was included. If the respondent answered yes to the question, "Do you provide help to others?", she was asked the open-ended question "What type of help do you give?" (item #43 appendix B).

4.2 Data Preparation

4.2.1 Principal Components Analysis

4.2.1.1 Nutritional support

The nutritional support scale and the perceived adequacy of support scale were assessed for internal consistency reliability using Cronbach's alpha (Carmines et al, 1979). Principal components analysis was used to assess the dimensionality of these scales. The results of this analysis is described after a short discussion on principal components analysis.

Principal components analysis is a multivariate analysis technique for examining interrelationships among a set of variables (Freund and Littell, 1986). It is used for summarizing data and detecting linear relationships. This statistical technique generates components (factors) up to the number of variables included. Each principal component (factor) is a linear combination of the original variables based on the correlation matrix between the variables and the factors. The factors are sorted by descending order of the eigenvalues which are equal to the variances of the factors. The first factor has the largest variance of any linear function of the original variables and the second factor has the second largest variance. Therefore the first factor is the strongest in relation to the overall commonality estimate and succeeding factors will have less and less importance. The cutoff point for retaining a

factor is usually a minimum eigenvalue of 1.0 (Kim and Mueller, 1988, p.43).

The factors are orthogonal, that is, they are uncorrelated to each other. Principal components analysis partials the first factor from each variable before continuing with the formation of the second factor and so on. The second factor is obtained by the formation of a linear transformation of the variables after those aspects of them related to factor 1 have been removed. Next a rotation procedure, varimax rotation, aligns the factors along perpendicular axes. It maximizes the loading of each variable on one factor while minimizing it on other factors. This gives a more meaningful interpretation because the rotation provides a clearer conceptual separation between factors.

The varimax rotated factor matrix for the nutritional support scale is found in Table 2. Three of the four factors that emerged were as expected; instrumental support, informational support, and social companionship support. The fourth factor that emerged appears to be another dimension of social companionship. The first dimension of social companionship support, factor 3, includes social activity items; and the second dimension, factor 4, includes items that imply aloneness or a lack of company to eat with.

The first and strongest factor, accounting for 24% of the variance, was instrumental support. The second factor

TABLE 2

VARIMAX ROTATED FACTOR MATRIX FOR THE NUTRITIONAL SUPPORT SCALE (N=46)

FACTOR LABELS/VARIABLES	FACTORS			
I. PERCEIVED INSTRUMENTAL SUPPORT	F1	F2	F3	F4
If I could no longer do my own grocery shopping someone would get groceries for me on a regular basis.	0.83	-0.02	0.15	-0.20
If I could no longer prepare my own meals, there is someone who would help me on a regular basis.	0.73	0.11	0.04	0.16
If I need a ride to the grocery store for whatever reason there is someone I can call who would be willing to give me a ride.	0.71	-0.09	0.19	0.10
If I could no longer get to the store myself there is someone I could rely on to take me shopping on a regular basis.	0.85	-0.02	0.00	0.16
II. PERCEIVED INFORMATIONAL SUPPORT	F1	F2	F3	F4
If I have trouble eating some types of foods there is someone who will give me ideas of what to eat as a substitute.	-0.11	0.67	-0.08	-0.14
If I had trouble understanding a recipe there is someone I could talk to in person or by phone.	0.05	0.79	-0.18	0.04

There is at least one person I know I can call on if I need to know how long some food will keep in the refrigerator or cupboard.	-0.02	0.75	0.27	0.28

Table 2 Continued

III. PERCEIVED SOCIAL COMPANIONSHIP	F1	F2	F3	F4
SOCIAL ACTIVITY				
If I decided in the afternoon that I would like to go out for dinner at a restaurant, I could find someone to go with me.	0.16	0.57	0.42	-0.14
I often have company over for meals or snacks.	0.14	0.11	0.85	-0.18
I am often invited to the homes of family members for lunch or dinner.	0.14	-0.16	0.70	0.30
IV. ALONENESS	F1	F2	F3	F4
I would eat better if I had someone to eat with more often.	0.23	-0.18	-0.23	0.71
I eat alone more often than I would prefer.	-0.00	0.16	0.20	0.84
Eigenvalue	2.90	2.17	1.49	1.31
Cumulative % of total variance	24.2	42.3	54.8	65.6
Reliability (Cronbach's alpha) based on underlined variables in factors 1 to 3	0.80	0.65	0.56	

The eigenvalue is the variance explained by each component. The cumulative proportions indicate the proportion of the total variation of the original set of variables explained by all the components up to and including that component.

was informational support, accounting for an additional 18%. However, one item loaded on both factor 2 and factor 3, although conceptually it belonged with factor 3 items. The weaker factors, factor 3 and factor 4, accounted for 12% and 11% of the variance respectively. These factors represented the two dimensions of social companionship support: social activity and aloneness. An attempt was made to eliminate factor 4, (ie. the 2 aloneness items) but this resulted in loss of the social activity items in factor 3. Further analysis used items in factor 3 and omitted factor 4. In further analysis, the item that loaded on both factor 2 and 3 was combined only with factor 3 items which were conceptualized as social companionship items.

The reliability of 3 of the subscales is shown in Table 2. Instrumental support had the highest reliability (alpha=0.80), followed by informational support (alpha=0.65), and thirdly social companionship (alpha=0.56). Reliability for factor 4 was not determined because there were only two items in the subscale. A total score for each of the 3 subscales was calculated for each respondent by summing the raw scores on items that loaded highest on each factor (underlined in Table 2) and used in further analysis.

The reliability and factor analyses resulted in the elimination of seven items from the original conceptualization of the nutritional support scale. Listed below are the items removed and the reasons for their

removal.

Two instrumental support items were eliminated in the principal components analysis as they did not load on any one factor. A third item was eliminated because it reduced the internal reliability (decreased alpha) of the scale as well. The item that were eliminated here were:

"If I wasn't feeling well for whatever reason, there is someone would get groceries for me."

"If I wasn't feeling well for whatever reason, there is someone I could rely on to prepare my meals if needed."

These items represent the perceived availability of short-term help with meal preparation if needed. Long-term help with grocery shopping and meal preparation, as well as, short and long term help with transportation to the store loaded on factor 1. Short term help with grocery shopping and meal preparation are a form of instrumental support, however, this analysis suggests it differs conceptually from long term help with grocery shopping and meal preparation.

The following item was removed as it reduced internal reliability (decreased alpha) and it did not load on any of the four factors in the principal components analysis.

"I often have help with grocery shopping from friends, neighbours, or family members even though I don't need it."

All other items in the instrumental support subscale begin

with an hypothetical statement about a situation, "If I...," whereas the statement "I often..." implies an actual situation. This item appears to be conceptually different from the others.

Four items were eliminated from the informational support subscale as they did not emerge on any of the four factors in the principal components analysis. Two of these items also reduced the internal reliability (decreased alpha) of this scale. They are:

"There is at least one person who gives me good suggestions about making meals for myself."

"There is someone I turn to for suggestions on what to cook for just myself."

The items for informational support which load on factor 2 all contain "If I..." statements, implying an hypothetical situation, whereas these two variables assess actual situations.

The following two items, again, are statements about actual rather than hypothetical situations. They also reduced the internal reliability of this subscale when retained therefore they were removed to increase alpha.

"I usually talk with someone about what's on special at the grocery store."

"I often exchange food coupons with someone else."

These two items are conceptually similar to each other as they are both about reducing the cost of grocery shopping by

using either specials or coupons, but they differ conceptually from other items. They may conceptually be more about reducing the cost of groceries than receiving informational support.

One item, listed below, among the social companionship support items was removed as it reduced the internal reliability of this subscale and didn't load on any of the four factors.

"I am often not invited over to the homes of friends for lunch or dinner."

The wording of this statement, disagreeing with a "not" statement, may be a problem causing it to be conceptualized somewhat differently than the other variables.

The perceived adequacy of support scale did not emerge as a dimension of nutritional support using the principal components procedures, therefore this scale was not used in further analysis. The majority of respondents do their own grocery shopping, provide their own transportation and make their own meals therefore they were not asked about their perceived adequacy of support for these items. This meant that not enough subjects responded to perceived adequacy for these variables.

4.2.1.2 Interest in Eating and Food Preparation

The same statistical procedures to assess internal consistency reliability (Cronbach's coefficient alpha) and dimensionality (principal components analysis) of the nutritional support scale was used for the interest in eating and food preparation scale.

Initially it was expected that interest in eating and interest in food preparation were two separate dimensions of the concept and this would emerge in the principal components analysis procedure. The final factor matrix, after varimax rotation, is shown in Table 3. Although two factors did emerge, they were not as initially conceptualized. The first and strongest factor, interest in eating and cooking, accounted for 37.3% of the variance. Factor 2, interest in avoiding monotony around eating and cooking, accounted for an additional 17.8% of the variance.

Six variables loaded on factor 1 and consisted of both interest in eating and interest in food preparation variables. This factor reflects the enjoyment of cooking and eating and this appears to be a single concept. The internal reliability of factor 1 was moderately high (alpha=0.83). Factor 2 consists of 3 variables and reflects ways of avoiding monotony in the diet. The internal reliability of factor 2 was moderate (alpha=0.53). A total score for each of the 2 subscales was calculated for each respondent by summing the raw scores on items that loaded

TABLE 3

VARIMAX ROTATED FACTOR MATRIX FOR THE INTEREST IN EATING AND FOOD PREPARATION SCALE (N=46)

FACTOR LABELS/VARIABLES	FACTORS	
I. INTEREST IN EATING AND COOKING	F1	F2
The food I eat is boring.	0.70	0.14
I eat because I have to - not because I enjoy it.	0.70	0.20
I like to prepare my meals from scratch because I enjoy cooking.	0.76	-0.13
I easily get bored with preparing meals.	0.62	-0.18
I like cooking for myself even when I don't have company.	0.80	-0.00
I don't enjoy preparing meals (cooking) for myself.	0.80	0.16
II.AVOIDING MONOTONY	F1	F2
I generally eat the same food every day.	0.08	0.72
I like to try new recipes once in a while.	0.21	0.74
At least once a week I take the time to make a nice meal for myself.	-0.21	0.67
Eigenvalue	3.36	1.60
Cumulative % of total variance	37.3	55.1
Reliability (Cronbach's alpha) based on underlined variables in each factor	0.83	0.53

highest on each factor (underlined in Table 3) and used in further analysis.

The reliability and principal components analysis resulted in the elimination of 7 items from the scale. Listed below are the items that were removed and the reasons associated with this. Although the item, "I eat well compared to other women my age," was initially included in the scale, it was found to be conceptually different. Originally this item was intended to reflect how the respondents compared themselves with others in terms of eating well; it does not reflect the concept of interest in eating and food preparation. This item was negatively correlated with several other items in the scale and did not load on factor 1 or factor 2.

The item, "I enjoy eating many types of foods," was negatively correlated with several other items and removing it increased the internal reliability of the scale. The words "many types of foods" may be too ambiguous. That is, other statements were more specific in nature such as "I like to try new recipes once in a while".

This item, "I don't enjoy eating by myself," was also negatively correlated with other items within the same scale and removing it improved the internal reliability of the scale. This item may reflect a perceived lack of companionship rather than interest in eating.

The item, "I plan ahead what I'll eat the next day,"

was also negatively correlated with several other items within the same scale and may reflect organizational or management style rather than interest or the enjoyment of eating.

Like the other items, the one, "I like trying new foods," was negatively correlated to several others and removing it improved the internal reliability of those remaining. This item seems to be similar to those retained in factor 2 as it seems to imply trying something different; but trying new foods may be conceptually different than having familiar foods prepared in different ways.

The items, "I only like to cook when I have company over." appears to be conceptually different than the items that were retained. It may be reflecting the lack of perceived social companionship more than an interest in cooking.

The focus of the items retained in the principal components analysis were specifically to do with eating, preparing meals and cooking. The focus of the following statement seems to be "time - to do the things I like to do," therefore giving this item a conceptually different interpretation.

"I find taking the time to prepare food and eat gets in the way of doing the things I like to do."

4.3 Data analysis

Preliminary analysis included descriptive statistics of all variables using SAS statistical procedures. All of the descriptive results were conducted with actual, rather than recoded data. The pretest data was combined with the final study data prior to beginning analysis.

The bivariate correlation matrix, Pearson correlation coefficients, was used to examine bivariate associations and the chance of multicollinearity. The multivariate regression procedure, response surface regression analysis, was used to test the hypotheses further. Three-way cross-tabulations were used to describe the significant relationships that were found. However, Chi- square statistics were not presented, due to small cell size. Rather, the general patterns were explored.

To eliminate the influence in the regression of a few responses that were extremely high or low, some variables were recoded (Appendix I). The data were also coded into categories in order to conduct the three-way cross-tabulations (Appendix I).

Response surface regression analysis allowed for the testing of both types of hypotheses as well as other effects in one procedure. This procedure uses a polynomial model that includes the analysis of linear, quadratic and interaction effects (Fruend and Littell, 1986, p.109-110).

The following regression model was used:

$$Y=\beta_0+\beta_1X_1+\beta_2X_1{}^2+\beta_3X_2+\beta_4X_2{}^2+\beta_5X_1X_2+\epsilon$$

where Y represents the dependent variable, and β_1, β_2, β_3, β_4 and β_5 are regression coefficients associated with the independent variable (X_1) and the control variable (X_2), and ϵ is the error, or residual. This model includes all linear and quadratic terms in the individual variables and all pairwise crossproducts of linear terms (Fruend and Littell, 1986).

Linear, quadratic and crossproduct terms are entered into the regression model in a hierarchical manner. The amount of variance explained by simple linear regression is determined first. Secondly, the additional variance explained by adding quadratic terms to the model is determined, followed by the addition of a crossproduct term and again the amount of additional variance is determined. Finally, the amount of variance explained by the total regression model is calculated. The quadratic terms are used to detect curvilinear effects and crossproduct terms are used to detect interactions among the effects of the variables (Fruend and Littell, 1986).

The assumptions for the response surface regression analysis are that the response variable is normally distributed and that the observations are independent. Analysis of the residuals included a normal probability plot to assess if they were normally distributed. The W:Normal

statistic was also used to test normality. In most cases the residuals were normally distributed. When there was evidence of nonnormality the normal probability plot showed that the data tended to fall close to the reference line. Because the regression procedures are robust to departures from normal, the results presented include those regressions that were significant and showed some evidence of non normality. A scatter plot of the residuals with the predicted values of the response variable, indicated that the observations were independent.

Due to the small sample size, the regression model was limited to one independent and one control variable. As a result, objective 2 - to determine the relative effects of nutritional support and social network characteristics on the outcome variables could not be assessed in the regression analysis.

It was recognized that the small sample size in this exploratory study would decrease statistical power and increase the possibility of failure to detect a significant relationship when one exists. Therefore a significance level of $P \leq 0.10$ was used in this study. It is also important to note that because multiple tests were performed, the possibility existed that some relationships may have been significant by chance.

Chapter 5

Descriptive Results

5.1 Response Rate

Of the 15 letters sent to obtain the pretest sample, 14 women were reached by telephone. One telephone number was no longer in service. Of the 8 women who agreed to participate, the first 5 women comprised the pretest sample while the 3 other women were part of the larger study. Of the 6 women who refused to participate, 1 women no longer met the selection criteria, 1 was not well enough and 4 were not interested.

To obtain participants for the larger sample, thirty letters were mailed in November. The investigator was able to reach all 30 women by telephone. Only eleven (37%) agreed to participate. Six women no longer met the selection criteria, 4 were not well enough and 9 were not interested.

In order to improve the response rate, the thesis committee recommended that the introductory letter be revised. The letter was considered too long and perhaps worded in such a way as to discourage women from participating. The second letter was revised to be more concise and worded in a positive tone to encourage women to participate.

Thirty-five revised letters were mailed in the December. Thirty-four women were contacted by telephone and

25 (74%) of these women agreed to participate. One telephone number was no longer in service. Two women were not interested, 5 women no longer met the selection criteria and 2 were not well enough to participate.

It may be that revising the letter helped to increase the response rate but other outside factors may also have discouraged women from participating in the first and second mailings. Women telephoned in the second and third mailings, November and December, may have been busy with Christmas preparations. Some women asked that they be contacted again after Christmas, in January. Several of these women who were contacted in January mentioned that the fall was very cloudy and that they felt "down" in spirits at that time. Several mentioned that their arthritis had bothered them in the fall but they were in better spirits after Christmas. Overall, of the 78 women contacted by letter and telephone, 44 women agreed to participate, 15 women were not interested, 7 were not well enough, and 12 no longer met the selection criteria. Based on the total number of eligible subjects (66), a response rate of 67% was calculated. The nonresponse rate, 33%, included those who refused to participate because they were not interested and those who refused because of health reasons.

The response rate for this study was somewhat lower than the overall response rate for the study by Chappell (1991) which was 71 percent (Chappell, 1991). The age of

the respondents may explain why the response rate was lower in this study. The average age in this study was 77 years, whereas the age of the respondents in the study by Chappell (1991) was 60 years and older. Of the original sample, 50% were between 60 and 69 years of age, 33% were between 70 and 79 and 17% were 80 years of age or older, although in the age category 70-79 the largest group of respondents lived alone (Chappell, 1991). In a systematic assessment of response rates by age, of three large scale surveys, Herzog and Rodgers (1988) found that response rates declined linearly with increasing age. The response rate declined from 69% to 49% from age 65 to over 85 years of age (Herzog and Rodgers (1988).

To increase the sample size, it was recommended that the investigator ask a few respondents if they knew of someone who met the selection criteria and might like to participate. Only one women thought she knew two woman who might be willing to participate. The investigator called these two women to explain their involvement in the study, to screen for selection criteria, and ask for their participation. They met the criteria and were willing to participate; therefore they were included in the study.

Of the 46 respondents who participated in the study, 26 (56%) were contacted with one telephone call, 11 (24%) women were contacted after a second telephone call, and 9 (20%) were contacted after 3 or more calls. Thirty-seven (80%)

agreed to participate in the study when initially contacted by telephone. Nine (20%)women asked to be called again at a later date and when contacted agreed to participate. Those who asked to be called again were either too busy or not feeling well enough to do the interview at that time. All the women who agreed to participate completed all aspects of the study.

5.2 Characteristics of subjects

5.2.1 Housing characteristics

The majority of the respondents (n=26, 54%) lived in a single detached house. Thirty-three percent (n=15) lived in apartments or high-rise buildings. Six (13%)women lived independently in apartments designated for seniors only. The selection criteria initially excluded those who lived in seniors housing as their social support and social network size was expected to be greater than others. Due to a low response rate, this criteria was waived in order to increase the sample size.

5.2.2 Age

The mean age was 77 years with a age range of 70 to 88 years. However one interview revealed that the age recorded (85 years) was incorrect and should have been 88 years. The age range of all others was 70 to 85 years. Forty-six percent (n=21) were 70 to 75 years, 30% (n=14) were 76 to

80 years and 24% (n=11) were 80 years of age and older. Initially the selection criteria excluded women 70-74 years of age as they generally perceive their health status and economic situation differently than those who are older. The age range was increased to include women from 70-85 years in order to increase the sample size.

5.2.3 Health status

Most women perceived their health to be excellent (30%) or good (55%). Seven (15%) perceived their health to be fair or poor. This differs somewhat from the study by Chappell (1991) of which 20% of the sample perceived their health to be excellent, 49% perceived their health to be good and 31% perceived their health to fair, poor, or bad, although in both surveys respondents tended to report their health status as good or excellent (Chappell, 1991). Other Canadian studies reveal results similar to the original study (Chappell, 1983; Strain, 1988).

In this study, a greater percentage of the respondents rated their health as excellent or good than in the other Canadian studies. This may be due to the respondents being somewhat older than in the other studies in which the age range was 60 years and older. Ferraro (1980) found that, although elders 75 years of age and older have more health-related problems than those 65-74, they tend to be more positive in rating their own health. In this study, the

bivariate results suggest that perceived health status tended to decline with increasing age (r=-.24, P=0.11).

Some of the respondents may have given a response of good or excellent to give the interviewer a positive impression. Also this sample of respondents may only represent those who are relatively healthy as those who did not feel well chose not to participate in this study (n=7). Also those with poor health, who were in the original study, may have entered care homes or died and left an older group who were healthier. These may be the respondents for which no present address or telephone number could be obtained.

Forty-five women (98%) reported having at least one health problem. The mean number of chronic health problems was 4 and ranged from 0 to 9. Forty-four percent (n=20) had 1 to 3 health problems, 41% (n=19) had 4 to 6 and 13% (n=6) had 7 to 9 health problems. The most common health problems (Table 4) were arthritis (67% n=31), vision (39% n=18), heart burn (35% n=16), hearing (33% n=15), allergies (33% n=15), heart problems (30% n=14), and high blood pressure (28% n=13).

National survey data indicate that 86% of people aged 65 years and older have at least one health problem. The most frequently reported health problems are arthritis, hypertension, hearing disorders, sight impairment and heart disease (Chappell, Strain and Blandford, 1986). The results of this study were similar to those of Strain (1988) who

reported 92.5% of those 70-74 years of age having at least one health problems and 96.2% of those 75 years of age having at least one health problem. The original study by Chappell (1991), reported that 60% of respondents had 0-2 chronic conditions and 40% had 3 or more chronic conditions (Chappell, 1991). These results are somewhat different from the results of this research in which 44% had 1-3 health problems and 54% had 4 or more health problems. The subjects in this study were somewhat older than those in the original study, by Chappell (1991) and the higher number of health problems may be reflect this difference.

TABLE 4

FREQUENCY OF CHRONIC HEALTH PROBLEMS

HEALTH PROBLEM	NUMBER WITH HEALTH PROBLEM	PERCENTAGE OF SAMPLE
Allergies	15	33%
Anemia (iron deficiency)	2	4%
Arthritis	31	67%
Diabetes I	2	4%
Digestive problems	9	20%
Hearing problems	15	33%
Heart burn	16	35%
Heart problems	14	30%
High blood pressure	13	28%
Osteoporosis	6	13%
Renal problems	1	2%
Respiratory	4	9%
Gall Bladder	3	7%
Vision	18	39%
Changes in taste	10	22%
Overweight	10	22%
Difficulty chewing	8	17%
Other health problems	10	22%
No health problems	1	2%

The bivariate results suggested that the number of chronic health problems increased with age ($r=.22$ $p\leq 0.15$). Again the respondents in this study were somewhat older than those in the original study, by Chappell (1991), and were therefore likely to have more chronic health problems. Strain's (1988) research also indicated that those in older age groups had more health problems than those in younger age groups. Arthritis was the most common health problem in this study (67%) and in the study by Strain (1988)(54%).

The mean functional disability score was 1.15 and ranged from 1 to 2.17. Forty-three percent (n=20) had no functional disability, that is they were able to perform all activities of daily living without assistance. Fifty-seven percent (n=26) had difficulty with at least one activity. Table 5 lists instrumental and self-care activities and the frequency that these occur among the respondents. The most frequently reported limitations were shopping (35%), doing household tasks (22%), bathing (26%), and walking (26%).

These results differ from the original sample of which 62% had no functional disability and 38% had difficulty with at least one activity (Chappell, 1989). Other Canadian studies reported that 67% of their respondents had no functional limitations and 33% had difficulty with at least one activity (Strain, 1988; Penning and Chappell, 1990).

TABLE 5

FREQUENCY OF FUNCTIONAL DISABILITIES

INSTRUMENTAL ACTIVITIES	# of WOMEN WITH DISABILITY	PERCENT
Using the telephone	1	2
Shopping for groceries, clothing, etc.	16	35
Preparing meals	2	4
Household tasks	10	22
Handle money, pay bills, deposit cheques	2	4
Taking out trash	4	9
SELF-CARE ACTIVITIES		
Dressing / undressing	6	13
Eating	2	4
Bathing / shower	12	26
Walking	12	26
Toileting	-	-
Taking medications	4	9

Again this difference may be due to the difference in age of the respondents as the age of respondents was 60 years and older in the research by Chappell (1989), Strain (1988) and Penning and Chappell (1990). The age range in this study was 70-85 years and the average age was 77 years whereas Strain (1988) reported an average age of 71 years. Strain (1988) reported that functional disability increased

with age as 67.7% of the respondents age, 70-74, had no functional disability and 46.4% of those 75 years of age and older had no functional disability. The lower percentage of respondents with no functional disability may be a reflection of the age of this sample. The bivariate results of this study also suggested that functional disability increased with age (r=.49, P=0.0005).

5.2.4 Economic Situation

Only one respondent declined to give information on her economic situation, therefore percentages are calculated with 45 respondents. Income and expenses did not vary a great deal. Nineteen (42%) women reported an income less than $1000 per month, 22(29%) between $1000 and $2000 and 4 (9%) women reported a monthly income greater than $2000. Thirty-four (75%) women reported expenses to be less than $1000 per month, 8 (18%) between $1000 and $1500 per month while only 3 (7%) reported expenses exceeding $2000 per month.

Nearly half of the respondents(n= 22, 49%) had no gap between income and expenses, indicating they had no income remaining after paying their expenses. Seventeen (38%) only had a gap of 1 category between income and expenses indicating they were able to meet their expenses and have money remaining. Six (13%) respondents had a gap of 2 or more categories between income and expenses, indicating they

were the least economically disadvantaged respondents.

The economic situation of those in this study was similar to other Canadian findings. Strain (1988) reported that 45% of her respondents had a monthly income of less than $1000 per month and 41% had an income between $1000 and $2000 per month. Exact comparison cannot be made with the original study as the income categories differed; however, similar to Strain (1988), Chappell (1991) found that 52% of those who lived alone had an income of less than $749 per month and 48% had an income of $750 or more.

In 1986, Canadian women, who were unattached (widowed, divorced, never married) and over 65 years of age, had an average income of $12,600 annually (Lindsay and Donald, 1988). In 1986, women aged 65 and older were among the poorest Canadians. Almost 46% of these women had incomes below the low-income cut-offs (58.5% of income spent on food, shelter, and clothing) (Lindsay and Donald, 1988). In this study, 49% of the respondents were economically disadvantaged as they had no gap between their income and expenses.

Even though most of the respondents reported limited disposable income they tended to have a positive perception of their economic situation. Thirteen (29%) women perceived their "income and assets" met their needs very well while the majority, 25 (56%), perceived that their needs were met adequately. Only 7 (15%) perceived their "income and

assets" met their needs with some difficulty .

These results are similar to those of Strain (1988): 26% indicated their income satisfied their needs very well, 55% responded that it was adequate and 12% reported that their income met their needs with some difficulty. Chappell and Badger (1989) had similar findings: 26% reported very well, 55% reported adequately and 19% reported their income satisfied their needs with some difficulty, not very well or totally inadequate.

5.2.5 Perceived Nutritional Support

The nutritional support instrument was used to assess perceived instrumental support, perceived information support and perceived social companionship support. As mentioned earlier, principal components analysis was used to determine whether subscales were evident and therefore which items would be retained for analysis. The frequency on each item is reported in Appendix C.

The majority of the respondents perceived that instrumental support was available if needed. The mean score was 2.65 and scores ranged from 0-4 out of a possible score of 0-4. Eighteen (39%) respondents perceived instrumental support to be high (score=4), 16 (35%) had moderate scores of 2-3, and 12 (26%) had low scores (0-1) indicating these women perceived less instrumental support to be available.

The scores for perceived informational support ranged from 0 to the maximum of 3 out of a possible score of 0-3, with a mean score of 1.3. In general, perceived informational support was moderate to low. Seven (15%) respondents perceived this type of support to be high with a score of 3, 16 (35%) had moderate score of 2, and 23 (50%) perceived this type of support to be low with scores of 0-1.

The mean score (1.8) for perceived social companionship support indicates that overall the respondents perceived this type of support to be available. Sixteen (35%) respondents perceived this type of support to be high (score of 3), 12 (26%) respondents had a moderate score of 2, and 18 (39%) had low scores of 0-1 indicating these women perceived less support. The possible scoring range was 0-3.

5.2.6 Social Networks

5.2.6.1 Family networks

With the exception of one women, all respondents had at least one relative in the immediate geographical area. Eighty percent (n=37) of respondents had at least one sibling of which slightly more than half (n=25 54%) had at least one living brother and thirty (65%) women had sisters that were still living (Table 6).

Most women had at least one child (n=44, 96%) of which 33 (72%) had at least one son while 36 (78%) had at least one daughter. The majority, 35 (76%), had at least one

other relative (includes grandchildren, nieces, nephews, cousins, etc.). The total size of the family network ranged from no family members for one respondent to 20 or more for 7 respondents. The median was 8.5 and the mean size of the family network was 10 members.

5.2.6.2 Friends and neighbour networks

The women were asked "Other than relatives, how many people do you consider as close friends." "Close friends" were defined by the respondent. By far the majority, 42 (91%), had at least one friend while only 4 (9%) had no friends. Most women, 38 (82%), reported 2 or more friends. The total size of the friendship network ranged from none for four respondents to 11 or more for six other respondents with a median of 5 and mean number of 5 friends.

Most women had neighbours they knew. Only 2 women did not know their neighbours and 3 only knew one neighbour. Eighty-nine percent (41) knew 2 or more of their neighbours. For further data analysis, the size of the friends and neighbours network was combined.

5.2.6.3 Total social network size

The mean size of the social network was 20 ($\pm$8.6) people with a median of 22 members. The smallest network consisted of 4 people and the largest network consisted of 30 or more people. Seven (15%) had a network size of 6-8

members, 11 (24%) had a network size of 10-18, 13 (28%) between 20 and 30, and 13 (28%) between 30 and 52 members.

TABLE 6

SOCIAL NETWORK SIZE

NETWORK MEMBERS	NUMBER OF MEMBERS	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Brothers	none	21	46%
	1	14	30%
	2 or more	11	24%
Sisters	none	16	35%
	1	14	30%
	2 or more	16	35%
Sons	none	13	28%
	1	19	41%
	2 or more	14	31%
Daughters	none	10	22%
	1	15	33%
	2 or more	21	45%
Relatives in contact with	none	11	24%
	1	7	15%
	2 or more	28	61%
Close friends	none	4	9%
	1	4	9%
	2 or more	38	82%
Neighbours	don't know	2	4%
	know 1	3	7%
	know 2 or more	41	89%

5.2.6.4 Social contact

To gain some idea of the respondents involvement with network members, the respondents were asked to indicate the amount of contact, irrespective of its form, with family, friends and neighbours. Table 7 provides a summary of this.

It should be noted that respondents usually have more than one family member, friend or neighbour and may be in contact with one network member everyday and another once a week.

TABLE 7

FREQUENCY OF SOCIAL CONTACT WITH NETWORK MEMBERS

NETWORK MEMBER	NUMBER OF RESPONDENTS	EVERYDAY	AT LEAST ONCE/WEEK	MORE THAN ONCE/MONTH
Brothers	25	3 (12%)	3 (12%)	2 (8%)
Sisters	30	5 (17%)	12 (40%)	9 (30%)
Sons	33	8 (24%)	15 (46%)	9 (27%)
Daughters	36	15 (42%)	20 (56%)	8 (22%)
Relatives in contact with Close	35	5 (17%)	16 (46%)	12 (34%)
friends	42	18 (56%)	32 (76%)	18 (43%)
Neighbours	44	10 (23%)	22 (50%)	12 (27%)

Of the respondents who had siblings, 22% (n=8) had daily contact, 41% (n=15) had contact at least once a week and 49% (18) had contact with a sibling at least once a month. Of the respondents who had brothers, only 3 were in contact with a brother daily and only 3 were in contact at least once a week. Most respondents were in contact with a brother once a month or a few times a year. Seventeen percent (5) of women who had a sister were in daily contact, 40% (12) had contact at least once a week and 30% (9) had contact with a sister a few times a month.

Of the respondents who had children, 21 (48%) had contact with a child everyday and 29 (66%) had contact with

a child at least once a week. Of the respondents who had at least one son, 24% (8) had contact daily with a son, while 46% (15) had contact at least once a week. Nine (27%) had contact with at least one son a few times a month. Forty-two percent (15) of the women who had at least one daughter had contact with a daughter everyday, 56% (20) had contact at least once a week and 22%(8) had contact with a daughter a few times a month. Overall, more respondents had contact with daughters everyday and at least once a week than with sons.

Five (14%) respondents had daily contact with a relative, 46% (n=16) had contact with a relative at least once a week and 12 (34%) had contact with a relative a few times a month. Many relatives were seen once a month or less often.

Eighteen (43%) respondents were in contact with a close friend everyday while the majority (32, 76%) were in contact at least once a week. Eighteen (43%) were in contact with a friend a few times per month. Only 10 (23%) were in contact with a neighbour daily while 22 (50%) were in contact with a neighbour at least once a week. Twelve (27%) were in contact with a neighbour a few times a month.

Although not all the respondents were in contact with one particular person on a daily basis, most had regular contact with someone at least once a week. Thirty-five (76%) of respondents were in contact with someone everyday

and 44 (96%) had regular contact with someone at least once per week (Table 8).

TABLE 8

FREQUENCY OF SOCIAL CONTACT

TYPE OF SOCIAL CONTACT	NUMBER OF RESPONDENTS WHO HAVE CONTACT	PERCENTAGE OF ALL RESPONDENTS	MEAN NUMBER OF PEOPLE IN GROUP
Everyday	35	76%	3.3
At least once/week	44	96%	7.1
A few times/month	37	80%	5.8
Once/month	17	37%	4.4
Less than once/month	36	78%	7.3
Less than once/year	8	18%	1.6

Lubben (1988) suggested that reciprocity of helping behaviour is important to network strength and durability. Although the respondents receive support, they may also give support. To address the issue of reciprocity, respondents were asked "Do you provide help to others?" If they answered yes, they were then asked the open ended question "What type of help do you provide?" Seventeen (41%) respondents said they give help to others while 24 (59%) did not. Several women expressed that they wish they could help others but their own needs were greater. As mentioned earlier, this item was added into the interview schedule after the pretest was completed therefore 41 women responded to this item.

5.2.7 Interest in eating and food preparation

As stated earlier, principal components analysis was used to determine whether subscales were evident within the interest in eating and food preparation instrument and which items would be retained for the final analysis. The final subscales were interest in eating and cooking and avoiding monotony. The possible scoring range was 0-6 for interest in eating and cooking, and 0-3 for avoiding monotony. The frequencies for each item is listed in Appendix D.

The majority of respondents were interested in eating and cooking. The mean score was 4.3 and scores ranged from 1-6. Nineteen (41%) respondents were highly interested and had a score of 6, 15 (33%) had moderate scores of 4-5, and 12 had low scores of 1-3 indicating less interest.

Most respondents tried to avoid monotony around eating and cooking. The mean score was 2.5 and scores ranged from 0-3. Twenty-eight (61%) respondents had a high score of 3, 12 (26%) had a moderate score of 2, and 6 had a lower score of 1.

Overall, the scores for both subscales and the total scale indicated that, in general, the respondents were interested in eating and cooking, and were interested in avoiding monotony around eating and cooking.

5.2.8 Food Patterns

5.2.8.1 Special Diet

Each respondent was asked "Are you on a special diet?" Responses were recorded on a check list of 8 diets. Most of the women (83% n=38) were not on a special diet. Two women were on a diabetic diet, 4 were on a low fat diet and 2 others on a non therapeutic (self-prescribed) diet.

5.2.8.2 Supplementation

The majority (30, 65%) of respondents did not take a vitamin or mineral supplement. This finding was similar to another Canadian study of elderly (ages 65-92) by Betts and Vivian (1985) who reported that only 37% of their respondents took vitamin and/or mineral supplements. Research by McGandy et al. (1986) also reported that only 37% of their female respondents, aged 70 and older, used supplements over a 3 day period. A more recent Canadian study of 619 independently living elderly men and women, reported that only 29% of their participants used at least one supplement (Scythes et al. 1989).

Of the 35% (16) of respondents in this study who did take vitamin and/or mineral supplements, the most common were supplements such as cod liver oil, and garlic pills or garlic mixtures (8, 50%). Other supplements taken by the respondents were calcium (5), vitamins plus minerals (5), Vitamin C (4), Vitamin B Complex (3), multi vitamins (3),

Vitamin A (2), and Vitamin E (2). Of those who used supplements the majority took these once a day (7 times/week) and three women took supplements twice a day. Only eight women took more than one type of supplement.

5.2.8.3 Appetite

In response to the question "Would you describe your appetite as ...?" most women described their appetite as excellent (13, 28%) or good (22, 48%). Ten respondents (22%) described their appetite as fair and only 1 thought her appetite was poor. This was similar to findings reviewed by Schlenker (1984) who reported that most elderly living in the community describe their appetite as good or excellent even among those who live alone.

5.2.8.4 Meal and snack patterns

Although all of the women ate most of their meals at home and alone, the majority had company for at least one meal or snack and went out at least once to eat during the 3-day recall period. Eighty-five (39) percent of the respondents had at least one meal or snack with others over the three recall days. Sixty-one percent (28) of the respondents ate at least one meal/snack away from home during the 3-day recall period.

5.2.8.5 Diet Quality

5.2.8.5.1 Comparison of the mean number of servings consumed to Canada's Food Guide to Health Eating (CFG) recommendations.

The three-day mean number of servings consumed by the total sample was below the recommended number of servings in CFG for all food groups (see Table 9). The study criterion of one serving of a Vitamin A rich vegetable or fruit in a three-day period was met by the majority of subjects (74%). The 3-day mean for a Vitamin C rich vegetable or fruit was also met the study criterion. The respondents consumed a 3-day mean intake of 3.9 servings of grains per day, whereas CFG recommends a minimum of 5 servings per day. Only 9 (20%) consumed 5 or more servings of grain products per day. They consumed 4.3 servings of vegetables and fruit per day and only a third (15) met the minimum recommendation of 5 servings per day. Overall, the respondents seemed to prefer vegetables as they consumed more servings of vegetables (2.4) compared to fruits (1.9) per day. The 3-day mean intake of milk was 1.3 servings which was also below the 2-4 servings recommended by CFG. Only 12 (26%) consumed 2 or more servings of milk per day. CFG recommends 2-3 servings of meat and alternatives per day. The mean intake was below this at 1.5 servings per day. Only 10 (22%) consumed 2 or more servings of meat and alternatives per day. (See Appendix E for Canada's Food Guide to Healthy Eating and

Appendix F for examples of serving sizes used to determine diet quality)

The distribution of intakes showed that most women did not meet the recommended number of servings in CFG and a considerable number consumed less than 50% of the recommended number of servings (Table 10). Thirty-nine percent (18) of the women consumed less than half of the recommended number of servings of milk products which are important sources of calcium. Only five women were taking calcium supplements. Twenty-six percent (12) consumed less than 50% of the recommended number of servings of vegetables and fruit. At least a quarter of the respondents did not consume a vitamin A rich food during the 3 days and 13% did not consume an average of 1 Vitamin C rich food per day.

At least two thirds of the sample did not meet the minimum number of servings for any of the four food groups. Grain products, meat and alternatives, and milk products were consumed in the least amounts with the majority of respondents not meeting the recommended number of servings. Eighty percent (37) did not consume the minimum of 5 servings of grains and 78% (36) did not consume the minimum of 2 servings of meat and alternatives (Table 10).

TABLE 9

MEAN DIET QUALITY SCORE AND MEAN NUMBER OF SERVINGS OF EACH FOOD GROUP IN FIRST, SECOND AND THIRD RECALL AND FOR THE THREE-DAY PERIOD (n=46)

FOOD GROUP AND SERVINGS PER DAY[1]	FIRST RECALL[2]	SECOND RECALL[3]	THIRD RECALL[3]	THREE-DAY MEAN	
	Mean (±SD)[4]	Mean (±SD)	Mean (±SD)	Mean (±SD)	Range
Grain products 5-12 servings	4.1 (1.3)	3.8 (1.6)	3.9 (1.5)	3.9 (1.0)	1.5-6.3
Vegetables & Fruit 5-10 servings	3.8 (2.1)	4.8 (2.2)	4.3 (2.3)	4.3 (1.6)	0.7-7.5
Milk products 2-4 servings	1.2 (1.1)	1.4 (0.9)	1.3 (1.0)	1.3 (0.8)	0.1-3.0
Meat & Alternatives 2-3 servings	1.5 (0.8)	1.5 (0.8)	1.5 (0.8)	1.5 (0.5)	0.2-2.3
Fruits	1.9 (1.4)	2 (1.4)	1.8 (1.2)	1.9 (1.1)	0.0-4.3
Vegetables	1.8 (1.4)	2.8 (1.7)	2.6 (1.7)	2.4 (1.0)	0.7-5.2
Vitamin A-rich vegetables & fruit	74[5]	63	63	74[6]	0-3
Vitamin C-rich vegetables & fruit	0.9 (0.8)	1.1 (1.0)	1.0 (0.8)	1.0 (0.7)	0-2.7
Diet quality score	15.3 (3.7)	16.3 (3.0)	15.85 (4.2)	15.8 (3.0)	7.8-21.9

[1] Canada's Food Guide to Healthy Eating (Minister of Supply and Services Canada, 1992)
[2] Recall from home visit
[3] Telephone recalls
[4] Standard deviation
[5] Percentage of respondents who had 1 serving on that day
[6] Percentage of respondents who had at least one serving in 3 days

Table 10

PERCENTAGE OF WOMEN NOT MEETING THE RECOMMENDED NUMBER OF SERVINGS IN CANADA'S FOOD GUIDE TO HEALTHY EATING

FOOD GROUP	% OF RESPONDENTS	% BELOW 50% OF RECOMMENDED SERVINGS[1]
Grain products	80% (37)[2]	15% (7)
Vegetables & fruit	67% (31)	26% (12)
Milk products	74% (34)	39% (18)
Meat & alternatives	78% (36)	9% (4)
Vitamin A rich vegetable & fruit	26% (12)[3]	-[4]
Vitamin C rich vegetable & fruit	13% (6)	-[4]

[1] Percentage of respondents whose three-day mean intakes were less than 50% of the recommended number of servings
[2] Number of respondents not meeting the recommended number of servings
[3] Percentage and number of respondents who had no vitamin A rich vegetable or fruit in 3 days
[4] Scoring was truncated at a minimum of one serving per day for vitamin C and one in 3 days for vitamin A, those lower than one were given a score of zero.

A Canadian study compared three-day mean daily food intakes of 50 senior citizens with Canada's Food Guide Recommendations (Harrison et al. 1982). The number of servings of milk and milk products (1.2) and meat and meat alternates (1.7) was similar to the consumption of milk products (1.3) and meat and alternatives (1.5) found in this study. The consumption of breads and cereals (4.7) and fruits and vegetables (4.9) was somewhat higher than the consumption of grain products (3.9) and vegetables and fruits (4.3) found in this study. The study by Harrison et al. (1982) included men and women and those who lived with others and who lived alone which may have affected food

consumption. Krondl et al. (1982) found that Canadian women consumed more fruit and vegetables than men although Reid and Miles (1977) reported that the consumption of fruits and vegetables was commonly below the recommendations of Canada's Food Guide.

In this study and that of Harrison et al. (1982) the recommended number of servings of milk products and meat and alternatives was not met. In both studies, respondents consumed the recommended number of Vitamin C rich fruits and vegetables as set in the study, although those in the study by Reid and Miles (1977) consumed less than the recommended number of Vitamin A rich foods. Other research using The Basic Four Food Guide, previously used in the United States, found that those 65 years and older did not meet the recommended number of servings for any of the four food groups (Slesinger et al. 1980).

5.2.8.5.2 Diet Quality Score

The mean diet quality score was similar across all three nonconsecutive days. The 3-day mean score was 15.8 and scores ranged from 7.8-21.9. The distribution of scores for the total sample showed that most women (63%, n= 29) had scores between 14 and 18. No one met the diet quality level of 23 set in this study although one respondent had a close score of 21.9. Six women (13%) had scores greater than 18 and 11 (24%) had scores below 14.

5.2.8.6 Diet Diversity

The dietary pattern suggested by the home recall and the two food diary assisted recalls reflects the wide variety of foods available. Over the 3 days, 264 different foods were found in the recalls of the total sample (Appendix G). Only 31 foods were considered common, that is, consumed by 15% (n=7) or more of the sample. In order to better describe the commonalities among the foods consumed by the respondents, similar foods were grouped together (Appendix H). Foods that were regrouped were all cooked cereals, all ready-to-eat cereals, nutritious muffins (contain whole grain cereals, dried fruit, carrots, zucchini, banana), crackers, whole wheat, rye and multigrain breads, fruit juices, potatoes, beef combination dishes, chicken combination dishes, egg combination dishes, pasta combination dishes, fish combination dishes, cream soups, beef based soups, chicken based soups, vegetable soups, fruit pies, cookies, nutritious cakes and slices (contain whole grain cereals, dried fruit, carrots, zucchini, banana) such as banana and date loaf, and other cakes and slices such as pound cake. Grouping foods increased the number of common foods to forty-seven.

Table 11 lists the frequency of occurrence of the common foods in the diet. The most common food consumed was milk, that is, 91% of the respondents consumed milk. Nine foods were consumed by 50%-74% of the respondents, 17 foods

were consumed by 25%-49%, and 20 foods were consumed by 15%-24% of the respondents.

In order to describe the food pattern, the foods eaten by 15% or more of the respondents were categorized by food groups (Table 12). The diet, in general, consisted of milk, usually consumed with cereal or as a beverage, and hard cheeses; a limited variety of fruits and vegetables were consumed; a wide variety of grains were consumed as breads (whole grain, white, fruit breads), cereals (both ready-to-eat and cooked), crackers and muffins, and rice; a more limited variety of meat and alternatives were consumed. The most popular meat and alternatives choice was chicken, followed by beef, eggs and peanut butter/nuts, and other meats (ground beef, ham, pork and salmon). The diet also consisted of a variety of combination dishes and both cream and vegetables soups. Cookies were popular, followed by both nutritious and non-nutritious cakes and slices and fruit pies.

As mentioned previously, fats and oils, condiments, concentrated sugars and beverages were not included in the diet diversity score. These are discussed here to describe the diet more completely. The majority of women ($\geq$ 75%) consumed butter or margarine, followed by mayonnaise and salad dressings; the most common condiment was pickles; concentrated sugars were consumed as sugar, jams and jellies and honey. Most women ($\geq$ 75%) consumed coffee and/or tea as

a beverage.

Krondl et al. (1982) reported that similar common foods were consumed by noninstitutionalized seniors living alone: tea and coffee were the most common beverages; whole grain breads and breakfast cereals were the most common grains; eggs, hard cheese and chicken were the most common protein sources; potatoes and carrots were the most common vegetable; and bananas and fruit juices were the most common fruits.

TABLE 11

COMMON FOODS IN THE DIET BY FREQUENCY OF OCCURRENCE IN THE 3-DAY RECALLS

	FOOD ITEM	PERCENTAGE
≥ 75%	milk	91%
≥ 50%-74%	whole grain breads	74%
	potatoes	74%
	fruit juices	67%
	white breads	63%
	bananas	59%
	cookies	57%
	ready-to-eat cereals	54%
	chicken	54%
	carrots	50%
≥ 25%-49%	tomatoes	43%
	crackers	41%
	cooked cereals	39%
	apples	39%
	hard cheese and slices	37%
	nutritious cakes and slices	35%[1]
	lettuce salad	33%
	peanut butter and nuts	33%
	ice cream	30%
	beef	30%
	peas	28%
	pasta combination dishes	28%
	cream soups	28%
	eggs	26%
	beef combination dishes	26%
	non-nutritious cakes and slices	26%
	muffins	26%

TABLE 11 CONTINUED

15%-24%	broccoli	24%
	oranges	22%
	ground beef	22%
	vegetable soups	21%
	rice and rice cakes	20%
	onions	20%
	ham deli slices	20%
	pork roast, chops, spare ribs	20%
	chicken soups	20%
	raisin and fruit breads	17%
	ham roast	17%
	chicken combination dishes	17%
	beef soups	17%
	fruit pies	17%
	fruit salad	15%
	corn	15%
	cole slaw	15%
	salmon	15%
	egg combination dishes	15%
	fish combination dishes	15%

[1] Nutritious cakes and slices contain whole-grain cereal, dried fruit, carrots, zucchini, banana, peanut butter while non-nutritious cakes and slices do not.

TABLE 12

FOODS EATEN BY AT LEAST FIFTEEN PERCENT OF THE WOMEN ON AT LEAST ONE DAY IN THE 3-DAY RECALLS, CLASSIFIED BY FOOD GROUP

FOOD GROUP	≥ 75%	≥ 50%	≥ 25%	≥ 15%
Milk products	milk		hard cheese and slices, ice cream	
Fruits		fruit juices, bananas	apples	oranges, fruit salad
Vegetables		potatoes, carrots	tomatoes, lettuce salad, peas	broccoli, onions, corn, cole slaw
Grains		whole grain breads, white bread, ready-to-eat cereal	crackers, cooked cereals, muffins	rice and rice cakes, raisin and fruit bread
Meat and alternatives		chicken	peanut butter and nuts, beef, eggs,	ground beef, ham, deli ham, pork, salmon
Combination dishes			pasta dishes, beef dishes	chicken dishes, egg dishes, fish dishes
Soups			cream soups	vegetable chicken, beef soups
Baked goods		cookies	nutritious[1] and non nutritious cakes and slices	fruit pies

TABLE 12 CONTINUED

Fats and oils[2]	butter margar -ine		mayonnaise	salad dressings
Condiments[2]				pickles
Concentrated sugars[2]		sugar	jams and jellies	honey
Beverages[2]	coffee tea			

[1] Nutritious cakes and slices contain whole-grain cereal, dried fruit, carrots, zucchini, banana, peanut butter while non-nutritious cakes and slices do not.
[2] These items were not counted in the diet diversity score and are here only for descriptive purposes.

5.2.8.6.1 Food Diversity Score

Although 264 different foods were eaten by the respondents, most ate a smaller number of foods. The number of common foods and uncommon foods were added together to give an "all foods" score (Table 13). The 3-day mean "all food" score was 10. Using the 24 hour recall method, Davis et al. (1985) reported a similar mean diet diversity score of 9 for noninstitutionalized elderly.

The distribution of the "all foods" score for the total sample showed that 70% (n=32) of the women consumed an average of 8-11 different foods per day. Fifteen percent (n=7) of the women consumed an average of 3-7 different foods per day and 15% (n=7) ate an average of 12-16 different foods. These findings were similar to those of

Davis et al. (1985) who reported that 10% (n=347) of their respondents consumed five or fewer foods using the 24 hour recall method and a similar diet diversity procedure. Using dietary frequency data to determine usual dietary intake, Davis et al. (1985) found that 14% reported a usual dietary intake of five or fewer foods per day.

TABLE 13

DIET DIVERSITY SCORES (n=46)

	HOME VISIT RECALL SCORE	FIRST TELEPHONE RECALL SCORE	SECOND TELEPHONE RECALL SCORE	3-DAY MEAN SCORE
COMMON FOODS	7.7 (2.3)[1]	8.5 (2.3)	8.5 (2.7)	8.2 (1.9)
UNCOMMON FOODS	1.6 (1.3)	1.7 (1.3)	2 (1.5)	1.8 (0.9)
ALL FOODS	9.2 (2.8)	10.2 (2.9)	10.5 (3.3)	10.0(2.4)
RANGE	5 - 19	3 - 18	1 - 18	4.3-16

[1] Standard deviation

Chapter 6

Bivariate and Multivariate Results

6.1 Bivariate Correlations

It was hypothesized that nutritional support and social networks would be positively related to food patterns and interest in eating and food preparation. Although not hypothesized, appetite was included in the bivariate analysis as it was thought that the independent variables may also have a positive effect on appetite. Table 14 shows the correlations between the nutritional support and social network variables and diet quality, diet diversity, the interest variables, and appetite. Correlations between the control variables and the independent and dependent variables also are presented. Because the sample size was small, and this would decrease statistical power and increase the possibility of failure to detect a significant relationship when one exists, the significance level was set at $P \leq 0.10$.

6.1.1 Nutritional support, social network characteristics and dependent variables

No significant correlations were found between two of the nutritional support variables, instrumental support and social companionship, and diet quality or diet diversity scores. However, informational support was positively correlated with diet quality ($r=0.31$, $P \leq 0.05$). Those who

perceived more informational support had a greater diet quality. No significant correlations were found between the nutritional support variables and the interest in eating and food preparation variables.

Among the social network variables and diet quality and diet diversity, only the friends/neighbours network size and weekly contact were positively correlated with diet diversity ($r=0.25$, $P\leq 0.10$; $r=0.30$, $P\leq 0.05$). That is, those who had a larger network of friends and neighbours, and those who had more social contact on a weekly basis had greater diet diversity.

Two of the social network variables were positively correlated to appetite, total network size ($r=0.30$, $P\leq 0.05$) and family network size ($r=0.36$, $P\leq 0.05$). That is, those who had a larger total network, and those who had a larger family network had better appetites.

6.1.2 Control variables and dependent variables

6.1.2.1 Economic situation and dependent variables

The economic variables were found to be significantly correlated to diet quality and diet diversity, but were not found to be correlated to the two interest in eating and food preparation subscales or appetite (Table 14). As expected, those who were less economically disadvantaged had higher diet quality ($r=-.44$, $P\leq .05$) and diet diversity scores ($r=-.44$, $P\leq .05$) and contrary to expectations, diet

TABLE 14

Intercorrelations (r) Among Independent, Dependent and Control Variables

VARIABLE	DIET QUAL-ITY	DIET DIVER-SITY	INTRS EAT-ING	MONOT-ONY AVOID	APPE TITE	PRCVD HLTH STATUS	FUNCTNL DIS-ABLTY	CHRONIC HEALTH PROBLEM	PRCVD ECONMC SECRITY	ECONO MIC DISAD VNTG	AGE
PRCVD INSTRUMENTAL SUP											
PRCVD INFORMATIONAL SUP	.31[1]									-.26[2]	-.32[1]
PRCVD SOCIAL COMPAN SUP											
SOCIAL NETWORK SIZE					.30[1]						
FAMILY NETWORK SIZE					.36[1]	.29[1]					
FRIENDS AND NEIGHBOURS		.25[2]									
EVERYDAY CONTACT			.25[2]								
ONCE/WEEK CONTACT		.30[1]									
PRCVD HEALTH STATUS				.26[2]	.29[1]						
FUNCTIONAL DISABILITY		-.28[2]			-.43[1]	-.65[1]					.43[1]
# OF CHRONIC HEALTH PROB					-.41[1]	-.37[1]	.34[1]				
PRCVD ECONOMIC SECURITY	-.31[1]										
ECONOMIC DISADVANTAGE	-.44[1]	-.44[1]									.33[1]
AGE	-.33[1]	-.30[1]			-.33[1]		.43[1]			.33[1]	

[1]Correlation significant at $p \leq .05$
[2]Correlation significant at $p \leq .10$

quality decreased as perceived economic security increased ($r=-.31$, $P \leq .05$).

Research by Davis et al. (1985) found that low income, using the poverty index ratio, was associated with low diet diversity, low intake of fruits and vegetables and low nutrient intake. Ryan and Bower (1989) also found, using self-reported income, that the elderly who had incomes below the poverty level, as defined by the US standards, had inadequate nutrient intake. Reid and Miles (1977) found that those with greater financial resources consumed a greater variety of foods and beverages. Singleton et al. (1980) found a significant ($P<.05$) relationship with only one nutrient, calcium, that is, the elderly with higher annual incomes had higher intakes of calcium.

The Canada Health Survey (Health and Welfare Canada, 1981) and the Nutrition Canada Survey (Myres and Kroetsch, 1978) both reported that low income Canadians are at greater risk for nutrition problems. By contrast, another Canadian study by Harrison et al. (1982) found a negative relationship between socio-economic status and diet pattern levels (based on meeting recommendations of Canada's Food Guide) among the elderly. They suggested that those who had higher socio-economic status may not be able to adjust in a nutritionally adequate manner to a reduced food budget after retirement as well as those of lower socio-economic status. Krondl et al. (1982) did not find a link between income per

month and greater variety of food use among the elderly.

Different methods of measuring economic status have been used in nutrition research and thus results are not easily comparable across studies. In addition, a low correlation or no correlation between economic variables and nutrition outcomes may be due to lack of variation in the economic measures or the outcome measures. This may be why there are conflicting results on whether or not economic situation influences diet quality and/or diet diversity among the elderly. In this study, economic disadvantage was associated with low diet quality and diet diversity scores.

Greater perceived economic security was associated with lower diet quality in this study, contrary to expectation. This may be because some of the respondents who were more economically disadvantaged still perceived their income as meeting their needs adequately or very well. Forty-nine percent (n=22) of 45 respondents had no gap between income and expenses and only 15% (n=7) of the 45 respondents perceived that their income met their needs with some difficulty. There was no significant association between economic disadvantage and perceived economic security.

6.1.2.2 Health status and dependent variables

None of the health variables were significantly correlated with diet quality. However, functional

disability was negatively correlated with diet diversity ($r=0.28, P \leq .10$). That is, those with greater functional disability had less variety in their diet.

Walker and Beauchene (1991) found a positive correlation ($r=.28$ $p<.05$) between mean adequacy ratio for dietary intake and functional ability (fewer functional impairments) among 61 independently living elderly aged 60-94 years. They also found those who had higher numbers of and more severe physical illnesses had a less adequate diet. Learner and Kivett (1981) found that, among adults 50 years and older, self-rated health was related to the extent of their concern about diet. Health accounted for dietary concerns beyond those that might have occurred as a result of dietary intervention.

Other researchers, however, have found no relationship between health variables and dietary intakes. Singleton et al. (1980) found no significant effect of perceived health status and number of ailments on nutrient intake of 97 noninstitutionalized women aged 60 and older. Kim et al. (1984) also found no effect of poor health on dietary intakes for 104 independently living elderly men and women. As reported in a study by Krondl et al. (1982), whether self-rated health status among the elderly was thought to be good or poor it seemed to have little, if any, affect on adequacy of the diets consumed. Betts and Vivian (1985) found that although functional disability was significantly

($p<.05$) related to dietary adequacy it only explained a small part of the variance. Krondl et al. (1982) also found that the presence of physical disabilities did not affect the number of different foods eaten.

Perceived health status was positively correlated to the interest subscale avoiding monotony ($r=.26$, $P\leq.10$) but not with the other interest scale. Those who perceived better health status avoided monotony when eating and preparing food.

All the health variables were significantly correlated to appetite. As functional disability increased and as the number of health problems increased, appetite decreased ($r=-.43$, $P\leq.05$; $r=-.41$, $P\leq.05$ respectively). A positive correlation was also found between perceived health status and appetite ($r=.29$, $P\leq.05$).

6.1.2.3 Age and dependent variables

Age was found to be negatively correlated to diet quality ($r=-.33$ $P\leq.05$), diet diversity ($r=-.30$ $P\leq.05$), and appetite ($r=-.33$ $P\leq.05$), that is, with increasing age there was a decrease in diet quality and diet diversity and appetite scores. Age was not associated with the two interest in eating and preparing food subscales.

Other research has also suggested that increasing age is associated with poorer diet quality. Schafer and Keith (1982) found that as age increased for 69 elderly women (87%

widows), the quality of their diet decreased (nutrient density score). Singleton et al. (1980) also found a significant negative effect of age on energy intake ($P<0.01$) and protein, as well as carbohydrate, vitamin B_6, phosphorus and iron ($P<0.05$). In contrast, Krondl et al. (1982) reported that among 194 elderly, those aged 71-77 years had greater variety of food use than those 65-70 years of age. McIntosh et al. (1989) found that although age was associated with poorer appetite ($r=0.2$ $P\leq 0.01$). It was also positively correlated with nutrient intake ($r=0.2$ $P\leq 0.01$).

Although there seemed to be some evidence in the literature that increasing age is not necessarily associated with poorer diet quality or diet diversity, it is important to consider the age of the subjects in these studies. The mean age in this study was 77 years with a range of 70-85, whereas the age range in the study by Krondl et al. (1982) was 65-77 years and in the study by McIntosh et al. (1989) it was 69 years. Schafer and Keith (1982) reported on single women who ranged in age from 60-95 years with a mean age of 74. The mean age for subjects in the study by Singleton et al. (1980) was 73 years and ranged from 65 to 85. The negative effect of age may not have been evident in the studies of Krondl et al. (1982) and McIntosh et al. (1989) because the average age of the respondents were younger than in the present and other studies.

6.1.3 Intercorrelations of health status, economic situation, and age with independent variables

Among the three nutritional support subscales, only perceived informational support was significantly correlated to any of the control variables. Perceived informational support was negatively correlated to economic disadvantage ($r=-.26$, $P\leq.10$). Those who perceived they had more informational support were less economically disadvantaged. Perceived informational support was also negatively correlated with age ($r=-.32$, $P\leq.05$), that is, with increasing age there was a decline in perceived informational support. Those who were older were also more likely to be economically disadvantaged ($r=.31$, $P\leq0.05$). Several women expressed that they knew what to eat as a substitute, had no trouble understanding recipes and would throw out food that they thought was too old to keep instead of turning to someone for this type of information. It may be that the women who were more economically disadvantaged and women who were older did not rely on others for this type of support in the past and, therefore, do not perceive this type of support to be available.

Among the social network variables, only family network size was positively and significantly correlated with one health variable. Those with a larger family network perceived their health status to be better than those with a smaller family network ($r=.29$, $P\leq.05$). Research by

Weinberger et al. (1987) also found no correlation between physical disability and total network size, number of friends, number of relatives or social contact among elderly adults. In contrast, Mor-barak et al. (1991) found correlations between social network characteristics (size and frequency) and instrumental activities of daily living (IADL) ($r=.2$, $P<0.01$) among 3,559 poor, frail (nursing home certifiable) elderly aged 65 years and older. High scores on IADL indicated greater independence in performing physical tasks. Therefore, those who were able to do tasks more independently also had higher network scores.

The influence of objective health status (functional disability, number of chronic health problems) on social network characteristics may not have been seen in the present study because the health of the women may not have been limiting enough to influence the social network size or the frequency of social contact. However, women who had larger family networks tended to have higher self-rated health status than those with smaller family networks.

None of the economic variables were correlated with the network variables. However, Weinberger et al. (1987) found that persons who had more contact with members of their social network reported fewer financial needs. Coleman (1993) pointed out that low economic status may restrict participation in social events and eating out with friends.

No correlation was found between age and social network

characteristics in this study, although Mor-barak et al. (1991) found a negative correlation between age and a social network score, including size and frequency of social contacts ($r=-0.17$, $P<0.001$). The age range was 65 years and older in the study by Mor-barak et al. (1991), and a quarter of the women (more than 500) were over 85 years of age and considered frail (nursing home certifiable). The effect of age on social network size and frequency of contact may not be evident in the present study because the age range was limited to 70-85 years old.

The intercorrelations among the independent and control variables may lead to the chance of multicollinearity in the regression analysis. This may occur when controlling for economic disadvantage or age as these control variables were correlated to diet quality, diet diversity and perceived informational support. The magnitude of the correlations was not high (less than $r=0.50$) and thus multicollinearity was likely not to be a problem.

6.1.4 Correlations among the dependent variables

In this study there was a strong correlation between diet quality and diet diversity ($r=.69$, $P=0.0001$) (Table 14). There was no significant ($P\leq0.10$) correlation of diet quality or diet diversity with the two interest in eating and food preparation. A positive association was found between diet quality and appetite ($r=.28$, $P\leq0.10$) and no

significant correlation between appetite with diet diversity. There was also a significant association ($P \leq 0.05$) between appetite and the interest in eating and cooking subscale (Table 15).

TABLE 15

Intercorrelations (r) Among Dependent Variables

VARIABLE	1	2	3	4	5
1. DIET QUALITY	-				
2. DIET DIVERSITY	.69[3]	-			
3. INTEREST: E&CKG			-		
4. MONOTONY				-	
5. APPETITE	.28[2]		.37[3]		-

[1]Correlation significant at $p \leq .05$
[2]Correlation significant at $p \leq .10$

6.1.5 Summary of bivariate results

In terms of the hypothetical model, the nutritional support subscale, informational support, was only correlated to diet quality. The other support scales were not correlated to diet quality or diet diversity. Among the social network variables, a larger network of friends and neighbours and having contact with others on a weekly basis was moderately correlated with diet diversity. Although not included in the model, appetite was moderately associated with total network size and family network size.

Among the control variables, perceived economic security and economic disadvantage were negatively correlated to diet quality and economic disadvantage was

negatively correlated to diet diversity. Perceived health status was positively correlated to the interest subscale avoiding monotony. Perceived health status was positively correlated with appetite while functional disability and the number of chronic health problems were negatively correlated to appetite. Age was negatively correlated with diet quality, diet diversity and appetite.

Multivariate analysis and three-way cross-tabulations were conducted to further examine the relationships between the independent, dependent and control variables and to determine if there were any changes in the picture seen in the bivariate results.

6.2 Multiple Regression Response Surface and Three-way Cross-tabulation Results

6.2.1 The influence of nutritional support and social network characteristics on diet quality

Relationships between diet quality and each of the nutritional support and social network characteristics were examined, taking health status, economic situation and age separately into account. Only informational support, family network size, friends/neighbours network size and everyday social contact emerged as significant for diet quality (see below for discussion). No significant effects of instrumental support, social companionship, total network size, and amount of contact once a week were apparent (See Appendix J for results from regression analyses).

Informational Support

Considering first informational support and the number of chronic health problems together, the regression analysis explained 22% of the variation (R^2=0.22). However, only informational support and the interaction of this support and the number of chronic health problems emerged as significant for diet quality. The tendency was for diet quality to increase as support increased (P=0.01, T_{40}), but the patterns differed according to the number of chronic health problems (P=0.05, T_{40}) (Table 16).

TABLE 16

RESPONSE SURFACE FOR PERCEIVED INFORMATIONAL SUPPORT AND CHRONIC HEALTH PROBLEMS ON DIET QUALITY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Informational support	3	74.27	26.76	3.47	0.03
Chronic health problems	3	35.79	11.93	1.67	0.19

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	10.65	2.44	0.0001
Informational support	1	3.83	1.47	0.01
Chronic health problems	1	1.67	1.08	0.13
Info sup*info sup	1	-0.49	0.42	0.25
Health prob*info sup	1	-0.43	0.21	0.05
Health prob*health prob	1	-0.14	0.11	0.20

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	285.76	7.14

The three-way cross-tabulations illustrate the need to take the number of chronic health problems into account (Table 17). Among those with 3 or fewer health problems, 5 of the 11(45%) respondents with low informational support had low diet quality compared to none of those with medium or high support. None of the 11 with low support had high diet quality compared to 3 of 7(43%) of those with medium support and 1 of 3 (33%) with high support.

The pattern was not as clear among those with 4 or more chronic health problems. Here 4 of the 12(33%) with low support and 2 of 9(22%) with medium support had low diet quality, while none of the 4 with high support had low diet

TABLE 17

DIET QUALITY BY INFORMATIONAL SUPPORT CONTROLLING FOR NUMBER OF CHRONIC HEALTH PROBLEMS=LOW[1]

DIET QUALITY[2]	PERCEIVED INFORMATIONAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	5 23.81 100.00 45.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 23.81
MEDIUM	6 28.57 50.00 54.55	4 19.05 33.33 57.14	2 9.52 16.67 66.67	12 57.14
HIGH	0 0.00 0.00 0.00	3 14.29 75.00 42.86	1 4.76 25.00 33.33	4 19.05
TOTAL	11 52.38	7 33.33	3 14.29	21 100.00

[1] CHRONIC HEALTH PROBLEMS
LOW=0-3

[2] DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 >

[3] INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

DIET QUALITY BY INFORMATIONAL SUPPORT CONTROLLING FOR NUMBER OF CHRONIC HEALTH PROBLEMS=HIGH[1]

DIET QUALITY[2]	PERCEIVED INFORMATIONAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	4 16.00 66.67 33.33	2 8.00 33.33 22.22	0 0.00 0.00 0.00	6 24.00
MEDIUM	4 16.00 36.36 33.33	4 16.00 36.36 44.44	3 12.00 27.27 75.00	11 44.00
HIGH	4 16.00 50.00 33.33	3 12.00 37.50 33.33	1 4.00 12.50 25.00	8 32.00
TOTAL	12 48.00	9 36.00	4 16.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS
HIGH=4 >

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18>

[3]INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

quality. Medium diet quality was more likely among those with high support (3 of 4, 75%). High diet quality was reported by 4 of 12 (33%), 3 of 9 (33%) and 1 of 4 (25%) with low, medium and high support, respectively.

Of all the control variables, only the number of chronic health problems emerged as an important variable to consider when looking at the relationship between informational support and diet quality. However, the overall pattern of increasing diet quality with increased informational support was more evident among those with relatively few rather than more health problems.

Family Size

Family size ($P=0.08$, T_{39}) and the interaction of this network variable with perceived economic security ($P=0.08$, T_{39}) also emerged as significant for diet quality (Table 18). Overall, the regression analysis explained 19% of the variation in diet quality ($R^2=0.19$).

Again the three-way cross-tabulations highlight the differences according to economic security (Table 19). Among the 32 respondents with a relatively low feeling of economic security, 4 of the 17 (24%) with small families and 2 of the 8 (25%) with medium sized families had low diet quality compared to none of those with large families. Medium diet quality was more prevalent among those with

TABLE 18

RESPONSE SURFACE FOR FAMILY NETWORK SIZE AND PERCEIVED ECONOMIC SECURITY ON DIET QUALITY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Family network	3	30.97	10.32	1.45	0.24
Perceived economic security	3	55.14	18.38	2.59	0.07

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	13.77	4.34	0.003
Family network	1	0.76	0.42	0.08
Perceived economic security	1	-0.12	3.78	0.98
Family network*family network	1	-0.02	0.01	0.26
Prcvd ec sec*family network	1	-0.17	0.10	0.08
Prcvd ec sec*prcvd ec sec	1	0.09	0.85	0.91

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	39	277.07	7.10

TABLE 19

DIET QUALITY BY FAMILY NETWORK SIZE CONTROLLING FOR PERCEIVED ECONOMIC SECURITY=LOW[1]

DIET QUALITY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	FAMILY NETWORK[3] SMALL	MEDIUM	LARGE	TOTAL
LOW	4 12.50 66.67 23.53	2 6.25 33.33 25.00	0 0.00 0.00 0.00	6 18.75
MEDIUM	10 31.25 58.82 58.82	3 9.38 17.65 37.50	4 12.50 23.53 57.14	17 53.13
HIGH	3 9.38 33.33 17.65	3 9.38 33.33 37.50	3 9.38 33.33 42.66	9 28.13
TOTAL	17 53.13	8 25.00	7 21.88	32 100.00

[1]PERCEIVED ECONOMIC SECURITY LOW=0-2

[2]DIET QUALITY LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]FAMILY NETWORK SIZE
SMALL=0-8
MEDIUM=9-16
HIGH=17 OR >

TABLE 19 CONT.

DIET QUALITY BY FAMILY NETWORK SIZE CONTROLLING FOR PERCEIVED ECONOMIC SECURITY=HIGH[1]

DIET QUALITY[3] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	FAMILY NETWORK[2] SMALL	MEDIUM	LARGE	TOTAL
LOW	2 15.38 40.00 33.33	2 15.38 40.00 33.33	1 7.69 20.00 100.00	5 38.46
MEDIUM	3 23.08 50.00 50.00	3 23.08 50.00 50.00	0 0.00 0.00 0.00	6 46.15
HIGH	1 7.69 50.00 16.67	1 7.69 50.00 16.67	0 0.00 0.00 000	2 15.38
TOTAL	6 46.15	6 46.15	1 7.69	13 100.00

[1]PERCEIVED ECONOMIC SECURITY HIGH=3

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]FAMILY NETWORK SIZE
SMALL=0-8
MEDIUM=9-16
HIGH=17 OR >

small (10 of 17, 59%) and large families (4 of 7, 57%) compared to those with medium families (3 of 8, 38%). High diet quality was more likely for those with medium (3 of 8, 38%) or large families (3 of 7, 43%) and less likely for those with small families (3 of 17, 18%).

It was difficult to detect a pattern among those with better perceptions of economic security as only 13 respondents were in this category. Here, those with small and medium sized families were equally likely to have low, medium or high diet quality. The only one individual who had a large network had low diet quality.

Of all the control variables, only when perceived economic security was taken in account did family size exert

a significant effect of diet quality. In this situation, the differences in diet quality according to family size were accounted for among those with low economic security.

Friends and Neighbours Network Size

Considering the size of the friends and neighbours network, it is again the interaction of the network variable with a control variable, age, that emerged as significant for diet quality ($P=0.07$, T_{40}) (Table 20). Overall, 20% of the variation in diet quality was explained by the regression analysis ($R^2=0.20$).

The three-way cross-tabulations highlight the differences according to age (Table 21). Among the 21 who were 70-75 years of age, those who had a small (n=11) or medium size network (n=7) of friends/neighbours were equally likely to have a low, medium or high diet quality. Only 3 had large networks and all had medium diet quality.

The pattern was different emerged among the 25 who were 76 years and older. Here 6 of 11(55%) who had a small network of friends/neighbours had low diet quality, compared to only 3 of 12 (25%) with a medium sized network. Five of the 11(45%) who had a small network and 4 of the 12 (33%) who had a medium size network reported medium diet quality. The two women who reported large networks had medium diet quality. Only those with a medium size network (5 of 12, 42%) reported high diet quality.

TABLE 20

RESPONSE SURFACE FOR FRIENDS/NEIGHBOURS NETWORK SIZE AND AGE ON DIET QUALITY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Friends/neighbours	3	32.65	10.88	1.50	0.23
Age	3	67.39	22.46	3.09	0.04

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	54.48	135.88	0.69
Friends/neighbours	1	-1.93	1.18	0.11
Age	1	-0.50	3.48	0.89
Frnds/neighbours*frnds/nb	1	-0.01	0.01	0.50
Age*friends/neighbours	1	0.03	0.02	0.07
Age*Age	1	-0.00	0.02	0.99

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	291.11	7.28

TABLE 21

DIET QUALITY BY FRIENDS/NEIGHBOURS NETWORK SIZE CONTROLLING FOR AGE=LOW[1]

DIET QUALITY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	FRIENDS/NEIGHBOURS NETWORK[3] SMALL	MEDIUM	LARGE	TOTAL
LOW	1 4.76 50.00 9.09	1 4.76 50.00 14.29	0 0.00 0.00 0.00	2 9.52
MEDIUM	6 28.57 50.00 54.55	3 14.29 25.00 42.86	3 14.29 25.00 100.00	12 57.14
HIGH	4 19.05 57.14 36.36	3 14.29 42.86 42.86	0 0.00 0.00 0.00	7 33.33
TOTAL	11 52.38	7 33.33	3 14.29	21 100.00

[1]AGE LOW=70-75

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]FRIENDS/NEIGHBOURS NETWORK SIZE
SMALL=0-10
MEDIUM=11-20
HIGH=21 OR >

TABLE 21 CONTINUED

DIET QUALITY BY FRIENDS/NEIGHBOURS NETWORK SIZE CONTROLLING FOR AGE=HIGH[1]

DIET QUALITY[3]	FRIENDS/NEIGHBOURS NETWORK[2]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	SMALL	MEDIUM	LARGE	TOTAL
LOW	6 24.00 66.67 54.55	3 12.00 33.33 25.00	0 0.00 0.00 0.00	9 36.00
MEDIUM	5 20.00 45.45 45.45	4 16.00 36.36 33.33	2 8.00 18.18 100.00	11 44.00
HIGH	0 0.00 0.00 0.00	5 20.00 100.00 41.67	0 0.00 0.00 0.00	7 33.33
TOTAL	11 44.00	12 48.00	2 8.00	21 100.00

[1]AGE HIGH=76 OR OLDER

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]FRIENDS/NEIGHBOURS NETWORK SIZE
SMALL=0-10
MEDIUM=11-20
HIGH=21 OR >

Of all the control variables, only when age was accounted for did the size of the friends/neighbours network reveal any significant effects on diet quality. In this case, higher diet quality among those with a larger network of the friends and neighbours was only evident among individuals who were 76 years and older.

Everyday Social Contact

Turning to everyday contact, again the network variable and the interaction of this variable with the control variable, functional disability, were significant for diet quality (P=0.06, T_{40} P=0.07, T_{40}) (Table 22). Overall, the regression explained 14% of the variation in diet quality.

TABLE 22

RESPONSE SURFACE FOR EVERYDAY SOCIAL CONTACT AND FUNCTIONAL DISABILITY ON DIET QUALITY[1]

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Everyday contact	3	28.99	9.67	1.23	0.31
Functional disability	3	48.23	16.08	2.06	0.12

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	43.48	34.98	0.22
Everyday contact	1	-3.84	2.02	0.06
Functional disability	1	-36.72	59.45	0.54
Everyday*everyday	1	0.05	0.16	0.74
Functnl dis*everyday	1	3.20	1.72	0.07
Functnl dis*functnl dis	1	10.64	24.93	0.67

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	312.98	7.82

TABLE 23

DIET QUALITY BY EVERYDAY CONTACT CONTROLLING FOR FUNCTIONAL DISABILITY=LOW[1]

DIET QUALITY[2] / EVERYDAY CONTACT[3]	LOW	MEDIUM	HIGH	TOTAL
LOW	2 10.00 66.67 18.18	1 5.00 33.33 20.00	0 0.00 0.00 0.00	3 15.00
MEDIUM	5 25.00 50.00 45.45	2 10.00 20.00 40.00	3 15.00 30.00 75.00	10 50.00
HIGH	4 20.00 57.14 36.36	2 10.00 28.57 40.00	1 5.00 14.29 25.00	7 35.00
TOTAL	11 55.00	5 25.00	4 20.00	20 100.00

FREQUENCY
PERCENT
ROW PERCENT
COLUMN PERCENT

[1]FUNCTIONAL DISABILITY LOW=NONE

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=3-4
HIGH=5 OR >

TABLE 23 CONTINUED

DIET QUALITY BY EVERYDAY CONTACT CONTROLLING FOR FUNCTIONAL DISABILITY=HIGH[1]

DIET QUALITY[3] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EVERYDAY CONTACT[2] LOW	MEDIUM	HIGH	TOTAL
LOW	3 11.54 37.50 27.27	4 15.38 50.00 33.33	1 3.85 12.50 33.33	8 30.77
MEDIUM	6 23.08 46.15 54.55	6 23.08 46.15 50.00	1 3.85 7.69 33.33	13 50.00
HIGH	2 7.69 40.00 18.18	2 7.69 40.00 16.67	1 3.85 20.00 33.33	5 19.23
TOTAL	11 42.31	12 46.15	3 11.54	26 100.00

[1]FUNCTIONAL DISABILITY HIGH=SOME

[2]DIET QUALITY
LOW=0-14.4
MEDIUM=14.5-17.9
HIGH=18 OR >

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

In this situation, the three-way cross-tabulations suggest that there are no differences according to functional disability (Table 23). This may be due to small sample size as most respondents who had no functional disability had a small number of daily contacts (55%) and those with some disability tended to have a small or medium number of daily contacts (88%). Of the 20 respondents who had no disability, 5 of the 11(45%) with low support and 5 of the 9(56%) with medium or high support had medium diet quality. Overall, those with a low or medium amount of daily contact were equally likely to have low or high diet quality. No one with high contact had low diet quality.

The pattern was the same among the 26 respondents who had some functional disability; that is, there were no differences among those with low or medium daily contact. Here, those who had low or medium daily contact were equally likely to have low, medium or high diet quality. Only 3 individuals had high daily contact, of which one had low, one had medium and one had high diet quality.

Summary

In summary, relatively few of the nutritional support or network characteristics emerged as significant for diet quality. For those that were significant, the relationships varied when taking certain control variables into account. Looking first at informational support, it is only among those with relatively few chronic health problems where higher diet quality was found among those with higher levels of informational support. This pattern was less evident among those with more health problems. In addition, when taking other control variables into account informational support did not emerge as important for diet quality.

In terms of the network variables, it was only family size in conjunction with perceived economic security, the friends and neighbours network in combination with age, and everyday contact in conjunction with functional disability that were significant. More specifically, among those with poor perceived economic security, higher diet quality

appeared to be related to having a larger family network, but this trend was not evident among those with better perceived economic security. It may be that the number or respondents with better economic security may be too small (n=13) to detect such an effect among those with better economic security. In addition, among older respondents, those with a larger friends and neighbours network tended to have higher diet quality than those with a smaller friends/neighbours network, but this trend was not seen among those who were younger. In regard to daily contact, the three-way cross-tabulations did not reveal the moderating influence of functional disability found in the regression analysis for daily contact on diet quality. However, as mentioned previously, this may be due to small sample size and most respondents having a low number of daily contacts.

6.2.2 The influence of nutritional support and social network characteristics on diet diversity

Attention now turns to diet diversity. Relationships between diet diversity and each of the nutritional support and social network characteristics were also examined, taking health status, economic situation, and age separately into account. Only informational support and everyday social contact emerged as significant for diet diversity (see below for discussion). No significant effects were

found for instrumental or social companionship support, for the size of the family, friends/neighbours, or total network, or for once a week social contact (Appendix J).

Informational Support

Looking first at informational support and the number of chronic health problems together, the regression explained 13% of the variation (R^2=0.13). As with diet quality, the interaction of this support variable with chronic health problems emerged as significant (P=0.05) (Table 24).

The three-way cross-tabulations further illustrate the interaction effect (Table 25). Among the 21 with 3 or fewer health problems, 3 of the 11(28%) respondents with low informational support had low diet diversity compared to none of those with medium or high support. Five of the 11 (45%) who had low support had medium diet diversity, and 6 of 7(85%) who had medium support and 1 of 3(100%) with high support had medium diet diversity. Only 3(27%) had low support and high diet diversity, compared with 1 of 7(14%) with medium and 2 of 3(67%) with high support. This suggest that diet diversity was higher among those with more support.

Among those with 4 or more health problems, 4(33%) had low support and low diet diversity compared to only 1(11%) with medium support and none with high support. Eight of

TABLE 24

RESPONSE SURFACE FOR PERCEIVED INFORMATIONAL SUPPORT AND CHRONIC HEALTH PROBLEMS ON DIET DIVERSITY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Informational support	3	27.19	9.06	1.86	0.15
Chronic health problems	3	20.73	6.91	1.42	0.25

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	6.24	2.02	0.003
Informational support	1	1.69	1.21	0.17
Chronic health problems	1	1.32	0.89	0.14
Info sup*info sup	1	0.02	0.35	0.96
Health prob*info sup	1	-0.36	0.18	0.05
Health prob*health prob	1	-0.10	0.09	0.28

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	194.60	4.87

TABLE 25

DIET DIVERSITY BY INFORMATIONAL SUPPORT CONTROLLING FOR NUMBER OF CHRONIC HEALTH PROBLEMS=LOW[1]

DIET DIVERSITY[2] / PERCEIVED INFORMATIONAL SUPPORT[3]	LOW	MEDIUM	HIGH	TOTAL
LOW	3 14.29 100.00 27.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 14.29
MEDIUM	5 23.81 41.67 45.45	6 28.57 50.00 85.71	1 4.76 8.33 33.33	12 57.14
HIGH	3 14.29 50.00 27.27	1 4.76 16.67 14.29	2 9.52 33.33 66.67	6 28.57
TOTAL	11 52.38	7 33.33	3 14.29	21 100.00

[1]CHRONIC HEALTH PROBLEMS
LOW=0-3

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

TABLE 25 CONTINUED

DIET DIVERSITY BY INFORMATIONAL SUPPORT CONTROLLING FOR NUMBER OF CHRONIC HEALTH PROBLEMS=HIGH[1]

DIET DIVERSITY[2]	PERCEIVED INFORMATIONAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	4 16.00 80.00 33.33	1 4.00 20.00 11.11	0 0.00 0.00 0.00	5 20.00
MEDIUM	3 12.00 21.43 25.00	8 32.00 57.14 88.89	3 12.00 27.43 75.00	14 56.00
HIGH	5 20.00 83.33 41.67	0 0.00 0.00 0.00	1 4.00 16.67 25.00	6 24.00
TOTAL	12 48.00	9 36.00	4 16.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS
HIGH=4 >

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

the 12(67%) who had low support, 9(100%) who had medium support and 4(100%) who had high support had medium or high diet diversity.

This suggests that higher, diet diversity was prominent when support was higher among those with few rather than more health problems, indicating a moderating effect was somewhat evident. None of the other health variables emerged as important for explaining the effect of informational support on diet diversity.

When economic disadvantage was considered as a control variable, informational support ($P=0.08$, T_{40}) and its interaction with the economic disadvantage ($P=0.05$, T_{40})

emerged as significant for diet diversity (Table 26). Overall, 28% of the variation in diet diversity was explained by the regression (R^2=.28).

The three-way cross-tabulations highlight the differences according to economic disadvantage (Table 27). Among the 23 respondents with low economic disadvantage, none had low diet diversity. High diet diversity was most prevalent among those with low support (7 of 9, 78%), rather than medium or high support. In contrast, when support was medium, 8 of 9(89%) had medium diet diversity, and when support was high, 4 of 5(80%) had medium diet diversity. When informational support was low, only 2 of 9 (22%) had medium diet diversity.

A different pattern emerged among the 22 respondents with high economic disadvantage. When support was low, 7 of

TABLE 26

RESPONSE SURFACE FOR PERCEIVED INFORMATIONAL SUPPORT AND ECONOMIC DISADVANTAGE ON DIET DIVERSITY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Informational support	3	17.37	5.79	1.44	0.25
Economic disadvantage	3	54.68	18.23	4.54	0.008

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	19.14	17.79	0.29
Informational support	1	-4.19	2.32	0.08
Economic disadvantage	1	-0.99	6.93	0.89
Info sup*info sup	1	0.09	0.35	0.77
Economic dis*info sup	1	0.77	0.38	0.05
Economic dis*economic dis	1	-0.13	0.67	0.84

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	160.65	4.01

TABLE 27

DIET DIVERSITY BY INFORMATIONAL SUPPORT CONTROLLING FOR ECONOMIC DISADVANTAGE=LOW[1]

DIET DIVERSITY[2]	PERCEIVED INFORMATIONAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00
MEDIUM	2 8.70 14.29 22.22	8 34.78 57.14 88.88	4 17.39 28.57 80.00	14 60.87
HIGH	7 30.43 77.78 77.78	1 4.35 11.11 11.11	1 4.35 11.11 20.00	9 39.13
TOTAL	9 39.13	9 39.13	5 21.74	23 100.00

[1]ECONOMIC DISADVANTAGE LOW=0-4

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

TABLE 27 CONTINUED

DIET DIVERSITY BY INFORMATIONAL SUPPORT CONTROLLING FOR ECONOMIC DISADVANTAGE=HIGH[1]

DIET DIVERSITY[2]	PERCEIVED INFORMATIONAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	7 31.82 87.50 50.00	1 4.55 12.50 16.67	0 0.00 0.00 0.00	8 36.36
MEDIUM	6 27.27 54.55 42.86	5 22.73 45.45 83.33	0 0.00 0.00 0.00	11 50.00
HIGH	1 4.55 33.33 7.14	0 0.00 0.00 0.00	2 9.09 66.67 100.00	3 13.64
TOTAL	14 63.64	6 27.27	2 9.09	22 100.00

[1]ECONOMIC DISADVANTAGE HIGH=5

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]INFORMATIONAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

Everyday Social Contact

Now looking at everyday contact and functional disability together, the regression explained 26% of the variation (R^2=0.26) in diet diversity. However, everyday contact (P=0.04, T_{40}), the quadratic term for everyday contact (P=0.10, T_{40}) and the interaction of everyday contact with functional disability (P=0.09, T_{40}), all emerged as significant for diet diversity (Table 28). It should be noted, however, that there was relatively little variation in everyday contact. Most respondents had low contact (14 of 20, 70% with no disability; 20 of 26, 77% with some disability).

The three-way cross-tabulations further illustrate the pattern (Table 29). Among the 20 respondents who had no functional disability, most had medium or high diet diversity. No one with medium or high daily contact had low diet diversity. Three of the 6(50%) who had medium or high daily contact had medium diet diversity, whereas 8 of the 14(57%) with low contact had medium diet diversity. Five of 14(36%) had low contact and high diet diversity, whereas 3 of 6(50%) with medium or high daily contact had high diet diversity.

Those with some functional disability (n=26) tended to have low or medium diet diversity. When daily contact was low, 6 of 20(30%) had low diet diversity, whereas 1 of 6(17%) of those with medium or high daily contact had low

TABLE 28

RESPONSE SURFACE FOR EVERYDAY SOCIAL CONTACT AND FUNCTIONAL DISABILITY ON DIET DIVERSITY[1]

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Everyday contact	3	31.65	10.55	5.57	0.07
Functional disability	3	34.50	11.50	2.80	0.05

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	43.16	25.36	0.10
Everyday contact	1	-3.16	1.46	0.04
Functional disability	1	-48.27	43.10	0.27
Everyday*everyday	1	0.20	0.12	0.09
Functnl dis*everyday	1	2.18	1.25	0.09
Functnl dis*functnl dis	1	16.45	18.08	0.37

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	164.53	4.11

TABLE 29

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR FUNCTIONAL DISABILITY=LOW[1]

DIET DIVERSITY[2]	EVERYDAY CONTACT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	1 5.00 100.00 7.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 5.00
MEDIUM	8 40.00 72.73 57.14	2 10.00 18.18 66.67	1 5.00 9.09 33.33	11 55.00
HIGH	5 25.00 62.00 35.71	1 5.00 12.50 33.33	2 10.00 25.00 66.67	8 40.00
TOTAL	14 70.00	3 15.00	3 15.00	20 100.00

[1]FUNCTIONAL DISABILITY LOW=NONE

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=O-2
MEDIUM=3-4
HIGH=5 OR >

TABLE 29 CONTINUED

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR FUNCTIONAL DISABILITY=HIGH[1]

DIET DIVERSITY[3]	EVERYDAY CONTACT[2]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	6 23.08 85.71 30.00	1 3.85 14.29 33.33	0 0.00 0.00 0.00	7 26.92
MEDIUM	12 46.15 80.00 60.00	1 3.85 6.67 33.33	2 7.69 13.33 66.67	15 57.69
HIGH	2 7.69 50.00 10.00	1 3.85 25.00 33.33	1 3.85 25.00 33.33	4 15.38
TOTAL	20 76.92	3 11.54	3 11.54	26 100.00

[1]FUNCTIONAL DISABILITY HIGH=SOME

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

diet diversity. Three of 6(50%) who had medium or high daily contact had medium diet diversity, and 12 of 14(60%) who had low contact had medium diet diversity. Two of the 20(10%)who had low daily contact and 2 of the 6(33%) who had medium or high daily contact had high diet diversity. The quadratic effects were not evident in the three-way cross-tabulations; however, there was some evidence of a moderating effect. When daily contact was higher diet diversity was higher among those with low functional disability, and this occurred to a lesser extent among those with high disability. As mentioned earlier, not being able to see a clear pattern may be due to only a few people

having medium or high daily contact.

The regression results and the three-way cross-tabulations of daily contact on diet diversity, when the number of chronic health problems was taken into account suggested that the moderating rather than the quadratic effect was evident (Appendix K). This was similar to the results when functional disability was considered.

The 21 respondents who had few chronic health problems tended to have medium or high diet diversity. When the number of chronic health problems was low, 2 of 14(14%) with low daily contact and 1 of 7(14%) with medium or high daily contact had low diet diversity. Eight of the 14(57%) who had low support and 4 of the 7(57%) who had medium or high daily contact had medium diet diversity. Four of 14(29%) with low daily contact and 2 of 7(29%) with medium or high daily contact had high diet diversity. This suggests that among those with few health problems, diet diversity tended to remain the same as daily contact increased.

A somewhat different pattern emerges for those with 4 or more health problems. Five of the 20(25%) respondents who had low daily contact had low diet diversity. In contrast, no one with medium or high daily contact had low diet diversity. When daily contact was low, 12 of 20(60%) had medium diet diversity, whereas 2 of 5(40%) of those with medium or high daily contact had medium diet diversity. Three of the 20(15%) with low daily contact and 3 of 5(60%)

with medium or high daily contact had high diet diversity. Again the quadratic effects were not evident. However, there was some indication of a moderating effect. Diet diversity tended to be higher among those with more daily contact only for those with many health problems.

When the influence of perceived health status was considered in the regression analysis, there were significant quadratic effects for everyday contact on diet diversity ($P=0.07$, T_{40}). Also, the interaction of everyday contact with perceived health status emerged as significant for diet diversity ($P=0.07$, T_{40}) (Appendix K). The regression analysis explained 19% of the variation in diet diversity ($R^2=0,19$).

The three-way cross-tabulations, however, show that the pattern was not clear as most respondents had low daily contact (Appendix K). Among those who perceived their health to be good(n=32), 6 of the 25(24%) who had low daily contact and 1 of 7(14%) who had medium or high daily contact had low diet diversity. Fourteen of 25(56%) with low daily contact and 2 of 7(29%) of those with medium or high daily contact had medium diet diversity. In contrast, 5 of 20(20%) of those with low daily contact and 4 of 7(57%) of those with medium or high daily contact had high diet diversity.

Only 14 respondents stated that they had excellent health status, therefore it was difficult to get a clear

pattern of effects for this group. Eight of 9(89%) of those with low daily contact had medium diet diversity, but when daily contact was high all had medium diet diversity (2, 100%).

In this case, a quadratic effect was not evident, however, there was some evidence of a moderating effect at higher levels of support, diet diversity was higher, among those who perceived good health. Diet diversity appeared to be medium regardless of the level of daily contact among those who perceived excellent health, however, the small number of respondents who perceived excellent health (n=14) make it difficult to see a pattern within this group.

Both of the economic variables, economic disadvantage and perceived economic security, emerged as important variables to consider when assessing the effect of daily contact on diet diversity. When economic disadvantage was accounted for, 33% of the variation in diet diversity was explained. Daily contact and the interaction of daily contact with economic disadvantage were significant (P=0.02, T_{40}; P=0.04 T_{40} respectively) (Table 30).

The three-way cross-tabulations illustrate the need to take economic disadvantage into consideration (Table 31). Among those with low economic disadvantage (n=23), no one had low diet diversity. However, 6 of 11(55%) with low contact and 8 of 12(67%) with medium or high contact had medium diet diversity. Five of 11(45%) of those with low

TABLE 30

RESPONSE SURFACE FOR EVERYDAY SOCIAL CONTACT AND ECONOMIC DISADVANTAGE ON DIET DIVERSITY[1]

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Everyday contact	3	28.14	9.38	2.50	0.07
Economic disadvantage	3	49.14	16.38	4.37	0.009

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	12.86	16.96	0.45
Everyday contact	1	-2.99	1.27	0.02
Economic disadvantage	1	1.24	6.62	0.85
Everyday*everyday	1	0.14	0.12	0.24
Economic dis*everyday	1	0.50	0.23	0.04
Economic dis*economic dis	1	-0.33	0.64	0.60

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	149.88	3.75

TABLE 31

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR ECONOMIC DISADVANTAGE=LOW[1]

DIET DIVERSITY[2]	EVERYDAY CONTACT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00
MEDIUM	6 26.09 42.86 54.55	6 26.09 42.86 75.00	2 8.70 14.29 50.00	14 60.87
HIGH	5 21.74 55.56 45.45	2 8.70 22.22 25.00	2 8.70 22.22 50.00	9 39.13
TOTAL	11 47.93	8 34.78	4 17.39	23 100.00

[1]ECONOMIC DISADVANTAGE LOW=0-5

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=O-2
MEDIUM=3-4
HIGH=5 OR >

TABLE 31 CONTINUED

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR ECONOMIC DISADVANTAGE=HIGH[1]

DIET DIVERSITY[3]	EVERYDAY CONTACT[2]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	3 13.64 37.50 30.00	5 22.73 62.50 55.56	0 0.00 0.00 0.00	8 36.36
MEDIUM	5 22.73 45.45 50.00	4 18.18 36.36 44.44	2 9.09 18.18 66.67	11 50.00
HIGH	2 9.09 66.67 20.00	0 0.00 0.00 0.00	1 4.55 33.33 33.33	3 13.64
TOTAL	10 45.45	9 40.91	3 13.64	22 100.00

[1]ECONOMIC DISADVANTAGE HIGH=6

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR>

daily contact had high diet diversity, whereas 4 of 12(33%) with medium or high daily contact had high diet diversity.

The pattern differed for the 22 respondents who had greater economic disadvantage. When daily contact was low or medium, 3 of 10(30%) and 5 of 9(56%) respectively, had low diet diversity. No one had high contact and low diet diversity. Five of 10(50%) with low daily contact and 6 of 12 (50%) who had medium or high daily contact had medium diet diversity. Only 2 of the 10(20%) who had low daily contact and 1 of the 12(8%) who had medium or high daily contact had high diet diversity. Overall, the moderating effect of economic disadvantage was evident in the three-way

cross-tabulations; diet diversity was lower among those with higher daily contact and low economic disadvantage, however, this effect was more striking among those with high economic disadvantage.

When perceived economic security was considered, the quadratic term for daily contact emerged as significant for diet diversity ($P=0.06$, T_{39}) (Table 32). The regression analysis explained 16% of the variation in diet diversity ($R^2=0.16$). However, it should be noted that relatively few individuals had high everyday contact (16%).

The three-way cross-tabulations illustrate that the quadratic effect was not prominent among either those who perceived low, or high economic security (Table 33). Among the 32 who felt less secure, 1 of 15(7%) with low daily contact had low diet diversity, whereas 3 of 17 (18%) who had medium or high daily contact had low diet diversity. Nine of 15(60%) with low daily contact and 10 of 17 (59%) with medium or high daily contact had medium diet diversity. Five of 15(33%) of those with low daily contact and 4 of 17(24%) of those with medium or high daily contact had high diet diversity. This suggests that the quadratic effect was not evident among those who perceived low economic security. However, it must be remembered there were few people with high contact in order for the quadratic effect to be examined.

TABLE 32

RESPONSE SURFACE FOR EVERYDAY SOCIAL CONTACT AND PERCEIVED ECONOMIC SECURITY ON DIET DIVERSITY[1]

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Everyday contact	3	28.14	9.38	2.50	0.07
Prcvd economic sec	3	49.14	16.38	4.37	0.009

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	7.81	3.17	0.12
Everyday contact	1	-0.35	0.93	0.71
Prcvd economic sec	1	2.57	2.94	0.39
Everyday*everyday	1	0.26	0.14	0.06
prcvd ec sec*everyday	1	-0.32	0.39	0.42
Prcvd ec sec*prcvd ec sec	1	-0.60	0.70	0.40

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	39	187.00	4.80

TABLE 33

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR PERCEIVED ECONOMIC SECURITY=LOW[1]

DIET DIVERSITY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EVERYDAY CONTACT[3] LOW	MEDIUM	HIGH	TOTAL
LOW	1 3.13 25.00 6.67	3 9.38 75.00 25.00	0 0.00 0.00 0.00	4 12.50
MEDIUM	9 28.13 47.37 60.00	7 21.88 36.84 58.33	3 9.38 15.79 60.00	19 59.38
HIGH	5 15.63 55.56 33.33	2 6.25 22.22 16.67	2 6.25 22.22 40.00	9 28.13
TOTAL	15 46.88	12 37.50	5 15.63	32 100.00

[1]PERCEIVED ECONOMIC SECURITY LOW=1-2

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=O-2
MEDIUM=3-4
HIGH=5 OR >

TABLE 33 CONTINUED

DIET DIVERSITY BY EVERYDAY CONTACT CONTROLLING FOR PERCEIVED ECONOMIC SECURITY=HIGH[1]

DIET DIVERSITY[3] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EVERYDAY CONTACT[2] LOW	MEDIUM	HIGH	TOTAL
LOW	2 15.38 50.00 28.57	2 15.38 50.00 50.00	0 0.00 0.00 0.00	4 30.77
MEDIUM	3 23.08 50.00 42.88	2 15.38 33.33 50.00	1 7.69 16.67 50.00	6 46.15
HIGH	2 15.38 66.67 28.57	0 0.00 0.00 0.00	1 7.69 33.33 50.00	3 23.08
TOTAL	7 53.85	4 30.77	2 15.38	13 100.00

[1]PERCEIVED ECONOMIC SECURITY HIGH=3

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

The pattern among those who perceived high economic security was not obvious as only 13 individuals were in this category. Two of 7(29%) with low daily contact and 2 of 6(33%) with medium or high daily contact had low diet diversity. Three of 7(43%) of those with low daily contact and 3 of 6(50%) of those with medium or high contact had medium diet diversity. Only 2 of 7(29%) with low daily contact and 1 of 2(50%) with medium or high daily contact had high diet diversity. The quadratic effect was also not evident among those with greater economic security. The lack of a pattern may be due to only 13 individuals

perceiving high economic security.

When the effect of everyday contact on diet diversity was assessed, taking age differences into account, the regression analysis explained 23% of the variation (R^2=0.23). Again, the quadratic term for everyday contact emerged as significant (P=0.07, T_{40}) (Appendix K). The issue of sample size for medium and high everyday contact emerged as problematic.

The three-way cross-tabulations indicate the quadratic pattern was not evident among either age category (Appendix K). Among the 21 who were younger(70-75), 1 of 15(7%) with low daily contact and none who had medium or high daily contact had low diet diversity. Ten of the 15(67%) who had low daily contact and 4 of the 6(67%) who had medium or high daily contact had medium diet diversity. Four of 15(27%) with low daily contact and 2 of 6(33%) who had medium or high daily contact had high diet diversity. This suggest little variation in diet diversity according to the amount of daily contact for those who were younger.

A somewhat different pattern emerged among the 25 respondents who were older. Six of the 19(32%) who had low daily contact and 1 of the 6(17%) who had medium or high daily contact had low diet diversity. Ten of the 19(53%) who had low daily contact and 2 of 6(33%) with medium or high daily contact had medium diet diversity. Three of 19(16%) with low daily contact had high diet diversity,

while 3 of 6(50%) with medium or high daily contact had high diet diversity. Again, the quadratic effect was not evident.

Summary

To summarize, relatively few effects of the nutritional support and social network characteristics emerged as significant for diet diversity. In addition, the relationships varied when taking into account specific control variables. Looking first at informational support, diet diversity was higher when support was higher among those with few rather than more health problems, indicating a moderating effect was somewhat evident.

Informational support also emerged as important for diet diversity when taking into account economic disadvantage. When support was high diet diversity was lower among those with less economic disadvantage. In contrast, diet diversity was high when support was high among those with the greatest economic disadvantage.

In terms of the network variables, only everyday contact in combination with all the health and economic variables and age emerged as significant for diet diversity. However, most respondents reported low everyday contact thus comparisons with those who had higher everyday contact were based on a small number of individuals, and small numbers for categories of control variables. Therefore these

results should be interpreted with caution.

6.2.3 The influence of nutritional support and social network characteristics on interest in eating and cooking

Relationships between interest in eating and cooking and each of the nutritional support and social network characteristics were examined, taking health status, economic situation and age separately into account. Only social companionship support emerged as significant for interest in eating and cooking (see below for discussion). No significant effects of informational support, instrumental support, total network size, family size, friends/neighbours size, and frequency of contact everyday or once a week were apparent (See Appendix J for results from regression analysis).

Social Companionship Support

Only when social companionship and the number of chronic health problems were together, did any significant effect occur for interest in eating and cooking. Sixteen percent of the variation was explained by the regression analysis (R^2=0.16). The quadratic term for social companionship (P=0.05, T_{40}) and the interaction of companionship with the number of health problems (P=0.10, T_{40}) emerged as significant (Table 34).

The three-way cross-tabulations suggested that the interaction effect was not very strong and that the quadratic effect was more evident (Table 35). Looking first at the 21 respondents who had 3 or fewer health problems, 3 of the 8(38%) with low companionship and 3 of 8(38%) with high companionship had high interest in eating and cooking. In contrast, 3 of the 5(60%) with medium companionship had high interest in eating and cooking.

The pattern was similar for those 25 respondents who had 4 or more health problems. Here, 3 of the 10(30%) who had low companionship and 2 of 8(25%) of those with high companionship had high interest in eating and cooking. In contrast, 5 of the 7(71%) with medium companionship had high interest.

In other words, the overall pattern suggested that those who had medium levels of social companionship tended to have greater interest in eating and cooking, regardless of the number of chronic health problems.

Of the nutritional support variables, only social companionship emerged as significant for interest in eating and cooking. This occurred only when the control variable, number of chronic health problems, was considered.

TABLE 34

RESPONSE SURFACE FOR PERCEIVED SOCIAL COMPANIONSHIP SUPPORT AND NUMBER OF CHRONIC HEALTH PROBLEMS ON INTEREST IN EATING AND COOKING

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Social companionship	3	20.53	6.84	1.91	0.14
Health problems	3	18.89	6.30	1.76	0.17

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	6.04	1.71	0.001
Social companionship	1	1.15	1.08	0.29
Health problems	1	-0.64	0.73	0.39
Soc comp*Soc companionship	1	-0.64	0.31	0.05
Hlth prob*Soc compan	1	0.25	0.14	0.10
Hlth prob*Hlth prob	1	-0.01	0.08	0.89

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	143.18	3.58

TABLE 35

INTEREST IN EATING AND COOKING BY SOCIAL COMPANIONSHIP CONTROLLING FOR CHRONIC HEALTH PROBLEMS=LOW[1]

INTEREST IN EATING AND COOKING[2]	PERCEIVED SOCIAL COMPANIONSHIP SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	1 4.76 25.00 12.50	1 4.76 25.00 20.00	2 9.52 50.00 25.00	4 19.05
MEDIUM	4 19.05 50.00 50.00	1 4.76 12.50 20.00	3 14.29 37.50 37.50	8 38.10
HIGH	3 14.29 33.33 37.50	3 14.29 33.33 60.00	3 14.29 33.33 37.50	9 42.86
TOTAL	8 38.10	5 23.81	8 38.10	21 100.00

[1]CHRONIC HEALTH PROBLEMS LOW=0-3

[2]INTEREST IN EATING AND COOKING
LOW=0-3
MEDIUM=4-5
HIGH=6

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

TABLE 35 CONTINUED

INTEREST IN EATING AND COOKING BY SOCIAL COMPANIONSHIP
CONTROLLING FOR CHRONIC HEALTH PROBLEMS=HIGH[1]

INTEREST IN EATING AND COOKING[2]	PERCEIVED SOCIAL COMPANIONSHIP SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	5 20.00 62.50 50.00	0 0.00 0.00 0.00	3 12.00 37.50 37.50	8 32.00
MEDIUM	2 8.00 28.57 20.00	2 8.00 28.57 28.57	3 12.00 42.86 37.50	7 28.00
HIGH	3 12.00 30.00 30.00	5 20.00 50.00 71.43	2 8.00 20.00 25.00	10 40.00
TOTAL	10 40.00	7 28.00	8 32.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS HIGH=4 OR <

[2]INTEREST IN EATING AND COOKING
LOW=0-3
MEDIUM=4-5
HIGH=6

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

6.2.4 The influence of nutritional support and social network characteristics on avoiding monotony around eating and cooking.

Relationships between avoiding monotony around eating and cooking and each of the nutritional support and social network characteristics were examined, taking health status, economic situation and age separately into account. Only social companionship support, total network size and social contact once a week emerged as significant for avoiding monotony (see below for discussion). No significant effects of informational support, instrumental support, family size, friends/neighbours network size, frequency of contact everyday were apparent (See Appendix J for results from regression analysis).

The following results should be interpreted with caution. The test for normality indicated that some nonnormality was occurring among all the regressions involving both interest in eating and cooking as well as interest in avoiding monotony. That is, the residuals in these regressions, tended not to be normally distributed. The significant quadratic effects may be a result of nonnormality. However, the regression procedures are robust to departures from normal therefore, the results presented here include those that showed some evidence of nonnormality.

Social companionship

When the influence of social companionship on avoiding monotony was assessed with each control variable, the quadratic term for companionship was significant in all cases ($P \leq 0.05$) (Appendix K). The regression analysis explained 17% of the variation in interest in avoiding monotony when functional disability was in the model ($R^2=0.17$) (Table 36), 13% with the number of chronic health problems ($R^2=0.13$), 21% with perceived health status ($R^2=0.21$), 14% with economic disadvantage ($R^2=0.14$), 14% with economic security ($R^2=0.14$), and 12% with age in the model ($R^2=0.12$).

Considering first social companionship with functional disability, the three-way cross-tabulations illustrate the need to take functional disability into account (Table 37). Among the 20 respondents who had no disability, those with low or high companionship were equally likely to have low, medium and high interest in avoiding monotony. For example, 4 of 8(50%) with low companionship and 4 of 7(57%) with high levels had high interest in avoiding monotony. In contrast, 4 of the 5(80%) who had medium companionship had high monotony avoidance, while none had medium, and only 1 had low interest. In general, respondents who had no

TABLE 36

RESPONSE SURFACE FOR SOCIAL COMPANIONSHIP SUPPORT AND FUNCTIONAL DISABILITY ON INTEREST IN AVOIDING MONOTONY AROUND COOKING AND EATING

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Social companionship	3	2.98	0.99	2.04	0.12
Functional disability	3	1.14	0.38	0.78	0.51

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	0.89	9.13	0.92
Social companionship	1	-1.88	0.94	0.05
Functional disability	1	5.29	15.21	0.73
Soc comp*Soc companionship	1	0.23	0.11	0.05
Functnl dis*Soc compan	1	1.03	0.81	0.21
Functcnl dis*functnl dis	1	-3.17	6.29	0.62

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	19.54	0.49

TABLE 37

INTEREST IN AVOIDING MONOTONY BY SOCIAL COMPANIONSHIP CONTROLLING FOR FUNCTIONAL DISABILITY=LOW[1]

INTEREST IN AVOIDING MONOTONY[2]	PERCEIVED SOCIAL COMPANIONSHIP SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	1 5.00 33.33 12.50	1 5.00 33.33 20.00	1 5.00 33.33 14.29	3 15.00
MEDIUM	3 15.00 60.00 37.50	0 0.00 0.00 0.00	2 10.00 40.00 28.57	5 25.00
HIGH	4 20.00 33.33 50.00	4 20.00 33.33 80.00	4 20.00 33.33 57.14	12 60.00
TOTAL	8 40.00	5 25.00	7 35.00	20 100.00

[1]FUNCTIONAL DISABILITY LOW=NONE

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

TABLE 37 CONTINUED

INTEREST IN AVOIDING MONOTONY BY SOCIAL COMPANIONSHIP
CONTROLLING FOR FUNCTIONAL DISABILITY=HIGH[1]

INTEREST IN AVOIDING MONOTONY[2]	PERCEIVED SOCIAL COMPANIONSHIP SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
LOW	0 0.00 0.00 0.00	3 11.54 100.00 42.86	0 0.00 0.00 0.00	3 11.54
MEDIUM	4 15.38 57.14 40.00	2 7.69 28.57 28.57	1 3.85 14.29 11.11	7 28.92
HIGH	6 23.08 37.50 60.00	2 7.690 12.50 28.57	8 30.77 50.00 88.89	16 61.54
TOTAL	10 38.46	7 26.92	9 34.62	26 100.00

[1]FUNCTIONAL DISABILITY HIGH=SOME

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

functional disability had medium and high interest in avoiding monotony.

The quadratic pattern was more evident among those 26 respondents who had some functional disability. None of the 10 who had low companionship and none of the 9 who had high companionship had low levels of avoiding monotony, compared to 3 of 7(43%) of those with medium companionship. In contrast, 6 of the 10(60%) who had low companionship and 8 of the 9(89%) who had high companionship were highly interested in avoiding monotony, while when companionship was medium, only 2 of 7(29%) had a high level of avoiding

monotony.

In other words, the overall pattern of a high level of avoiding monotony when social companionship was high or low, and lower levels of avoiding monotony when companionship was medium, was more evident among those with some, rather than no functional disability.

When the number of chronic health problems was considered, among the 21 respondents who had 3 or fewer health problems, those with low or high companionship were equally likely to have low, medium or high interest in avoiding monotony (Appendix K). For example, 5 of the 8(62%) with low companionship and 6 of the 8(75%) with high companionship had a high level of avoiding monotony. Those with medium companionship were also likely to have a high level of avoiding monotony (3 of 5, 60%).

The pattern differed among those who had 4 or more health problems (n=25). Five of the 10(50%) with low companionship and 6 of the 8(75%) with high companionship had high levels of avoiding monotony. No one with low or high companionship had low levels of avoiding monotony. In contrast, 2 of 7(29%) with medium companionship had low levels of avoiding monotony. However, 3 of 7(43%) of those with medium support also had high levels of avoiding monotony. Again, the quadratic effect was more evident among those with more health problems. However, the pattern was weak as only 2 individuals had medium companionship and

low levels of avoiding monotony.

The quadratic pattern emerged again when perceived health status was considered (Appendix K). The quadratic pattern was only evident among the 32 who perceived good, rather than the 14 who perceived excellent health status. Six of the 13(46%) with low companionship and 9 of the 10(90%) with high companionship had high levels of avoiding monotony around eating and cooking. None of those with low or high companionship had a low level of interest in avoiding monotony. However, 4 of the 9(44%) with medium companionship, no one with high companionship had a low level of avoiding monotony.

The pattern was not as distinct as with functional disability. However, those who saw their health as good, rather than excellent, when companionship was medium, tended to have a lower interest in avoiding monotony.

Those with no functional disability, those with few health problems or those with excellent perceived health tended to have a high interest in avoiding monotony. However, among those with some disability, those with more health problems or with good, rather than excellent, perceived health, interest in avoiding monotony tended to be lowest among those who had medium companionship.

As mentioned earlier, social companionship emerged as significant for avoiding monotony when both the economic variables were considered (Appendix K). This influence was

also quadratic.

Considering first low economic disadvantage, 4 of the 6(67%) who had low companionship and 9 of the 11(81%) who had high companionship had high avoiding monotony. No one with low or high companionship had low avoiding monotony. In contrast, those with medium companionship had equally low (2 of 6, 33%), medium (2 of 6, 33%) and high (2 of 6, 33%) interest in avoiding monotony.

The quadratic pattern was not evident among those with greater economic disadvantage. Only 2 of 6(33%) with medium companionship had low avoiding monotony. By contrast, 5 of the 11(45%) who had low companionship, 4 of the 6(67%) with medium companionship, and 3 of the 5(60%) who had high companionship were highly interested in avoiding monotony. In other words, the effect of social companionship on interest in avoiding monotony was accounted for, to a large extent, by those with low economic disadvantage.

When perceived economic security was taken into account, the quadratic pattern was evident only among the 32 with low economic security (Appendix K). A high interest in avoiding monotony was more likely among those who had low 13(62%) and high companionship (9 of 12, 75%) than among those with medium companionship. Three of the 7(43%) with medium companionship had high avoiding monotony and 3 of 7(43%) had low avoiding monotony. A quadratic effect was not evident among the 13 who perceived high economic

security. The sample size may have been to small to see a pattern among those with high economic security.

Again, the effect of social companionship on interest in avoiding monotony was accounted for among those with low perceived economic security. Although the pattern was similar for both economic disadvantage and perceived economic security, the quadratic pattern was more evident among those who were economically better off than among those who perceived low economic security.

As mentioned earlier, social companionship also exerted a quadratic effect on interest in avoiding monotony when age was taken into account (R^2=0.12) (Appendix K). However, the three-way cross-tabulations illustrate that this effect was weak (Appendix K).

Among the 21 respondents who were young(70-75), those who had low or medium companionship were equally likely to have low, medium or high interest in avoiding monotony. For example, 4 of the 9(44%) with low companionship and 2 of the 5(40%) with medium companionship had high levels of avoiding monotony. Those who had high companionship tended to have a high interest in avoiding monotony (5 of 7, 71%).

Among those who were older(76+), those with low and high companionship tended to have a high interest in avoiding monotony (4 of 4, 100%; 4 of 6, 67% respectively). At medium companionship, interest tended to be low (1 of 2, 50%) or high (1 of 2, 50%). In other words, the quadratic

effect of social companionship on interest in avoiding monotony was only weakly evident among those who were older and not evident among those who were younger.

Total network size

When the total network size and functional disability were taken into account, the regression explained 19% of the variation in the interest in avoiding monotony scale (R^2=0.19). Total network size and its quadratic term, as well as the interaction of this network variable with functional disability, were significant for avoiding monotony (P=0.01, P=0.06, P=0.09, T_{40}, respectively) (Table 38).

Three-way cross-tabulations, however, illustrate very little difference between the 20 respondents with no functional disability and the 26 with some disability (Table 39). However note that, for those with no functional disability or for some, most had a large network (56%, 58%). Looking first at those with no disability, all 4 (100%) who had a small network, 6 of 11 (54%) with a large network and only 2 of 5(40%) with a medium network had high avoiding monotony. Two of the 5(40%)who had medium companionship and 3 of the 11(27%) who had high companionship had medium interest in avoiding monotony.

The pattern only differed slightly among those with some functional disability. High interest in avoiding

TABLE 38

RESPONSE SURFACE FOR TOTAL NETWORK SIZE AND FUNCTIONAL DISABILITY ON INTEREST IN AVOIDING MONOTONY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Total network size	3	3.44	1.15	2.41	0.08
Functional disability	3	3.34	0.78	1.64	0.20

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-1.68	8.82	0.85
Total network	1	-0.29	0.11	0.01
Functional disability	1	12.06	14.66	0.42
total net*total network	1	0.003	0.00	0.06
Functnl dis*total network	1	0.15	0.09	0.09
Functcnl dis*functnl dis	1	-6.62	6.11	0.28

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	19.08	0.48

TABLE 39

INTEREST IN AVOIDING MONOTONY BY TOTAL NETWORK SIZE CONTROLLING FOR FUNCTIONAL DISABILITY=LOW[1]

INTEREST IN AVOIDING MONOTONY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	TOTAL NETWORK SIZE[3] SMALL	MEDIUM	LARGE	TOTAL
LOW	0 0.00 0.00 0.00	1 5.00 33.33 20.00	2 10.00 66.67 18.18	3 15.00
MEDIUM	0 0.00 0.00 0.00	2 10.00 40.00 40.00	3 15.00 60.00 27.27	5 25.00
HIGH	4 20.00 33.33 100.00	2 10.00 16.67 40.00	6 30.00 50.00 54.55	12 60.00
TOTAL	4 20.00	5 25.00	11 55.66	20 100.00

[1]FUNCTIONAL DISABILITY LOW=NONE

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

TABLE 39 CONTINUED

INTEREST IN AVOIDING MONOTONY BY TOTAL NETWORK SIZE
CONTROLLING FOR FUNCTIONAL DISABILITY=HIGH[1]

INTEREST IN AVOIDING MONOTONY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	TOTAL NETWORK SIZE[3] SMALL	MEDIUM	LARGE	TOTAL
LOW	1 3.85 33.33 20.00	1 3.85 33.33 16.67	1 3.50 33.33 6.67	3 11.54
MEDIUM	1 3.85 14.29 20.00	2 7.69 28.57 33.33	4 15.38 57.14 26.67	7 26.92
HIGH	3 11.54 18.75 60.00	3 11.54 18.75 50.00	10 38.46 62.50 66.67	16 61.54
TOTAL	5 19.23	6 23.08	15 57.69	26 100.00

[1]FUNCTIONAL DISABILITY HIGH=SOME

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

monotony was equally likely among those with small (3 of 5, 60%), medium (3 of 6, 50%) and large (10 of 15, 67%) networks. Those with small, medium or large networks were just as likely to have low, medium or high interest in avoiding monotony. Although functional disability appeared to be an important variable in the regression analysis, the cross-tabulations suggest very little difference in the effect of social companionship on interest in avoiding monotony among those with no functional disability or those with some.

When the size of the total network and economic disadvantage were considered together, the regression

explained 13% of the variation in avoiding monotony (R^2=0.13). When controlling for economic disadvantage, the quadratic term for the total network size was significant for avoiding monotony (P=0.04, T_{40}) (Table 40).

The three-way cross-tabulations illustrate that this pattern was evident for the 22 who had high economic disadvantage but not for the 23 who were financially better-off (Table 41). The quadratic pattern may not have been seen among those with less economic disadvantage because most (70%) had a large social network. Among those who were better-off, one of the 7(14%) who had a small or medium network size, and 1 of the 16(6%) who had a large network had low interest in avoiding monotony. One of the 7(14%) who had a small or medium network and 5 of 16(31%) with a large network had medium interest in avoiding monotony. Five of the 7(71%) who had a small or medium network, and 10 of 16(63%) who had a large network were highly interested in avoiding monotony.

The pattern differed only slightly for those who were more economically disadvantaged. Here it is those with a medium network who are more distinctive. Those with a small and large network tended to have high interest in avoiding

TABLE 40

RESPONSE SURFACE FOR TOTAL NETWORK SIZE AND ECONOMIC DISADVANTAGE ON INTEREST IN AVOIDING MONOTONY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Total network size	3	2.25	0.75	1.47	0.24
Economic disadvantage	3	0.10	0.33	0.64	0.59

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-3.59	6.20	0.57
Total network	1	-0.14	0.11	0.22
Economic disadvantage	1	2.95	2.42	0.23
total net*total network	1	0.003	0.002	0.04
Economic dis*total network	1	-0.00	0.02	0.99
Economic dis*Economic dis	1	-0.30	0.24	0.22

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	20.44	0.51

TABLE 41

INTEREST IN AVOIDING MONOTONY BY TOTAL NETWORK SIZE CONTROLLING FOR ECONOMIC DISADVANTAGE=LOW[1]

INTEREST IN AVOIDING MONOTONY[2] / TOTAL NETWORK SIZE[3] FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	SMALL	MEDIUM	LARGE	TOTAL
LOW	0 0.00 0.00 0.00	1 4.35 50.00 25.00	1 4.35 50.00 6.25	2 8.70
MEDIUM	0 0.00 0.00 0.00	1 4.35 16.67 25.00	5 21.74 83.33 31.25	6 26.09
HIGH	3 13.04 20.00 100.00	2 8.70 13.33 50.00	10 43.48 66.67 62.50	15 65.22
TOTAL	3 13.04	4 17.39	16 69.57	23 100.00

[1]ECONOMIC DISADVANTAGE=0-5

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

TABLE 41 CONTINUED

INTEREST IN AVOIDING MONOTONY BY TOTAL NETWORK SIZE
CONTROLLING FOR ECONOMIC DISADVANTAGE=HIGH[1]

INTEREST IN AVOIDING MONOTONY[2]	TOTAL NETWORK SIZE[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	SMALL	MEDIUM	LARGE	TOTAL
LOW	1 4.55 25.00 16.67	1 4.55 25.00 16.67	2 9.09 50.00 20.00	4 18.18
MEDIUM	1 4.55 16.67 16.67	3 13.64 50.00 50.00	2 9.09 33.33 20.00	6 27.27
HIGH	4 18.18 33.33 66.67	2 9.09 16.67 33.33	6 27.27 50.00 60.00	12 54.55
TOTAL	6 27.27	6 27.27	10 45.45	22 100.00

[1]ECONOMIC DISADVANTAGE=6

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

monotony (4 of 6, 67%; 6 of 10, 60%), whereas only 2 of 6(33%) with medium network size had high interest. Three (50%) of those with a medium network tended to have a medium interest in avoiding monotony. Overall, avoiding monotony tended to be higher when the total network size was small or large, and lower when the network size was medium, but only among those more economically disadvantaged. A lack of evidence for a quadratic effect among those with low economic disadvantaged may be due to this group having a large network size(70%).

Weekly Contact

Once again, the quadratic term for the network variable, weekly contact, emerged as significant (P=0.08, T_{40}). However, the control variable, perceived health status (P=0.06, T_{40}) as well as the quadratic term for perceived health status (P=0.09, T_{40}) were significant (Table 42). The regression analysis explained 18% of the variation in avoiding monotony (R^2=0.18).

Looking at the three-way cross-tabulations, the pattern was not that clear (Table 43). Among the 32 who perceived good, rather than excellent health status, 5 of the 8(63%) with low weekly contact and 8 of the 12 (66%) with high weekly contact had high interest in avoiding monotony. In contrast, 5 of the 12(42%) with medium weekly contact had a high interest level. When support was medium, 7 of 12(58%) respondents had low to medium interest in avoiding monotony, while 3 of 8(38%) who had low weekly contact and 4 of 12(33%) with high weekly contact had low to medium interest in avoiding monotony.

Only 14 respondents perceived excellent health, and there was very little variation in the pattern as most had high interest in avoiding monotony. All 4 of those with low weekly contact, 3 of 5(60%) with medium and 3 of 5(60%) with high weekly contact had high interest in avoiding monotony. No one with low weekly contact or high weekly contact had

TABLE 42

RESPONSE SURFACE FOR WEEKLY CONTACT AND PERCEIVED HEALTH STATUS ON INTEREST IN AVOIDING MONOTONY

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Total network size	3	1.68	0.56	1.16	0.34
Perceived health	3	2.79	0.93	1.92	0.14

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-0.70	1.78	0.70
Total network	1	-0.19	0.18	0.30
Prcvd health	1	1.75	0.90	0.06
total net*total network	1	0.02	0.01	0.08
Prcvd health*total network	1	-0.01	0.03	0.85
Prcvd hlth*prcvd hlth	1	-0.20	0.12	0.09

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	19.33	0.48

TABLE 43

INTEREST IN AVOIDING MONOTONY BY WEEKLY CONTACT CONTROLLING FOR PERCEIVED HEALTH STATUS=LOW[1]

INTEREST IN AVOIDING MONOTONY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	WEEKLY CONTACT[3] LOW	MEDIUM	HIGH	TOTAL
LOW	0 0.00 0.00 0.00	2 6.25 50.00 16.67	2 6.25 50.00 16.67	4 12.50
MEDIUM	3 9.36 30.00 37.50	5 15.63 50.00 41.67	2 6.25 20.00 16.67	10 31.25
HIGH	5 15.63 27.78 62.50	5 15.63 27.78 41.67	8 25.00 44.44 66.67	18 56.25
TOTAL	8 25.00	12 37.50	12 37.50	32 100.00

[1]PERCEIVED HEALTH STATUS LOW=2-4

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

TABLE 43 CONTINUED

INTEREST IN AVOIDING MONOTONY BY WEEKLY CONTACT
CONTROLLING FOR PERCEIVED HEALTH=HIGH[1]

INTEREST IN AVOIDING MONOTONY[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	WEEKLY CONTACT[3] LOW	MEDIUM	HIGH	TOTAL
LOW	0 0.00 0.00 0.00	2 14.29 100.00 40.00	0 0.00 0.00 0.00	2 14.29
MEDIUM	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 14.29 100.00 40.00	2 14.29
HIGH	4 28.57 40.00 100.00	3 21.43 300.00 60.00	3 21.43 30.00 60.00	10 71.43
TOTAL	4 28.57	5 35.71	5 35.71	14 100.00

[1]PERCEIVED HEALTH=HIGH=5

[2]INTEREST IN AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]TOTAL NETWORK SIZE
SMALL=0-9
MEDIUM=10-19
LARGE=20 OR >

low interest, whereas 2 of 5(40%) of those with medium contact had low interest in avoiding monotony. Overall, the quadratic effects of weekly contact on interest in avoiding monotony were more obvious among those who perceived good, rather than excellent, health but the number in the latter was low.

When economic disadvantage was considered, weekly contact again had a quadratic effect on interest in avoiding monotony ($P=0.06$, T_{40}) (Appendix K). The regression explained 12% of the variation in interest in avoiding monotony ($R^2=0.12$).

The three-way cross-tabulations illustrated that this

effect occurred for both those who had low or high economic disadvantage (Appendix K). Among the 23 who had low economic disadvantage, 3 of 4(75%) with low weekly contact and 8 of 11(73%) with high weekly contact had high interest in avoiding monotony. In contrast, 4 of the 8(50%) with medium contact had medium or low interest.

The pattern was similar among those with greater economic disadvantage. Five of the 7(71%) with low weekly contact and 3 of the 6(50%) with high weekly contact had high interest in avoiding monotony. In contrast, 5 of 9(56%) with medium contact had low or medium interest. In other words, the effect of weekly contact on interest in avoiding monotony tended to occur among those with either low or high economic disadvantage.

The effect of weekly contact on interest in avoiding monotony only occurred when perceived health status and economic disadvantage were considered. The other control variables did not emerge as important when examining this relationship.

Summary

To summarize the effect of nutritional support and social network characteristics on the two interest subscale, only social companionship emerged as significant for the subscale, interest in eating and cooking, and this occurred when the number of chronic health problems was controlled.

Those with a medium social companionship support had high interest in eating and cooking regardless of the number of chronic health problems, illustrating a quadratic effect.

Only one of the nutritional support scales and two of the social network characteristics emerged as significant for the interest in avoiding monotony subscale. Furthermore, the relationship varied, when taking certain control variables into account. Looking first at social companionship support, all the control variables appeared to be important. When functional disability was controlled, those with low and high companionship had higher interest in avoiding monotony than those with medium companionship, illustrating a quadratic effect. This effect was more evident among those with some rather than no functional disabilities. The same pattern emerged for those with more chronic health problems, those who perceived good rather than excellent health status, those with less economic disadvantage, those with less perceived economic security and also among those who were older.

In terms of the network variables, only the total network size and weekly contact in conjunction with certain control variables emerged as significant for interest in avoiding monotony. First looking at total network size, although the regression analysis revealed a significant quadratic effect when functional disability was controlled, the three-way cross-tabulations indicate this relationship

was weak, but small number in both categories of functional disability make finding a quadratic effect difficult in the three-way tables. When economic disadvantage was controlled, the quadratic effect was more evident among those with less, rather than greater economic disadvantage. Those with small and large networks tended to have higher interest in avoiding monotony than those who had a medium-sized network. The quadratic effect was similar when looking at weekly contact. The quadratic effect was greater among those who perceived good rather than excellent health, perhaps because the number of respondents was low in the latter category, and those with low and high weekly contact had higher interest in avoiding monotony than those with a medium amount of weekly contact. When economic disadvantage was controlled those with low and high weekly contact had higher interest than those with a medium amount of weekly contact, regardless of level of economic disadvantage.

6.2.5 The influence of nutritional support and social network characteristics on appetite

Relationships between appetite and each of the nutritional support and social network characteristics were examined, taking health status, economic situation and age separately into account. Instrumental and social companionship support, as well as the network characteristics, family size and everyday contact emerged as

significant for appetite (see below for discussion). No significant effects of informational support, total network size, friends/neighbours network size, or weekly contact were apparent (See Appendix J for results from regression analysis).

Instrumental Support

Considering first instrumental support and economic disadvantage together, the regression explained 12% of the variation in appetite (R^2=0.12). Instrumental support and the interaction of support with economic disadvantage emerged as significant (P=0.09, T_{40}; P=0.05, T_{40}, respectively) (Table 44).

The three-way cross-tabulations illustrate that the significant effects were not strong (Table 45). Among the 23 who were the least economically disadvantaged, 3 of the 12(25%) who had low or medium support had fair appetite, whereas only 1 had high support and fair appetite. It was apparent that most respondents with medium or high support had good or excellent appetite. Six of the 12(50%) with low or medium support had good appetite and 6 of 11(55%) who had high support had good appetite. Four of 11(37%) had high support and excellent appetite, whereas only 3 of 12(25%) who had low or medium support had excellent appetite. In general, appetite was just as likely to be fair, good or excellent regardless of the level of instrumental support

TABLE 44

RESPONSE SURFACE FOR INSTRUMENTAL SUPPORT AND ECONOMIC DISADVANTAGE ON APPETITE

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Instrumental support	3	2.22	0.74	1.40	0.26
Economic disadvantage	3	2.80	0.93	1.77	0.17

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-2.26	6.33	0.72
Instrumental support	1	1.12	0.64	0.09
Economic disadvantage	1	-0.17	2.46	0.95
Instrumental*instrumental	1	0.01	0.07	0.90
Economic dis*instrumental	1	-0.22	0.11	0.05
Economic dis*Economic dis	1	0.06	0.24	0.81

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	21.10	0.53

TABLE 45

APPETITE BY INSTRUMENTAL SUPPORT
CONTROLLING FOR ECONOMIC DISADVANTAGE=LOW[1]

APPETITE[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	INSTRUMENTAL SUPPORT[3] LOW	MEDIUM	HIGH	TOTAL
FAIR	2 8.70 50.00 50.00	1 4.35 25.00 12.50	1 4.35 25.00 9.09	4 17.39
GOOD	1 4.35 8.33 25.00	5 21.74 41.67 62.50	6 26.09 50.00 54.55	12 52.17
EXCELLENT	1 4.35 14.29 25.00	2 8.70 28.57 25.00	4 17.39 57.14 36.36	7 30.43
TOTAL	4 17.39	8 34.78	11 47.83	23 100.00

[1]ECONOMIC DISADVANTAGE=0-5

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

TABLE 45 CONTINUED

APPETITE BY INSTRUMENTAL SUPPORT
CONTROLLING FOR ECONOMIC DISADVANTAGE=HIGH[1]

APPETITE[2]	INSTRUMENTAL SUPPORT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
FAIR	2 9.09 28.57 25.00	3 13.64 42.86 42.86	2 9.09 28.57 28.57	7 31.82
GOOD	2 9.09 22.22 25.00	2 9.09 22.22 28.57	5 22.73 55.56 71.43	9 40.91
EXCELLENT	4 18.18 66.67 50.00	2 9.09 33.33 28.57	0 0.00 0.00 0.00	6 27.27
TOTAL	8 36.36	7 31.82	7 31.82	22 100.00

[1]ECONOMIC DISADVANTAGE=6

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

among those with low economic disadvantage.

A different pattern was somewhat evident among the 22 who had greater economic disadvantage. No one had high instrumental support and excellent appetite. In contrast, 6 of 15(40%) had low or medium support and excellent appetite. Those with low or medium and high support were equally likely to have fair appetite (5 of 15, 33%; 2 of 7, 29% respectively). Those with high support tended to have good appetite (5 of 7, 71%). The overall trend appears to be for economic disadvantage to moderate the effect of instrumental support on appetite. Those with greater economic disadvantage and higher support tended to have poorer

appetites than those who have less instrumental support, whereas appetite tended to remain the same among those with less economic disadvantage.

When the control variables perceived economic security or age were considered, in each case, a significant interaction with instrumental support emerged ($P=0.01$, T_{39}; $P=0.08$, T_{40}, respectively) (Appendix K). Twenty percent of the variation was explained when taking into account economic security ($R^2=0.20$), and 21% was explained when age was considered ($R^2=0.21$). However, the patterns that emerged were not the same.

Looking first at the pattern with perceived economic security, the three-way cross-tabulations indicate the pattern was not straight forward (Appendix K). Among the 32 respondents who perceived less security, 4 of the 11(36%) with low support and 3 of the 10(30%) with medium support reported fair appetite, while only 2 of 11(18%) with high support reported fair appetite. When support was medium or high appetite tended to be reported as good (6 of 10, 60%; 7 of 11, 64% respectively). In contrast, those with low support equally reported fair and excellent appetite.

The pattern was less clear among the 13 who had greater economic security, as there were too few people in this category. In this group, only 1 had low support and this individual had excellent appetite. When support was medium, 2 of 5(40%) reported good appetite, while 4 of the 7(57%)

with high support reported good appetite. In general, when support was medium or high, respondents tended to have good, rather than fair or excellent appetite.

Now focusing on the pattern when age was considered, among the 21 respondents who were younger, most of those with low support had excellent appetite (4 of 7, 57%) (Appendix K). In contrast, when support was medium or high, 2 of 6 (33%); and 3 of 8, (38%) respectively had excellent appetite. Two of the 7(29%) who had low support, none of the 6 with medium support and 1 of the 8(13%) had fair appetite. Only 1 of 7(14%) with low support, and 4 of 6(67%) with medium support and 4 of 8(50%) with high support reported good appetite.

For the 25 who were older, a difference was evident among those with medium or high support. Seven of the 10(70%) who had high support had good appetite, whereas, 4 of 10(40%) who had medium support had good appetite. Those with medium support were also more likely than those with high support to have fair appetite (4 of 10, 40%, 2 of 10, 20% respectively). Those with low or medium support were equally likely to have fair, good or excellent appetite. In other words, there was a tendency for appetite to be higher with increasing support among those who were younger and older, although this was more evident among those who were older.

Only when the economic variables and age were

considered did instrumental support have an effect on appetite. Economic disadvantage, perceived economic security and age moderated this effect.

Social Companionship Support

Only when the number of chronic health problems was considered did social companionship influence appetite. The regression analysis explained 24% percent of the variation in appetite (R^2=0.24). However, both the linear and quadratic terms for companionship emerged as significant (P=0.07, T_{40}; P=0.08, T_{40} respectively) (Table 46).

The three-way cross-tabulations illustrate the differences according to the number of health problems (Table 47). That is, among the 21 who had 3 or fewer health problems, 3 of the 8(38%) with low companionship, 4 of the 8(50%) with high companionship, and 3 of the 5(60%) with medium companionship had excellent appetite. Appetite tended to be good among those with low companionship (4 of 8, 50%).

The quadratic pattern was somewhat more distinct among the 25 who had 4 or more health problems. When companionship was low, 5 of 10(50%) had fair appetite. Also, 3 of the 8(38%) with high companionship had fair appetite, while none with medium support had fair appetite. Those with medium and high companionship tended to have good appetite (5 of 7, 71%; 5 of 8, 63%). Two of the 7(29%) with

TABLE 46

RESPONSE SURFACE FOR SOCIAL COMPANIONSHIP AND CHRONIC HEALTH PROBLEMS ON APPETITE

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Social companionship	3	1.72	0.57	1.27	0.30
Chronic health problems	3	5.01	1.67	3.70	0.02

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-3.58	0.61	0.00
Social companionship	1	0.71	0.38	0.07
Health problems	1	-0.34	0.26	0.20
Soc compnshp*soc compnshp	1	-0.20	0.11	0.08
Hlth prob*companionship	1	0.002	0.05	0.97
Hlth prob*hlth prob	1	0.02	0.03	0.50

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	18.08	0.45

TABLE 47

APPETITE BY SOCIAL COMPANIONSHIP
CONTROLLING FOR CHRONIC HEALTH PROBLEMS=LOW[1]

APPETITE[2] / SOCIAL COMPANIONSHIP SUPPORT[3]	LOW	MEDIUM	HIGH	TOTAL
FAIR	1 4.76 33.33 12.50	1 4.76 33.33 20.00	1 4.76 33.33 12.50	3 14.29
GOOD	4 19.05 50.00 50.00	1 4.76 12.50 20.00	3 14.29 37.50 37.50	8 38.10
EXCELLENT	3 14.29 30.00 37.50	3 14.29 30.00 60.00	4 19.05 40.00 50.00	10 47.62
TOTAL	8 38.10	5 23.81	8 38.10	21 100.00

FREQUENCY
PERCENT
ROW PERCENT
COLUMN PERCENT

[1]CHRONIC HEALTH PROBLEMS LOW=0-3

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=3
HIGH=3

TABLE 47 CONTINUED

APPETITE BY SOCIAL COMPANIONSHIP SUPPORT
CONTROLLING FOR CHRONIC HEALTH PROBLEMS=HIGH[1]

APPETITE[2]	SOCIAL COMPANIONSHIP[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
FAIR	5 20.00 62.50 50.00	0 0.00 0.00 0.00	3 12.00 37.50 37.50	8 32.00
GOOD	4 16.00 28.57 40.00	5 20.00 35.71 71.43	5 20.00 35.71 62.50	14 56.00
EXCELLENT	1 4.00 33.33 10.00	2 8.00 66.67 28.57	0 0.00 0.00 0.00	3 12.00
TOTAL	10 40.00	7 28.00	8 32.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS HIGH=4 OR >

[2]APPETITE
FAIR=0-
GOOD=3
EXCELLENT=4

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

medium companionship had excellent appetite and none with high companionship and only 1 with low companionship had excellent appetite. Overall, those with medium companionship tended to have better appetite than those with low or high companionship when the number of chronic health problems was controlled.

Only when the number of health problems was considered did social companionship influence appetite. None of the other control variables appeared to be important when examining this relationship.

Family Size

Turning to family size, again the number of chronic health problems was an important variable to consider. The regression explained 30% of the variation (R^2= 0.30) in appetite. Family size emerged as significant when the number of health problems was controlled (P=0.08, T_{40}), suggesting that appetite improved as family size increased (Table 48).

The three-way cross-tabulations illustrate this further by the number of health problems (Table 49). Those who had few health problems and small family network size tended to have good appetite (5 of 9, 56%), whereas those with a medium or large family network (2 of 8, 25%; 1 of 4, 25%) had good appetite. Among those who had 4 or more health problems, when family size was small 5 of 14(43%) had fair appetite and none of those with a large family had fair appetite. All of those who had a large family had good appetite (4, 100%), while 4 of 7(57%) who had a medium size family and 6 of 14(43%) who had a small family had good appetite.

Among those with few or many health problems, appetite tended to increase as family size increased. However, the increase was from fair to good among those with many health problems and from good to excellent among those with few health problems.

Only when the number of chronic health problems was

TABLE 48

RESPONSE SURFACE FOR FAMILY NETWORK SIZE AND CHRONIC HEALTH PROBLEMS ON APPETITE

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Family network	3	3.16	1.05	2.53	0.07
Chronic health problems	3	3.81	1.27	3.05	0.40

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-2.55	0.77	0.001
Family network	1	0.17	0.10	0.09
Health problems	1	-0.09	0.25	0.74
Family net*family net	1	-0.004	0.003	0.27
Hlth prob*family net	1	-0.02	0.01	0.21
Hlth prob*hlth prob	1	0.01	0.03	0.76

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	16.64	0.42

TABLE 49

APPETITE BY FAMILY NETWORK SIZE
CONTROLLING FOR CHRONIC HEALTH PROBLEMS=LOW[1]

APPETITE[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	FAMILY NETWORK[3] SMALL	MEDIUM	LARGE	TOTAL
FAIR	2 9.52 66.67 22.22	1 4.76 33.33 12.50	0 0.00 0.00 0.00	3 14.29
GOOD	5 23.81 62.50 55.56	2 9.52 25.00 25.00	1 4.76 12.50 25.00	8 38.10
EXCELLENT	2 9.52 20.00 22.22	5 23.81 50.00 62.50	3 14.29 30.00 75.00	10 47.62
TOTAL	9 42.86	8 38.10	4 19.05	21 100.00

[1]CHRONIC HEALTH PROBLEMS LOW=0-3

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]FAMILY NETWORK SIZE
SMALL=0-8
MEDIUM=9-16
LARGE=17 OR >

TABLE 49 CONTINUED

APPETITE BY FAMILY NETWORK SIZE
CONTROLLING FOR CHRONIC HEALTH PROBLEMS=HIGH[1]

APPETITE[2]	FAMILY NETWORK[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	SMALL	MEDIUM	LARGE	TOTAL
FAIR	5 24.00 75.00 42.88	2 8.00 25.00 28.57	0 0.00 0.00 0.00	8 32.00
GOOD	6 24.00 42.86 42.86	4 16.00 28.57 57.14	4 16.00 28.57 100.00	14 56.00
EXCELLENT	2 8.00 66.67 14.29	1 4.00 33.33 14.29	0 0.00 0.00 0.00	3 12.00
TOTAL	14 56.00	7 28.00	4 16.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS HIGH=4 OR >

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]FAMILY NETWORK SIZE
SMALL=0-8
MEDIUM=9-16
LARGE=17 OR >

considered did family size influence appetite. None of the other control variables emerged as important when examining this relationship.

Everyday Social Contact

When everyday contact and economic disadvantage were considered together, the regression analysis explained 13% of the variation in appetite (R^2=0.13). In this situation, the interaction of daily contact with economic disadvantage emerged as significant (P=0.06, T_{40}) (Table 50). That is, the pattern differed by the amount of economic disadvantage.

The pattern was not clear in the three-way cross-tabulations (Table 51). This may be due to the fact that among the 23 respondents who were less economically disadvantaged, most had low daily contact. When daily contact was low, medium or high, appetite tended to be good (7 of 15, 47%; 3 of 4, 75%, 2 of 4, 50%). Only those with low daily contact had fair appetite (4 of 15, 27%).

Most (22, 81%) of the respondents with high economic disadvantage had low daily contact. In other words, there were too few respondents with medium or high levels of daily contact with which to make comparisons.

Daily contact only exerted an influence on appetite when economic disadvantage was considered. None of the other control variables emerged as important when assessing this relationship.

TABLE 50

RESPONSE SURFACE FOR EVERYDAY CONTACT AND ECONOMIC DISADVANTAGE ON APPETITE

FACTOR	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F-RATIO	PROB > F
Everyday contact	3	2.56	0.85	1.64	0.20
Economic disadvantage	3	2.26	0.75	1.45	0.24

PARAMETER	DEGREES OF FREEDOM	PARAMETER ESTIMATE	STANDARD ERROR	PROB > T
Intercept	1	-2.02	6.31	0.75
Everyday contact	1	0.61	0.47	0.20
Economic disadvantage	1	0.22	2.46	0.93
Everyday*everyday	1	0.05	0.04	0.26
Economic dis*everyday	1	-0.17	0.09	0.06
Economic dis*Economic dis	1	0.00	0.24	0.99

RESIDUAL	DEGREES OF FREEDOM	SUMS OF SQUARES	MEAN SQUARE
Total error	40	20.77	0.52

TABLE 51

APPETITE BY EVERYDAY CONTACT
CONTROLLING FOR ECONOMIC DISADVANTAGE=LOW[1]

APPETITE[2] / FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EVERYDAY CONTACT[3] LOW	MEDIUM	HIGH	TOTAL
FAIR	4 17.39 100.00 26.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 17.39
GOOD	7 30.43 58.33 46.67	3 13.04 25.00 75.00	2 8.70 16.67 50.00	12 52.17
EXCELLENT	4 17.39 57.14 26.67	1 4.35 14.29 25.00	2 8.70 28.57 50.00	7 30.43
TOTAL	15 65.22	4 17.39	4 17.39	23 100.00

[1]ECONOMIC DISADVANTAGE=0-5

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=3-4
HIGH=5 OR >

TABLE 51 CONTINUED

APPETITE BY EVERYDAY CONTACT
CONTROLLING FOR ECONOMIC DISADVANTAGE=HIGH[1]

APPETITE[2]	EVERYDAY CONTACT[3]			
FREQUENCY PERCENT ROW PERCENT COLUMN PERCENT	LOW	MEDIUM	HIGH	TOTAL
FAIR	5 22.73 71.43 27.78	1 4.55 14.29 50.00	1 4.55 14.29 50.00	7 31.82
GOOD	8 36.36 88.89 44.44	0 0.00 0.00 0.00	1 4.55 11.11 50.00	9 40.91
EXCELLENT	5 22.73 83.33 27.78	1 4.55 16.67 50.00	0 0.00 0.00 0.00	6 27.27
TOTAL	18 81.82	2 9.09	2 9.09	22 100.00

[1]ECONOMIC DISADVANTAGE=6

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=3-4
HIGH=5 OR >

Significant control variables

While the focus here has been on the support and network variables the regression analysis revealed that in a few cases only the control variable was significant. More specifically, functional disability was found to have a significant negative effect on appetite when each of informational support, social companionship, total network size, family size, friends/neighbours size, everyday contact and weekly contact were controlled separately in the regression analysis($P \leq 0.01$) (Appendix L). This suggests appetite may be influenced more by functional disability than by the nutritional support or social network variables.

Summary

To summarize for appetite, two of the nutritional support scales and two social network characteristics emerged as significant. As for the other nutritional outcome variables the relationships varied when taking certain control variables into consideration.

Looking first at instrumental support, this nutritional support scale only emerged as important when its effect on appetite was assessed, in conjunction with economic disadvantage. More specifically, when economic disadvantage was high and instrumental support was high appetite tended to be lower than when instrumental support was low. The regression analysis also revealed a significant interaction between instrumental support and perceived economic security, however, partly due to the small number of respondents for high economic security, the three-way cross-tabulations did not reveal a clear effect. Furthermore, when age was controlled, those who were older tended to have better appetite when instrumental support was higher, whereas appetite tended to be somewhat lower when instrumental support was higher for those who were younger.

Social companionship also emerged as an important variable when looking at appetite, but only when the number of chronic health problems was controlled. Those who had a medium amount of social companionship tended to have better appetite than those with low or high instrumental support.

In terms of the social network variables, only when economic disadvantage was controlled did the size of the family network have a significant effect on appetite, those with small and large family networks tended to better appetite than those with a medium size family network. However, this was only evident for those who were less economically disadvantaged. The only other network characteristic that had a significant effect on appetite was daily contact. The regression analysis suggested that economic disadvantage moderated this effect, however, the three-way cross-tabulations indicate that there were too few people in the medium and high categories of daily contact with which to make comparisons.

6.2.6 Discussion

6.2.6.1 Nutrition support and social network characteristics on diet quality and diet diversity

In the bivariate case, of the three nutritional support variables, informational support was correlated with diet quality, but not with diet diversity, while instrumental support and social companionship were not correlated with diet quality or diet diversity. The response surface regression analysis and three-way cross-tabulations revealed that informational support influenced not only diet quality

but also diet diversity.

The effect of perceived informational support on diet quality and diet diversity, however, depended on the moderating influence of the number of chronic health problems. Those with few health problems tended to benefit, in terms of diet quality and diet diversity, from having more support, but this was less evident for those with many health problems. It is important to note that the number of chronic health problems does not reflect specific types of health problems. It may be that those with few health problems have conditions that reflect the need for advice around food issues (diabetes), while those who have more health problems may have conditions that do not require advice around food related issues (e.g. vision impairment).

Economic disadvantage also tended to have a moderating influence, but only on the relationship between informational support and diet diversity. These findings suggest, that under certain conditions (health status and economic situation), perceived informational support may have an effect of diet quality and diet diversity.

The findings were in contrast to those of Schafer and Keith (1982). These researchers found that informal sources of food information, such as family and friends, was not a factor in the quality of diets of elderly single women (87% widowed) who lived alone although formal sources of information on nutrition (e.g., government information and

food classes) were associated with better diet quality. In their analysis, Schafer and Keith (1982) only considered the correlation between sources of information (media advertizing, spouse, friends) and diet quality, whereas this study assessed perception that someone was available who could give advice when needed. The results indicated that these other variables may moderate the effect that informal sources of information have on diet quality and diet diversity. The present study only looked at the effects of informal sources of food information, so a comparison with formal sources of information was not possible. However, the results suggest that it may be important not only to consider the influence of informal informational support on food patterns, but also the role health and economic factors play on this relationship.

Of the three nutritional support variables, it was expected that perceived instrumental support would have the greatest effect on diet quality and diet diversity. This hypothesis was not supported as no significant effect was found between perceived instrumental support and diet quality or diet diversity when controlling for health status or economic situation.

The lack of any significant effect of perceived instrumental support on food patterns may be due to the following reasons. First, there was relatively little variability in the perceived instrumental support score.

The scores tended to be high, suggesting that most of the respondents perceived instrumental support was available if needed. Secondly, the measurement of perceived instrumental support may be problematic. While the items in the perceived informational support scale and perceived social companionship scale deal with situation-specific nutritional issues that are immediate, the items in the perceived instrumental support scale refer to possible future scenarios, not immediate concerns, and therefore may not influence or be related to present food patterns.

Perhaps more importantly, the idea that instrumental support would have an effect on diet quality and diet diversity was based on the belief that the elderly widow may need help due to functional disabilities. However, even though the women in this study had several health problems, they had very few functional disabilities and tended to perceive their health as excellent or good. They may not have needed instrumental support and therefore an effect on diet quality and diet diversity may not have been seen.

A lack of significant findings for social companionship on diet quality and diet diversity may be due to the following reason. The items in the social companionship scale reflect social activities that involve eating together. However, they do not reflect whether or not this type of companionship was available on a daily basis. It may be that having the occasional social activity that

involves eating with others does not influence usual diet quality or diet diversity.

While social companionship did not have a significant effect, the results suggest that having contact with others on a daily basis (not specifically around mealtimes) has some impact on both diet quality and diet diversity, depending, to some extent, on the level of functional disability. However, when the other health variables, economic situation and age were considered separately, daily contact emerged as somewhat important only for diet diversity.

Others have found social companionship to influence other nutritional measures. McIntosh et al. (1989) found that the elderly who had more companionship around mealtimes had higher protein ($P \leq 0.10$) and energy intakes ($P \leq 0.05$) when sex, age, race and economic resources were controlled. Krondl et al. (1982) also found an association between social activity and variety of food use; those who had greater social activity had a greater variety of food use.

Walker and Beauchene (1991) found that the number of social contacts was inversely related to loneliness ($r=-.35$, $P<0.05$). Those more socially active reported less loneliness which appeared to be related to an increase in energy, protein and phosphorus intake ($P<F$ 0.05) when age, income, and whether the subject lived alone or with others was controlled. However, they reported that the number of

social contacts, per se, had no effect on dietary adequacy.

McIntosh and Shifflet (1984) found that frequency of contact with neighbours was significantly correlated with several nutrients although multivariate linear regression analysis only revealed two significant effects. Frequency of contact with neighbours had a significant and positive effect on phosphorous and magnesium intakes when sex, income, age and race were controlled.

No literature on the effect of family network size on nutritional health was found with which to compare the results of the present study. This study found that perceived economic security tended to moderate the effect of family size on diet quality. Diet quality tended to increase as family size increased only among those who perceived less economic security, while diet quality tended to remain the same among those who perceived greater economic security. It may be that those who perceived their income was only adequate, actually had lower income than those who perceived their income met their needs very well. This suggests that having a small family network puts the widow, who is poor, at greater risk of nutritional inadequacies than those with a larger family network. Perhaps having a larger family network means having more people to draw on for assistance. For example, those with a large family network may be more likely to rely on someone within the network to help with household repairs, whereas

those with a smaller network may have to rely on professional services that cost money. This may leave those with a smaller family network with less income to spend on food.

Age tended to moderate the effect of the combined size of the friends and neighbours network on diet quality. Diet quality increased as the size of the friends and neighbours network increased among those who were 76 years of age or older but not among those who were younger. Diet quality tended to be higher among those who were younger, and lower among those who were older, therefore having a larger network may be of more benefit to those who are older and have lower diet quality than those who are younger and have higher diet quality.

Friends and neighbours are important in the areas of socialization, day-to-day companionship and responding to health-related tasks (Peters and Kaiser, 1985; Cantor, 1979). Research by McIntosh et al. (1989) found that friendship networks had a positive effect on the intake of vitamins, minerals and protein when sex, age, race, and economic resources were considered. Their friendship network variable included the number of close friends, friendship density, frequency of getting together and the extent to which advice was shared with friends,

The size of the total social network in the present study had no significant effect on diet quality or diet

diversity. More information about the effect of social networks on food patterns was obtained when the type of social network was considered. It may be that the total size of the network was not as important to food patterns as the type of relationship within the social network and the frequency of social contact.

The quality of the relationships within the social network were not studied although this may influence the effect of the various types of social networks on diet quality and diet diversity. The effect of family members on food patterns may be related to family dynamics, a close-knit family who often does things together may have a different effect than families that do not spend a lot of time together. Not having a confidant relationship, that is not having someone to confide in, may have a negative effect on diet quality and diet diversity as having a confidant relationship has been associated with a positive sense of well-being and greater life satisfaction (Lowenthal and Haven, 1968; Strain and Chappell, 1982; Lubben, 1989).

The present study did not establish if nutritional support or social network variables were more important in terms of their influence on diet quality or diet diversity. However, the influence of nutritional support and social networks depended, to some extent, on the control variable involved. It also depended on whether or not the control variable was exerting a moderating influence or having a

direct effect on diet quality or diet diversity.

6.2.6.2 Nutritional support and social network characteristics on interest in eating and food preparation

In the bivariate case, the three nutritional support variables were not associated with interest in eating and cooking or interest in avoiding monotony around eating and cooking. Among the social network variables, only one significant effect was found. Daily contact was positively correlated to interest in eating and cooking ($r=.25$, $P\leq 0.10$). When taking the control variables into consideration in the regression analysis, this relationship no longer remained significant ($P\leq 0.10$).

In only one case did nutritional support or social networks influence interest in eating and cooking in the regression analysis. When the number of chronic health problems was controlled, a quadratic effect was somewhat evident for social companionship. That is, interest in eating and cooking tended to depend on the amount of companionship perceived to be available. A moderate level of companionship appeared to be the optimal point at which it had a positive influence on interest in eating and cooking. Although it was not clear in the results, it may be that interest in eating and cooking increases initially and then levels off at high levels of companionship.

Social companionship also tended to have a quadratic effect on interest in avoiding monotony. This occurred when each of the control variables was considered separately. However, the results suggest that social companionship tended to influence when social companionship was low or high. At moderate levels of social companionship, interest in avoiding monotony tended to be low. The size of the total network and weekly contact also appeared to have similar quadratic effects on interest in avoiding monotony.

It has been assumed that social support can rekindle interest in eating (Coleman, 1993). An attempt was made to develop an instrument that would capture the concept of interest in eating and food preparation. The failure to find a greater number of, and more significant effects, of nutritional support and social networks may reflect problems in the measurement of the concept of interest in eating and food preparation.

Initially it was thought that the interest scale would fall under two concepts, namely, interest in eating and interest in food preparation. Principal component analysis did reveal two concepts, interest in eating and cooking and interest in avoiding monotony around eating and cooking, although they were not the same as initially speculated. It may be that the concept of interest in either eating or preparing food was not fully captured by the items included in the scale.

The concepts of interest in eating and food preparation and nutritional support were not developed with input from a representative group of elderly women and therefore may not reflect their understanding of these concepts. Priority needs to be given to the development of this instrument using qualitative methods which include input from elderly women. This may help determine if interest in eating and food preparation is something that is important to elderly widows. It may also help define these concepts, and lead to the development of items that more closely reflect the elderly women's interest in eating and food preparation.

6.2.6.3 Nutritional support, social network characteristics and appetite

Although not included in the hypothetical model, appetite was included in the statistical analysis as a dependent variable because it was thought that nutritional support and social network characteristics may influence appetite. In the bivariate case, none of the nutritional support variables were correlated with appetite, while two of the network variables (size of the total network and family network size, $r=0.30$, $r=0.06$ respectively) were. Family network size and total network size remained significant in the regression analysis only when the number of chronic health problems was controlled. In addition, significant effects were found for both instrumental support

and social companionship when taking into account certain control variables.

The regression analysis indicated that economic disadvantage, perceived economic security, and age tended to moderate the effect of perceived instrumental support on appetite. Economic disadvantage also moderated the effect of daily contact on appetite. McIntosh et al. (1989) found, among the elderly, that companionship failed to buffer the negative effects of financial stressors on appetite ($P \leq 0.01$). That is, those who had companionship tended to have poorer appetites, when faced with financial problems, than those without companionship. Their instrument for measuring companionship encompassed both companionship at mealtimes, and instrumental support: help with cooking. When taking the instrumental aspect into consideration, the results presented here are similar to that of McIntosh et al. (1989).

In the present study, appetite tended to decrease somewhat as instrumental support increased, among those who had the greatest economic disadvantage (no gap between income and expenses), while appetite tended to increase among those less economically disadvantaged. Similarly, appetite decreased, to some extent, as daily contact increased among those who had the greatest economic disadvantage, while appetite tended to increase among those less economically disadvantaged.

McIntosh et al. (1989) suggested that instrumental help may have its drawbacks as it represents a potential loss of control over what food is prepared. Perhaps the potential loss of control over preparing food or purchasing groceries is exaggerated when there is also a lack of actual income. McIntosh et al. (1989) also found that even though appetite was poorer among those with greater financial stress, compared to those with less stress, this did not decrease nutrient intake, as those with more companionship also had higher nutrient intakes than those with less companionship.

Here, when the number of chronic health problems was controlled, a quadratic effect was found between social companionship and appetite. That is, when the amount of companionship was medium, appetite was better. Appetite tended to be lower when companionship was low or high. Therefore the optimal level, for better appetite, appeared to be having a medium amount of support. In addition, when the number of chronic health problems was controlled, appetite tended to increase somewhat as family size increased. This would be expected because family members frequently provide companionship to the elderly.

In summary, of the nutritional support variables, only informational support tended to influence diet quality and diet diversity but only in combination with the various control variables. Of the social network variables, family network size, the size of the friends and neighbours

network, and having daily contact with someone appeared to influence diet quality while only daily contact had some effect on diet diversity. Although social companionship, total network size, and weekly contact appeared to have an effect on interest in eating and cooking, as well as interest in avoiding monotony, the normality test suggests that these effects may be spurious. Appetite was measured using only a single item. In spite of this, instrumental support and social companionship, as well as family network size and daily contact, had some effect on appetite.

Health status, economic situation, and age were important variables to consider. With the exception of the two interest variables, in most cases a control variable moderated the effect of the independent variable on the outcome variable. This suggests that moderating effects should be considered in future research. Quadratic effects also need to be considered in future research as, in a few cases, this effect was prominent. That is, the influence of the independent variable on the outcome variable depended on the level of the independent variable when health status, economic situation were controlled. A larger sample size is needed to confirm these results.

The small number of significant effects may be due to the small sample size and therefore not enough power to detect a greater number of significant relationships. Overall, 360 models were tested and of these, 29 were

significant; however, some of these models may have occurred by chance. The total variation explained by the regression models ranged from 12% to 33%. The variation may be low because only two variables were included in each of the models: one independent and one control variable. It may be that including other variables within the same model may reveal other significant relationships. Research is needed on a larger sample to test more complex models.

Chapter 7

Summary and Conclusions

7.1 Summary and conclusions

The goal of this study was to explore the influence that nutritional support and social network characteristics would have on diet quality, diet diversity, and interest in eating and food preparation, and as well to examine the effect of the control variables on these relationships. A sample of elderly widows living alone was chosen because it was felt that the effects of nutritional support and social network characteristics might be more apparent among this population as they live alone, frequently have health problems and lower incomes, and may rely on outside sources of support from family, friends and neighbours.

Out of a possible 82 women, 46 women agreed to participate. Although the women studied had several health problems, they tended to have few functional disabilities and tended to perceive their health as excellent or good. Further, these women had participated in a previous survey which may have influenced their willingness to be a part of this study; thus they may represent women who like to help others in this way. These potential differences limit the generalizability of the study.

The widow's diet, on average, did not meet the recommendations of Canada's Food Guide to Healthy Eating for any food group. A considerable number of women did not meet

at least 50% of the recommended number of servings from each food group. However, most women consumed a variety of different foods each day and described their appetite as either excellent or good. The women were highly interested in eating and cooking and tended to avoid monotony around preparing food.

No existing measures of nutritional support and interest in eating and food preparation were found. Therefore two scales that reflect these concepts were developed for this study. The validity and reliability of these scales were assessed using principal components analysis and Cronbach's alpha. These procedures revealed three dimensions of the nutritional support scale and two dimensions of the interest in eating and food preparation scale. Each of these subscales was moderately reliable.

Response surface regression analysis and three-way cross-tabulations were used to determine if nutritional support and social network characteristics influenced diet quality, diet diversity, and interest in eating and food preparation, while considering the additional impact of both the health status and economic situation of the women. Health status and economic situation were hypothesized to both have either a direct effect, and to moderate the influence of nutritional support and social networks, on the outcome variables.

The results must be interpreted with caution because

the sample size was small. In addition, the cross-tabulations suggest that in some cases the relationships were not as strong as suggested by the regression results. Table 52 presents a summary of the regression results.

Overall, nutritional support did not have a strong effect on the outcome variables. When there was an effect it was in conjunction with a control variable. This was also the case for the social network variables.

For diet quality and diet diversity, of the nutritional support variables, only informational support was important. In both cases, control variable exerted a moderating influence.

Nutritional support and social network characteristics generally did not emerge as important for interest in eating and cooking, this may be due to low variation as most of the women studied were highly interested in eating and cooking. Of the nutritional support variables, only social companionship was important for interest in eating and cooking and this occurred only when the number of health problems was considered. Having a moderate amount of companionship appeared to be the optimal level of companionship. Social companionship was also important for interest in avoiding monotony when all of the control variables were taken into account. In these cases those who had low or high companionship tended to have a high interest in avoiding monotony.

TABLE 52

SUMMARY TABLE OF RESPONSE SURFACE REGRESSION RESULTS

NUTRITIONAL SUPPORT EFFECTS

	DIET QUALITY	DIET DIVERSITY	INTEREST IN EATING AND COOKING	INTEREST IN AVOIDING MONOTONY	APPETITE
CONTROL VARIABLES		INSTRUMENTAL SUPPORT			
CHRONIC HEALTH PROBLEMS					
FUNCTIONAL DISABILITY					
PERCEIVED HEALTH STATUS					
ECONOMIC DISADVANTAGE					L^1/CP^2
PERCEIVED ECONOMIC SECURITY					CP
AGE					CP
		INFORMATIONAL SUPPORT			
CHRONIC HEALTH PROBLEMS	L/CP	CP			
FUNCTIONAL DISABILITY					
PERCEIVED HEALTH STATUS					
ECONOMIC DISADVANTAGE		L/CP			
PERCEIVED ECONOMIC SECURITY					
AGE					
		SOCIAL COMPANIONSHIP			
CHRONIC HEALTH PROBLEMS			Q^3	L/Q	L/Q
FUNCTIONAL DISABILITY				L/Q	
PERCEIVED HEALTH STATUS				Q	
ECONOMIC DISADVANTAGE				Q	
PERCEIVED ECONOMIC SECURITY				Q	
AGE				Q	

SOCIAL NETWORK VARIABLES

CONTROL VARIABLE	DIET QUALITY	DIET DIVERSITY	INTEREST IN EATING AND COOKING	INTEREST IN AVOIDING MONOTONY	APPETITE
		TOTAL NETWORK SIZE			
CHRONIC HEALTH					
FUNCTIONAL DIS				L/CP/Q	
PERCEIVED HEALTH					

TABLE 52 CONTINUED CONTROL VARIABLES	DIET QUALITY	DIET DIVERSIIY	INTEREST IN EATING AND COOKING	INTEREST IN AVOIDING MONOTONY	APPETITE
ECONOMIC DIS				Q	
PERCEIVED ECONOMIC SECURITY					
AGE					
FAMILY NETWORK SIZE					
CHRONIC HEALTH					LIN
FUNCTIONAL DIS					
PERCEIVED HEALTH					
ECONOMIC DIS					
TABLE 52 CONTINUED					
PERCEIVED ECONOMIC SECURITY	L/CP				
AGE					
FRIENDS/NEIGHBOURS NETWORK SIZE					
CHRONIC HEALTH					
FUNCTIONAL DIS					
PERCEIVED HEALTH					
ECONOMIC DIS					
PERCEIVED SECURITY					
AGE	CP				
DAILY CONTACT					
CHRONIC HEALTH		L/CP/Q			
FUNCTIONAL DIS	L/CP	L/CP/Q			
PERCEIVED HEALTH		CP/Q			
ECONOMIC DIS		L/CP			CP
PERCEIVED SECURITY		Q			
AGE		Q			
WEEKLY CONTACT					
CHRONIC HEALTH					
FUNCTIONAL DIS					
PERCEIVED HEALTH				Q	

TABLE 52 CONTINUED CONTROL VARIABLE	DIET QUALITY	DIET DIVERSITY	INTEREST IN EATING AND COOKING	INTEREST IN AVOIDING MONOTONY	APPETITE
ECONOMIC DIS				Q	
PERCEIVED SECURITY					
AGE					

[1]L=LINEAR EFFECT
[2]CP=CROSSPRODUCT (INTERACTION) EFFECT
[3]Q=QUADRATIC EFFECT

Note that the cross-tabulations suggest that some of these relationships while statistically significant were not strong.

Appetite was included in the analysis to explore whether or not it might be an important variable to consider in this type of research. In contrast to the other nutritional outcomes studied, instrumental support was important when looking at appetite, and economic situation appeared to be a moderating variable (Table 52). Since the respondents were generally healthy and may not have needed instrumental support this may explain why instrumental support did not influence diet quality or diet diversity. Social companionship was also related to appetite when the number of chronic health problems was considered. Here there appeared to be an optimal level of social companionship at which point appetite tended to level off.

Turning to the social network characteristics, family network size, friends/neighbours network size and daily contact influenced diet quality, whereas only daily contact appeared to be important for diet diversity. Again these effects were moderated on some control variables and not others. None of the network characteristics affected interest in eating and cooking while, total network size and weekly contact had some effect on interest in avoiding monotony when certain health and economic variables were considered.

Family network size and daily contact were the only two network characteristics to influence appetite; again, the number of chronic health problems and economic disadvantage

were important variables in these relationships. The number of chronic health problems and economic disadvantage continually emerged as important variables in describing the relationship of nutritional support and social network characteristics on the outcome variables.

Conclusions

Overall, these findings suggest that nutritional support and social network characteristics are important to consider in terms of their effect on the nutritional outcomes studied, but other variables are also important as the R^2 was low and variation yet to be explained. In addition, health status, economic situation and age are important to consider when examining the effect of nutritional support and social network characteristics on the nutritional outcomes examined in this study. Health and economic variables appear, in some cases, to exert direct effects on the nutritional outcomes studied, as shown in previous research, and in other cases were shown to have moderating effects that, to date, have been shown in only one other study (McIntosh et al., 1989).

Different types of nutritional support and social network characteristics appear important for each outcome variable in this study. Instrumental support appears important for appetite, while informational support appears important for diet quality and diet diversity, and social

companionship for the two interest variables. Of the social network characteristics family network size and the friends and neighbours network appear important for diet quality, while everyday contact appears important for diet diversity. Total network size and weekly contact appear important for interest in avoiding monotony, while family network size and daily contact appear important for appetite.

7.2 Limitations

The generalizability of this study is limited as the sample size was small and was unlikely to be representative of the general population of elderly widowed women who live alone. Procedures to increase the response rate among elderly widows who live alone need to be developed to increase the representativeness of the results. The small sample size decreases the statistical power and therefore increases the chance of failure to find significant results when they do exist (Type II errors). Therefore, some variables that were not found to have a significant effect in this study may be found significant with a larger sample size. Future research on elderly widows living alone will need a larger sample size.

The cross-sectional nature of this also limits the interpretation of the results. The study reflects the situation of the elderly women studied at one point in time. Over time, changes may occur in the perception of

nutritional support, the size of the social network and the frequency of contact. Also, changes may occur in terms of health and economic situation over time. A longitudinal approach may reveal whether perceived nutritional support changes when other factors also change, or whether the individuals perceptions of support remains the same. The current study contributes to existing knowledge of social support and social networks as they appear to be related to the food patterns of elderly widows who live alone and their interest in eating and preparing food.

7.3 Directions for future research

This exploratory study was the first step necessary for the development of an instrument to assess how nutritional support (situation-specific support) influences food patterns and interest in eating and preparing food. Further research, with a larger sample, should identify what type of nutritional support elderly widows need, and under what circumstances this type of support influences food patterns.

The three nutritional support subscales only assessed the perception that support was available, if needed. Further development of the concept of perceived adequacy of nutritional support needs input by elderly women through qualitative research (e.g. focus groups). This may help define the concept and refine the nutritional support

instrument to be able to assess perceived adequacy of support in terms of nutrition. Qualitative research may also help define the concept of informational support, instrumental support, and social companionship support and lead to the development of items that better reflect the nutritional support needs of elderly widows.

Further research should also consider, in more detail, the nutritional outcomes studied here and whether there are other nutritional outcomes that may be more sensitive to the effects of nutritional support and social network characteristics.

Further development of the concept of interest in eating and food preparation is needed as it is assumed that social factors play an important role in maintaining this interest. Qualitative research may help define the concept of interest in eating and food preparation and lead to the development of items that better reflect this concept.

Future research also must examine more complex models that include more than one independent variable and one control variable. This may help determine which of the nutritional support variables and social network characteristics, as well as which control variables are most important, and to test reciprocal models or mediating effects.

The influence of nutritional support and social network characteristics on appetite warrants further investigation

as there was some evidence that nutritional support and social network characteristics may influence appetite. Again, research needs to determine which type of nutritional support and which social network characteristics exert the greatest influence on appetite.

The results in this study represent an initial attempt to examine the relationship of nutritional support and social network characteristics on food patterns. A number of research questions remain to be answered.

7.4 Implication for practise

In addition to exploring further the effects of nutritional support and network characteristics on nutritional outcomes, research also needs to develop strategies to strengthen network ties, especially among those who have a small network, and who feel their network doesn't provide the nutritional support they want or need, in order to continue to live independently in the community.

Since the literature suggests that income influences the elderly person's ability to maintain her social network, and also her ability to purchase the food she needs, ensuring that her financial needs are met adequately is paramount. Whether income or economic resources should be increased by increasing old age security, or guaranteed income supplement, or by providing food coupons, low-cost services such as appropriate low-cost transportation (allows

her to visit more frequently with family and friends), and appropriate low-cost housing (to reduce the amount of income spent on shelter), needs to be addressed in future intervention programs. Being able to maintain an adequate social network is likely to improve the chances of having someone available to provide nutritional support when needed.

Since health status influences both the effect of nutritional support and social network characteristics on food patterns, ensuring that the widow's health care needs are met adequately is also necessary. Having friends to discuss health problems with and to provide helpful advice, may help to reduce the impact of poor health on food patterns. Receiving help from formal support services, such as home care, for personal care needs (bathing) and house cleaning may allow her to maintain her relationship with family and friends on a social interaction level rather than on a personal care level. This may help her retain strong social ties and increase the chance that nutritional support would be available, if needed.

7.5 Concluding comments

Recognizing the limitations of this study, this research contributes to the existing literature in a variety of ways. A first attempt was made to develop a situation-specific instrument that,with further development, may be

useful to measure social support around nutritional concerns. Also an instrument was developed to assess interest around eating and preparing foods. This was done in order to assess whether nutritional support influences this nutritional outcome variable, as it is often assumed that having companionship will help the elderly maintain an interest in eating and preparing food. The research also expands on the importance of understanding the role of other variables, such as health status and economic situation, when assessing the impact of nutritional support on nutritional outcomes. Several research questions in the area of nutritional support and nutrition remain to be addressed.

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APPENDICES

APPENDIX A
Initial contact letters
Screening telephone conversation

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY

Department of Foods and Nutrition

Duff Roblin Building
Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-6874
(204) 275-5299 FAX

December 4, 1992

Dear :

A few years ago, you participated in a study conducted by the Centre on Aging at the University of Manitoba. As a graduate student in the Department of Foods and Nutrition, I now am interested in talking to you about yourself, your food choices and the involvement of your family, friends and neighbours. You are one of 50 people who have been selected for my study.

I would like to meet with you for about an hour, at your convenience, to ask some questions, followed by two short follow-up telephone conversations. Your assistance will help to assure the sucess of the project. You will not be identified in any way and your name will not be used anywhere. All the information you provide is strictly confidential and you have the right to refuse to answer any questions.

I will be calling you shortly to arrange a time. If you have any questions, please do not hesitate to call me at 474-6874 or 663-9154. I look forward to talking to you.

Sincerely, Vivian Schultz (Project Coordinator)

THE UNIVERSITY OF MANITOBA

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Department of Foods and Nutrition

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(204) 474-6874
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October , 1992

Dear :

My name is Vivian Schultz. I am a graduate student from the University of Manitoba, Department of Foods and Nutrition. I am conducting research to explore whether family, friends and neighbours influence the food choices of independently living older women. At the present time we know very little about how social ties help determine what foods women choose. To learn more about this I am interviewing women like yourself.

I understand you've participated in an earlier survey conducted by the Centre on Aging, University of Manitoba, in 1985. I trust this was a positive experience for you. It is from the Centre on Aging that I received your name and address to contact you and ask if you would be willing to participate in this new survey.

This survey will involve three interviews. I will be conducting each of the interviews. The first interview will be in your home and will take about 1 to 1 1/2 hours to complete. This interview will begin by asking you questions about the food you ate the day before and will be followed with a series of questions on eating and preparing food. Other questions will focus on the help you receive with obtaining and preparing food, your health situation, income and expenses, and how many people you visit with regularly. The following two interviews will be conducted by telephone and will last approximately 30 minutes. The questions in these two interviews will be about the food you ate the day before. The information you provide is strictly confidential. Your name will not appear in any publication of the results of this research. You are free to choose not to answer any questions you wish.

I hope that you will be able to participate in this

survey. I will be phoning you within the next week to ask for your response and to set up an interview time convenient to you.

If you have any questions please call me at: **University - 474-6874 Home - 663-9154.**

Sincerely, Vivian Schultz (Principal Investigator)

SCREENING TELEPHONE CALL:

Hello, my name is Vivian Schultz. I'm calling from the University of Manitoba, the Department of Foods and Nutrition. Recently I sent you a letter to ask if you'd like to participate in a survey to explore how family, friends and neighbours influence the food choices of women like yourself. Did you receive this letter? (IF NOT CONFIRM ADDRESS - IF WRONG ADDRESS EXPLAIN THE PURPOSE OF THE LETTER AND PHONE CALL AND THAT A LETTER WILL BE SENT TO HER CORRECT ADDRESS). IF RECEIVED LETTER CONTINUE ON. I'd like to encourage you to participate as this is an opportunity to talk together about concerns many people have with nutrition.

If you are interested in participating I will be conducting 3 interviews with you. The first one would be in your home and will take 1 hour to 1 1/2 hours. The next 2 follow-up interviews will be conducted by telephone and will last approximately 30 minutes. Any information you give is strictly confidential. Are you interested in participating in this survey? (IF "NO" - MAY I ASK WHY YOU ARE UNABLE TO PARTICIPATE._____

_____

_____

THANK YOU FOR TAKING THE TIME TO TALK TO ME). IF ANSWERED "YES" CONTINUE.

There are a few questions I need to ask to be sure you'll be able to participate.

1. Do you receive meals on wheels? (IF ANSWERED "YES" THANK HER FOR HER WILLINGNESS TO PARTICIPATE AND EXPLAIN WE ARE ONLY ASKING PEOPLE WHO DO NOT RECEIVE HELP WITH MEALS FROM FORMAL ORGANIZATIONS AS WE WANT TO KNOW HOW FAMILY, FRIENDS AND NEIGHBOURS HELP OUT).

2. What type of housing do you live in?
   1 - detached (single family house)
   2 - semi-detached (dupplex)
   3 - apartment (no more than 4 stories)
   4 - highrise
   5 - seniors apartment housing
   6 - other _____
   (IF LIVE IN SENIORS APARTMENT HOUSING OR OTHER THANK

HER FOR HER WILLINGNESS TO PARTICIPATE AND EXPLAIN THAT THESE LIVING SITUATIONS OFTEN MEAN RECEIVING DIFFERENT SOURCES OF HELP THAN THOSE WHO LIVE ALONE AND WE NEED WOMEN WHO LIVE IN SIMILAR TYPES OF HOUSING TO PARTICIPATE IN THIS STUDY).

3. Do you live alone? (IF "NO" THANK HER FOR HER WILLINGNESS TO PARTICIPATE AND EXPLAIN THAT THOSE WHO LIVE WITH OTHERS USUALLY EAT WITH THOSE THEY LIVE WITH THEREFORE THE FOOD PATTERNS OF THOSE LIVING WITH OTHERS MAY BE VERY DIFFERENT FROM THOSE WHO LIVE ALONE. THEREFORE WE DECIDED TO ONLY INTERVIEW THOSE WHO LIVE ALONE).

IF CRITERIA MET

The next step is to set up a time that's convenient for you and I to meet for the first interview. (SET UP TIME)

Do you have any questions? Thankyou for you willingness to participate. I will see you _____ (DATE AND TIME)

If you find you have any problem with this time please feel free to call be at the University at 474-6874 or at home at 663-9154. The phone numbers are also on the letter that was mailed to you. Thank you again and have a good day.

APPENDIX B
Home interview
Telephone reminder call
Telephone recall interview

INTRODUCTION OF INTERVIEWER AT THE DOOR

Hello Mrs._____. My name is Vivian Schultz. I'm from the University of Manitoba. I recently talked to you on the telephone to set up an interview to ask you questions about how family and friends influence your food choices. Do you remember my call? (IF YES CARRY ON - IF NO - CONFIRM IF HAVE THE RIGHT PERSON - IF NOT APOLOGIZE FOR INTERUPTING HER AND LEAVE). May I come in? If it's all right with you may we talk in your kitchen?

INTRODUCTION TO INTERVIEW

Mrs._____, your answers to this questionnaire will help us understand how women like yourself receive help from family and friends for issues around food. You are one of about 50 women whom I am interviewing. I want to assure you that everything you say is confidential, and your name will not be used in the publication of any results of this survey.

The questions today should take 1 to 1 1/2 hours to answer. I would also like to talk to you, at a later date, by telephone 2 more times. Each telephone interview will take about 30 minutes.

I have a consent form for each person I interview, it says... (REFER TO CONSENT FORM). I need your signature and the date of todays interview. Thankyou.

Mrs._____, I am going to talk to you about you, your family, friends, neighbours, your health and how you manage as well as the foods you eat. There are no right or wrong answers to any of the questions I ask. If there are any questions you would rather not answer, please feel free to so. I really appreciate your help.

THE UNIVERSITY OF MANITOBA

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The Effect of Social Support on the Food Patterns Of Elderly Widows Living Alone

CONSENT FORM

I have read the letter which describes the responsibilities of participants in the proposed study. I agree to participate in the study as described in the letter and further explained in a telephone call and home visit. I understand that responses to all questions will be kept entirely confidential. I also understand that I am free to choose not to answer any questions I wish, and also free to withdraw from the study at any time.

I have had the project explained and I agree to participate.

Signature _____

Date _____

INTERVIEW SCHEDULE

PROTOCOL FOR 24 HOUR RECALL INTERVIEW

First I'd like to ask you about the foods you ate yesterday. Could you please tell me everything you ate and drank from the time you got up in the morning yesterday until going to bed last night and what you ate during the night. Be sure to mention everything you ate or drank at home, or when visiting friends or relatives. Include snacks and drinks of all kinds. I also need to know where you ate and if you ate with someone.

1. First, about what time did you get up yesterday?

When did you first eat or drink something? (RECORD ON FORM)

What did you eat or drink then? (RECORD ON FORM)

CONTINUE:
Did you eat or drink anything else at this time?
(WHEN NEEDED ASK: DID YOU PUT ANYTHING IN THE TEA, ON THE BREAD, ETC.?)

Where did you eat that?

Did you eat alone or with someone else?

When was the next time you had something to eat or drink?

What did you eat or drink then?

Did you eat or drink anything else at this time?

2. CONTINUE THROUGH THE DAY UNTIL THE 24 HOUR PERIOD IS COVERED.

Did you have any snack during the night?

3. ASSIST THE RESPONDENT BY HELPING HER RECALL HER ACTIVITIES

4. Now let's go back over this list and find out how you prepared the food a nd how much of each food you ate. I have some plastic dishes and models that may help you describe the amount. You could also show me the bowls and glasses that you usually use so I can measure them.

Would you please tell me how you prepared each food and how much of each food

you had? First you mentioned... (NAME OF FOOD). How was this prepared? (FRIED, BOILED, BAKED, ETC.) How much did you eat? (SHOW FOOD MODEL, SEE WHAT BOWLS, CUPS AND GLASSES THE USED).

(TO ESTIMATE **FOOD MIXTURES** FIRST OBTAIN THE TOTAL VOLUME EATEN AND THEN THE AMOUNT OF EACH COMPONENT. THE INDIVIDUAL ITEMS SHOULD NOT EXCEED THE TOTAL VOLUME. IF THIS IS TOO DIFFICULT TRY TO DETERMINE THE PROPORTIONS OF INGREDIENTS (WHAT WAS MOST, LEAST AND SO ON). TRY TO WRITE A RECIPE ON THE RECIPES HERE FORM. FOR SOUP, STEWS, ETC. HAVE SUBJECT DESCRIBE THE BROTH AS THIN, MEDIUM OR THICK.

5. Is this day different in any way or is it pretty much the way you usually eat? For example, it would probably be different if you were sick or celebrating a special occasion.

USUAL (1)
DIFFERENT (2)

6. Why is it different?

ILLNESS (1)
CELEBRATION (2) (eg. birthday)
NA (3)

7. Do you take a vitamin or mineral pill?

___ no IF "NO" GO TO ITEM # 8
___ yes

What type of supplement(s) (CHECK ANY THAT APPLY)

		Number per week
___	vitamin B12	___
___	B Complex	___
___	Calcium	___
___	Folic Acid	___
___	Iron	___
___	Magnesium	___
___	Multi-vitamin	___
___	Multi-vitamin plus mineral	___
___	Potassium	___
___	Selenium	___
___	Vitamin A	___
___	Vitamin C	___
___	Vitamin E	___
___	Zinc	___
___	don't know	___
___	other	___

8. To get an idea of how much food you usually eat I'd like you to show me which bowls you usually use for cereal, soups, stews and desserts.

When you have cold cereal for breakfast which bowl do you usually use? How high do you usually fill it? I will put some water in the bowl to the height you indicated and measure the amount in this measuring cup.

(RECORD DESCRIPTION OF DISHES AND UTENSILS AND MEASUREMENT OF USUAL AMOUNTS ON THE FORM TITLED: DISHES AND UTENSILS USUALLY USED)
(DO THIS FOR HOT CEREAL, SOUPS, STEWS, AND DESSERTS)

When you have coffee or tea which cups do you usually use? How high do you usually fill it? I will put some water in the cup to the height you indicated and measure the amount in this measuring cup.

When you have juice which glass do you usually use? How high do you usually fill it? Again I will put some water in this glass to the height you indicated and measure the amount in this measuring cup. (DO THIS ALSO

FOR MILK AND ASK ABOUT OTHER BEVERAGES)

What would you use to measure a cup of rice, macaroni or mashed potatoes? (MEASURE THE AMOUNT THIS CUP HOLDS WITH WATER AND WRITE THIS INTO THE MEASUREMENT OF USUAL AMOUNTS COLUMN).

What would you use to measure a tablespoon of peanut butter or jam? Would you measure this heaping or level with the spoon?
(IF POSSIBLE ASK HER TO ACTUALLY SHOW HOW MUCH SHE USUALLY EATS AND MEASURE THIS WITH THE MEASURING SPOONS, THEN WRITE THIS INTO THE MEASUREMENT OF USUAL AMOUNTS COLUMN).

What would you use to measure a teaspoon of honey or sugar? Would you measure this heaping or level with the spoon?
(MEASURE THE USUAL AMOUNT USING MEASURING SPOONS, THEN WRITE THIS INTO THE MEASUREMENT OF USUAL AMOUNTS COLUMN).

How much butter or margarine do you usually put on your bread or toast? (SHOW TEASPOON AND TABLESPOON AND ASK HER ESTIMATE USING THESE)

If you were making egg, salmon, or tuna salad for yourself looking at this TABLESPOON how much mayonnaise would you use?

DISHES AND UTENSILS USUALLY USED

DESCRIPTION OF DISHES AND UNTENSILS USUALLY USED	MEASUREMENT OF USUAL AMOUNTS

RECIPES HERE

EARLIER I MENTIONED THAT I WILL BE CONDUCTING 2 TELEPHONE INTERVIEWS. THE PURPOSE OF THE INTERVIEW IS TALK TO YOU ABOUT THE FOODS YOU ATE THE DAY BEFORE. FIRST I WILL GIVE YOU A TELEPHONE CALL TO ASK YOU TO KEEP A FOOD DIARY FOR THE FOLLOWING DAY. THE DAY AFTER YOU KEEP THE FOOD DIARY I WILL PHONE YOU TO TALK TO YOU ABOUT THE FOODS YOU ATE ON THAT DAY.

THE FOOD DIARY IS TO HELP YOU REMEMBER THE FOODS YOU ATE. (GO OVER THE INSTRUCTIONS WITH HER AND BE SURE SHE UNDERSTANDS WHAT TO DO.) I WILL GIVE YOU A TELEPHONE CALL A DAY AHEAD TO ASK YOU TO KEEP THIS DIARY.

HOW TO KEEP A DIARY OF THE FOODS YOU EAT

Write down the name of everything you eat or drink (except water) at home and away from home. Include foods you eat between meals or while watching T.V., even small snacks like fruit, crackers, candies. Use the form provided and follow these simple instructions.

1. **TIME COLUMN**. Note the time of day when food is eaten in the time column. For example, if breakfast is eaten at 8:00 am. write 8:00 in the column.
2. **PLACE EATEN**. Here write **at home** if you ate home. Write **away from home** if you ate out. For example, if you went out for lunch you would write away from home beside the time you had lunch.
3. **ATE ALONE OR ATE WITH OTHERS**. Here you note if you ate by yourself or if you ate with someone else. For example, if you had no company for supper you would write **ate alone**. If you had someone over for dinner or went out for dinner to someone elses home you would write **ate with others**.
4. **FOOD OR DRINK EATEN COLUMN**. Here, name the foods and beverages you ate at each meal and for snacks.
5. **HOW PREPARED COLUMN**. Here you write down how the food was cooked or prepared. For example, you write down if you buttered your toast, or if you used milk or water in preparing your soup, if you fried, or roasted your meat, or added milk and/or sugar to your coffee or tea and so on.

6. **AMOUNT EATEN.**

- for **individual items**, count the number. For example: 1 apple, 2 Ritz crackers, 2 eggs, 2 slices of bread, one Oh Henry chocolate bar and so on.

- for **liquids** write down whether it was 1/2 cup, 1 cup, a teaspoon, tablespoon and so on. Other foods such as mashed potatoes, rice, cereal, peas, spaghetti sauce, etc. can also be measured this way. You can either actually measure the food or estimate by your best guess how much you ate or drank. Do whichever you suits you the best.

- for **pieces** of cheese, chicken, meat, cake, etc. tell if it is a small, medium or large piece. If your at home and if you think it will help use the ruler to measure the length and width of the food and use the thickness indicator to measure how thick it is. Otherwise estimate or guess the size of each piece you ate. Use the ruler and thickness squares to help you do this. For example, if you had a pork chop for supper you would say if it was small, medium, or large and if it's 1,2,3,4,5,6,7, or 8 thickness squares in height. If you had a piece of cake or cheese you would use a ruler to measure or estimate the length and width of it and the thickness indicator to measure or estimate its height.

If you have any questions call me, Vivian Schultz at 474-6874 during the day or at 663-9154 after 6 pm.

I.D. NO.___

NOW I'M GOING TO READ TO YOU STATEMENTS ABOUT EATING AND PREPARING FOOD. I'D LIKE YOU TO TELL ME IF YOU AGREE OR DISAGREE WITH EACH STATEMENT. REMEMBER THERE IS NO RIGHT OR WRONG ANSWER.

INTEREST IN EATING AND FOOD PREPARATION

1. I like to prepare my meals from scratch because I enjoy cooking.
   AGREE ___ UNDECIDED ___ DISAGREE ___

2. I eat well compared to other woman my age.
   AGREE ___ UNDECIDED ___ DISAGREE ___

3. I only like to cook when I have company over.
   AGREE ___ UNDECIDED ___ DISAGREE ___

4. I enjoy eating many types of foods.
   AGREE ___ UNDECIDED ___ DISAGREE ___

5. I'm usually bored with preparing meals.
   AGREE ___ UNDECIDED ___ DISAGREE ___

6. I don't enjoy eating by myself.
   AGREE ___ UNDECIDED ___ DISAGREE ___

7. I like to try new recipes once in a while.
   AGREE ___ UNDECIDED ___ DISAGREE ___

8. I like cooking for myself even when I don't have company.
   AGREE ___ UNDECIDED ___ DISAGREE ___

9. I don't enjoy preparing meals (cooking) for myself.
   AGREE ___ UNDECIDED ___ DISAGREE ___

10. The food I eat is boring.
    AGREE ___ UNDECIDED ___ DISAGREE ___

11. At least once a week I take the time to make a nice meal for myself.
    AGREE ___ UNDECIDED ___ DISAGREE ___

12. I generally eat the same food every day.
    AGREE ___ UNDECIDED ___ DISAGREE ___

13. I usually plan ahead what I'll eat the next day.
AGREE ___ UNDECIDED ___ DISAGREE ___

14. I find taking the time to prepare food and eat gets in the way of doing the things I like to do.
AGREE ___ UNDECIDED ___ DISAGREE ___

15. I like trying new foods.
AGREE ___ UNDECIDED ___ DISAGREE ___

16. I eat because I have to - not because I enjoy it.
AGREE ___ UNDECIDED ___ DISAGREE ___

THIS NEXT SECTION IS ON THE KINDS OF SUPPORT OR HELP YOU MAY OR MAY NOT RECEIVE FROM FAMILY AND FRIENDS. AGAIN I'D LIKE YOU TO TELL ME IF YOU AGREE OR DISAGREE WITH EACH STATEMENT.

NUTRITIONAL SUPPORT

17. There is at least one person who gives me good suggestion about making meals for myself.
AGREE ___ UNDECIDED ___ DISAGREE ___

18. If I have trouble eating some types of foods there is someone who will give me ideas of what I can eat as a substitute.
AGREE ___ UNDECIDED ___ DISAGREE ___

19. If I had trouble understanding a recipe there is someone I could talk to in person or by phone.
AGREE ___ UNDECIDED ___ DISAGREE ___

20. I usually talk with someone about what's on special at the grocery store.
AGREE ___ UNDECIDED ___ DISAGREE ___

21. There is at least one person I know I can call on if I need to know how long some food will keep in the refrigerator or cupboard.
AGREE ___ UNDECIDED ___ DISAGREE ___

22. There is someone I turn to for suggestions on what to cook for just myself.
AGREE ___ UNDECIDED ___ DISAGREE ___

23. I often exchange coupons with someone else.
AGREE ___ UNDECIDED ___ DISAGREE ___

24. If I was not feeling well for whatever reason someone would get groceries for me.
AGREE ___ UNDECIDED ___ DISAGREE ___

25. If I could no longer do my own grocery shopping someone would get groceries for me on a regular basis.
AGREE ___ UNDECIDED ___ DISAGREE ___

26. If I wasn't feeling well for whatever reason, there is someone I could rely on to prepare my meals if needed.
AGREE ___ UNDECIDED ___ DISAGREE ___

27. If I could no longer prepare my own meals, there is someone who would help me on a regular basis.
AGREE ___ UNDECIDED ___ DISAGREE ___

28. I often have help with grocery shopping from friends, neighbours or family members even though I don't need it.
AGREE ___ UNDECIDED ___ DISAGREE ___

29. If I need a ride to the grocery store for whatever reason there is someone I can call who would be willing to give me a ride.
AGREE ___ UNDECIDED ___ DISAGREE ___

30. If I could no longer get to the store myself there is someone I could rely on to take me shopping on a regular basis.
AGREE ___ UNDECIDED ___ DISAGREE ___

31. If I decided in the afternoon that I would like to go out for dinner at a restaurant, I could find someone to go with me.
AGREE ___ UNDECIDED ___ DISAGREE ___

32. I am not often invited over to the homes of friends for lunch or dinner.
AGREE ___ UNDECIDED ___ DISAGREE ___

33. I often have company over for meals or snacks.
AGREE ___ UNDECIDED ___ DISAGREE ___

34. I would eat better if I had someone to eat with more often.
AGREE ___ UNDECIDED ___ DISAGREE ___

35. I am often invited to the homes of family members for lunch or dinner.
AGREE ___ UNDECIDED ___ DISAGREE ___

36. I eat alone more often than I would perfer.
AGREE ___ UNDECIDED ___ DISAGREE ___

37. Do you do most of your own grocery shopping.
YES ___ NO ___

IF "YES" GO TO QUESTION 37
IF ANSWERED "NO" HAVE SUBJECTS ANSWER STATEMENTS A & B.

A) I often don't get what I want or need when someone else does my grocery shopping.
AGREE ___ UNDECIDED ___ DISAGREE ___

B) The assistance I receive with grocery shopping is very adequate (enough).
AGREE ___ UNDECIDED ___ DISAGREE ___

38. Do you usually rely on someone else for transportation to the grocery store.
YES ___ NO ___

IF ANSWERED "NO" GO TO QUESTION 38

IF ANSWERED "YES" HAVE SUBJECTS ANSWER STATEMENTS A & B.

A) I can't get to the store as often as I would like because I have to rely on someone for a ride.
AGREE ___ UNDECIDED ___ DISAGREE ___

B) It's working out very well getting a ride with _____ to go grocery shopping.
AGREE ___ UNDECIDED ___ DISAGREE ___

39. Do you do most of your own food preparation (making meals and snacks).
YES ___ NO ___

IF ANSWERED "YES" GO TO QUESTION 39

IF ANSWERED "NO" HAVE SUBJECTS ANSWER STATEMENTS A & B.

A) The person who usually prepares my meals usually prepares what I want to eat.
AGREE ___ UNDECIDED ___ DISAGREE ___

B) I feel I don't receive enough help getting my meals and snacks ready.
AGREE ___ UNDECIDED ___ DISAGREE ___

40. I would like to have company more often at mealtimes.
AGREE ___ UNDECIDED ___ DISAGREE ___

41. The suggestions from friends or family members of what to cook for myself are not very helpful.
AGREE ___ UNDECIDED ___ DISAGREE ___

42. I am satisfied with how often I have company over for lunch or dinner.
AGREE ___ UNDECIDED ___ DISAGREE ___

43. Do you provide help to others? YES ___ NO ___

IF ANSWERED "YES" ASK

What type of help do you give? (LIST AS MANY AS SHE NAMES)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

HEALTH STATUS

I'D LIKE TO SPEND A BIT OF TIME TALKING TO YOU ABOUT YOUR HEALTH.

PERCEIVED HEALTH STATUS

44. For your age, would you say, in general, your health is:

___ Excellent (never prevents activities) (5)
___ Good for your age (rarely prevents activities) (4)
___ Fair for your age (occasionally prevents some activities) (3)
___ Poor for your age (very often prevents activities(2)
___ Bad for your age (health troubles or infirmity all the time - prevents most activities or (1) requires confinement to bed

FUNCTIONAL DISABILITY

NOW I HAVE SOME QUESTIONS ABOUT YOUR ABILITY TO CARRY ON DIFFERENT ACTIVITIES. I AM INTERESTED IN YOUR CAPABILITY, NOT WHETHER OR NOT YOU ACTUALLY DO THEM.
(BE SURE TO NOTE THE RESPONDENT'S ABILITY TO PERFORM THE TASK RATHER THAN HER TENDENCY TO IN FACT DO THE TASK.)

45. Can you use the telephone?

1 yes, without help (including looking up numbers)
2 yes, can dial if number is available, no phone, but respondent has easy access to phone and has memorized or has easy access to important numbers
3 only answers phone, uses phone only with help, cannot read
4 can't use phone at all

IF THE RESPONDENT CANNOT LOOK UP NUMBERS BECAUSE OF ILLITERACY SCORE THE RESPONDENT AS 1.

IF 2,3,4 Who, if anyone, helps?_____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

46. Are you able to shop for groceries, clothing and so on?

1 yes, without help; able to go to the stores alone, able to carry purchases home with or without a car
2 yes, but need some help usually, can do regular shopping alone but may need assistance with carrying, transportation, or delivery to home
3 always need help, can shop, but cannot go alone, has no transportation or cannot carry purchases
4 cannot shop at all

IF 2,3,4 Who, if anyone, helps?___

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

(SHOPPING IS DEFINED AS PURCHASING ITEMS FOR PERSONAL NEEDS SUCH AS FOOD, CLOTHING, AND MEDICINE. SHOPPING DOES NOT HAVE TO INCLUDE EXCEPTIONAL ITEMS, SUCH AS FURNITURE. SHOPPING INCLUDES THE ACTUAL PURCHASING AND RELATED ACTIVITIES SUCH AS TRANSPORTATION AND CARRYING PURCHASES.)

47. Can you prepare your own meals? Do you have difficulty preparing your own meals?

1 Yes, plan and cook; can plan and prepare nutritional meals as needed for daily living
2 Can prepare simple things; could use help but can prepare simple, cooked meals
3 Only with help; unable to prepare simple meals; cannot cook, although may heat water on stove
4 Completely unable to prepare meals

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

(DETERMINE IF THE RESPONDENT CAN PREPARE A NUTRITIOUS, HOT MEAL. DO NOT SCORE A RESPONDENT AS LACKING INDEPENDENCE WITHOUT SUFFICIENT EVIDENCE OF REAL IMPAIRMENT.)

48. Can you do household tasks and chores?

1 yes, without help; able to perform all necessary tasks, including heavy chores such as vacuuming, changing bedding
2 able to perform all necessary tasks except heavy chores such as vacuuming, changing bedding, laundry
3 able to perform only light housekeeping tasks such as dusting, some dishes, pulling covers up on bed
4 cannot do housekeeping

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

49. Can you handle your own money; deposit cheques, pay bills, etc.

1 Can handle all money; cash cheques, pay bill, etc.
2 Can handle money; may need help in paying bills because of transportation, or needing cheque cashed
3 Can handle coins, small bills; does not pay bills; depends on help from others
4 Cannot handle money at all; completely dependent on others

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

50. Can you dress and undress yourself?

1 Yes, without any help
2 May experience difficulty or pain; can button or zipper when necessary; assistance would make task easier
3 Can dress only with help; always needs help with buttons, zippers, fastenings, shoes; does no wear underclothing due to difficulty in dressing
4 Completely unable to dress and undress

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

(WATCH FOR RESPONDENT WHO COULD DRESS WITH HELP, BUT HAS NO HELP AVAILABLE; OR THE RESPONDENT WHO DRESSES ONLY IN ROBES OR SMOCKS WHICH HAVE NO FASTENING. ASSESSING RESPONDENT'S ABILITY)

51. Do you need help eating?

1 no help needed
2 minimal help required; can feed self using silverware, pick up glass; occasional spills, pain or shaking; may need help cutting food but can bring to mouth
3 great deal of help required; can feed self but has difficulty using silverware; liquids or soups need special attention; can eat finger foods only
4 completely dependent (tubes, I.V. hand fed)

IF 2,3,4 Who, if anyone, help?_____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

52. Can you take a bath or shower?

1 Yes, no help required; respondent can physically bathe and can wash her hair
2 Respondent can bathe; may need help preparing bath, may need help getting out of tub (grab bars may be needed); shampooing is difficult, bathing may be painful; assistance would be beneficial but not absolutely necessary
3 Always needs special equipment or assistance; can physically bathe, but cannot get in and out of tub alone
4 completely unable to bath self

IF 2,3,4 Who, if anyone, helps?_____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

53. Do you need help walking?

1 No help required; can climb up and down stairs; able to manage on own both inside and outside
2 Some help with stairs, but walks without help
3 Always need help but can walk with help
4 Cannot walk even with help

IF 2,3,4 Who, if anyone, helps _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

54. Do you need assistance using the toilet?

1 No help required
2 Some difficulty but can manage mostly on own (needs some special equipment)
3 Only with help
4 completely unable

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

55. Do you need help taking out the trash or garbage?

1 No help required
2 With some difficulty
3 With help
4 Never (incapable)

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER,
5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

56. Do you need help taking medication or with routine health practices?

1 No help required
2 Sometimes need help
3 Usually need help
4 Completely dependent

IF 2,3,4 Who, if anyone, helps? _____

SCORE: 1=DAUGHTER, 2=SON, 3=SISTER, 4=BROTHER, 5=OTHER RELATIVE, 6=FRIEND, 7=NEIGHBOUR

NOW I HAVE A LIST OF HEALTH PROBLEMS THAT PEOPLE OFTEN HAVE. I'LL READ THEM TO YOU - TELL ME IF YOU HAVE HAD ANY OF THEM WITHIN THE LAST YEAR.

CHRONIC HEALTH PROBLEMS

57. Do you have any of the following health problems (CHECK ANY THAT APPLY)

___ allergies, specify _____
___ anaemia (iron deficiency)
___ arthritis
___ diabetes, specify insulin dependent _____
diet controlled _____
___ digestive problems (EXAMPLE: DIVERTICULITIS)
specify _____
___ hearing problems, hearing aid Yes ___
No ___
___ heart problems, specify _____
___ heart burn (EXAMPLE HIATAL HERNIA)
___ high blood pressure (HYPERTENSION)
___ osteoporosis (aging bone loss)
___ renal problems (KIDNEY)
___ respiratory problems (BRONCHITIS, ASTHMA, EMPHYSEMA)
___ gall bladder problems
___ vision problems
___ changes in taste, specify _____
___ weight problems, specify ___ overweight
___ underweight
___ difficulty chewing food or eating any foods because of wearing dentures?
___ other, specify _____

58. Are you on any of the following special diets?

___ diabetic
___ low cholesterol
___ low fat
___ low salt (sodium)
___ low calorie (energy)
___ ulcer
___ allergy, specify _____
___ other, specify _____
___ none (GO TO QUESTION 59)

59. Would you describe your appetite as ...

___ Excellent
___ Good
___ Fair
___ Poor
___ Don't know

NOW I WOULD LIKE TO ASK YOU ABOUT YOUR INCOME AND EXPENSES. WHAT YOU TELL ME IS CONFIDENTIAL INFORMATION. THE QUESTIONNAIRE WILL NOT MENTION YOUR NAME AND THE INFORMATION WILL BE USED STATISTICALLY AS WE WANT TO KNOW WHAT INCOMES OLDER WOMEN MAKE IN GENERAL AND NOT THE INCOME OF ANYONE INDIVIDUAL.

ECONOMIC SITUATION

PERCEIVED ECONOMIC SECURITY

60. How do you think your income and assets currently satisfy your needs?

___ Very well
___ Adequately
___ With some difficulty
___ Not very well
___ Totally inadequate

ECONOMIC DISADVANTAGE

61. A) What is your average monthly income including the old age security payments? (SHOW CARD)

00 - No income
01 - Less than $500
02 - $500 - 999
03 - $1000 - 1499
04 - $1500 - 1999
05 - $2000 - 2499
06 - $2500 - 2999
07 - $3000 - 3499
08 - $3500 - 3999
09 - $4000 - 4499
10 - $4500 - 4999
11 - $5000 - 5499
12 - $5500 - 5999
13 - $6000 or more
98 - Don't know
99 - Missing

B) Now, looking at monthly expenses, what are your average monthly expenses? (SHOW CARD)

00 - No expenses
01 - Less than $500
02 - $500 - 999
03 - $1000 - 1499
04 - $1500 - 1999
05 - $2000 - 2499
06 - $2500 - 2999
07 - $3000 - 3499
08 - $3500 - 3999
09 - $4000 - 4499
10 - $4500 - 4999
11 - $5000 - 5499
12 - $5500 - 5999
13 - $6000 or more
98 - Don't know
99 - Missing

SOCIAL NETWORKS

NOW I HAVE A SERIES OF QUESTIONS ON THE NUMBER OF FAMILY AND FRIENDS CLOSE TO YOU

62. How many brothers do you have? (RECORD LIVING ONLY) _ _

63. Of your brothers, how many do you have contact with?
(RECORD NUMBER)
(CONTACT INCLUDES: SEEING, PHONING, LETTER WRITING)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF BROTHERS IN Q. 61 SHOULD ADD UP TO THE SAME NO. AS IN 60.

64. How many sisters do you have? (RECORD LIVING ONLY) _ _

65. Of your sisters, how many do you have contact with?
(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF SISTERS IN Q. 63 SHOULD ADD UP TO THE SAME NO. AS IN 62.)

66. How many sons do you have? (RECORD LIVING ONLY) _ _

67. Of your sons, how many do you have contact with?
(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF SONS IN Q. 65 SHOULD ADD UP TO THE SAME NO. AS IN 64.)

68. How many daughters do you have? (RECORD LIVING ONLY) _ _

69. Of your daughters, how many do you have contact with?
(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few time a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF DAUGHTERS IN Q. 67 SHOULD ADD UP TO THE SAME NO. IN 66.)

70. How many relatives do you have contact with or feel close to? (INCLUDE GRANDCHILDREN, NIECES, NEPHEWS, COUSINS, ETC.) (RECORD LIVING ONLY) _ _

71. Of your other relatives, how many do you have contact with?

(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but a least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF OTHER RELATIVES IN Q. 69 SHOULD ADD UP TO THE SAME NO. AS IN 68.)

72. Other than relatives, how many people do you consider as close friends? (RECORD NUMBER) _ _

73. Of your close friends, how many do you have contact with?

(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF CLOSE FRIENDS IN Q. 71 SHOULD ADD UP TO THE SAME NO. AS IN 70.)

74. Other than close friends and relatives, how many of your neighbours do you know? (RECORD NUMBER) _ _

75. Of your neighbours, how many do you have contact with?

(RECORD NUMBER)

every day	_ _
once a week or more	_ _
a few times a month	_ _
once a month	_ _
less often than once a month but at least once a year	_ _
less than once a year	_ _
never	_ _
missing	_ _

(NO. OF NEIGHBOURS IN Q. 73 SHOULD ADD UP TO THE SAME NO. AS IN 72.)

THANK YOU FOR THE TIME YOU'VE TAKEN TO TALK TO ME TODAY. I WILL BE CALLING YOU WITHIN THE NEXT TWO WEEKS TO ARRANGE FOR THE TELEPHONE INTERVIEWS.

If you are interested I will send you a summary of the results of this survey after it is completed.

___ YES
___ NO

If you are interested I will send you the results of your own 3 - 24 hour recalls.

___ YES
___ NO

I.D.# ___

What is your average monthly income including the old age security payments?

00 - No income

01 - Less than $500

02 - $500 - 999

03 - $1000 - 1499

04 - $1500 - 1999

05 - $2000 - 2499

06 - $2500 - 2999

07 - $3000 - 3499

08 - $3500 - 3999

09 - $4000 - 4499

10 - $4500 - 4999

11 - $5000 - 5499

12 - $5500 - 5999

13 - $6000 or more

98 - Don't know

I.D. # ___

Now, looking at monthly expenses, what are your average monthly expenses?

00 - No expenses

01 - Less than $500

02 - $500 - 999

03 - $1000 - 1499

04 - $1500 - 1999

05 - $2000 - 2499

06 - $2500 - 2999

07 - $3000 - 3499

08 - $3500 - 3999

09 - $4000 - 4499

10 - $4500 - 4999

11 - $5000 - 5499

12 - $5500 - 5999

13 - $6000 or more

98 - Don't know

TELEPHONE REMINDER CALL

Hello Mrs._____. This is Vivian Schultz from the University of Manitoba, Dept. of Foods and Nutrition. I visited you a couple of weeks ago for an interview about the foods you eat. Remember at the interview I said I'd give you a telephone call in a couple of weeks? (WAIT FOR RESPONSE) I'm calling to ask you to keep a food diary of all the foods you eat tomorrow, for breakfast, lunch, dinner as well as all the snacks in between. Do you have a copy of the instruction sheet titled "How to keep a diary of the foods you eat" plus food diary sheets? You should have 2 sets exactly the same. I'd like to go over the instruction sheet with you as we did during our visit. Do you have it near by so you can look at it as we talk? (GIVE HER TIME TO GET IT) I'd like to go over this to be sure its clear as to how to keep this food diary. (GO THROUGH INSTRUCTIONS)
Do you have any questions? Are the instructions clear enough to you?
I will call you the day after tomorrow on _____ to have an interview with you on the telephone to talk about the foods you ate on _____. The interview will take about 30 minutes. What is a good time to call you _____. Please feel free to call me if you have any problems or questions with this. My phone numbers are on the instruction sheet.

PROTOCOL FOR 24 HOUR TELEPHONE RECALL INTERVIEW

Hello Mrs._____. This is Vivian Schultz from the University of Manitoba calling you to do the interview about the foods you ate yesterday. Is this stell a good time for us to talk (IF YES CONTINUE ON - IF NO ARRANGE ANOTHER TIME).

First I'd like to ask you about the foods you ate yesterday. Could you please tell me everything you ate and drank from the time you got up in the morning yesterday until going to bed last night and what you ate during the night. Use the food diary you kept yesterday as a reminder of the foods you ate. Be sure to mention everything you ate or drank at home, and when visiting friends or relatives. Include snacks and drinks of all kinds. I also need to know where you ate and if you ate with someone.

1. First, about what time did you get up yesterday?

   When did you first eat or drink something? (RECORD ON FORM)

   What did you eat or drink then? (RECORD ON FORM)

   CONTINUE:
   Did you eat or drink anything else at this time that may not be written in your food diary?
   (WHEN NEEDED ASK: DID PUT ANYTHING IN THE TEA, ON THE BREAD, ETC.?)

   Where did you eat that?

   Did you eat alone or with someone else?

   When was the next time you had something to eat or drink?

   What did you eat or drink then?

   Did you eat or drink anything else at this time?

2. CONTINUE THROUGH THE DAY UNTIL THE 24 HOUR PERIOD IS COVERED.

   Did you have any snack during the night?

3. ASSIST THE RESPONDENT BY HELPING HER RECALL HER ACTIVITIES

4. Now let's go back over this list and find out how you prepared the food and how much of each food you ate. Again refer to your food diary as reminder. Would you please tell me how you prepared each food and how much of each food you had? First you mentioned... (NAME OF FOOD). How was this prepared? (FRIED, BOILED, BAKED, ETC.) How much did you eat?

(AS THE SUBJECT TELLS AMOUNTS REFER TO THE LIST OF DISHES AND UTENSILS USUALLY USED AND ASK HER WHICH SHE USED. FOR EXAMPLE, WHICH GLASS DID YOU USE FOR JUICE? WHICH SPOON DID YOU USE TO MEASURE THE SUGAR FOR YOUR TEA? WRITE THIS INTO THE FOOD UNIT COLUMN. ASK IF SHE FILLED IT TO HER USUAL AMOUNT.

WHEN ESTIMATING MASHED POTATOES, RICE, CANNED PEAS, ETC. ASK HER IF SHE ACTUALLY MEASURED THE FOOD - IF SHE DID ASK HER WHICH CUP OR SPOON SHE USED AND WRITE THIS INTO THE FOOD UNIT COLUMN. IF SHE ESTIMATED JUST WRITE IN "ESTIMATED" INTO THE FOOD UNIT COLUMN.

WHEN ESTIMATING CHEESE, MEAT, CAKE, PIZZA, COOKIES, ETC. ASK HER IF SHE ACTUALLY MEASURED THE FOODS USING THE RULER AND THICKNESS INDICATOR - IF YES WRITE THE AMOUNTS SHE GIVES - IF NO ASK HER TO USE THE RULER TO ESTIMATE THE LENGTH, WIDTH AND DIAMETER, AND THEN ASK HER TO USE HER THICKNESS INDICATOR AND TELL HOW MANY SQUARES THICK THE FOOD MAY HAVE BEEN.

WHEN ESTIMATING **FOOD MIXTURES** FIRST OBTAIN THE TOTAL VOLUME EATEN AND THEN THE AMOUNT OF EACH COMPONENT. THE INDIVIDUAL ITEMS SHOULD NOT EXCEED THE TOTAL VOLUME. IF THIS IS TOO
DIFFICULT TRY TO DETERMINE THE PROPORTIONS OF INGREDIENTS (WHAT WAS MOST, LEAST AND SO ON). TRY TO WRITE A RECIPE ON THE RECIPES HERE FORM. FOR SOUP, STEWS, ETC. HAVE SUBJECT DESCRIBE THE BROTH AS THIN, MEDIUM OR THICK.

5. Is this day different in any way or is it pretty much the way you usually eat? For example, it would probably be different if you were sick or celebrating a special occasion.

   USUAL (1)
   DIFFERENT (2)

6. Why is it different?

   ILLNESS (1)
   CELEBRATION (2) (eg. birthday)
   NA (3)

   (THANK HER FOR HER TIME. REMIND HER THAT I WILL CALL HER AGAIN IN A COUPLE OF WEEKS TO SET UP ANOTHER TELEPHONE INTERVIEW. ASK IF SHE HAS ANY QUESTIONS OR CONCERNS. TAKE A FEW MINUTES TO CHAT IF APPROPRIATE).

AFTER INTERVIEW IS COMPLETE

GO THROUGH THE 24 HOUR RECALL FORM AND IN THE OFFICE ONLY COLUMN PUT IN THE AMOUNTS ACCORDING TO THE MEASUREMENT OF USUAL AMOUNTS OBTAINED FROM THE HOME VISIT. FOR EXAMPLE IF SHE SAID SHE HAD A BOWL OF CEREAL, USING THE BLUE CEREAL BOWL, REFER TO THE USUAL AMOUNT COLUMN AND WRITE IN THE MEASUREMENT OF HER USUAL AMOUNTS. IF SHE HAD HALF OF WHAT SHE USUALLY EATS WRITE IN HALF OF HER USUAL AMOUNT IN THE OFFICE ONLY COLUMN.

ANOTHER EXAMPLE - IF SHE MEASURED MACARONI WITH THE GREEN PLASTIC CUP AND SAID SHE HAD 1/2 CUP REFER TO THE DISHES AND UTENSILS SHEET AND FIND WHICH CUP SHE USES FOR MEASURING FOODS AND DIVIDE THE AMOUNT IT HOLDS IN HALF TO ESTIMATE THE AMOUNT OF MACARONI SHE ATE. WRITE THIS AMOUNT INTO THE OFFICE ONLY COLUMN.

RECIPES HERE

APPENDIX C
PERCEIVED NURITIONAL SUPPORT RESPONSE FREQUENCIES

PERCEIVED NUTRITIONAL SUPPORT RESPONSE FREQUENCIES (n=46)

PERCEIVED INSTRUMENTAL SUPPORT	AGREE	DISAGREE	UNDECIDED
If I was not feeling well for whatever reason someone would get groceries for me.	43 (93%)	3 (6.5%)	-
If I could no longer do my own grocery shopping someone would get groceries for me on a regular basis.	35 (76%)	8 (17%)	3 (7%)
If I need a ride to the grocery store for whatever reason there is someone I can call who would be willing to give me a ride.	37 (80%)	9 (20%)	-
If I could no longer get to the store myself there is someone I could rely on to take me shopping on a regular basis.	32 (70%)	12 (26%)	2 (4%)
PERCEIVED INFORMATIONAL SUPPORT			
If I have trouble eating some types of foods there is someone who will give me ideas of what to eat as a substitute.	9 (20%)	32 (70%)	5 (10%)
If I had trouble understanding a recipe there is someone I could talk to in person or by phone.	29 (63%)	13 (28%)	4 (9%)
There is at least one person I know I can call on if I need to know how long some food will keep in the refrigerator or cupboard.	24 (52%)	13 (28%)	9 (20%)

CONTINUED

PERCEIVED SOCIAL COMPANIONSHIP SUPPORT			
If I decided in the afternoon that I would like to go out for dinner at a restaurant, I could find someone to go with me.	33 (72%)	11 (24%)	2 (4%)
I often have company over for meals or snacks.	23 (50%)	23 (50%)	-
I am often invited to the homes of family members for lunch or dinner.	28 (61%)	18 (39%)	-
I would eat better if I had someone to eat with more often.	36 (78%)	10 (22%)	-
I eat alone more often than I prefer.	29 (63%)	17 (37%)	-

APPENDIX D
INTEREST SCALE RESPONSE FREQUENCIES

INTEREST SCALE RESPONSE FREQUENCIES (n=46)

INTEREST IN EATING AND FOOD PREPARATION	AGREE	DISAGREE	UNDECIDED
The food I eat is boring.	8 (17%)	36 (78%)	2
I eat because I have to not because I enjoy it.	9 (20%)	34 (74%)	3 (6%)
I like to prepare my meals from scratch because I enjoy cooking.	32 (70%)	14 (30%)	-
I easily get bored with preparing meals.	8 (17%)	36 (78)	2
I like cooking for myself even when I don't have company.	30 (65%)	15 (33%)	1
I don't enjoy preparing meals (cooking) for myself.	15 (33%)	31 (67%)	-
MONOTONY AVOIDANCE			
I generally eat the same food every day.	7 (15%)	39 (85%)	-
I like to try new recipes once in a while.	30 (65%)	16 (35%)	-
At least once a week I take the time to make a nice meal for myself.	44 (96%)	2 (4%)	-

APPENDIX E

CANADA'S GUIDE TO HEALTHY EATING

Healthy Canada

Health and Welfare Canada | Santé et Bien-être social Canada

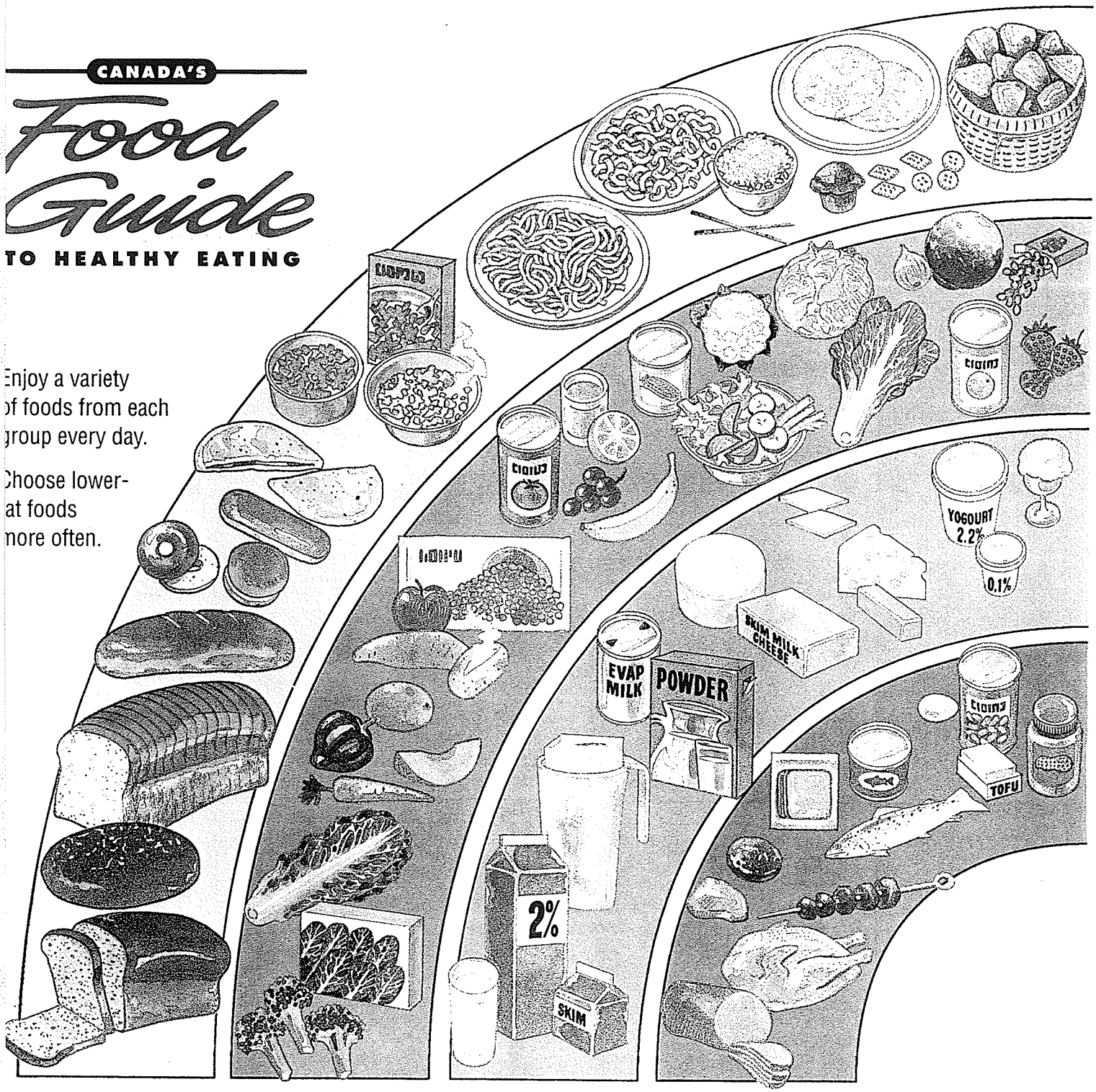
CANADA'S

Food Guide

TO HEALTHY EATING

Enjoy a variety of foods from each group every day.

Choose lower-fat foods more often.



Grain Products
Choose whole grain and enriched products more often.

Vegetables & Fruit
Choose dark green and orange vegetables and orange fruit more often.

Milk Products
Choose lower-fat milk products more often.

Meat & Alternatives
Choose leaner meats, poultry and fish, as well as dried peas, beans and lentils more often.

Canada

CANADA'S

Food Guide

TO HEALTHY EATING

FOR PEOPLE FOUR YEARS AND OVER

Different People Need Different Amounts of Food

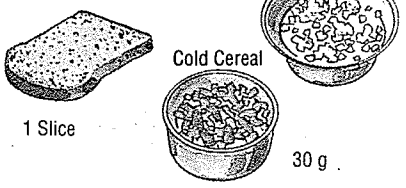
The amount of food you need every day from the 4 food groups and other foods depends on your age, body size, activity level, whether you are male or female and if you are pregnant or breast-feeding. That's why the Food Guide gives a lower and higher number of servings for each food group. For example, young children can choose the lower number of servings, while male teenagers can go to the higher number. Most other people can choose servings somewhere in between.

Grain Products

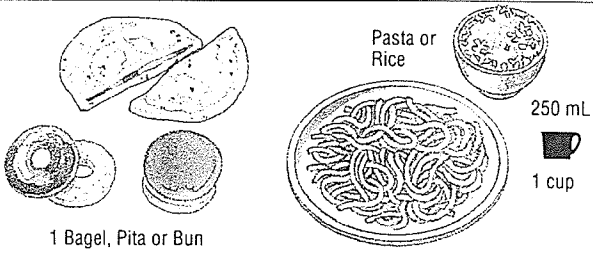
5–12

SERVINGS PER DAY

1 Serving



2 Servings

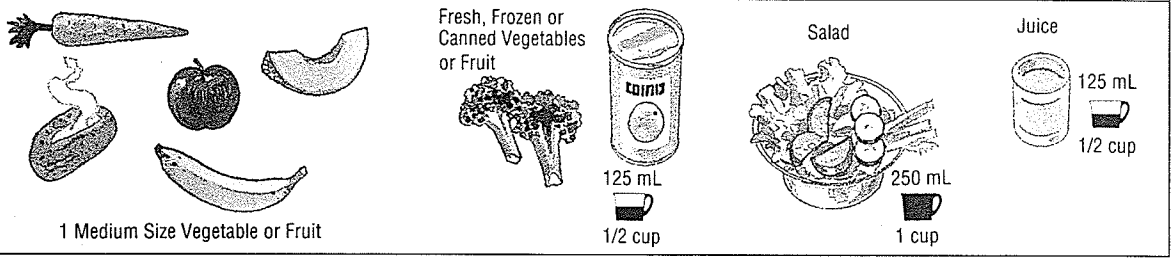


Vegetables & Fruit

5–10

SERVINGS PER DAY

1 Serving

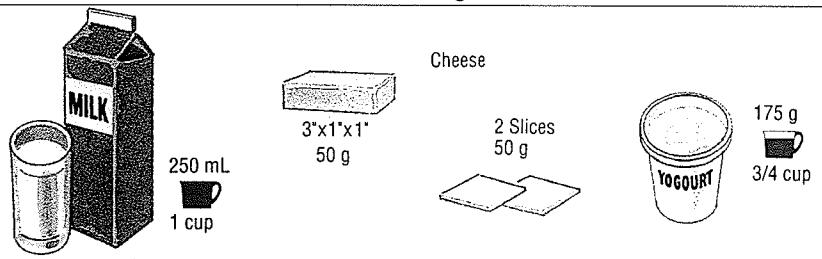


Milk Products

SERVINGS PER DAY

Children 4–9 years: 2–3
Youth 10–16 years: 3–4
Adults: 2–4
Pregnant & Breast-feeding Women: 3–4

1 Serving

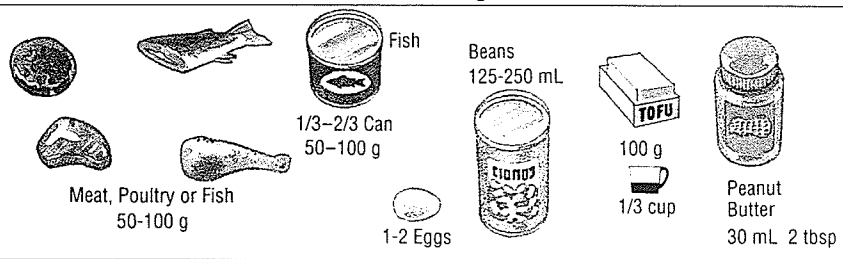


Meat & Alternatives

2–3

SERVINGS PER DAY

1 Serving



Other Foods

Taste and enjoyment can also come from other foods and beverages that are not part of the 4 food groups. Some of these foods are higher in fat or Calories, so use these foods in moderation.

Enjoy eating well, being active and feeling good about yourself. That's

SBN 0-662-19648-1

APPENDIX F
EXAMPLES OF SERVING SIZES BASED ON CANADA'S GUIDE TO HEALTHY EATING

EXAMPLES OF SERVING SIZES USED TO DETERMINE DIET QUALITY[1]

FOOD ITEM[2]	SERVING SIZE = 1 SERVING	FOOD ITEM	SERVING SIZE = 1 SERVING
milk	1 cup	ice cream	1/2 cup
pudding	1/2 cup	cheddar cheese	3"x1"x1" or 50g
cheese slice	1 slice	cottage cheese	1/2 cup
yoghurt	3/4 cup		
cooked cereals	3/4 cup	ready-to-eat cereals	3/4 cup or 30g
muffins	1	crackers	4
bagel	1/2	tea biscuit	1
bread	1 slice	pancakes	1
waffles	1	dumplings	1
rice,cooked	1/2 cup	pasta	1/2 cup
date or fruit loaf	3"x4"x1/4"	oatmeal,peanut butter cookies	2
apple, orange, banana, pear, kiwi, peaches	1	fruit juices	1/2 cup
apple sauce	1/2 cup	dried prunes, apricots	4
strawberries	1/2 cup	stewed rhubarb	1/2 cup
grapefruit	1/2	grapes	1/2 cup
fruit salad	1/2 cup		
peas, corn, beans, carrots mix vegetables	1/2 cup	cabbage	1/2 cup
avocado	1 small	yam	1 small
broccoli, cauliflower	2-3 spears or 1/2 cup	lettuce salad, caesar salad	1 cup
coleslaw	1/2 cup	tomato	1 medium
potatoes	1 medium	mashed potatoes	1/2 cup
beef, pork, ham slices	50g-100g 2=4"x2"x1/8"	meat balls	4 small
pork chops	1	pork sausages	3
chicken, leg, thigh, breast	1 medium or 2 small pieces	salmon, tuna	1/3-2/3 can 50-100g
pickerel fish	1 med fillet	peanut butter	2 tablespoons

[1] Combination dishes and soups were divided into appropriate food groups and servings sizes using recipes.
[2] High sugar and high fat cakes and cookies, concentrated sugars and fats, beverages such as coffee, tea, fruit drinks, soft drinks, alcoholic beverages and condiments were not included in the four food groups.

APPENDIX G

FIRST FOOD LIST FOR DIET DIVERSITY

MINIMAL GROUPING FOOD LIST AND
NUMBER OF RESPONDENTS WHO CONSUMED THESE FOODS

Milk products
milk 1%,2%, skim, whole, cream, buttermilk 42
eggnog 1
hot chocolate 1
ice cream 14
milk based puddings 5
cheddar, mozzarella, cheese slices 17
spreadable cheeses: cream cheese, velvetta, cheese whiz 6
yoghurt 2
cottage cheese 5
milk shake 1

Grain products
oatbran porridge, oatmeal porridge 18
cream of wheat 2
red river cereal 1
cheerios 4
special k 7
cornflakes 6
shredded wheat 1
all bran 6
raisin crunch 1
rice krispees 4
muslix 1 shreddies 1
fruit & fibre 1
raisin bran 4
just right cereal 1
granola 1
bran muffins 7
blueberry muffins 1
carrot muffins 3
fruit & fibre muffins 1
soda crackers 16
wheat thins 1
crackers: bretons
champions 2
bagel 4
tea biscuit 4
whole wheat, rye bread, cracked wheat 31
white bread, buns, kaisers 29
fergasa bread 1
raisin bread 5
pumpernickle bread 2
multigrain bread 3
fruit bread 3
cinnamon bun 1
pancakes 2
waffles 2
dumplings 1
rice 8
rice cakes 1
pasta: linguini, spaghetti, macaroni 5

Fruit
apple 15
apple sauce 3
apple juice 6
orange 10
orange juice 19
banana 27
prunes, dried fruit, raisins 9
prune juice 3
apricots 1
apricot juice 1
strawberries 6
stewed rhubarb 2
grapefruit 10
pear 6
pear juice 1
kiwi 3
grapes 4
peaches 4
cherries 1
mango 1
pineapple chunks, crushed 4
fruit salad, fruit cocktail 7
3-fruit juice 3
5-alive 2
papaya/orange juice 1
cranberry juice 3

Vegetables
frozen mixed vegetables 4
peas 13
peas & carrots 4
lima beans 1
corn, corn-on-the-cob 4
cream corn 3
green beans 1
carrots 23

carrot salad 1
turnips 6
beets 1
cabbage 2
asparagus 1
avacado 1
yam 1
cassava 1
parsnips 3
broccoli 11
cauliflower 5
green/red peppers 1
celery 4
lettuce 5
lettuce salad 15
green onions 1
cucumber 5
onion 9
cole slaw 7
ceasar salad 2
mushrooms 3
tomatoes fresh 19
tomatoes stewed, sauce 4
tomato juice 3
v-8 juice 2
potatoes baked, boiled 25
mashed potatoes 13
scalloped potatoes 2
french fries 1
hash browns 1
potato pancakes 1

Meat & Alternatives
ham flakes 3
ham deli slices 9
ham roast 5
head cheese 1
ground beef, meat balls,
meat loaf 10
beef roast 12
steak 4
beef liver 2
liver sausage 3
corn beef 1
pork deli slices 1
pork roast 5
pork chops 1
pork sausages 1
spare ribs 3
back bacon 1
weiners 2
bologne 1
chicken: breast, roast,
fingers, legs & thighs 25
roast turkey 2
canned salmon 7
canned tuna 2
pickerel fish 5
pickled (gefilte) fish 1
crab meat 1
eggs: fried, poached, hard
boiled 12
peanut butter 11
nuts: pecans, cashews,
peanuts, sunflower seeds 4

Combination dishes
carnation instant breakfast 1
slim fast shake 1
beef & broccoli stirfry 1
shepards pie 2
beef stew 5
pork & bean 2
chili con carne 2
hamburger/noodle casserole 1
meat patty 1
cheese burger 1
chicken casserole 2
chicken stirfried rice 1
chicken balls 1
chicken stirfry 2
turkey pie 1
chicken a la king 1
chicken pie 1
chicken salad 1
omlet 1
egg salad 2
sausage/egg mcmuffin 1
french toast 2
pasta primevera 1
lasagna 4
macaroni & cheese 5
alphagetti 1
macaroni with vegetables &
sauce 1
chinese noodle salad 1
shrimp sandwich 1
fish burger 1
tuna salad 4
tuna casserole 1
salmon salad 1
cabbage rolls - rice 2
ground beef & rice 2
pizza 1

goat meat stew 1
perogies 1
pyroshski 1
cottage cheese salad 1
jelly vegetable salad 2
potato salad 1
spinach salad 1
rice pudding 1
bread pudding 1
stuffing - bread type 3
rice & peas 1
rice broccoli, cheese casserole 1

Soups
tomato soup 6
onion soup 1
consomme 2
cup-a-soup 1
hamburger vegetable soup1
vegetable beef lentil soup 2
vegetable beef soup 5
chicken soup homemade 6
chicken with rice/noodles canned 5
potato soup 1
cream of celery soup 1
mushroom soup 4
cream of asparagus soup 1
cream of broccoli soup 1
beet borscht 2
barley vegetable soup 2
pea soup 4
cabbage soup 2
vegetable soup - canned 1
vegetable pasta soup 2

Cookies
sugar cookies 6
cocolate chip 3
arrowroot digestives 5
gingersnaps 3
shortbread 6
cream filled cookies 2
raisin cookies 1
coconut cookies 1
jam cookies 1
fudgeo cookies 1
oatmeal cookies 5
butter cookies 2
gumdrop cookies 1
chocolate wafer cookies 1
peanut butter cookies 1

Pies
pumpkin pie 1
apple pie 6
plum pie 1
lemon pie 4
raspberry pie 1

Cakes & slices
date cake 1
date loaf 2
carrot cake 3
fruit cake 6
blackberry banana cake 1
christmas pudding 1
apple crumble 1
banana loaf 1
zucchini loaf 2
date pecan balls 1
cheese cake 1
coffee cake 1
lemon sponge cake 1
peanut butter cake 1
white cake 2
cup cake 1
lemon slice 2
chocolate chip muffin 1
chocolate brownie 1
pudding cake with nuts 2
pound cake 1
fudge 1
butter tarts 2
mincemeat tart 3
chocolate almonds 2
chocolates 3
doughnuts 1
butter scotch candies 2
jello with whip cream 2
jello 2
areo chocolate bar 1
score bar 1
mars bar 1
slim fast bar 1
potato chips 1

APPENDIX H
SECOND GROUPED FOOD LIST

GROUPED FOODS AND THE NUMBER OF RESPONDENTS WHO CONSUMED THESE FOODS

Milk products
milk 1%,2%, skim, whole, cream, buttermilk 42
eggnog 1
hot chocolate 1
ice cream 14
milk based puddings 5
cheddar, mozzarella, cheese slices 17
spreadable cheeses: cream cheese, velvetta, cheese whiz 6
yoghurt 2
cottage cheese 5
milk shake 1

Grain products
cooked cereals 18
ready-to-eat cereals 25
muffins 12
crackers 19
bagel 4
tea biscuit 4
whole wheat, rye bread, cracked wheat, multigrain 34
white bread, buns, kaisers 29
fergasa bread 1
raisin & fruit bread 8
cinnamon bun 1
pancakes 2
waffles 2
dumplings 1
rice, rice cakes 9
pasta: linguini, spaghetti, macaroni 5

Fruit
fruit juices 31
apple, apple sauce 18
orange 10
banana 27
prunes, dried fruit, raisins 5
prune juice 3
apricots 1
strawberries 6
stewed rhubarb 2
grapefruit 10
pear 6
kiwi 3
grapes 4
peaches 4
cherries 1
mango 1
pineapple chunks, crushed 4
fruit salad, fruit cocktail 7

Vegetables
frozen mixed vegetables 4
peas 13
peas & carrots 4
lima beans 1
corn, corn-on-the-cob, cream corn 7
green beans 1
carrots, carrot salad 23
turnips 6
beets 1
cabbage 2
asparagus 1
avacado 1
yam 1
cassava 1
parsnips 3
broccoli 11
cauliflower 5
green/red peppers 1
celery 4
lettuce 5
lettuce salad 15
caesar salad 2
green onions 1
cucumber 5
onion 9
cole slaw 7
ceasar salad 2
mushrooms 3
tomatoes fresh, stewed, sauce, juice 20
v-8 juice 2
potatoes 34

Meat & Alternatives
ham roast and flakes 8

ham deli slices, deli slices 9
ground beef, meat balls, meat loaf 10
beef roast, steak, liver 14
liver sausage 3
corn beef 1
pork deli slices, bologne, back bacon 3

pork roast, pork chops, spare ribs 9
pork sausages, weiners 5
chicken: breast, roast, fingers, legs & thighs 25
roast turkey 2
canned salmon 7
canned tuna 2
pickerel fish 5
pickled (gefilte) fish 1
crab meat 1
eggs: fried, poached, hard boiled 12
peanut butter, nuts 15

Combination dishes
carnation instant breakfast 1
slim fast shake 1
beef based dishes 12
pork & beans 2
chicken based dishes 8
egg based dishes 7
pasta based dishes 13
fish based dishes 7
cabbage rolls 4
pizza 1
goat meat stew 1
perogies 1
pyroshski 1
cottage cheese salad 1
jelly vegetable salad 2
potato salad 1
spinach salad 1
rice pudding 1
bread pudding 1
stuffing - bread type 3
rice & peas 1
rice broccoli, cheese casserole 1

Soups
creamed soups 13
beef based soups 8
chicken based soups 9
vegetable based soups 10
soups with legumes 6

cookies 26
fruit pies 8
pumpkin pie 1
lemon pie 4
nutritious cakes and slices 16
cakes and slices 12
fudge 1
butter tarts 2
mincemeat tart 3
chocolate almonds 2
chocolates 3
doughnuts 1
butter scotch candies 2
jello with whip cream 2
jello 2
areo chocolate bar 1
score bar 1
mars bar 1
slim fast bar 1
potato chips 1

APPENDIX I
RECODED VARIABLES FOR BIVARIATE AND REGRESSION ANALYSIS AND CATEGORIES FOR THREE-WAY CROSS-TABULATIONS

RECODED VARIABLES

DEPENDENT VARIABLES	SCORES	
DIET QUALITY	< 10=10	> 21=20.6
DIET DIVERSITY	< 6=6	> 15=15
APPETITE	< 2=2	
INDEPENDENT VARIABLES		
TOTAL NETWORK SIZE	> 30=30	
FAMILY NETWORK SIZE	> 20=20	
FRIENDS AND NEIGHBOURS NETWORK SIZE	> 20=20	
NUMBER OF CONTACTS EVERYDAY	> 5=5	
NUMBER OF CONTACTS ONCE/WEEK	> 12=12	
CONTROL VARIABLES		
FUNCTIONAL DISABILITY	> 1.42=1.42	
NUMBER OF CHRONIC HEALTH PROBLEMS	> 7=7	
ECONOMIC DISADVANTAGE	< 4=4	

CATEGORIES FOR THREE-WAY CROSS-TABULATIONS

DEPENDENT VARIABLES	CATEGORIES
DIET QUALITY	0-14.4=LOW 14.5-17.9=MEDIUM 18 OR > =HIGH
DIET DIVERSITY	0-8=LOW 8.1-11.5=MEDIUM 11.6 OR > =HIGH
INTEREST IN EATING AND COOKING	0-3=LOW 4-5=MEDIUM 6=HIGH
AVOIDING MONOTONY	0-1=LOW 2=MEDIUM 3=HIGH
APPETITE	0-2=FAIR 3=GOOD 4=EXCELLENT
INDEPENDENT VARIABLES	
INSTRUMENTAL SUPPORT	0-1=LOW 2-3=MEDIUM 4=HIGH
INFORMATIONAL SUPPORT	0-1=LOW 2=MEDIUM 3=HIGH
SOCIAL COMPANIONSHIP	0-1=LOW 2=MEDIUM 3=HIGH
TOTAL NETWORK SIZE	0-9=SMALL 10-19=MEDIUM 20 OR > =HIGH
FAMILY NETWORK	0-8=SMALL 9-16=MEDIUM 17 OR > =LARGE
FRIENDS AND NEIGHBOURS	0-10=SMALL 11-20=MEDIUM > 20=HIGH
EVERYDAY SOCIAL CONTACT	1-2=LOW 3-4=MEDIUM 5=HIGH

TABLE CONTINUED	CATEGORIES
ONCE / WEEK CONTACT	1-5=LOW 6-10=MEDIUM 11 OR > =HIGH
CONTROL VARIABLES	
AGE	70-75 76-85
FUNCTIONAL DISABILITY	1=NONE > 1=SOME
CHRONIC HEALTH PROBLEMS	0-3=LOW 4-9=HIGH
PERCEIVED HEALTH STATUS	2-4=GOOD 5=EXCELLENT
ECONOMIC DISADVANTAGE	0-5=LOW 6=HIGH
PERCEIVED ECONOMIC SECURITY	1-2=LOW 3=HIGH

APPENDIX J
NONSIGNIFICANT REGRESSION RESULTS

RESPONSE SURFACE FOR DIET QUALITY, INFORMATIONAL SUPPORT,FUNCTIONAL DISABILITY

$R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	43.274198	36.238888	1.194	0.2395	15.549423
PIFS	1	4.381132	3.450935	1.270	0.2116	0.681936
FDSR	1	-47.796453	60.794262	-0.786	0.4364	-0.845115
PIFS*PIFS	1	-0.504605	0.426837	-1.182	0.2441	-1.135362
FDSR*PIFS	1	-1.993861	2.791288	-0.714	0.4792	-0.628098
FDSR*FDSR	1	19.323568	25.034498	0.772	0.4447	0.852189

RESPONSE SURFACE FOR DIET QUALITY,INFORMATIONAL SUPPORT,PERCEIVED HEALTH STATUS

$R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	18.417166	6.974679	2.641	0.0117	16.103603
PIFS	1	0.200354	2.379303	0.0842	0.9333	0.553026
PHS44	1	-1.931773	3.509943	-0.550	0.5851	0.548795
PIFS*PIFS	1	-0.509339	0.437923	-1.163	0.2517	-1.145014
PHS44*PIFS	1	0.484671	0.521756	0.929	0.3585	1.090510
PHS44*PHS44	1	0.224376	0.456915	0.491	0.6261	0.504846

RESPONSE SURFACE FOR DIET QUALITY, INFORMATIONAL SUPPORT,PERCEIVED ECONOMIC SECURITY

$R^2=0.18$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	17.206379	4.548109	3.783	0.0005	16.361805
PIFS	1	1.149011	1.716918	0.669	0.5073	0.910510
PEC60	1	-1.012876	3.867559	-0.262	0.7948	-1.148712
PIFS*PIFS	1	-0.269958	0.425020	-0.635	0.5290	-0.607407
PEC60*PIFS	1	0.133936	0.608498	0.220	0.8269	0.200904
PEC60*PEC60	1	-0.084185	0.846661	-0.0994	0.9213	-0.084185

RESPONSE SURFACE FOR DIET QUALITY, INFORMATIONAL SUPPORT, ECONOMIC DISADVANTAGE

$R^2=0.32$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.113973	22.139959	0.00515	0.9959	17.506029
PIFS	1	-1.262034	2.892884	-0.436	0.6650	0.394373
ECDA	1	8.502541	8.625893	0.986	0.3302	-1.245983
PIFS*PIFS	1	-0.361859	0.397110	-0.911	0.3676	-0.814182
ECDA*PIFS	1	0.522105	0.472323	1.105	0.2756	0.783158
ECDA*ECDA	1	-1.053158	0.831243	-1.267	0.2125	-1.053158

RESPONSE SURFACE FOR DIET QUALITY, INFORMATIONAL SUPPORT,AGE $R^2=0.21$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.783139	138.292572	0.00574	0.9955	16.686371
PIFS	1	6.931108	8.667171	0.800	0.4286	0.359002
AGE	1	0.498180	3.538456	0.141	0.8887	-1.701183
PIFS*PIFS	1	-0.777896	0.494121	-1.574	0.1233	-1.750257
AGE*PIFS	1	-0.056233	0.104815	-0.536	0.5946	-0.532625
AGE*AGE	1	-0.004133	0.022597	-0.183	0.8558	-0.232499

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, FUNCTIONAL DISABILITY $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	45.864980	36.488366	1.257	0.2161	14.763652
PIS	1	0.138373	2.990341	0.0463	0.9633	-0.221960
FDSR	1	-47.901465	62.374540	-0.768	0.4470	-0.822747
PIS*PIS	1	0.043069	0.284519	0.151	0.8804	0.172277
FDSR*PIS	1	-0.165017	2.414033	-0.0684	0.9458	-0.069307
FDSR*FDSR	1	18.311428	26.502681	0.691	0.4936	0.807534

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, CHRONIC HEALTH PROBLEMS $R^2=0.02$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	16.520042	3.490819	4.732	0.0000	15.919787
PIS	1	-0.572529	1.560574	-0.367	0.7156	0.076575
CHP57	1	0.105887	1.224672	0.0865	0.9315	-0.502608
PIS*PIS	1	0.074066	0.287221	0.258	0.7978	0.296266
CHP57*PIS	1	0.089872	0.189417	0.474	0.6377	0.629103
CHP57*CHP57	1	-0.061319	0.122043	-0.502	0.6181	-0.751157

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, PERCEIVED HEALTH STATUS $R^2=0.01$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	16.532603	7.892770	2.095	0.0426	15.348775
PIS	1	0.120097	1.939024	0.0619	0.9509	0.213041
PHS44	1	-1.026462	3.855762	-0.266	0.7914	0.330740
PIS*PIS	1	0.055275	0.289430	0.191	0.8495	0.221102
PHS44*PIS	1	-0.067051	0.373851	-0.179	0.8586	-0.201153
PHS44*PHS44	1	0.197294	0.493595	0.400	0.6915	0.443911

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, PERCEIVED ECONOMIC SECURITY

$R^2=0.17$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	14.317041	4.515642	3.171	0.0030	15.390645
PIS	1	1.030291	1.411824	0.730	0.4699	0.148023
PEC60	1	0.415540	3.740914	0.111	0.9121	-0.446239
PIS*PIS	1	0.204371	0.274085	0.746	0.4604	0.817483
PEC60*PIS	1	-0.886881	0.552073	-1.606	0.1162	-1.773762
PEC60*PEC60	1	0.227996	0.880616	0.259	0.7971	0.227996

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, ECONOMIC DISADVANTAGE

$R^2=0.25$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-15.391570	22.780519	-0.676	0.5032	17.156862
PIS	1	1.382106	2.316046	0.597	0.5540	0.107028
ECDA	1	13.658296	8.840948	1.545	0.1302	-1.213171
PIS*PIS	1	-0.007838	0.252108	-0.0311	0.9754	-0.031351
ECDA*PIS	1	-0.259448	0.382577	-0.678	0.5016	-0.518896
ECDA*ECDA	1	-1.435257	0.856647	-1.675	0.1017	-1.435257

RESPONSE SURFACE FOR DIET QUALITY, INSTRUMENTAL SUPPORT, AGE

$R^2=0.24$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	23.278715	137.929502	0.169	0.8668	15.827892
PIS	1	-5.696840	5.466556	-1.042	0.3036	0.917474
AGE	1	0.248980	3.540225	0.0703	0.9443	-2.295520
PIS*PIS	1	-0.166241	0.282370	-0.589	0.5593	-0.664964
AGE*PIS	1	0.088007	0.074300	1.184	0.2432	1.320105
AGE*AGE	1	-0.004717	0.022714	-0.208	0.8366	-0.265310

RESPONSE SURFACE FOR DIET QUALITY, SOCIAL COMPANIONSHIP, FUNCTIONAL DISABILITY

$R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	49.185030	37.266747	1.320	0.1944	15.300746
SCS	1	-3.217663	3.839459	-0.838	0.4070	0.137901
FDSR	1	-46.812938	62.075639	-0.754	0.4552	-1.117047
SCS*SCS	1	-0.258225	0.461192	-0.560	0.5787	-0.581005
FDSR*SCS	1	3.375431	3.285352	1.027	0.3104	1.063261
FDSR*FDSR	1	15.053934	25.643061	0.587	0.5605	0.663878

RESPONSE SURFACE FOR DIET QUALITY, SOCIAL COMPANIONSHIP, CHRONIC HEALTH PROBLEMS $R^2=0.03$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	15.776285	2.676895	5.894	0.0000	16.337750
SCS	1	0.451708	1.695627	0.266	0.7913	-0.386841
CHP57	1	0.309115	1.147876	0.269	0.7891	-0.239695
SCS*SCS	1	-0.173025	0.491406	-0.352	0.7266	-0.389306
CHP57*SCS	1	-0.056341	0.227056	-0.248	0.8053	-0.295792
CHP57*CHP57	1	-0.041870	0.121094	-0.346	0.7313	-0.512902

RESPONSE SURFACE FOR DIET QUALITY, SOCIAL COMPANIONSHIP, PERCEIVED HEALTH STATUS $R^2=0.0$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	16.894848	7.318077	2.309	0.0262	15.858913
SCS	1	0.322236	2.925735	0.110	0.9129	-0.463817
PHS44	1	-0.890627	3.684817	-0.242	0.8102	0.439623
SCS*SCS	1	-0.209649	0.469452	-0.447	0.6576	-0.471710
PHS44*SCS	1	-0.000714	0.598475	-0.0012	0.9991	-0.001607
PHS44*PHS44	1	0.169254	0.506345	0.334	0.7399	0.380822

RESPONSE SURFACE FOR DIET QUALITY, SOCIAL COMPANIONSHIP, PERCEIVED ECONOMIC SECURITY $R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	18.151124	3.874537	4.685	0.0000	16.285865
SCS	1	0.724595	1.837617	0.394	0.6955	-0.211673
PEC60	1	-0.992951	3.783340	-0.262	0.7944	-1.309918
SCS*SCS	1	-0.236978	0.491435	-0.482	0.6323	-0.533201
PEC60*SCS	1	-0.077387	0.756192	-0.102	0.9190	-0.116081
PEC60*PEC60	1	-0.050221	0.962506	-0.0522	0.9587	-0.050221

RESPONSE SURFACE FOR DIET QUALITY, SOCIAL COMPANIONSHIP, AGE $R^2=0.16$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-29.139284	149.318652	-0.195	0.8463	16.552491
SCS	1	-4.711864	8.336843	-0.565	0.5751	-0.194990
AGE	1	1.515416	3.812618	0.397	0.6931	-1.819204
SCS*SCS	1	-0.439367	0.463889	-0.947	0.3493	-0.888576
AGE*SCS	1	0.076129	0.106860	0.712	0.4803	0.856448
AGE*AGE	1	-0.012079	0.024347	-0.496	0.6225	-0.679417

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE FUNCTIONAL DISABILITY $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	33.268155	36.768746	0.905	0.3710	15.227774
SNSCR	1	0.369131	0.472147	0.782	0.4389	0.480169
FDSR	1	-32.176292	61.109003	-0.527	0.6014	-0.702993
SNSCR*SNSCR	1	-0.003019	0.007136	-0.423	0.6745	-0.510139
FDSR*SNSCR	1	-0.189721	0.357156	-0.531	0.5982	-0.517939
FDSR*FDSR	1	13.245442	25.462169	0.520	0.6058	0.584124

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	13.506946	4.241972	3.184	0.0028	16.445383
SNSCR	1	0.214560	0.320929	0.669	0.5076	0.924525
CHP57	1	0.400202	1.245105	0.321	0.7496	-0.380347
SNSCR*SNSCR	1	-0.005237	0.007528	-0.696	0.4906	-0.885124
CHP57*SNSCR	1	0.009884	0.032848	0.301	0.7648	0.450186
CHP57*CHP57	1	-0.096725	0.120369	-0.804	0.4264	-1.184880

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.04$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	15.723106	7.861700	2.000	0.0523	15.738926
SNSCR	1	0.165035	0.442479	0.373	0.7111	0.647558
PHS44	1	-1.215526	3.679598	-0.330	0.7429	0.271537
SNSCR*SNSCR	1	-0.004385	0.007554	-0.581	0.5648	-0.741135
PHS44*SNSCR	1	0.009680	0.080928	0.120	0.9054	0.188769
PHS44*PHS44	1	0.175998	0.539455	0.326	0.7459	0.395994

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE, PERCEIVED ECONOMIC SECURITY

$R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	15.023020	5.026542	2.988	0.0048	15.949653
SNSCR	1	0.276975	0.314427	0.881	0.3838	0.853155
PEC60	1	-0.772562	3.813388	-0.203	0.8405	-1.212827
SNSCR*SNSCR	1	-0.003100	0.006935	-0.447	0.6573	-0.523883
PEC60*SNSCR	1	-0.052976	0.070992	-0.746	0.4600	-0.688684
PEC60*PEC60	1	0.115055	0.853551	0.135	0.8935	0.115055

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE, ECONOMIC DISADVANTAGE

$R^2=0.26$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-7.248710	22.522039	-0.322	0.7492	17.307560
SNSCR	1	-0.033994	0.407546	-0.0834	0.9339	0.366794
ECDA	1	11.296875	8.794188	1.285	0.2063	-1.454719
SNSCR*SNSCR	1	-0.003125	0.006446	-0.485	0.6305	-0.528160
ECDA*SNSCR	1	0.033693	0.059891	0.563	0.5769	0.438011
ECDA*ECDA	1	-1.332438	0.856143	-1.556	0.1275	-1.332438

RESPONSE SURFACE FOR DIET QUALITY, TOTAL NETWORK SIZE, AGE

$R^2=0.17$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	32.562016	137.431062	0.237	0.8139	15.896616
SNSCR	1	-0.917132	0.897492	-1.022	0.3130	0.772376
AGE	1	0.008232	3.521189	0.00234	0.9981	-1.876216
SNSCR*SNSCR	1	-0.002896	0.006911	-0.419	0.6774	-0.489461
AGE*SNSCR	1	0.013871	0.010651	1.302	0.2002	1.352441
AGE*AGE	1	-0.003188	0.022557	-0.141	0.8883	-0.179348

RESPONSE SURFACE FOR DIET QUALITY, FAMILY NETWORK SIZE, FUNCTIONAL DISABILITY

$R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	36.282643	36.073312	1.006	0.3206	14.884173
SNF	1	0.387892	0.577851	0.671	0.5059	0.548513
FDSR	1	-34.694342	60.449132	-0.574	0.5692	-0.953835
SNF*SNF	1	0.005288	0.014644	0.361	0.7199	0.477203
FDSR*SNF	1	-0.364622	0.439915	-0.829	0.4121	-0.727422
FDSR*FDSR	1	14.041655	25.188549	0.557	0.5803	0.619237

RESPONSE SURFACE FOR DIET QUALITY, FAMILY NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	15.575404	3.483342	4.471	0.0001	16.187789
SNF	1	0.029807	0.437103	0.0682	0.9460	0.723095
CHP57	1	0.040160	1.153435	0.0348	0.9724	-0.027976
SNF*SNF	1	-0.001843	0.015113	-0.122	0.9035	-0.166335
CHP57*SNF	1	0.024289	0.045666	0.532	0.5977	0.807615
CHP57*CHP57	1	-0.043313	0.119846	-0.361	0.7199	-0.530582

RESPONSE SURFACE FOR DIET QUALITY, FAMILY NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	17.516031	5.798011	2.577	0.0138	15.804532
SNF	1	0.032775	0.602081	0.0544	0.9569	0.646908
PHS44	1	-1.407178	3.879265	-0.363	0.7187	0.189850
SNF*SNF	1	-0.004580	0.014449	-0.317	0.7529	-0.413344
PHS44*SNF	1	0.037571	0.132822	0.283	0.7787	0.535393
PHS44*PHS44	1	0.162749	0.569022	0.286	0.7763	0.366186

RESPONSE SURFACE FOR DIET QUALITY, FAMILY NETWORK SIZE, ECONOMIC DISADVANTAGE $R^2=0.27$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-8.814574	22.616653	-0.390	0.6988	17.340850
SNF	1	-0.040578	0.627663	-0.0646	0.9488	0.628226
ECDA	1	11.717632	8.991968	1.303	0.2000	-1.309176
SNF*SNF	1	-0.004228	0.012652	-0.334	0.7400	-0.381617
ECDA*SNF	1	0.039101	0.105886	0.369	0.7139	0.371458
ECDA*ECDA	1	-1.343731	0.891952	-1.507	0.1398	-1.343731

RESPONSE SURFACE FOR DIET QUALITY, FAMILY NETWORK SIZE, AGE $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-2.680518	140.291884	-0.0191	0.9849	15.953915
SNF	1	-0.369069	1.212577	-0.304	0.7624	0.763664
AGE	1	0.717810	3.600194	0.199	0.8430	-1.483573
SNF*SNF	1	0.000197	0.013616	0.0145	0.9885	0.017815
AGE*SNF	1	0.005746	0.014771	0.389	0.6993	0.409388
AGE*AGE	1	-0.006296	0.023067	-0.273	0.7863	-0.354176

RESPONSE SURFACE FOR DIET QUALITY, FRIENDS/NEIGHBOURS SIZE, FUNCTIONAL DISABILITY $R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	41.967204	36.470746	1.151	0.2567	15.161681
SNFR	1	0.047047	0.627768	0.0749	0.9406	0.807053
FDSR	1	-40.857702	61.201267	-0.668	0.5082	-0.964824
SNFR*SNFR	1	-0.006774	0.014117	-0.480	0.6339	-0.611370
FDSR*SNFR	1	0.148896	0.503131	0.296	0.7688	0.297047
FDSR*FDSR	1	14.338799	25.477653	0.563	0.5767	0.632341

RESPONSE SURFACE FOR DIET QUALITY, FRIENDS/NEIGHBOURS, CHRONIC HEALTH PROBLEMS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	13.582608	3.266416	4.158	0.0002	16.425162
SNFR	1	0.245569	0.386073	0.636	0.5284	0.927873
CHP57	1	0.663374	1.156141	0.574	0.5693	-0.240718
SNFR*SNFR	1	-0.007305	0.014877	-0.491	0.6261	-0.659254
CHP57*SNFR	1	0.001572	0.045159	0.0348	0.9724	0.052268
CHP57*CHP57	1	-0.106951	0.128546	-0.832	0.4103	-1.310149

RESPONSE SURFACE FOR DIET QUALITY, FRIENDS/NEIGHBOURS, PERCEIVED HEALTH STATUS $R^2=0.03$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	16.582553	7.644277	2.169	0.0361	15.723220
SNFR	1	0.137350	0.535349	0.257	0.7988	0.508010
PHS44	1	-1.260960	3.687384	-0.342	0.7342	0.296160
SNFR*SNFR	1	-0.006827	0.014611	-0.467	0.6429	-0.616098
PHS44*SNFR	1	0.016995	0.096068	0.177	0.8605	0.242181
PHS44*PHS44	1	0.182850	0.503002	0.364	0.7181	0.411413

RESPONSE SURFACE FOR DIET QUALITY, FRIENDS/NEIGHBOURS SIZE, PERCEIVED ECONOMIC SECURITY $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	19.008282	4.417413	4.303	0.0001	15.984046
SNFR	1	0.039134	0.362708	0.108	0.9146	0.847144
PEC60	1	-2.185929	3.653562	-0.598	0.5531	-1.511919
SNFR*SNFR	1	-0.005052	0.013609	-0.371	0.7125	-0.455907
PEC60*SNFR	1	0.078061	0.113425	0.688	0.4954	0.741582
PEC60*PEC60	1	-0.036408	0.857684	-0.0424	0.9664	-0.036408

RESPONSE SURFACE FOR DIET QUALITY, FRIENDS/NEIGHBOURS, ECONOMIC DISADVANTAGE $R^2=0.27$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-6.385250	22.742623	-0.281	0.7803	17.548830
SNFR	1	-0.186306	0.566539	-0.329	0.7440	0.011252
ECDA	1	11.440290	8.816394	1.297	0.2020	-1.477804
SNFR*SNFR	1	-0.009078	0.012681	-0.716	0.4782	-0.819298
ECDA*SNFR	1	0.075626	0.088020	0.859	0.3954	0.718447
ECDA*ECDA	1	-1.371227	0.851818	-1.610	0.1153	-1.371227

RESPONSE SURFACE FOR DIET QUALITY, EVERYDAY CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	17.872710	2.698372	6.624	0.0000	15.763041
SCEDSCR	1	-1.038206	0.972728	-1.067	0.2922	-0.182378
CHP57	1	-0.348641	1.164854	-0.299	0.7663	-0.221203
SCEDSCR*SCEDSCR	1	0.069574	0.168516	0.413	0.6819	0.434840
CHP57*SCEDSCR	1	0.176395	0.146391	1.205	0.2353	1.543458
CHP57*CHP57	1	-0.022221	0.124952	-0.178	0.8597	-0.272209

RESPONSE SURFACE FOR DIET QUALITY, EVERYDAY CONTACT, PERCEIVED HEALTH STATUS $R^2=0.03$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	16.076955	8.696449	1.849	0.0719	15.215012
SCEDSCR	1	0.569656	2.013988	0.283	0.7788	0.388009
PHS44	1	-1.054286	4.076348	-0.259	0.7972	0.065986
SCEDSCR*SCEDSCR	1	0.115443	0.174095	0.663	0.5111	0.721517
PHS44*SCEDSCR	1	-0.283333	0.418994	-0.675	0.5038	-1.062499
PHS44*PHS44	1	0.258087	0.511905	0.504	0.6169	0.580696

RESPONSE SURFACE FOR DIET QUALITY, EVERYDAY CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	20.458194	3.998337	5.117	0.0000	15.249463
SCEDSCR	1	-0.986171	1.174666	-0.840	0.4063	0.030364
PEC60	1	-2.598316	3.703572	-0.702	0.4871	-1.392883
SCEDSCR*SCEDSCR	1	0.184174	0.170334	1.081	0.2862	1.151087
PEC60*SCEDSCR	1	0.038723	0.494466	0.0783	0.9380	0.096808
PEC60*PEC60	1	0.277156	0.881201	0.315	0.7548	0.277156

RESPONSE SURFACE FOR
DIET QUALITY, EVERYDAY CONTACT, ECONOMIC DISADVANTAGE
R^2=0.29

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-1.945894	22.287352	-0.0873	0.9309	17.231237
SCEDSCR	1	-2.361524	1.667747	-1.416	0.1645	-0.216069
ECDA	1	10.106686	8.699198	1.162	0.2522	-1.211859
SCEDSCR*SCEDSCR	1	-0.038112	0.151563	-0.251	0.8027	-0.238198
ECDA*SCEDSCR	1	0.493131	0.300744	1.640	0.1089	1.232827
ECDA*ECDA	1	-1.255137	0.839262	-1.496	0.1426	-1.255137

RESPONSE SURFACE FOR
DIET QUALITY, EVERYDAY CONTACT, AGE
R^2=0.17

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	10.721442	137.147666	0.0782	0.9381	15.665412
SCEDSCR	1	-6.813600	4.297447	-1.585	0.1207	0.187510
AGE	1	0.509888	3.531694	0.144	0.8859	-1.236956
SCEDSCR*SCEDSCR	1	0.070798	0.157241	0.450	0.6550	0.442490
AGE*SCEDSCR	1	0.084318	0.055285	1.525	0.1351	1.580955
AGE*AGE	1	-0.005714	0.022699	-0.252	0.8026	-0.321390

RESPONSE SURFACE FOR
DIET QUALITY, ONCE/WEEK CONTACT FUNCTIONAL DISABILITY
R^2=0.09

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	38.876638	36.414100	1.068	0.2921	15.347821
SCOWSCR	1	0.405450	0.998236	0.406	0.6868	0.669313
FDSR	1	-37.045771	61.585498	-0.602	0.5509	-0.925782
SCOWSCR*SCOWSCR	1	-0.021595	0.034457	-0.627	0.5344	-0.777403
FDSR*SCOWSCR	1	-0.028730	0.777809	-0.0369	0.9707	-0.036200
FDSR*FDSR	1	13.557714	25.831888	0.525	0.6026	0.597895

RESPONSE SURFACE FOR
DIET QUALITY, ONCE/WEEK CONTACT, CHRONIC HEALTH PROBLEMS
R^2=0.05

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	15.641455	2.857310	5.474	0.0000	16.375417
SCOWSCR	1	0.171876	0.530350	0.324	0.7476	0.683187
CHP57	1	0.056928	1.168140	0.0487	0.9614	-0.455780
SCOWSCR*SCOWSCR	1	-0.016909	0.036194	-0.467	0.6429	-0.608737
CHP57*SCOWSCR	1	0.041877	0.058793	0.712	0.4804	0.879413
CHP57*CHP57	1	-0.062630	0.122115	-0.513	0.6109	-0.767221

RESPONSE SURFACE FOR DIET QUALITY, ONCE/WEEK CONTACT, PERCEIVED HEALTH STATUS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	19.571936	7.519353	2.603	0.0129	15.727196
SCOWSCR	1	-0.040472	0.758117	-0.0534	0.9577	0.342223
PHS44	1	-2.409714	3.822069	-0.630	0.5320	0.276484
SCOWSCR*SCOWSCR	1	-0.019242	0.036522	-0.527	0.6012	-0.692702
PHS44*SCOWSCR	1	0.093831	0.125777	0.746	0.4600	0.844482
PHS44*PHS44	1	0.290150	0.501075	0.579	0.5658	0.652837

RESPONSE SURFACE FOR DIET QUALITY, ONCE/WEEK CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	17.764220	4.224076	4.205	0.0001	15.829769
SCOWSCR	1	0.312959	0.598635	0.523	0.6041	0.785857
PEC60	1	-1.838108	3.741831	-0.491	0.6260	-1.328150
SCOWSCR*SCOWSCR	1	-0.009124	0.033515	-0.272	0.7869	-0.328466
PEC60*SCOWSCR	1	-0.036247	0.151007	-0.240	0.8116	-0.217483
PEC60*PEC60	1	0.181860	0.864939	0.210	0.8346	0.181860

RESPONSE SURFACE FOR DIET QUALITY, ONCE/WEEK, ECONOMIC DISADVANTAGE $R^2=0.18$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-4.504860	22.559979	-0.200	0.8427	17.145847
SCOWSCR	1	-1.003961	0.844495	-1.189	0.2415	-0.287771
ECDA	1	11.341580	8.913250	1.272	0.2106	-1.418990
SCOWSCR*SCOWSCR	1	0.007244	0.031470	0.230	0.8191	0.260798
ECDA*SCOWSCR	1	0.173813	0.126288	1.376	0.1764	1.042880
ECDA*ECDA	1	-1.380345	0.866200	-1.594	0.1189	-1.380345

RESPONSE SURFACE FOR DIET QUALITY, ONCE/WEEK CONTACT, AGE $R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.594078	139.319183	0.0330	0.9739	15.830551
SCOWSCR	1	-0.596733	2.000277	-0.298	0.7670	0.637954
AGE	1	0.547288	3.578659	0.153	0.8793	-1.645108
SCOWSCR*SCOWSCR	1	-0.001318	0.033874	-0.0389	0.9691	-0.047466
AGE*SCOWSCR	1	0.009276	0.024282	0.382	0.7045	0.417414
AGE*AGE	1	-0.005305	0.022989	-0.231	0.8187	-0.298412

RESPONSE SURFACE FOR APPETITE, INFORMATIONAL SUPPORT, CHRONIC HEALTH PROBLEMS $R^2=0.20$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.421171	0.629689	5.433	0.0000	3.118238
PIFS	1	0.227292	0.379635	0.599	0.5527	0.175570
CHP57	1	-0.154446	0.277534	-0.556	0.5810	-0.581812
PIFS*PIFS	1	0.001311	0.108137	0.0121	0.9904	0.002950
CHP57*PIFS	1	-0.032623	0.055141	-0.592	0.5574	-0.171268
CHP57*CHP57	1	0.005307	0.029170	0.182	0.8566	0.065008

RESPONSE SURFACE FOR APPETITE, INFORMATIONAL SUPPORT, PERCEIVED HEALTH STATUS $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.039562	1.810017	1.127	0.2665	2.898544
PIFS	1	-0.264834	0.617459	-0.429	0.6703	0.100512
PHS44	1	0.286603	0.910874	0.315	0.7547	0.433540
PIFS*PIFS	1	0.010160	0.113646	0.0894	0.9292	0.022859
PHS44*PIFS	1	0.086104	0.135402	0.636	0.5285	0.193734
PHS44*PHS44	1	-0.018105	0.118575	-0.153	0.8794	-0.040735

RESPONSE SURFACE FOR APPETITE, INFORMATIONAL SUPPORT, PERCEIVED ECONOMIC SECURITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.198148	1.217359	0.984	0.3311	2.980788
PIFS	1	0.425835	0.459554	0.927	0.3598	0.281888
PEC60	1	1.037858	1.035201	1.003	0.3223	0.284462
PIFS*PIFS	1	0.056258	0.113762	0.495	0.6237	0.126581
PEC60*PIFS	1	-0.203342	0.162872	-1.248	0.2193	-0.305014
PEC60*PEC60	1	-0.112096	0.226520	-0.495	0.6236	-0.112096

RESPONSE SURFACE FOR APPETITE, INFORMATIONAL SUPPORT, ECONOMIC DISADVANTAGE $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.989100	6.692625	0.745	0.4604	3.017893
PIFS	1	0.156129	0.874482	0.178	0.8592	0.180160
ECDA	1	-0.745128	2.607496	-0.286	0.7765	-0.126305
PIFS*PIFS	1	0.031942	0.120041	0.266	0.7915	0.071869
ECDA*PIFS	1	-0.026370	0.142777	-0.185	0.8544	-0.039554
ECDA*ECDA	1	0.065838	0.251274	0.262	0.7947	0.065838

RESPONSE SURFACE FOR APPETITE, INFORMATIONAL SUPPORT, AGE $R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	48.769731	36.895544	1.322	0.1937	2.819456
PIFS	1	-0.349406	2.312344	-0.151	0.8807	0.083601
AGE	1	-1.126610	0.944037	-1.193	0.2397	-0.382042
PIFS*PIFS	1	-0.014381	0.131828	-0.109	0.9137	-0.032357
AGE*PIFS	1	0.005784	0.027864	0.207	0.8372	0.065073
AGE*AGE	1	0.006884	0.006029	1.142	0.2603	0.387216

RESPONSE SURFACE FOR APPETITE, INSTRUMENTAL SUPPORT, CHRONIC HEALTH PROBLEMS $R^2=0.18$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.177463	0.820735	5.090	0.0000	3.073919
PIS	1	-0.137046	0.366911	-0.374	0.7107	-0.052970
CHP57	1	-0.341463	0.287836	-1.186	0.2427	-0.684904
PIS*PIS	1	0.010584	0.067529	0.157	0.8762	0.042337
CHP57*PIS	1	0.019492	0.044534	0.438	0.6640	0.136447
CHP57*CHP57	1	0.015256	0.028694	0.532	0.5979	0.186885

RESPONSE SURFACE FOR APPETITE, INSTRUMENTAL SUPPORT, PERCEIVED HEALTH STATUS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.937389	1.930609	0.486	0.6299	2.873067
PIS	1	0.228048	0.474294	0.481	0.6333	0.063888
PHS44	1	0.646085	0.943138	0.685	0.4973	0.467174
PIS*PIS	1	0.010856	0.070796	0.153	0.8789	0.043422
PHS44*PIS	1	-0.068436	0.091446	-0.748	0.4586	-0.205309
PHS44*PHS44	1	-0.028252	0.120736	-0.234	0.8162	-0.063567

RESPONSE SURFACE FOR APPETITE, SOCIAL COMPANIONSHIP, PERCEIVED HEALTH STATUS $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.657532	1.761723	0.373	0.7109	3.034681
SCS	1	1.022025	0.704329	1.451	0.1546	0.251856
PHS44	1	0.541140	0.887067	0.610	0.5453	0.460892
SCS*SCS	1	-0.154652	0.113014	-1.368	0.1788	-0.347966
PHS44*SCS	1	-0.111476	0.144074	-0.774	0.4436	-0.250821
PHS44*PHS44	1	-0.009523	0.121895	-0.0781	0.9381	-0.021428

RESPONSE SURFACE FOR APPETITE, SOCIAL COMPANIONSHIP, PERCEIVED ECONOMIC SECURITY $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.197656	1.031252	2.131	0.0394	3.064725
SCS	1	0.312671	0.489102	0.639	0.5264	0.080736
PEC60	1	0.361198	1.006978	0.359	0.7218	0.231000
SCS*SCS	1	-0.061713	0.130801	-0.472	0.6397	-0.138854
PEC60*SCS	1	-0.036854	0.201268	-0.183	0.8557	-0.055281
PEC60*PEC60	1	-0.018729	0.256182	-0.0731	0.9421	-0.018729

RESPONSE SURFACE FOR APPETITE, SOCIAL COMPANIONSHIP, ECONOMIC DISADVANTAGE $R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.501250	6.390827	0.861	0.3945	3.214769
SCS	1	0.903232	0.778836	1.158	0.2536	0.178285
ECDA	1	-1.007167	2.523215	-0.399	0.6919	-0.214051
SCS*SCS	1	-0.160786	0.122042	-1.317	0.1952	-0.361769
ECDA*SCS	1	-0.060403	0.137963	-0.438	0.6639	-0.090605
ECDA*ECDA	1	0.088372	0.245815	0.360	0.7211	0.088372

RESPONSE SURFACE FOR APPETITE, SOCIAL COMPANIONSHIP, AGE $R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	40.961988	37.585229	1.090	0.2824	3.033599
SCS	1	-0.884639	2.099038	-0.421	0.6757	0.212091
AGE	1	-0.898821	0.959935	-0.936	0.3547	-0.491933
SCS*SCS	1	-0.137767	0.116797	-1.180	0.2452	-0.309977
AGE*SCS	1	0.018572	0.026905	0.690	0.4940	0.208936
AGE*AGE	1	0.005196	0.006130	0.848	0.4017	0.292272

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.30$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.120607	0.934240	2.270	0.0287	3.076668
SNSCR	1	0.088051	0.070680	1.246	0.2201	0.388241
CHP57	1	0.083057	0.274219	0.303	0.7635	-0.383142
SNSCR*SNSCR	1	-0.000597	0.001658	-0.360	0.7205	-0.100967
CHP57*SNSCR	1	-0.010821	0.007234	-1.496	0.1426	-0.492353
CHP57*CHP57	1	-0.001224	0.026510	-0.0462	0.9634	-0.014998

RESPONSE SURFACE FOR DIET DIVERSITY, INFORMATIONAL SUPPORT, FUNCTIONAL DISABILITY $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	54.364428	28.988936	1.875	0.0681	8.813660
PIFS	1	0.135232	2.760541	0.0490	0.9612	0.552689
FDSR	1	-72.677775	48.631762	-1.494	0.1429	-0.645093
PIFS*PIFS	1	-0.000581	0.341444	-0.0017	0.9987	-0.001307
FDSR*PIFS	1	0.194190	2.232863	0.0870	0.9311	0.061170
FDSR*FDSR	1	28.642404	20.026096	1.430	0.1604	1.263130

RESPONSE SURFACE FOR DIET DIVERSITY, INFORMATIONAL SUPPORT, PERCEIVED HEALTH STATUS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.673255	5.774775	1.502	0.1410	9.787378
PIFS	1	0.633713	1.968974	0.322	0.7494	0.640439
PHS44	1	-0.093658	2.906102	-0.0322	0.9745	0.413588
PIFS*PIFS	1	0.016465	0.362584	0.0454	0.9640	0.037046
PHS44*PIFS	1	-0.073185	0.431994	-0.168	0.8663	-0.164667
PHS44*PHS44	1	0.068452	0.378309	0.181	0.8573	0.154016

RESPONSE SURFACE FOR DIET DIVERSITY, INFORMATIONAL SUPPORT, PERCEIVED ECONOMIC SECURITY $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.021656	3.856888	1.561	0.1265	10.505711
PIFS	1	0.243831	1.455979	0.167	0.8679	0.629715
PEC60	1	4.102735	3.279768	1.251	0.2184	-0.116411
PIFS*PIFS	1	0.035901	0.360425	0.0996	0.9212	0.080776
PEC60*PIFS	1	0.034139	0.516019	0.0662	0.9476	0.051209
PEC60*PEC60	1	-1.067588	0.717585	-1.487	0.1451	-1.067588

RESPONSE SURFACE FOR DIET DIVERSITY, INFORMATIONAL SUPPORT, AGE $R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-12.506292	114.501898	-0.109	0.9136	10.141539
PIFS	1	-3.981688	7.176145	-0.555	0.5821	0.431780
AGE	1	0.768311	2.929730	0.262	0.7945	-0.842678
PIFS*PIFS	1	0.027922	0.409116	0.0682	0.9459	0.062825
AGE*PIFS	1	0.054010	0.086784	0.622	0.5372	0.607613
AGE*AGE	1	-0.006204	0.018709	-0.332	0.7419	-0.348998

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, FUNCTIONAL DISABILITY

R^2=0.13

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	53.784387	27.550970	1.952	0.0579	8.521490
PIS	1	-0.609339	2.257892	-0.270	0.7886	0.147585
FDSR	1	-70.356185	47.096631	-1.494	0.1431	-0.750397
PIS*PIS	1	0.118355	0.214830	0.551	0.5848	0.473418
FDSR*PIS	1	0.173317	1.822744	0.0951	0.8247	0.072793
FDSR*FDSR	1	27.452989	20.011161	1.372	0.1777	1.210677

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, CHRONIC HEALTH PROBLEMS

R^2=0.02

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	10.697555	2.734336	3.912	0.0003	9.825412
PIS	1	-0.797819	1.222388	-0.653	0.5176	-0.068112
CHP57	1	0.027515	0.959278	0.0287	0.9773	-0.176637
PIS*PIS	1	0.126677	0.224978	0.563	0.5765	0.506707
CHP57*PIS	1	0.073473	0.148369	0.495	0.6232	0.514312
CHP57*CHP57	1	-0.032133	0.095595	-0.336	0.7385	-0.393625

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, PERCEIVED HEALTH STATUS

R^2=0.04

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.639451	6.078709	1.092	0.2813	9.421539
PIS	1	0.561745	1.493362	0.376	0.7088	0.269469
PHS44	1	0.757873	2.969560	0.255	0.7999	0.650855
PIS*PIS	1	0.128237	0.222908	0.575	0.5683	0.512947
PHS44*PIS	1	-0.268559	0.287926	-0.933	0.3566	-0.805678
PHS44*PHS44	1	0.030450	0.380148	0.0801	0.9366	0.068512

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, PERCEIVED ECONOMIC SECURITY

$R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.298331	3.727384	0.885	0.3816	9.960441
PIS	1	0.666432	1.165373	0.572	0.5707	0.101383
PEC60	1	5.410436	3.087893	1.752	0.0876	0.534550
PIS*PIS	1	0.204108	0.226240	0.902	0.3725	0.816431
PEC60*PIS	1	-0.716086	0.455702	-1.571	0.1242	-1.432172
PEC60*PEC60	1	-0.860929	0.726894	-1.184	0.2434	-0.860929

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, ECONOMIC DISADVANTAGE

$R^2=0.20$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	7.747637	18.336566	0.423	0.6749	10.447283
PIS	1	-0.026044	1.864239	-0.0140	0.9889	-0.091766
ECDA	1	2.329294	7.116283	0.327	0.7451	-1.220665
PIS*PIS	1	0.075951	0.202928	0.374	0.7102	0.303802
ECDA*PIS	1	-0.064728	0.307945	-0.210	0.8346	-0.129457
ECDA*ECDA	1	-0.342050	0.689535	-0.496	0.6226	-0.342050

RESPONSE SURFACE FOR DIET DIVERSITY, INSTRUMENTAL SUPPORT, AGE

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-27.128609	111.085408	-0.244	0.8083	9.840922
PIS	1	-1.256638	4.402645	-0.285	0.7768	0.321399
AGE	1	1.151188	2.851220	0.404	0.6885	-1.247045
PIS*PIS	1	0.007074	0.227414	0.0311	0.9753	0.028295
AGE*PIS	1	0.017923	0.059840	0.300	0.7661	0.268847
AGE*AGE	1	-0.008731	0.018293	-0.477	0.6358	-0.491119

RESPONSE SURFACE FOR DIET DIVERSITY, SOCIAL COMPANIONSHIP, FUNCTIONAL DISABILITY

$R^2=0.17$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	63.030308	28.002091	2.251	0.0300	8.592616
SCS	1	-4.209993	2.884955	-1.459	0.1523	0.837051
FDSR	1	-80.875250	46.643398	-1.734	0.0906	-0.961209
SCS*SCS	1	0.039684	0.346538	0.115	0.9094	0.088289
FDSR*SCS	1	3.842129	2.468601	1.556	0.1276	1.210271
FDSR*FDSR	1	29.146642	19.268098	1.513	0.1382	1.285367

RESPONSE SURFACE FOR DIET DIVERSITY, SOCIAL COMPANIONSHIP, CHRONIC HEALTH PROBLEMS

$R^2=0.01$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.687400	2.108146	4.119	0.0002	9.819976
SCS	1	0.048064	1.335987	0.0360	0.9715	0.218097
CHP57	1	0.537825	0.904420	0.595	0.5554	0.292571
SCS*SCS	1	0.130317	0.387183	0.337	0.7382	0.293212
CHP57*SCS	1	-0.083890	0.178899	-0.469	0.6417	-0.440423
CHP57*CHP57	1	-0.046914	0.095411	-0.492	0.6256	-0.574698

RESPONSE SURFACE FOR DIET DIVERSITY, SOCIAL COMPANIONSHIP, PERCEIVED HEALTH STATUS

$R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	7.087550	5.654364	1.253	0.2173	9.545923
SCS	1	2.395228	2.260590	1.060	0.2957	0.762863
PHS44	1	-0.145980	2.847100	-0.0513	0.9594	0.459416
SCS*SCS	1	0.047647	0.362725	0.131	0.8961	0.107207
PHS44*SCS	1	-0.579884	0.462416	-1.254	0.2171	-1.304739
PHS44*PHS44	1	0.188869	0.391231	0.483	0.6318	0.424956

RESPONSE SURFACE FOR DIET DIVERSITY, SOCIAL COMPANIONSHIP, PERCEIVED ECONOMIC SECURITY

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.094968	3.154856	1.932	0.0607	10.243375
SCS	1	1.373134	1.496286	0.918	0.3644	0.177193
PEC60	1	3.230951	3.080599	1.049	0.3007	-0.200990
SCS*SCS	1	0.098128	0.400153	0.245	0.8076	0.220788
PEC60*SCS	1	-0.774694	0.615732	-1.258	0.2158	-1.162042
PEC60*PEC60	1	-0.567475	0.783724	-0.724	0.4733	-0.567475

RESPONSE SURFACE FOR DIET DIVERSITY, SOCIAL COMPANIONSHIP, ECONOMIC DISADVANTAGE

$R^2=0.23$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	11.889404	17.792775	0.668	0.5078	11.015425
SCS	1	-1.124560	2.171151	-0.518	0.6073	0.076637
ECDA	1	1.427912	7.024912	0.203	0.8400	-1.455463
SCS*SCS	1	-0.307850	0.339777	-0.906	0.3703	-0.692662
ECDA*SCS	1	0.418840	0.384103	1.093	0.2809	0.629760
ECDA*ECDA	1	-0.351314	0.684377	-0.513	0.6105	-0.351314

RESPONSE SURFACE FOR
DIET DIVERSITY, SOCIAL COMPANIONSHIP, AGE
R^2=0.10

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-31.751194	120.440905	-0.264	0.7934	10.167787
SCS	1	-1.279346	6.724524	-0.190	0.8501	0.317110
AGE	1	1.258664	3.075270	0.409	0.6845	-1.171607
SCS*SCS	1	-0.116976	0.374174	-0.313	0.7562	-0.263197
AGE*SCS	1	0.023764	0.086193	0.276	0.7842	0.267341
AGE*AGE	1	-0.009358	0.019638	-0.477	0.6363	-0.526400

RESPONSE SURFACE FOR
DIET DIVERSITY, TOTAL NETWORK SIZE, FUNCTIONAL DISABILITY
R^2=0.16

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	42.063540	27.538925	1.527	0.1345	8.036492
SNSCR	1	0.219407	0.353627	0.620	0.5385	0.694977
FDSR	1	-55.026301	45.769205	-1.202	0.2363	-0.713479
SNSCR*SNSCR	1	-0.002387	0.005344	-0.447	0.6575	-0.403448
FDSR*SNSCR	1	-0.070066	0.267502	-0.262	0.7947	-0.191280
FDSR*FDSR	1	21.826405	19.070565	1.145	0.2592	0.962544

RESPONSE SURFACE FOR
DIET DIVERSITY, TOTAL NETWORK SIZE, CHRONIC HEALTH PROBLEMS
R^2=0.08

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.386804	3.266118	2.568	0.0141	10.290618
SNSCR	1	0.130951	0.247100	0.530	0.5991	0.933382
CHP57	1	0.152089	0.958672	0.159	0.8747	-0.171419
SNSCR*SNSCR	1	-0.003459	0.005796	-0.597	0.5541	-0.584505
CHP57*SNSCR	1	0.016697	0.025291	0.660	0.5129	0.759730
CHP57*CHP57	1	-0.069274	0.092679	-0.747	0.4592	-0.848612

RESPONSE SURFACE FOR
DIET DIVERSITY, TOTAL NETWORK SIZE, PERCEIVED HEALTH STATUS
R^2=0.10

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.883230	5.945778	0.821	0.4163	9.764140
SNSCR	1	0.492542	0.334645	1.472	0.1489	1.514984
PHS44	1	-0.393000	2.782868	-0.141	0.8884	0.335562
SNSCR*SNSCR	1	-0.003730	0.005713	-0.653	0.5176	-0.630400
PHS44*SNSCR	1	-0.071194	0.061206	-1.163	0.2516	-1.388280
PHS44*PHS44	1	0.261000	0.407988	0.640	0.5260	0.587251

RESPONSE SURFACE FOR DIET DIVERSITY, TOTAL NETWORK SIZE, PERCEIVED ECONOMIC SECURITY

$R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.676064	4.085064	0.900	0.3737	10.467064
SNSCR	1	0.236810	0.255433	0.927	0.3596	0.983472
PEC60	1	4.278869	3.097903	1.381	0.1751	-0.143786
SNSCR*SNSCR	1	-0.002839	0.005633	-0.504	0.6171	-0.478818
PEC60*SNSCR	1	-0.032314	0.057672	-0.560	0.5785	-0.420077
PEC60*PEC60	1	-0.968333	0.693404	-1.396	0.1705	-0.968333

RESPONSE SURFACE FOR DIET DIVERSITY, TOTAL NETWORK SIZE, ECONOMIC DISADVANTAGE

$R^2=0.26$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	14.341105	17.568231	0.816	0.4192	10.650773
SNSCR	1	-0.092458	0.317905	-0.291	0.7727	0.560353
ECDA	1	0.064793	6.859873	0.00945	0.9925	-1.373123
SNSCR*SNSCR	1	-0.002989	0.005028	-0.594	0.5556	-0.505082
ECDA*SNSCR	1	0.047435	0.046718	1.015	0.3160	0.616658
ECDA*ECDA	1	-0.224432	0.667831	-0.336	0.7386	-0.224432

RESPONSE SURFACE FOR DIET DIVERSITY, TOTAL NETWORK SIZE, AGE

$R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-2.988883	106.358847	-0.0281	0.9777	10.037774
SNSCR	1	-0.773150	0.694575	-1.113	0.2723	0.877476
AGE	1	0.667618	2.725073	0.245	0.8077	-1.324945
SNSCR*SNSCR	1	-0.002129	0.005348	-0.398	0.6927	-0.359732
AGE*SNSCR	1	0.011781	0.008243	1.429	0.1607	1.146638
AGE*AGE	1	-0.006739	0.017457	-0.386	0.7015	-0.379072

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, FUNCTIONAL DISABILITY

$R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	43.226325	27.555645	1.569	0.1246	9.223009
SNF	1	0.405379	0.441408	0.921	0.3628	0.410876
FDSR	1	-56.748329	46.175822	-1.229	0.2263	-0.705020
SNF*SNF	1	-0.004784	0.011186	-0.428	0.6712	-0.431713
FDSR*SNF	1	-0.217087	0.336042	-0.646	0.5220	-0.433088
FDSR*FDSR	1	23.004340	19.241003	1.196	0.2389	1.014491

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.972811	2.691982	3.333	0.0019	10.545213
SNF	1	0.199409	0.337802	0.590	0.5583	0.567036
CHP57	1	0.032558	0.891396	0.0365	0.9710	0.310333
SNF*SNF	1	-0.010782	0.011678	-0.923	0.3615	-0.973054
CHP57*SNF	1	0.024770	0.035291	0.702	0.4868	0.823613
CHP57*CHP57	1	-0.029140	0.092687	-0.314	0.7548	-0.356865

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.803313	5.271656	1.670	0.1027	10.367430
SNF	1	0.368117	0.466896	0.788	0.4351	0.725886
PHS44	1	-0.512964	3.008255	-0.171	0.8655	0.108752
SNF*SNF	1	-0.012117	0.011205	-1.081	0.2860	-1.093593
PHS44*SNF	1	-0.010641	0.103000	-0.103	0.9182	-0.151632
PHS44*PHS44	1	0.099694	0.441260	0.226	0.8224	0.224312

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, PERCEIVED ECONOMIC SECURITY $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.321034	3.591932	0.925	0.3609	11.066900
SNF	1	0.646334	0.346762	1.864	0.0699	0.749692
PEC60	1	4.309339	3.127200	1.378	0.1761	-0.371031
SNF*SNF	1	-0.016598	0.011671	-1.422	0.1629	-1.497962
PEC60*SNF	1	-0.109431	0.079909	-1.369	0.1787	-1.039599
PEC60*PEC60	1	-0.882835	0.700413	-1.260	0.2150	-0.882835

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, ECONOMIC DISADVANTAGE $R^2=0.26$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.615929	17.802497	0.372	0.7121	11.098286
SNF	1	-0.079970	0.494059	-0.162	0.8722	0.389817
ECDA	1	2.835218	7.077847	0.415	0.6806	-1.060509
SNF*SNF	1	-0.011336	0.009959	-1.138	0.2618	-1.023086
ECDA*SNF	1	0.071812	0.083347	0.862	0.3940	0.682218
ECDA*ECDA	1	-0.474976	0.702092	-0.677	0.5026	-0.474976

RESPONSE SURFACE FOR DIET DIVERSITY, FAMILY NETWORK SIZE, AGE $R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-15.827596	109.644102	-0.154	0.8781	10.482094
SNF	1	-0.361756	0.947681	-0.382	0.7047	0.611859
AGE	1	0.874761	2.813706	0.311	0.7575	-0.953461
SNF*SNF	1	-0.009335	0.010642	-0.877	0.3856	-0.842464
AGE*SNF	1	0.008028	0.011544	0.695	0.4908	0.572015
AGE*AGE	1	-0.007008	0.018028	-0.389	0.6996	-0.394180

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, FUNCTIONAL DISABILITY $R^2=0.20$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	48.314131	26.706870	1.809	0.0780	8.974955
SNFR	1	-0.093972	0.459703	-0.204	0.8391	1.217943
FDSR	1	-60.788296	44.816585	-1.356	0.1826	-0.851760
SNFR*SNFR	1	-0.005202	0.010337	-0.503	0.6176	-0.469482
FDSR*SNFR	1	0.273900	0.368434	0.743	0.4616	0.546431
FDSR*FDSR	1	22.057914	18.656826	1.182	0.2441	0.872754

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, CHRONIC HEALTH PROBLEMS $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	7.367040	2.489088	2.960	0.0052	10.319953
SNFR	1	0.182797	0.294197	0.621	0.5378	1.177551
CHP57	1	0.727555	0.881007	0.826	0.4138	0.138512
SNFR*SNFR	1	-0.003429	0.011336	-0.303	0.7638	-0.309493
CHP57*SNFR	1	0.003763	0.034412	0.109	0.9135	0.125122
CHP57*CHP57	1	-0.103827	0.097955	-1.061	0.2951	-1.273112

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, PERCEIVED HEALTH STATUS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.322487	5.746111	0.926	0.3599	9.741527
SNFR	1	0.514178	0.402416	1.278	0.2087	1.404453
PHS44	1	0.205301	2.771763	0.0741	0.9413	0.500729
SNFR*SNFR	1	-0.005083	0.010983	-0.463	0.6460	-0.458714
PHS44*SNFR	1	-0.074173	0.072213	-1.027	0.3105	-1.056959
PHS44*PHS44	1	0.129619	0.378101	0.343	0.7335	0.291642

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, PERCEIVED ECONOMIC SECURITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.784217	3.598546	1.607	0.1160	10.539630
SNFR	1	0.178837	0.295472	0.605	0.5485	1.011142
PEC60	1	3.578206	2.976292	1.202	0.2365	-0.320475
SNFR*SNFR	1	-0.005321	0.011087	-0.480	0.6340	-0.480183
PEC60*SNFR	1	0.019666	0.092399	0.213	0.8326	0.186825
PEC60*PEC60	1	-1.026293	0.698693	-1.469	0.1499	-1.026293

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, ECONOMIC DISADVANTAGE $R^2=0.25$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	13.685611	17.976310	0.761	0.4509	10.700409
SNFR	1	-0.084401	0.447806	-0.188	0.8515	0.572499
ECDA	1	0.138118	6.970269	0.0198	0.9843	-1.281509
SNFR*SNFR	1	-0.006165	0.010023	-0.615	0.5420	-0.556383
ECDA*SNFR	1	0.054825	0.069573	0.788	0.4353	0.520841
ECDA*ECDA	1	-0.199529	0.673287	-0.296	0.7685	-0.199529

RESPONSE SURFACE FOR DIET DIVERSITY, FRIENDS/NEIGHBOURS, AGE $R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.584253	106.703561	0.00548	0.9957	10.108027
SNFR	1	-0.993265	0.928233	-1.070	0.2910	1.052031
AGE	1	0.528431	2.730382	0.194	0.8475	-1.223164
SNFR*SNFR	1	-0.005537	0.010353	-0.535	0.5957	-0.499739
AGE*SNFR	1	0.015746	0.011876	1.326	0.1924	1.121877
AGE*AGE	1	-0.005528	0.017449	-0.317	0.7530	-0.310953

RESPONSE SURFACE FOR DIET DIVERSITY, ONCE/WEEK CONTACT, FUNCTIONAL DISABILITY $R^2=0.22$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	42.838779	26.222667	1.634	0.1102	9.360807
SCOWSCR	1	0.232737	0.718853	0.324	0.7478	1.306850
FDSR	1	-53.078790	44.349194	-1.197	0.2384	-0.943070
SCOWSCR*SCOWSCR	1	-0.027343	0.024813	-1.102	0.2771	-0.884350
FDSR*SCOWSCR	1	0.258834	0.560119	0.462	0.6465	0.326130
FDSR*FDSR	1	19.435943	18.602162	1.045	0.3024	0.857125

RESPONSE SURFACE FOR DIET DIVERSITY, ONCE/WEEK CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.16$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	9.560051	2.105223	4.541	0.0001	10.428911
SCOWSCR	1	0.203520	0.390754	0.521	0.6054	1.126070
CHP57	1	-0.114515	0.860668	-0.133	0.8948	-0.206667
SCOWSCR*SCOWSCR	1	-0.018411	0.026667	-0.728	0.4709	-0.698809
CHP57*SCOWSCR	1	0.062027	0.043318	1.432	0.1599	1.302569
CHP57*CHP57	1	-0.045242	0.089972	-0.503	0.6178	-0.554216

RESPONSE SURFACE FOR DIET DIVERSITY, ONCE/WEEK CONTACT, PERCEIVED HEALTH STATUS $R^2=0.15$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.189465	5.564350	1.112	0.2726	9.881831
SCOWSCR	1	0.958679	0.561008	1.709	0.0952	1.615432
PHS44	1	-0.286817	2.828346	-0.101	0.9197	0.523322
SCOWSCR*SCOWSCR	1	-0.028907	0.027026	-1.070	0.2912	-1.040663
PHS44*SCOWSCR	1	-0.097872	0.093075	-1.052	0.2993	-0.880849
PHS44*PHS44	1	0.174704	0.370798	0.471	0.6401	0.393085

RESPONSE SURFACE FOR DIET DIVERSITY, ONCE/WEEK CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.18$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.814705	3.310982	1.182	0.2442	10.574363
SCOWSCR	1	0.733479	0.469233	1.563	0.1261	1.245971
PEC60	1	3.994744	2.932990	1.362	0.1810	-0.158508
SCOWSCR*SCOWSCR	1	-0.018033	0.026270	-0.686	0.4965	-0.649202
PEC60*SCOWSCR	1	-0.154708	0.118365	-1.307	0.1989	-0.928249
PEC60*PEC60	1	-0.806251	0.677973	-1.189	0.2415	-0.806251

RESPONSE SURFACE FOR DIET DIVERSITY, ONCE/WEEK CONTACT, ECONOMIC DISADVANTAGE $R^2=0.29$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	18.042177	17.409341	1.036	0.3063	10.647267
SCOWSCR	1	-0.504166	0.651689	-0.774	0.4437	0.544284
ECDA	1	-1.221154	6.878278	-0.178	0.8600	-1.240667
SCOWSCR*SCOWSCR	1	-0.011344	0.024285	-0.467	0.6429	-0.408401
ECDA*SCOWSCR	1	0.146203	0.097456	1.500	0.1414	0.877217
ECDA*ECDA	1	-0.089673	0.668439	-0.134	0.8940	-0.089673

RESPONSE SURFACE FOR
DIET DIVERSITY, ONCE/WEEK CONTACT, AGE
R^2=0.21

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-22.281268	103.897122	-0.214	0.8313	10.150183
SCOWSCR	1	-1.000407	1.491704	-0.671	0.5063	1.103720
AGE	1	1.056702	2.669527	0.396	0.6943	-1.174140
SCOWSCR*SCOWSCR	1	-0.009420	0.025262	-0.373	0.7112	-0.339114
AGE*SCOWSCR	1	0.016741	0.018108	0.924	0.3608	0.753328
AGE*AGE	1	-0.008475	0.017144	-0.494	0.6237	-0.476745

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, FUNCTIONAL DISABILITY

R^2=0.11

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	37.051721	25.836695	1.434	0.1593	4.106968
PIFS	1	2.280102	2.460361	0.927	0.3596	0.313236
FDSR	1	-58.387620	43.343571	-1.347	0.1855	0.178088
PIFS*PIFS	1	-0.335060	0.304315	-1.101	0.2775	-0.753884
FDSR*PIFS	1	-0.881074	1.990063	-0.443	0.6603	-0.277538
FDSR*FDSR	1	25.023664	17.848469	1.402	0.1686	1.103544

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, CHRONIC HEALTH PROBLEMS

R^2=0.10

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.942767	1.787757	2.205	0.0332	5.016423
PIFS	1	1.178580	1.077827	1.093	0.2807	0.344785
CHP57	1	0.159258	0.787951	0.202	0.8408	-0.522749
PIFS*PIFS	1	-0.331762	0.307012	-1.081	0.2863	-0.746464
CHP57*PIFS	1	0.013303	0.156552	0.0850	0.9327	0.069843
CHP57*CHP57	1	-0.045939	0.082816	-0.557	0.5740	-0.574998

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, PERCEIVED HEALTH STATUS

R^2=0.11

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	11.645056	4.864734	2.394	0.0215	4.533491
PIFS	1	-0.422163	1.659528	-0.254	0.8005	0.027571
PHS44	1	-3.557338	2.448133	-1.453	0.1540	-0.500044
PIFS*PIFS	1	-0.282638	0.305445	-0.925	0.3603	-0.635935
PHS44*PIFS	1	0.368131	0.363917	1.012	0.3178	0.828294
PHS44*PHS44	1	0.381683	0.318691	1.198	0.2381	0.858787

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, PERCEIVED ECONOMIC SECURITY

R^2=0.06

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.710244	3.402694	1.384	0.1741	4.492526
PIFS	1	1.361981	1.284520	1.060	0.2955	0.408425
PEC60	1	-1.171248	2.893537	-0.405	0.6879	-0.272168
PIFS*PIFS	1	-0.216308	0.317981	-0.680	0.5004	-0.486693
PEC60*PIFS	1	-0.220387	0.455251	-0.484	0.6310	-0.330580
PEC60*PEC60	1	0.307415	0.633434	0.485	0.6302	0.307415

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, ECONOMIC DISADVANTAGE

$R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	36.682212	16.970342	2.162	0.0367	4.102902
PIFS	1	-0.489160	2.217404	-0.221	0.8265	0.324049
ECDA	1	-12.811903	6.611772	-1.938	0.0597	-0.137882
PIFS*PIFS	1	-0.312208	0.304386	-1.026	0.3112	-0.702467
ECDA*PIFS	1	0.328363	0.362037	0.907	0.3698	0.492545
ECDA*ECDA	1	1.218148	0.637150	1.912	0.0631	1.218148

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INFORMATIONAL SUPPORT, AGE

$R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	96.377660	100.511938	0.959	0.3434	4.403650
PIFS	1	2.886202	6.299356	0.458	0.6493	0.452956
AGE	1	-2.491375	2.571773	-0.969	0.3385	0.421096
PIFS*PIFS	1	-0.296636	0.359130	-0.826	0.4137	-0.667430
AGE*PIFS	1	-0.021862	0.076181	-0.287	0.7756	-0.245850
AGE*AGE	1	0.016647	0.016423	1.014	0.3169	0.936405

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, FUNCTIONAL DISABILITY

$R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	43.868144	24.124082	1.818	0.0765	2.906793
PIS	1	-0.465038	1.977047	-0.235	0.8152	0.423966
FDSR	1	-68.444953	41.238583	-1.660	0.1048	0.243288
PIS*PIS	1	0.230408	0.188108	1.225	0.2278	0.921633
FDSR*PIS	1	-0.202159	1.596024	-0.127	0.8998	-0.084907
FDSR*FDSR	1	28.926837	17.522101	1.651	0.1066	1.275762

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, CHRONIC HEALTH PROBLEMS

$R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.273884	2.270707	1.442	0.1571	4.038021
PIS	1	-0.339972	1.015122	-0.335	0.7394	0.536537
CHP57	1	0.534895	0.796624	0.671	0.5058	-0.204451
PIS*PIS	1	0.185147	0.186831	0.991	0.3276	0.740590
CHP57*PIS	1	-0.037814	0.123212	-0.307	0.7605	-0.264700
CHP57*CHP57	1	-0.073954	0.079386	-0.932	0.3571	-0.905942

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, PERCEIVED HEALTH STATUS

R^2=0.12

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	10.883449	5.105184	2.132	0.0392	3.718385
PIS	1	-0.735779	1.254196	-0.587	0.5607	0.404950
PHS44	1	-3.263878	2.493976	-1.309	0.1981	-0.788553
PIS*PIS	1	0.169855	0.187209	0.907	0.3697	0.679421
PHS44*PIS	1	0.073954	0.241814	0.306	0.7613	0.221861
PHS44*PHS44	1	0.370038	0.319266	1.159	0.2533	0.832587

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, PERCEIVED ECONOMIC SECURITY

R^2=0.10

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.154936	3.282766	1.566	0.1255	3.609383
PIS	1	-0.378239	1.029489	-0.367	0.7153	0.416064
PEC60	1	-1.088283	2.727841	-0.399	0.6921	-0.287063
PIS*PIS	1	0.215951	0.199860	1.081	0.2866	0.863804
PEC60*PIS	1	-0.138766	0.402567	-0.345	0.7322	-0.277533
PEC60*PEC60	1	0.269688	0.642138	0.420	0.6768	0.269688

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, ECONOMIC DISADVANTAGE

R^2=0.15

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	28.543404	16.627167	1.717	0.0938	2.982162
PIS	1	0.508001	1.690448	0.301	0.7653	0.635097
ECDA	1	-10.516217	6.452878	-1.630	0.1110	-0.038499
PIS*PIS	1	0.212000	0.184010	1.152	0.2561	0.848001
ECDA*PIS	1	-0.207691	0.279237	-0.744	0.4614	-0.415381
ECDA*ECDA	1	1.089310	0.625254	1.742	0.0892	1.089310

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, INSTRUMENTAL SUPPORT, AGE

R^2=0.11

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	90.436802	97.018708	0.932	0.3568	3.446210
PIS	1	0.815766	3.845140	0.212	0.8331	0.276099
AGE	1	-2.333828	2.490171	-0.937	0.3543	0.482210
PIS*PIS	1	0.228823	0.198617	1.152	0.2561	0.915284
AGE*PIS	1	-0.020555	0.052262	-0.393	0.6962	-0.308324
AGE*AGE	1	0.015737	0.015877	0.985	0.3306	0.885205

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, SOCIAL COMPANIONSHIP, FUNCTIONAL DISABILITY

$R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	31.764154	25.930156	1.225	0.2277	4.253726
SCS	1	0.382877	2.671491	0.143	0.8868	0.220233
FDSR	1	-46.226083	43.192152	-1.070	0.2909	0.020508
SCS*SCS	1	-0.388213	0.320897	-1.210	0.2335	-0.873480
FDSR*SCS	1	0.767426	2.285944	0.336	0.7388	0.241739
FDSR*FDSR	1	18.666370	17.842410	1.046	0.3018	0.823187

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, SOCIAL COMPANIONSHIP, PERCEIVED HEALTH STATUS

$R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.170674	4.855897	1.683	0.1002	4.615715
SCS	1	2.258437	1.941366	1.163	0.2516	0.371154
PHS44	1	-2.758642	2.445054	-1.128	0.2659	-0.520064
SCS*SCS	1	-0.390848	0.311504	-1.255	0.2169	-0.878408
PHS44*SCS	1	-0.238559	0.397117	-0.603	0.5498	-0.538008
PHS44*PHS44	1	0.395896	0.335984	1.178	0.2456	0.890766

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, SOCIAL COMPANIONSHIP, PERCEIVED ECONOMIC SECURITY

$R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.174484	2.754472	2.242	0.0307	4.894299
SCS	1	0.935117	1.306392	0.716	0.4784	0.250930
PEC60	1	-1.574473	2.689639	-0.585	0.5617	-0.532516
SCS*SCS	1	-0.559483	0.349369	-1.601	0.1174	-1.258837
PEC60*SCS	1	0.455310	0.537589	0.847	0.4022	0.682964
PEC60*PEC60	1	0.089748	0.684262	0.131	0.8963	0.089748

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, SOCIAL COMPANIONSHIP, ECONOMIC DISADVANTAGE

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	28.068175	16.847608	1.666	0.1035	4.404366
SCS	1	2.077845	2.055818	1.011	0.3182	0.247100
ECDA	1	-9.744682	6.651742	-1.465	0.1507	-0.393646
SCS*SCS	1	-0.478513	0.321728	-1.487	0.1448	-1.076653
ECDA*SCS	1	-0.095535	0.363699	-0.263	0.7941	-0.143302
ECDA*ECDA	1	0.949434	0.648022	1.465	0.1507	0.949434

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, SOCIAL COMPANIONSHIP, AGE $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	33.709455	106.264924	0.317	0.7527	4.671420
SCS	1	7.139353	5.933043	1.203	0.2359	-0.048547
AGE	1	-0.943505	2.713309	-0.348	0.7289	0.424359
SCS*SCS	1	-0.359582	0.330134	-1.089	0.2826	-0.809060
AGE*SCS	1	-0.078619	0.076048	-1.034	0.3074	-0.884464
AGE*AGE	1	0.007213	0.017327	0.416	0.6794	0.405731

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, FUNCTIONAL DISABILITY $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	36.730827	25.568262	1.437	0.1586	3.417539
SNSCR	1	-0.132479	0.328322	-0.404	0.6887	-0.003481
FDSR	1	-53.964607	42.493988	-1.270	0.2114	0.160935
SNSCR*SNSCR	1	0.004088	0.004952	0.824	0.4149	0.690857
FDSR*SNSCR	1	-0.005601	0.248359	-0.0226	0.9821	-0.015292
FDSR*FDSR	1	22.655450	17.705891	1.280	0.2081	0.999105

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.692923	2.898694	1.619	0.1133	4.355130
SNSCR	1	-0.070322	0.219302	-0.321	0.7501	0.207694
CHP57	1	0.197159	0.850826	0.232	0.8179	-0.441765
SNSCR*SNSCR	1	0.002318	0.005144	0.451	0.6547	0.381795
CHP57*SNSCR	1	0.002136	0.022446	0.0952	0.9247	0.087188
CHP57*CHP57	1	-0.051384	0.082253	-0.625	0.5357	-0.629457

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	11.524672	5.241007	2.199	0.0337	3.835620
SNSCR	1	-0.115686	0.294979	-0.392	0.6970	0.266715
PHS44	1	-3.323321	2.453006	-1.355	0.1831	-0.912259
SNSCR*SNSCR	1	0.005268	0.005036	1.046	0.3018	0.890225
PHS44*SNSCR	1	-0.012256	0.053951	-0.227	0.8214	-0.238993
PHS44*PHS44	1	0.417643	0.359628	1.161	0.2524	0.939697

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, PERCEIVED ECONOMIC SECURITY

R^2=0.06

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.812600	3.688862	1.576	0.1232	3.854557
SNSCR	1	-0.048542	0.230659	-0.210	0.8344	0.124822
PEC60	1	-1.360149	2.787444	-0.488	0.6295	-0.266900
SNSCR*SNSCR	1	0.003668	0.005087	0.721	0.4752	0.619858
PEC60*SNSCR	1	-0.033281	0.052079	-0.639	0.5265	-0.432648
PEC60*PEC60	1	0.414755	0.626152	0.662	0.5116	0.414755

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, ECONOMIC DISADVANTAGE

R^2=0.

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	27.858685	17.181527	1.621	0.1128	3.453620
SNSCR	1	0.022223	0.310907	0.0715	0.9434	0.300807
ECDA	1	-9.755482	6.708877	-1.454	0.1537	-0.160776
SNSCR*SNSCR	1	0.003174	0.004918	0.645	0.5223	0.536417
ECDA*SNSCR	1	-0.021401	0.045690	-0.468	0.6420	-0.278207
ECDA*ECDA	1	0.995851	0.653131	1.525	0.1352	0.995851

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, TOTAL NETWORK SIZE, AGE

R^2=0.08

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	83.218925	99.760521	0.834	0.4091	3.781623
SNSCR	1	0.263114	0.651485	0.404	0.6885	0.105530
AGE	1	-2.173551	2.556014	-0.850	0.4002	0.480451
SNSCR*SNSCR	1	0.003167	0.005016	0.631	0.5314	0.535294
AGE*SNSCR	1	-0.004680	0.007731	-0.605	0.5484	-0.456285
AGE*AGE	1	0.014949	0.016374	0.913	0.3667	0.840908

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, FUNCTIONAL DISABILITY

R^2=0.07

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	35.034784	25.280197	1.386	0.1735	3.698418
SNF	1	-0.116672	0.404958	-0.288	0.7748	0.454537
FDSR	1	-51.806642	42.362785	-1.223	0.2285	0.127732
SNF*SNF	1	0.003088	0.010263	0.302	0.7643	0.278570
FDSR*SNF	1	0.082203	0.308293	0.267	0.7911	0.163986
FDSR*FDSR	1	21.302378	17.652149	1.207	0.2346	0.939435

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.056428	2.372974	1.709	0.0951	4.514038
SNF	1	0.018954	0.297770	0.0637	0.9496	0.428174
CHP57	1	0.200005	0.785760	0.255	0.8004	-0.457061
SNF*SNF	1	0.002003	0.010295	0.195	0.8467	0.180795
CHP57*SNF	1	-0.004558	0.031109	-0.147	0.8843	-0.151541
CHP57*CHP57	1	-0.040391	0.081711	-0.494	0.6238	-0.494793

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	10.987264	4.520003	2.431	0.0196	4.360652
SNF	1	0.173549	0.400324	0.434	0.6668	0.935165
PHS44	1	-3.830815	2.579327	-1.485	0.1453	-1.158124
SNF*SNF	1	0.001941	0.009607	0.202	0.8409	0.175151
PHS44*SNF	1	-0.033133	0.088314	-0.375	0.7055	-0.472148
PHS44*PHS44	1	0.486662	0.378343	1.286	0.2057	1.094989

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, PERCEIVED ECONOMIC SECURITY $R^2=0.04$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.576037	3.303063	1.991	0.0535	4.171742
SNF	1	-0.013731	0.318875	-0.0431	0.9658	0.408750
PEC60	1	-2.247339	2.875706	-0.781	0.4392	-0.310755
SNF*SNF	1	0.001035	0.010732	0.0964	0.9237	0.093382
PEC60*SNF	1	0.017514	0.073483	0.238	0.8129	0.166388
PEC60*PEC60	1	0.438170	0.644084	0.680	0.5003	0.438170

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, ECONOMIC DISADVANTAGE $R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	35.071840	17.149119	2.045	0.0475	3.543398
SNF	1	-0.157013	0.475926	-0.330	0.7432	0.534848
ECDA	1	-12.126178	6.818177	-1.778	0.0829	-0.273701
SNF*SNF	1	0.005590	0.009593	0.583	0.5633	0.504539
ECDA*SNF	1	0.019183	0.080288	0.238	0.8124	0.182235
ECDA*ECDA	1	1.165106	0.676325	1.723	0.0927	1.165106

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FAMILY NETWORK SIZE, AGE $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	87.676178	100.124411	0.876	0.3864	4.107050
SNF	1	0.208535	0.865400	0.239	0.8126	0.516636
AGE	1	-2.242988	2.569410	-0.873	0.3879	0.382617
SNF*SNF	1	0.000296	0.009718	0.0305	0.9759	0.026707
AGE*SNF	1	-0.002043	0.010542	-0.194	0.8473	-0.145595
AGE*AGE	1	0.014838	0.016463	0.907	0.3696	0.840288

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS NETWORK, FUNCTIONAL DISABILITY $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	35.568997	25.450342	1.398	0.1699	3.684114
SNFR	1	0.043229	0.438074	0.0987	0.9219	-0.268211
FDSR	1	-53.897664	42.708016	-1.262	0.2143	0.223702
SNFR*SNFR	1	0.002944	0.009851	0.299	0.7666	0.265682
FDSR*SNFR	1	-0.110150	0.351100	-0.314	0.7554	-0.219750
FDSR*FDSR	1	23.189873	17.779044	1.304	0.1996	1.022673

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS NETWORK, CHRONIC HEALTH PROBLEMS $R^2=0.04$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.370219	2.239153	1.952	0.0580	4.556327
SNFR	1	-0.014166	0.264656	-0.0535	0.9576	0.095984
CHP57	1	0.246050	0.792543	0.310	0.7578	-0.446298
SNFR*SNFR	1	0.001092	0.010198	0.107	0.9153	0.098537
CHP57*SNFR	1	0.000383	0.030957	0.0124	0.9902	0.012748
CHP57*CHP57	1	-0.053941	0.088119	-0.612	0.5439	-0.660781

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED HEALTH STATUS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	10.526594	5.174024	2.035	0.0486	4.124936
SNFR	1	-0.057646	0.362351	-0.159	0.8744	-0.062403
PHS44	1	-3.010715	2.495804	-1.206	0.2348	-0.682095
SNFR*SNFR	1	0.003598	0.009889	0.364	0.7179	0.324741
PHS44*SNFR	1	-0.006996	0.065024	-0.108	0.9149	-0.099691
PHS44*PHS44	1	0.375635	0.340457	1.103	0.2765	0.845178

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED ECONOMIC SECURITY

$R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.501884	3.239783	1.698	0.0974	3.880616
SNFR	1	0.063239	0.266015	0.238	0.8133	0.049882
PEC60	1	-1.679051	2.679566	-0.627	0.5346	-0.301797
SNFR*SNFR	1	0.007003	0.009981	0.702	0.4871	0.632024
PEC60*SNFR	1	-0.102526	0.083187	-1.232	0.2252	-0.973995
PEC60*PEC60	1	0.613444	0.629035	0.975	0.3355	0.613444

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS NETWORK, ECONOMIC DISADVANTAGE

$R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	23.389588	17.367069	1.347	0.1856	3.662619
SNFR	1	0.363762	0.432629	0.841	0.4054	0.210811
ECDA	1	-8.565905	6.734037	-1.272	0.2107	-0.135382
SNFR*SNFR	1	0.002532	0.009683	0.262	0.7950	0.228550
ECDA*SNFR	1	-0.078950	0.067215	-1.175	0.2471	-0.750028
ECDA*ECDA	1	0.925950	0.650478	1.423	0.1623	0.925950

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, FRIENDS/NEIGHBOURS, AGE

$R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	83.233730	101.336380	0.821	0.4163	3.951912
SNFR	1	0.472409	0.881543	0.536	0.5950	-0.144369
AGE	1	-2.162998	2.593044	-0.834	0.4091	0.413034
SNFR*SNFR	1	0.003816	0.009832	0.388	0.7000	0.344430
AGE*SNFR	1	-0.007326	0.011279	-0.650	0.5197	-0.521964
AGE*AGE	1	0.014806	0.016572	0.893	0.3769	0.832859

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, FUNCTIONAL DISABILITY

$R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	31.533602	24.624062	1.281	0.2077	4.023571
SCEDSCR	1	0.421120	1.421796	0.296	0.7686	0.654357
FDSR	1	-47.286324	41.848356	-1.130	0.2652	0.084908
SCEDSCR*SCEDSCR	1	-0.012081	0.112840	-0.107	0.9152	-0.075568
FDSR*SCEDSCR	1	-0.081754	1.212021	-0.0675	0.9466	-0.042921
FDSR*FDSR	1	19.791336	17.552272	1.128	0.2662	0.872798

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, CHRONIC HEALTH PROBLEMS

$R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.211050	1.767083	2.383	0.0220	4.857707
SCEDSCR	1	0.144664	0.637010	0.227	0.8215	0.768741
CHP57	1	0.197755	0.762828	0.259	0.7968	-0.329228
SCEDSCR*SCEDSCR	1	-0.023628	0.110356	-0.214	0.8315	-0.147676
CHP57*SCEDSCR	1	0.080278	0.095867	0.837	0.4074	0.702434
CHP57*CHP57	1	-0.070359	0.081827	-0.860	0.3950	-0.861902

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, PERCEIVED HEALTH STATUS

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	8.094687	5.742901	1.410	0.1664	4.422014
SCEDSCR	1	0.551378	1.329983	0.415	0.6807	0.872185
PHS44	1	-2.277386	2.691910	-0.846	0.4026	-0.696468
SCEDSCR*SCEDSCR	1	0.033391	0.114968	0.290	0.7730	0.208692
PHS44*SCEDSCR	1	-0.105559	0.277353	-0.381	0.7055	-0.395847
PHS44*PHS44	1	0.296712	0.338048	0.878	0.3853	0.667601

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, PERCEIVED ECONOMIC SECURITY

$R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.625149	2.855814	2.320	0.0257	4.196160
SCEDSCR	1	0.230423	0.839006	0.275	0.7850	0.835027
PEC60	1	-2.624694	2.645278	-0.992	0.3272	-0.509837
SCEDSCR*SCEDSCR	1	0.049544	0.121661	0.407	0.6861	0.309649
PEC60*SCEDSCR	1	-0.072066	0.353172	-0.204	0.8384	-0.180165
PEC60*PEC60	1	0.573755	0.629398	0.912	0.3676	0.573755

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, ECONOMIC DISADVANTAGE

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	26.359669	17.149891	1.537	0.1322	4.073535
SCEDSCR	1	-0.015623	1.282738	-0.0122	0.9903	0.661248
ECDA	1	-8.883526	6.690942	-1.328	0.1913	-0.145326
SCEDSCR*SCEDSCR	1	-0.007679	0.116574	-0.0659	0.9478	-0.047991
ECDA*SCEDSCR	1	0.063703	0.231316	0.275	0.7844	0.159258
ECDA*ECDA	1	0.858894	0.645514	1.331	0.1909	0.858894

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, EVERYDAY CONTACT, AGE $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	78.828372	97.501040	0.808	0.4236	4.272800
SCEDSCR	1	2.223355	3.055141	0.728	0.4710	0.650025
AGE	1	-2.032328	2.510753	-0.809	0.4230	0.211532
SCEDSCR*SCEDSCR	1	0.003511	0.111786	0.0314	0.9751	0.021042
AGE*SCEDSCR	1	-0.025560	0.039303	-0.650	0.5182	-0.475256
AGE*AGE	1	0.013706	0.016137	0.849	0.4008	0.776863

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT FUNCTIONAL DISABILITY $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	36.640014	25.080342	1.461	0.1519	3.394341
SCOWSCR	1	-0.662214	0.687538	-0.963	0.3413	-0.054978
FDSR	1	-52.320278	42.417234	-1.233	0.2246	0.146558
SCOWSCR*SCOWSCR	1	0.025260	0.023732	1.064	0.2935	0.909378
FDSR*SCOWSCR	1	0.289184	0.535719	0.540	0.5923	0.364385
FDSR*FDSR	1	21.191325	17.791806	1.191	0.2406	0.934537

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.067351	1.913314	3.171	0.0029	4.253583
SCOWSCR	1	-0.436023	0.355134	-1.228	0.2267	-0.116234
CHP57	1	-0.103224	0.782211	-0.132	0.8957	-0.533879
SCOWSCR*SCOWSCR	1	0.021857	0.024236	0.902	0.3726	0.786842
CHP57*SCOWSCR	1	0.044106	0.039369	1.120	0.2693	0.926223
CHP57*CHP57	1	-0.044850	0.081771	-0.548	0.5864	-0.549409

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT, PERCEIVED HEALTH STATUS $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	9.661201	5.095249	1.896	0.0652	3.989713
SCOWSCR	1	-0.225033	0.513814	-0.438	0.6638	-0.054881
PHS44	1	-2.400155	2.590411	-0.927	0.3597	-0.676009
SCOWSCR*SCOWSCR	1	0.022554	0.024753	0.911	0.3677	0.811950
PHS44*SCOWSCR	1	-0.015647	0.085245	-0.184	0.8553	-0.140822
PHS44*PHS44	1	0.291909	0.339604	0.860	0.3952	0.656786

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT, PERCEIVED ECONOMIC SECURITY

$R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	7.306779	3.082445	2.370	0.0228	3.794988
SCOWSCR	1	-0.371709	0.436843	-0.851	0.4000	-0.106215
PEC60	1	-1.838662	2.730535	-0.710	0.4819	-0.404884
SCOWSCR*SCOWSCR	1	0.026158	0.024457	1.070	0.2914	0.941676
PEC60*SCOWSCR	1	0.020057	0.110184	0.182	0.8565	0.120343
PEC60*PEC60	1	0.353359	0.631174	0.560	0.5788	0.353359

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT, ECONOMIC DISADVANTAGE

$R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	28.901521	17.441859	1.657	0.1053	3.578214
SCOWSCR	1	-0.567797	0.652906	-0.870	0.3897	-0.146701
ECDA	1	-9.200628	6.891126	-1.335	0.1894	-0.217898
SCOWSCR*SCOWSCR	1	0.020634	0.024331	0.848	0.4015	0.742807
ECDA*SCOWSCR	1	0.059149	0.097638	0.606	0.5481	0.354894
ECDA*ECDA	1	0.862774	0.669687	1.288	0.2050	0.862774

RESPONSE SURFACE FOR INTEREST IN EATING AND COOKING, ONCE/WEEK CONTACT, AGE

$R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	105.109017	98.215622	1.069	0.2913	3.629697
SCOWSCR	1	-0.167345	1.424489	-0.117	0.9071	-0.144724
AGE	1	-2.665102	2.549240	-1.045	0.3021	0.264731
SCOWSCR*SCOWSCR	1	0.025099	0.024123	1.040	0.3044	0.903567
AGE*SCOWSCR	1	-0.002038	0.017292	-0.118	0.9068	-0.091722
AGE*AGE	1	0.017501	0.016371	1.069	0.2915	0.984422

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, FUNCTIONAL DISABILITY

$R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-11.302073	9.732523	-1.161	0.2524	2.626465
PIFS	1	1.103512	0.926803	1.191	0.2408	-0.249094
FDSR	1	23.229144	16.327255	1.423	0.1626	-0.287468
PIFS*PIFS	1	-0.022572	0.114634	-0.197	0.8449	-0.050787
FDSR*PIFS	1	-0.983272	0.749544	-1.325	0.1927	-0.312881
FDSR*FDSR	1	-9.548814	6.723408	-1.420	0.1633	-0.421103

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, CHRONIC HEALTH PROBLEMS

$R^2=0.01$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.668159	0.694306	3.843	0.0004	2.480106
PIFS	1	0.085119	0.418593	0.203	0.8399	-0.056091
CHP57	1	-0.087448	0.306015	-0.286	0.7765	-0.141626
PIFS*PIFS	1	-0.022704	0.119234	-0.190	0.8499	-0.051084
CHP57*PIFS	1	-0.015543	0.060800	-0.256	0.7995	-0.081601
CHP57*CHP57	1	0.010043	0.032163	0.312	0.7565	0.123022

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, PERCEIVED HEALTH STATUS

$R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.088090	1.800024	0.0489	0.9612	2.484211
PIFS	1	-0.297148	0.614050	-0.484	0.6311	-0.171600
PHS44	1	1.215314	0.905845	1.342	0.1873	0.495413
PIFS*PIFS	1	-0.053187	0.113019	-0.471	0.6405	-0.119671
PHS44*PIFS	1	0.097803	0.134655	0.726	0.4718	0.220056
PHS44*PHS44	1	-0.147392	0.117921	-1.250	0.2186	-0.331632

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, PERCEIVED ECONOMIC SECURITY

$R^2=0.01$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.263746	1.307183	1.732	0.0912	2.503067
PIFS	1	0.117293	0.493463	0.238	0.8134	-0.032472
PEC60	1	0.110676	1.111585	0.0996	0.9212	0.056811
PIFS*PIFS	1	-0.023715	0.122156	-0.194	0.8471	-0.053359
PEC60*PIFS	1	-0.033898	0.174890	-0.194	0.8473	-0.050847
PEC60*PEC60	1	-0.000730	0.243341	-0.003	0.9976	-0.000730

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, ECONOMIC DISADVANTAGE $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-1.316248	6.545543	-0.201	0.8416	2.635684
PIFS	1	-0.990855	0.855263	-1.159	0.2535	-0.152105
ECDA	1	1.853500	2.550192	0.766	0.4482	-0.045020
PIFS*PIFS	1	0.021260	0.117403	0.181	0.8572	0.047835
ECDA*PIFS	1	0.165154	0.139639	1.183	0.2439	0.247732
ECDA*ECDA	1	-0.224625	0.245752	-0.914	0.3662	-0.224625

RESPONSE SURFACE FOR AVOIDING MONOTONY, INFORMATIONAL SUPPORT, AGE $R^2=0.07$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-1.261923	38.114672	-0.0331	0.9738	2.490174
PIFS	1	-3.499166	2.388750	-1.465	0.1508	0.067858
AGE	1	0.158538	0.975230	0.163	0.8717	0.038558
PIFS*PIFS	1	0.075002	0.136184	0.551	0.5849	0.158755
AGE*PIFS	1	0.042831	0.028888	1.483	0.1460	0.481848
AGE*AGE	1	-0.001404	0.006228	-0.225	0.8228	-0.078983

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, FUNCTIONAL DISABILITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-3.728291	8.963534	-0.416	0.6797	2.296206
PIS	1	-0.601766	0.734591	-0.819	0.4175	0.236385
FDSR	1	11.715984	15.322590	0.765	0.4490	-0.201357
PIS*PIS	1	0.081145	0.069893	1.161	0.2525	0.324582
FDSR*PIS	1	0.326757	0.593018	0.551	0.5847	0.137238
FDSR*FDSR	1	-5.507579	6.510504	-0.846	0.4026	-0.242884

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, CHRONIC HEALTH PROBLEMS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.545750	0.851643	2.989	0.0048	2.205943
PIS	1	-0.294994	0.380728	-0.775	0.4430	0.155011
CHP57	1	-0.045347	0.298779	-0.152	0.8801	-0.085824
PIS*PIS	1	0.093285	0.070072	1.331	0.1906	0.373138
CHP57*PIS	1	-0.000183	0.046211	-0.004	0.9969	-0.001281
CHP57*CHP57	1	0.003023	0.029774	0.102	0.9196	0.037035

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, PERCEIVED HEALTH STATUS $R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-0.270060	1.811673	-0.149	0.8822	2.186170
PIS	1	-0.380346	0.445076	-0.855	0.3978	0.118334
PHS44	1	1.305478	0.885035	1.475	0.1480	0.422418
PIS*PIS	1	0.096257	0.066435	1.449	0.1552	0.385027
PHS44*PIS	1	0.015567	0.085812	0.181	0.8570	0.046702
PHS44*PHS44	1	-0.150714	0.113298	-1.330	0.1810	-0.339107

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, PERCEIVED ECONOMIC SECURITY $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.859863	1.226544	1.516	0.1375	2.243909
PIS	1	-0.227148	0.383481	-0.592	0.5570	0.172789
PEC60	1	0.457892	1.016111	0.451	0.6548	0.066906
PIS*PIS	1	0.092939	0.074447	1.248	0.2193	0.371756
PEC60*PIS	1	-0.029106	0.149955	-0.194	0.8471	-0.058213
PEC60*PEC60	1	-0.083193	0.239194	-0.348	0.7299	-0.083193

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, ECONOMIC DISADVANTAGE $R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-1.373053	6.257653	-0.219	0.8274	2.372191
PIS	1	-0.532176	0.536202	-0.994	0.3264	0.101907
ECDA	1	1.784960	2.428548	0.735	0.4666	-0.054373
PIS*PIS	1	0.086855	0.069252	1.254	0.2171	0.347418
ECDA*PIS	1	0.067142	0.105081	0.639	0.5265	0.134285
ECDA*ECDA	1	-0.197362	0.235315	-0.839	0.4066	-0.197362

RESPONSE SURFACE FOR AVOIDING MONOTONY, INSTRUMENTAL SUPPORT, AGE $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-13.417918	35.510804	-0.378	0.7075	2.263821
PIS	1	-1.768685	1.407389	-1.257	0.2161	0.265837
AGE	1	0.473067	0.911453	0.519	0.6056	-0.196230
PIS*PIS	1	0.069984	0.072698	0.963	0.3415	0.279938
AGE*PIS	1	0.020925	0.019129	1.094	0.2806	0.313871
AGE*AGE	1	-0.003491	0.005848	-0.597	0.5539	-0.195360

RESPONSE SURFACE FOR AVOIDING MONOTONY, TOTAL NETWORK SIZE, CHRONIC HEALTH PROBLEMS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.588054	1.048867	3.420	0.0015	2.182562
SNSCR	1	-0.128878	0.070338	-1.824	0.1121	-0.182727
CHP57	1	-0.114052	0.307805	-0.371	0.7129	-0.037910
SNSCR*SNSCR	1	0.003664	0.001861	1.969	0.0559	0.619198
CHP57*SNSCR	1	-0.002786	0.008120	-0.343	0.7334	-0.125742
CHP57*CHP57	1	0.021511	0.029757	0.723	0.4740	0.263505

RESPONSE SURFACE FOR AVOIDING MONOTONY, TOTAL NETWORK SIZE, PERCEIVED HEALTH STATUS $R^2=0.17$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.322437	1.850825	0.174	0.8626	2.258686
SNSCR	1	-0.072053	0.104170	-0.692	0.4931	-0.096174
PHS44	1	1.230894	0.855262	1.421	0.1631	0.390447
SNSCR*SNSCR	1	0.002883	0.001778	1.621	0.1128	0.487269
PHS44*SNSCR	1	-0.009536	0.019052	-0.501	0.8195	-0.185947
PHS44*PHS44	1	-0.115498	0.127000	-0.909	0.3686	-0.258871

RESPONSE SURFACE FOR AVOIDING MONOTONY, TOTAL NETWORK SIZE, PERCEIVED ECONOMIC SECURITY $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.074512	1.350599	2.276	0.0284	2.243203
SNSCR	1	-0.126208	0.084451	-1.494	0.1431	-0.154682
PEC60	1	0.262445	1.024225	0.256	0.7991	0.080153
SNSCR*SNSCR	1	0.003479	0.001863	1.868	0.0693	0.587876
PEC60*SNSCR	1	-0.001991	0.019088	-0.104	0.9174	-0.025881
PEC60*PEC60	1	-0.037112	0.229252	-0.162	0.8722	-0.037112

RESPONSE SURFACE FOR AVOIDING MONOTONY, TOTAL NETWORK SIZE, AGE $R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-16.265294	35.884491	-0.453	0.6528	2.278080
SNSCR	1	-0.359820	0.234343	-1.535	0.1325	-0.157712
AGE	1	0.573552	0.919414	0.624	0.5363	-0.100483
SNSCR*SNSCR	1	0.003902	0.001804	2.163	0.0366	0.659458
AGE*SNSCR	1	0.002774	0.002781	0.998	0.3245	0.270504
AGE*AGE	1	-0.004091	0.005890	-0.695	0.4813	-0.230122

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, FUNCTIONAL DISABILITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-5.093772	9.058852	-0.672	0.5055	2.846559
SNF	1	-0.172421	0.145272	-1.187	0.2423	0.299724
FDSR	1	15.430493	15.196948	1.081	0.2851	-0.159820
SNF*SNF	1	0.000237	0.003682	0.0643	0.9490	0.021365
FDSR*SNF	1	0.164462	0.110595	1.487	0.1448	0.328102
FDSR*FDSR	1	-7.817519	6.332416	-1.235	0.2242	-0.344753

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, CHRONIC HEALTH PROBLEMS $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.195670	0.886870	2.476	0.0176	2.473388
SNF	1	0.055481	0.111288	0.499	0.6208	0.233291
CHP57	1	-0.043873	0.293568	-0.149	0.8820	-0.131406
SNF*SNF	1	-0.000298	0.003848	-0.0773	0.9387	-0.026859
CHP57*SNF	1	-0.007050	0.011627	-0.606	0.5477	-0.234406
CHP57*CHP57	1	0.011479	0.030539	0.376	0.7090	0.140615

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, PERCEIVED HEALTH STATUS $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-0.273137	1.664156	-0.164	0.8705	2.436402
SNF	1	-0.001855	0.147390	-0.0126	0.9900	0.101427
PHS44	1	1.246002	0.948646	1.312	0.1970	0.413761
SNF*SNF	1	0.000685	0.003537	0.194	0.8474	0.061847
PHS44*SNF	1	-0.000531	0.032515	-0.0163	0.9870	-0.007571
PHS44*PHS44	1	-0.137788	0.139297	-0.989	0.3285	-0.310045

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, PERCEIVED ECONOMIC SECURITY $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.136200	1.229217	1.738	0.0901	2.489284
SNF	1	0.006413	0.118668	0.0540	0.9572	0.227450
PEC60	1	0.102086	1.070178	0.0954	0.9245	0.081625
SNF*SNF	1	0.000492	0.003994	0.123	0.9026	0.044378
PEC60*SNF	1	0.003602	0.027346	0.132	0.8959	0.034214
PEC60*PEC60	1	-0.012072	0.239592	-0.0504	0.9601	-0.012072

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, ECONOMIC DISADVANTAGE $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-2.588984	6.816217	-0.394	0.6955	2.654599
SNF	1	-0.056464	0.180840	-0.312	0.7565	0.117730
ECDA	1	2.180853	2.590729	0.846	0.4028	-0.008969
SNF*SNF	1	-0.000305	0.003645	-0.0836	0.9338	-0.027504
ECDA*SNF	1	0.015051	0.030508	0.493	0.6245	0.142988
ECDA*ECDA	1	-0.235786	0.258986	-0.818	0.3644	-0.235786

RESPONSE SURFACE FOR AVOIDING MONOTONY, FAMILY NETWORK, AGE $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-16.921831	37.527636	-0.451	0.6545	2.641386
SNF	1	-0.151217	0.324360	-0.466	0.6436	0.196015
AGE	1	0.524837	0.963041	0.545	0.5887	-0.037242
SNF*SNF	1	0.000892	0.003642	0.190	0.8503	0.062439
AGE*SNF	1	0.002030	0.003951	0.514	0.6102	0.144634
AGE*AGE	1	-0.003556	0.006170	-0.576	0.5676	-0.200038

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, FUNCTIONAL DISABILITY $R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-4.650897	8.988201	-0.517	0.6077	2.386828
SNFR	1	-0.248645	0.154713	-1.607	0.1159	-0.147327
FDSR	1	14.859150	15.083028	0.985	0.3305	-0.196204
SNFR*SNFR	1	0.006248	0.003478	1.796	0.0801	0.563886
FDSR*SNFR	1	0.084238	0.123987	0.679	0.5008	0.168055
FDSR*FDSR	1	-5.851718	5.278857	-1.098	0.2789	-0.303825

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, CHRONIC HEALTH PROBLEMS $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.266585	0.802903	4.068	0.0002	2.213987
SNFR	1	-0.137187	0.094899	-1.446	0.1561	-0.301836
CHP57	1	-0.096610	0.284186	-0.340	0.7357	0.006787
SNFR*SNFR	1	0.008056	0.003657	1.656	0.1055	0.546528
CHP57*SNFR	1	-0.006210	0.011100	-0.559	0.5780	-0.208481
CHP57*CHP57	1	0.023393	0.031597	0.740	0.4634	0.288570

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED HEALTH STATUS

$R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-0.137325	1.788052	-0.0777	0.8385	2.259776
SNFR	1	-0.088972	0.123821	-0.719	0.4766	-0.163116
PHS44	1	1.393617	0.852859	1.634	0.1101	0.441873
SNFR*SNFR	1	0.005776	0.003378	1.709	0.0952	0.521267
PHS44*SNFR	1	-0.014140	0.022220	-0.636	0.5282	-0.201495
PHS44*PHS44	1	-0.136785	0.118340	-1.167	0.2500	-0.305538

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED ECONOMIC SECURITY

$R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.798973	1.176310	2.379	0.0223	2.243139
SNFR	1	-0.112984	0.096585	-1.170	0.2492	-0.251127
PEC60	1	0.082811	0.972905	0.0851	0.9326	0.093302
SNFR*SNFR	1	0.006742	0.003624	1.860	0.0704	0.608487
PEC60*SNFR	1	-0.027518	0.030204	-0.911	0.3678	-0.261427
PEC60*PEC60	1	0.074859	0.228392	0.328	0.7448	0.074859

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, ECONOMIC DISADVANTAGE

$R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-4.883209	6.250277	-0.783	0.4383	2.478337
SNFR	1	-0.066385	0.155700	-0.426	0.6721	-0.254735
ECDA	1	3.154529	2.423529	1.302	0.2005	-0.010183
SNFR*SNFR	1	0.005884	0.003485	1.688	0.0991	0.531040
ECDA*SNFR	1	-0.016789	0.024190	-0.694	0.4914	-0.159592
ECDA*ECDA	1	-0.298833	0.234102	-1.277	0.2091	-0.298833

RESPONSE SURFACE FOR AVOIDING MONOTONY, FRIENDS/NEIGHBOURS NETWORK, AGE

$R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-15.795382	36.542876	-0.460	0.6483	2.349186
SNFR	1	-0.282071	0.317894	-0.887	0.3802	-0.245542
AGE	1	0.543399	0.935078	0.581	0.5644	-0.057214
SNFR*SNFR	1	0.006225	0.003546	1.756	0.0858	0.561768
AGE*SNFR	1	0.001619	0.004067	0.398	0.6926	0.115386
AGE*AGE	1	-0.003665	0.006976	-0.813	0.5432	-0.208141

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, FUNCTIONAL DISABILITY $R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-7.541454	8.058884	-0.832	0.4101	2.472370
SCEDSCR	1	-0.810480	0.523061	-1.167	0.2501	0.107357
FDSR	1	18.401004	15.395487	1.195	0.2380	-0.142089
SCEDSCR*SCEDSCR	1	0.063498	0.041512	1.530	0.1340	0.395863
FDSR*SCEDSCR	1	0.277630	0.445887	0.623	0.5371	0.145756
FDSR*FDSR	1	-8.170121	6.457262	-1.265	0.2131	-0.360302

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.861151	0.681999	4.195	0.0001	2.261354
SCEDSCR	1	-0.288682	0.245852	-1.174	0.2473	-0.009788
CHP57	1	-0.103373	0.294411	-0.351	0.7273	-0.126286
SCEDSCR*SCEDSCR	1	0.063868	0.042591	1.500	0.1416	0.389177
CHP57*SCEDSCR	1	-0.009880	0.037000	-0.267	0.7908	-0.086447
CHP57*CHP57	1	0.013141	0.031581	0.416	0.8795	0.160883

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, PERCEIVED HEALTH STATUS $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.286485	2.091855	0.137	0.8918	2.297261
SCEDSCR	1	-0.253723	0.484470	-0.524	0.6034	0.006897
PHS44	1	1.054158	0.980577	1.075	0.2888	0.411175
SCEDSCR*SCEDSCR	1	0.046059	0.041879	1.100	0.2780	0.287869
PHS44*SCEDSCR	1	0.007482	0.101031	0.0741	0.9413	0.028057
PHS44*PHS44	1	-0.114107	0.123140	-0.927	0.3597	-0.256740

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.05$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.877578	1.088584	2.643	0.0118	2.268948
SCEDSCR	1	-0.315270	0.319814	-0.986	0.3303	0.000826
PEC60	1	-0.245997	1.008331	-0.244	0.8085	0.031042
SCEDSCR*SCEDSCR	1	0.061234	0.046375	1.320	0.1944	0.382712
PEC60*SCEDSCR	1	0.004718	0.134523	0.0350	0.9722	0.011789
PEC60*PEC60	1	0.066312	0.238815	0.278	0.7837	0.066312

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, ECONOMIC DISADVANTAGE $R^2=0.09$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-5.163742	6.394955	-0.807	0.4242	2.450981
SCEDSCR	1	-0.017480	0.478315	-0.0365	0.9710	0.038316
ECDA	1	3.031137	2.494959	1.215	0.2315	0.016220
SCEDSCR*SCEDSCR	1	0.065333	0.043489	1.503	0.1407	0.408330
ECDA*SCEDSCR	1	-0.058832	0.086254	-0.683	0.4984	-0.147329
ECDA*ECDA	1	-0.286759	0.240703	-1.191	0.2405	-0.286759

RESPONSE SURFACE FOR AVOIDING MONOTONY, EVERYDAY CONTACT, AGE $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-26.007090	35.450993	-0.734	0.4675	2.366441
SCEDSCR	1	1.659978	1.110837	1.494	0.1429	-0.025722
AGE	1	0.695614	0.912900	0.763	0.4498	-0.132070
SCEDSCR*SCEDSCR	1	0.066139	0.040545	1.627	0.1115	0.413369
AGE*SCEDSCR	1	-0.025819	0.014291	-1.807	0.0783	-0.464104
AGE*AGE	1	-0.004191	0.005868	-0.714	0.4792	-0.235770

RESPONSE SURFACE FOR AVOIDING MONOTONY, ONCE/WEEK CONTACT, FUNCTIONAL DISABILITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-6.190091	9.027514	-0.686	0.4969	2.402420
SCOWSCR	1	-0.436383	0.247475	-1.771	0.0841	0.050397
FDSR	1	17.282719	15.257821	1.132	0.2644	-0.199095
SCOWSCR*SCOWSCR	1	0.014188	0.008542	1.661	0.1046	0.510754
FDSR*SCOWSCR	1	0.228538	0.192829	1.185	0.2429	0.287858
FDSR*FDSR	1	-8.100008	6.404051	-1.265	0.2133	-0.357210

RESPONSE SURFACE FOR AVOIDING MONOTONY, ONCE/WEEK CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.11$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.365001	0.703464	3.362	0.0017	2.249277
SCOWSCR	1	-0.110488	0.130571	-0.846	0.4026	-0.115598
CHP57	1	0.135882	0.287594	0.472	0.6392	0.071368
SCOWSCR*SCOWSCR	1	0.013654	0.008911	1.532	0.1333	0.491547
CHP57*SCOWSCR	1	-0.020756	0.014475	-1.434	0.1584	-0.435882
CHP57*CHP57	1	0.001282	0.030054	0.0430	0.9659	0.015831

RESPONSE SURFACE FOR AVOIDING MONOTONY, ONCE/WEEK CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.06$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.788607	1.141942	2.442	0.0192	2.292895
SCOWSCR	1	-0.222027	0.161836	-1.372	0.1779	-0.163201
PEC60	1	0.208135	1.011571	0.206	0.8381	0.043834
SCOWSCR*SCOWSCR	1	0.014166	0.009060	1.564	0.1260	0.509878
PEC60*SCOWSCR	1	0.012417	0.040823	0.304	0.7626	0.074501
PEC60*PEC60	1	-0.059701	0.233829	-0.255	0.7998	-0.059701

RESPONSE SURFACE FOR AVOIDING MONOTONY, ONCE/WEEK CONTACT, ECONOMIC DISADVANTAGE $R^2=0.10$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-6.213834	6.490608	-0.957	0.3444	2.462745
SCOWSCR	1	-0.167085	0.243710	-0.686	0.4971	-0.067049
ECDA	1	3.738393	2.565032	1.457	0.1532	-0.034703
SCOWSCR*SCOWSCR	1	0.015628	0.010407	1.502	0.1415	0.472736
ECDA*SCOWSCR	1	-0.009653	0.037358	-0.258	0.7975	-0.053092
ECDA*ECDA	1	-0.371035	0.248588	-1.493	0.1438	-0.371035

RESPONSE SURFACE FOR AVOIDING MONOTONY, ONCE/WEEK CONTACT, AGE $R^2=0.08$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-14.784215	36.499998	-0.405	0.8876	2.325116
SCOWSCR	1	0.132052	0.524049	0.252	0.8023	-0.122318
AGE	1	0.445411	0.937829	0.475	0.6374	-0.093936
SCOWSCR*SCOWSCR	1	0.013430	0.008875	1.513	0.1381	0.483486
AGE*SCOWSCR	1	-0.004046	0.008362	-0.536	0.5283	-0.182090
AGE*AGE	1	-0.002798	0.005023	-0.465	0.8448	-0.157376

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, PERCEIVED HEALTH STATUS R^2=0.15

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.118848	1.887300	0.593	0.5563	2.853238
SNSCR	1	0.057763	0.106223	0.544	0.5896	0.359221
PHS44	1	0.350792	0.853334	0.397	0.6934	0.337408
SNSCR*SNSCR	1	-0.000030864	0.001813	-0.0170	0.9865	-0.005216
PHS44*SNSCR	1	-0.008309	0.019428	-0.428	0.6712	-0.162024
PHS44*PHS44	1	0.002200	0.128503	0.0170	0.9865	0.004950

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, PERCEIVED ECONOMIC SECURITY R^2=0.15

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.874185	1.287936	1.444	0.1567	2.865257
SNSCR	1	-0.004805	0.081158	-0.0592	0.9531	0.273388
PEC60	1	0.589188	0.884288	0.599	0.5529	0.263995
SNSCR*SNSCR	1	0.001066	0.001790	0.596	0.5549	0.180179
PEC60*SNSCR	1	-0.005208	0.018324	-0.284	0.7778	-0.067702
PEC60*PEC60	1	-0.059167	0.220313	-0.269	0.7897	-0.059167

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, ECONOMIC DISADVANTAGE R^2=0.16

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.477396	6.154045	0.728	0.4711	2.869379
SNSCR	1	0.126213	0.111360	1.133	0.2638	0.411962
ECDA	1	-1.072503	2.402872	-0.446	0.6578	-0.107574
SNSCR*SNSCR	1	0.000490	0.001761	0.278	0.7822	0.082857
ECDA*SNSCR	1	-0.022239	0.016365	-1.359	0.1818	-0.289103
ECDA*ECDA	1	0.134299	0.233937	0.574	0.5691	0.134299

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, AGE R^2=0.24

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	51.496525	33.726220	1.527	0.1347	2.770187
SNSCR	1	-0.207300	0.220249	-0.941	0.3522	0.315289
AGE	1	-1.156132	0.864118	-1.338	0.1885	-0.458773
SNSCR*SNSCR	1	0.000577	0.001695	0.340	0.7354	0.097521
AGE*SNSCR	1	0.002735	0.002814	1.045	0.3017	0.266828
AGE*AGE	1	0.005784	0.005536	1.222	0.2289	0.380494

RESPONSE SURFACE FOR APPETITE, FAMILY NETWORK SIZE, PERCEIVED HEALTH STATUS R^2=0.18

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.857283	1.616476	1.025	0.3114	3.082663
SNF	1	0.100856	0.143167	0.704	0.4852	0.375643
PHS44	1	0.219776	0.922437	0.238	0.8129	0.260301
SNF*SNF	1	-0.002702	0.003436	-0.786	0.4362	-0.243872
PHS44*SNF	1	-0.001305	0.031583	-0.0413	0.8672	-0.018803
PHS44*PHS44	1	-0.004648	0.135306	-0.0344	0.9728	-0.010458

RESPONSE SURFACE FOR APPETITE, FAMILY NETWORK SIZE, PERCEIVED ECONOMIC SECURITY R^2=0.20

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.384717	1.117905	1.239	0.2228	3.127722
SNF	1	0.126835	0.107922	1.175	0.2470	0.437657
PEC60	1	0.561450	0.973269	0.577	0.5673	0.273807
SNF*SNF	1	-0.002410	0.003632	-0.664	0.5109	-0.217528
PEC60*SNF	1	-0.015075	0.024870	-0.606	0.5479	-0.143212
PEC60*PEC60	1	-0.032338	0.217987	-0.148	0.8828	-0.032338

RESPONSE SURFACE FOR APPETITE, FAMILY NETWORK SIZE, ECONOMIC DISADVANTAGE R^2=0.18

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	6.887459	6.162789	1.118	0.2704	3.140497
SNF	1	0.156157	0.171031	0.913	0.3657	0.483310
ECDA	1	-1.727213	2.450212	-0.705	0.4849	-0.208548
SNF*SNF	1	-0.002388	0.003448	-0.693	0.4925	-0.215521
ECDA*SNF	1	-0.010816	0.028853	-0.375	0.7097	-0.102753
ECDA*ECDA	1	0.163223	0.243047	0.672	0.5057	0.163223

RESPONSE SURFACE FOR APPETITE, FAMILY NETWORK SIZE, AGE R^2=0.27

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	50.303274	33.092561	1.520	0.1364	3.021141
SNF	1	-0.213333	0.286027	-0.746	0.4601	0.397063
AGE	1	-1.149917	0.849227	-1.354	0.1833	-0.352701
SNF*SNF	1	-0.002392	0.003212	-0.745	0.4608	-0.215885
AGE*SNF	1	0.003840	0.003484	1.131	0.2649	0.280733
AGE*AGE	1	0.006849	0.005441	1.259	0.2155	0.385229

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS NETWORK, CHRONIC HEALTH PROBLEMS R^2=0.26

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.763043	0.737806	3.745	0.0006	3.042317
SNFR	1	0.053438	0.087205	0.613	0.5435	0.230671
CHP57	1	0.034745	0.261145	0.133	0.8948	-0.379108
SNFR*SNFR	1	0.001118	0.003360	0.332	0.7416	0.100704
CHP57*SNFR	1	-0.015026	0.010200	-1.473	0.1486	-0.489598
CHP57*CHP57	1	0.002101	0.029035	0.0724	0.9427	0.025737

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED HEALTH STATUS R^2=0.13

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	1.647218	1.848921	0.891	0.3783	2.799182
SNFR	1	-0.051172	0.129485	-0.395	0.6948	0.145623
PHS44	1	0.507620	0.891867	0.569	0.5724	0.387261
SNFR*SNFR	1	0.003045	0.003534	0.862	0.3940	0.274838
PHS44*SNFR	1	0.000728	0.023236	0.0313	0.9752	0.010378
PHS44*PHS44	1	-0.036728	0.121661	-0.302	0.7643	-0.082837

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS NETWORK, PERCEIVED ECONOMIC SECURITY R^2=0.13

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.299967	1.157720	1.987	0.0540	2.803862
SNFR	1	-0.039101	0.095059	-0.411	0.6831	0.163191
PEC60	1	0.374557	0.957529	0.391	0.6978	0.244435
SNFR*SNFR	1	0.004565	0.003567	1.280	0.2082	0.411964
PEC60*SNFR	1	-0.019780	0.029727	-0.666	0.5095	-0.188002
PEC60*PEC60	1	0.019417	0.224783	0.0864	0.9316	0.019417

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS NETWORK, ECONOMIC DISADVANTAGE R^2=0.13

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.408373	6.332885	0.538	0.5934	2.885869
SNFR	1	0.162283	0.157757	1.029	0.3098	0.252010
ECDA	1	-0.519441	2.455552	-0.212	0.8335	-0.094144
SNFR*SNFR	1	0.003047	0.003531	0.863	0.3933	0.274987
ECDA*SNFR	1	-0.038948	0.024510	-1.630	0.1110	-0.378510
ECDA*ECDA	1	0.084476	0.237195	0.356	0.7236	0.084476

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS NETWORK, AGE R^2=0.19

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	46.072550	35.129064	1.312	0.1972	2.780024
SNFR	1	-0.073331	0.305594	-0.240	0.8116	0.162814
AGE	1	-1.055498	0.898899	-1.174	0.2473	-0.409731
SNFR*SNFR	1	0.003122	0.003408	0.916	0.3651	0.281775
AGE*SNFR	1	0.000321	0.003910	0.0822	0.8349	0.022895
AGE*AGE	1	0.006435	0.005745	1.120	0.2693	0.381894

RESPONSE SURFACE FOR APPETITE, EVERYDAY CONTACT, CHRONIC HEALTH PROBLEMS R^2=0.21

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.711701	0.631572	5.877	0.0000	2.944595
SCEDSCR	1	-0.151329	0.227673	-0.665	0.5101	0.035272
CHP57	1	-0.168953	0.272642	-0.623	0.5386	-0.596327
SCEDSCR*SCEDSCR	1	0.050795	0.039442	1.288	0.2052	0.317468
CHP57*SCEDSCR	1	-0.025295	0.034284	-0.738	0.4647	-0.221341
CHP57*CHP57	1	0.008973	0.029246	0.307	0.7606	0.108925

RESPONSE SURFACE FOR APPETITE, EVERYDAY CONTACT, PERCEIVED HEALTH STATUS R^2=0.15

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.759010	2.092611	0.363	0.7187	2.823855
SCEDSCR	1	0.343587	0.484599	0.709	0.4824	0.249065
PHS44	1	0.647838	0.980837	0.660	0.5127	0.323238
SCEDSCR*SCEDSCR	1	0.042185	0.041890	1.007	0.3202	0.263529
PHS44*SCEDSCR	1	-0.129938	0.101058	-1.286	0.2059	-0.487269
PHS44*PHS44	1	-0.015357	0.123173	-0.125	0.9014	-0.034554

RESPONSE SURFACE FOR APPETITE, EVERYDAY CONTACT, PERCEIVED ECONOMIC SECURITY R^2=0.10

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.734843	1.052118	2.599	0.0131	2.788575
SCEDSCR	1	-0.214717	0.309100	-0.695	0.4914	0.045359
PEC60	1	0.107306	0.974554	0.110	0.9129	0.189643
SCEDSCR*SCEDSCR	1	0.055185	0.044822	1.455	0.1538	0.407487
PEC60*SCEDSCR	1	-0.046357	0.130113	-0.356	0.7236	-0.115892
PEC60*PEC60	1	0.048557	0.231878	0.214	0.8319	0.048557

RESPONSE SURFACE FOR APPETITE, EVERYDAY CONTACT, AGE $R^2=0.16$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	42.238836	35.182248	1.201	0.2370	2.779801
SCEDSCR	1	0.299713	1.102416	0.272	0.7871	0.018767
AGE	1	-0.971312	0.905978	-1.072	0.2901	-0.426858
SCEDSCR*SCEDSCR	1	0.043767	0.040337	1.085	0.2844	0.273544
AGE*SCEDSCR	1	-0.006589	0.014182	-0.465	0.6447	-0.123542
AGE*AGE	1	0.006006	0.005823	1.031	0.3085	0.337815

RESPONSE SURFACE FOR APPETITE, ONCE/WEEK CONTACT, CHRONIC HEALTH PROBLEMS $R^2=0.21$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.196946	0.666957	4.793	0.0000	3.084157
SCOWSCR	1	0.065364	0.123795	0.528	0.5004	0.176438
CHP57	1	-0.083377	0.272669	-0.306	0.7614	-0.502378
SCOWSCR*SCOWSCR	1	0.000702	0.008449	0.0831	0.9342	0.025264
CHP57*SCOWSCR	1	-0.012680	0.013723	-0.924	0.3611	-0.288272
CHP57*CHP57	1	0.002274	0.028504	0.0798	0.8368	0.027858

RESPONSE SURFACE FOR APPETITE, ONCE/WEEK CONTACT, PERCEIVED HEALTH STATUS $R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.053367	1.829823	1.122	0.2685	2.828326
SCOWSCR	1	-0.142641	0.184497	-0.773	0.4440	0.050574
PHS44	1	0.401710	0.930148	0.432	0.6681	0.402517
SCOWSCR*SCOWSCR	1	0.005737	0.008888	0.646	0.5223	0.208546
PHS44*SCOWSCR	1	0.023968	0.030809	0.783	0.4382	0.215712
PHS44*PHS44	1	-0.039596	0.121843	-0.325	0.7471	-0.089092

RESPONSE SURFACE FOR APPETITE, ONCE/WEEK CONTACT, PERCEIVED ECONOMIC SECURITY $R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.731710	1.096887	2.490	0.0171	2.883167
SCOWSCR	1	-0.129522	0.155451	-0.833	0.4098	0.136031
PEC60	1	0.223562	0.971660	0.230	0.8192	0.248447
SCOWSCR*SCOWSCR	1	0.007189	0.008703	0.826	0.4138	0.258785
PEC60*SCOWSCR	1	0.032965	0.039213	0.841	0.4057	0.197788
PEC60*PEC60	1	-0.043226	0.224803	-0.192	0.8484	-0.043225

RESPONSE SURFACE FOR
APPETITE, ONCE/WEEK CONTACT, ECONOMIC DISADVANTAGE
R^2=0.06

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	4.884018	6.579139	0.742	0.4622	2.849367
SCOWSCR	1	-0.026183	0.246279	-0.106	0.9159	0.135558
ECDA	1	-0.531126	2.599360	-0.243	0.8094	-0.138427
SCOWSCR*SCOWSCR	1	0.006107	0.009178	0.665	0.5096	0.219856
ECDA*SCOWSCR	1	-0.004902	0.036829	-0.133	0.8948	-0.029412
ECDA*ECDA	1	0.052211	0.252609	0.207	0.8373	0.052211

RESPONSE SURFACE FOR
APPETITE, ONCE/WEEK CONTACT, AGE
R^2=0.21

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	48.807387	34.123073	1.430	0.1604	2.719805
SCOWSCR	1	0.152533	0.489922	0.311	0.7572	0.150403
AGE	1	-1.141927	0.876756	-1.302	0.2002	-0.458850
SCOWSCR*SCOWSCR	1	0.009587	0.008297	1.156	0.2547	0.345147
AGE*SCOWSCR	1	-0.003128	0.005847	-0.535	0.6017	-0.140815
AGE*AGE	1	0.007094	0.005631	1.260	0.2150	0.399020

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APPENDIX K
SIGNIFICANT REGRESSION RESULTS

AND THREE-WAY CROSS TABULATIONS

ABBREVIATIONS OF VARIABLES

AAF=DIET DIVERSITY
AVGSCR=DIET QUALITY
APP59=APPETITE
IEFA=INTEREST IN EATING AND COOKING
IEFB=AVOIDING MONOTONY
PIFS=INFORMATIONAL SUPPORT
PIS=INSTRUMENTAL SUPPORT
SCS=SOCIAL COMPANIONSHIP
SNSCR=TOTAL NETWORK SIZE
SNF=FAMILY NETWORK
SNFR=FRIENDS & NEIGHBOURS
SCEDSCR=EVERYDAY SOCIAL CONTACT
SCOWSCR=ONCE/WEEK SOCIAL CONTACT
PHS44=PERCEIVED HEALTH
CHP57=CHRONIC HEALTH PROBLEMS
FDSR=FUNCTIONAL DISABILITY
ECDA=ECONOMIC DISADVANTAGE
PEC60=PERCEIVED ECONOMIC SECURITY

EVERYDAY CONTACT EFFECT ON DIET DIVERSITY
CONTROLLING FOR CHRONIC HEALTH PROBLEM

$R^2=0.19$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	11.820702	1.949409	6.064	0.0000	9.584052
SCEDSCR	1	-1.577083	0.702736	-2.244	0.0304	0.447450
CHP57	1	-0.341271	0.841536	-0.406	0.6872	0.216407
SCEDSCR*SCEDSCR	1	0.206494	0.121742	1.696	0.0976	1.290590
CHP57*SCEDSCR	1	0.206740	0.105759	1.955	0.0576	1.808979
CHP57*CHP57	1	-0.016250	0.090270	-0.180	0.8580	-0.199062

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1	2	0	3
	4.76	9.52	0.00	14.29
	33.33	66.67	0.00	
	9.09	33.33	0.00	
MEDIUM	6	3	3	12
	28.57	14.29	14.29	57.14
	50.00	25.00	25.00	
	54.55	50.00	75.00	
HIGH	4	1	1	6
	19.05	4.76	4.76	28.57
	66.67	16.67	16.67	
	36.36	16.67	25.00	
Total	11	6	4	21
	52.38	28.57	19.05	100.00

[1]CHRONIC HEALTH PROBLEMS LOW=0-3

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	2	3	0	5
	8.00	12.00	0.00	20.00
	40.00	60.00	0.00	
	18.18	27.27	0.00	
MEDIUM	6	7	1	14
	24.00	28.00	4.00	56.00
	42.86	50.00	7.14	
	54.55	63.64	33.33	
HIGH	3	1	2	6
	12.00	4.00	8.00	24.00
	50.00	16.67	33.33	
	27.27	9.09	66.67	
Total	11	11	3	25
	44.00	44.00	12.00	100.00

[1]CHRONIC HEALTH PROBLEMS HIGH=4 OR >

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

EVERYDAY CONTACT EFFECT ON DIET DIVERSITY CONTROLLING FOR PERCEIVED HEALTH STATUS

R^2=0.19

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.193915	6.238297	0.833	0.4100	9.399663
SCEDSCR	1	1.394869	1.444711	0.966	0.3401	1.563042
PHS44	1	0.934693	2.924121	0.320	0.7509	0.038510
SCEDSCR*SCEDSCR	1	0.235798	0.124885	1.888	0.0663	1.473736
PHS44*SCEDSCR	1	-0.556755	0.301278	-1.848	0.0720	-2.087829
PHS44*PHS44	1	0.068981	0.367209	0.188	0.8519	0.155207

TABLE 1 OF AAF BY SCEDSCR
CONTROLLING FOR PHS44=GOOD

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	3 9.38 42.86 17.65	4 12.50 57.14 36.36	0 0.00 0.00 0.00	7 21.88
MEDIUM	9 28.13 56.25 52.94	6 18.75 37.50 54.55	1 3.13 6.25 25.00	16 50.00
HIGH	5 15.63 55.56 29.41	1 3.13 11.11 9.09	3 9.38 33.33 75.00	9 28.13
Total	17 53.13	11 34.38	4 12.50	32 100.00

TABLE 2 OF AAF BY SCEDSCR
CONTROLLING FOR PHS44=EXCELNT

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	1 7.14 100.00 16.67	0 0.00 0.00 0.00	1 7.14
MEDIUM	3 21.43 30.00 60.00	4 28.57 40.00 66.67	3 21.43 30.00 100.00	10 71.43
HIGH	2 14.29 66.67 40.00	1 7.14 33.33 16.67	0 0.00 0.00 0.00	3 21.43
Total	5 35.71	6 42.86	3 21.43	14 100.00

[1]PERCEIVED HEALTH STATUS LOW=1-4

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

[1]PERCEIVED HEALTH STATUS HIGH=5

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

EVERYDAY CONTACT EFFECT ON DIET DIVERSITY CONTROLLING FOR AGE

$R^2=0.23$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-45.647841	102.881486	-0.444	0.6597	9.888920
SCEDSCR	1	-5.048630	3.223735	-1.566	0.1252	0.801768
AGE	1	1.690772	2.649305	0.638	0.5270	-0.826594
SCEDSCR*SCEDSCR	1	0.222642	0.117954	1.888	0.0664	1.391514
AGE*SCEDSCR	1	0.054918	0.041472	1.324	0.1930	1.029708
AGE*AGE	1	-0.012505	0.017028	-0.734	0.4670	-0.703408

TABLE 1 OF AAF BY SCEDSCR
CONTROLLING FOR AGE=70-75

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1	0	0	1
	4.76	0.00	0.00	4.76
	100.00	0.00	0.00	
	9.09	0.00	0.00	
MEDIUM	6	6	2	14
	28.57	28.57	9.52	66.67
	42.86	42.86	14.29	
	54.55	85.71	66.67	
HIGH	4	1	1	6
	19.05	4.76	4.76	28.57
	66.67	16.67	16.67	
	36.36	14.29	33.33	
Total	11	7	3	21
	52.38	33.33	14.29	100.00

TABLE 2 OF AAF BY SCEDSCR
CONTROLLING FOR AGE=76-85

AAF(DIET DIVERSITY) SCEDSCR(EVERYDAY SOCIAL CONTACT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	2	5	0	7
	8.00	20.00	0.00	28.00
	28.57	71.43	0.00	
	18.18	50.00	0.00	
MEDIUM	6	4	2	12
	24.00	16.00	8.00	48.00
	50.00	33.33	16.67	
	54.55	40.00	50.00	
HIGH	3	1	2	6
	12.00	4.00	8.00	24.00
	50.00	16.67	33.33	
	27.27	10.00	50.00	
Total	11	10	4	25
	44.00	40.00	16.00	100.00

[1]AGE LOW=70-75

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

[1]AGE HIGH=76 OR >

[2]DIET DIVERSITY
LOW=0-8.0
MEDIUM=8.1-11.5
HIGH=11.6-16

[3]EVERYDAY CONTACT
LOW=0-2
MEDIUM=2-3
HIGH=5 OR >

SOCIAL COMPANIONSHIP EFFECT ON AVOIDING MONOTONY CONTROLLING FOR CHRONIC HEALTH PROBLEMS

$R^2=0.13$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	3.153730	0.644458	4.894	0.0000	2.204814
SCS	1	-0.919867	0.408220	-2.253	0.0298	-0.099418
CHP57	1	-0.095966	0.276349	-0.347	0.7302	-0.082733
SCS*SCS	1	0.240935	0.118305	2.037	0.0484	0.542104
CHP57*SCS	1	0.037367	0.054663	0.684	0.4982	0.196174
CHP57*CHP57	1	0.002325	0.029153	0.0798	0.9368	0.028487

TABLE 1 OF IEFB BY SCS
CONTROLLING FOR CHP57=LOW

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1 4.76 25.00 12.50	2 9.52 50.00 40.00	1 4.76 25.00 12.50	4 19.05
MEDIUM	2 9.52 66.67 25.00	0 0.00 0.00 0.00	1 4.76 33.33 12.50	3 14.29
HIGH	5 23.81 35.71 62.50	3 14.29 21.43 60.00	6 28.57 42.86 75.00	14 66.67
Total	8 38.10	5 23.81	8 38.10	21 100.00

TABLE 2 OF IEFB BY SCS
CONTROLLING FOR CHP57=HIGH

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	2 8.00 100.00 28.57	0 0.00 0.00 0.00	2 8.00
MEDIUM	5 20.00 55.56 50.00	2 8.00 22.22 28.57	2 8.00 22.22 25.00	9 36.00
HIGH	5 20.00 35.71 50.00	3 12.00 21.43 42.86	6 24.00 42.86 75.00	14 56.00
Total	10 40.00	7 28.00	8 32.00	25 100.00

[1]CHRONIC HEALTH PROBLEMS LOW=0-3

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

[1]CHRONIC HEALTH PROBLEMS HIGH=4 OR >

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

SOCIAL COMPANIONSHIP EFFECT ON AVOIDING MONOTONY CONTROLLING FOR PERCEIVED HEALTH STATUS

$R^2=0.21$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.894044	9.134207	0.0979	0.9225	2.236747
SCS	1	-1.875235	0.941064	-1.993	0.0532	0.084571
FDSR	1	5.290981	15.214952	0.348	0.7299	-0.171540
SCS*SCS	1	0.226462	0.113040	2.003	0.0519	0.509538
FDSR*SCS	1	1.034902	0.805251	1.285	0.2061	0.325994
FDSR*FDSR	1	-3.165369	6.285202	-0.504	0.6173	-0.139593

TABLE 1 OF IEFB BY SCS
CONTROLLING FOR PHS44=GOOD

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	4 12.50 100.00 44.44	0 0.00 0.00 0.00	4 12.50
MEDIUM	7 21.88 70.00 53.85	2 6.25 20.00 22.22	1 3.13 10.00 10.00	10 31.25
HIGH	6 18.75 33.33 46.15	3 9.38 16.67 33.33	9 28.13 50.00 90.00	18 56.25
Total	13 40.63	9 28.13	10 31.25	32 100.00

TABLE 2 OF IEFB BY SCS
CONTROLLING FOR PHS44=EXCELNT

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1 7.14 50.00 20.00	0 0.00 0.00 0.00	1 7.14 50.00 16.67	2 14.29
MEDIUM	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 14.29 100.00 33.33	2 14.29
HIGH	4 28.57 40.00 80.00	3 21.43 30.00 100.00	3 21.43 30.00 50.00	10 71.43
Total	5 35.71	3 21.43	6 42.86	14 100.00

[1]PERCEIVED HEALTH STATUS GOOD=2-4

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

[1]PERCEIVED HEALTH STATUS EXCELLENT=5

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

SOCIAL COMPANIONSHIP EFFECT ON AVOIDING MONOTONY CONTROLLING FOR ECONOMIC DISADVANTAGE

$R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-3.547070	6.112602	-0.580	0.5650	2.325521
SCS	1	-0.883325	0.745886	-1.184	0.2433	-0.127710
ECDA	1	2.571872	2.413367	1.066	0.2930	0.067704
SCS*SCS	1	0.262273	0.116728	2.247	0.0302	0.590114
ECDA*SCS	1	0.002273	0.131956	0.0172	0.9863	0.003410
ECDA*ECDA	1	-0.250758	0.235114	-1.067	0.2926	-0.250758

TABLE 1 OF IEFB BY SCS
CONTROLLING FOR ECDA=LOW

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	2 8.70 100.00 33.33	0 0.00 0.00 0.00	2 8.70
MEDIUM	2 8.70 33.33 33.33	2 8.70 33.33 33.33	2 8.70 33.33 18.18	6 26.09
HIGH	4 17.39 26.67 66.67	2 8.70 13.33 33.33	9 39.13 60.00 81.82	15 65.22
Total	6 26.09	6 26.09	11 47.83	23 100.00

TABLE 2 OF IEFB BY SCS
CONTROLLING FOR ECDA=HIGH

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1 4.55 25.00 9.09	2 9.09 50.00 33.33	1 4.55 25.00 20.00	4 18.18
MEDIUM	5 22.73 83.33 45.45	0 0.00 0.00 0.00	1 4.55 16.67 20.00	6 27.27
HIGH	5 22.73 41.67 45.45	4 18.18 33.33 66.67	3 13.64 25.00 60.00	12 54.55
Total	11 50.00	6 27.27	5 22.73	22 100.00

[1]ECONOMIC DISADVANTAGE LOW=0-5

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

[1]ECONOMIC DISADVANTAGE HIGH=6

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

SOCIAL COMPANIONSHIP EFFECT ON AVOIDING MONOTONY CONTROLLING FOR PERCEIVED ECONOMIC SECURITY

$R^2=0.14$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	2.918331	0.895320	2.932	0.0056	2.067105
SCS	1	-0.784780	0.472061	-1.662	0.1044	-0.122621
PEC60	1	-0.329496	0.971893	-0.339	0.7364	0.128166
SCS*SCS	1	0.310688	0.126244	2.461	0.0184	0.699049
PEC60*SCS	1	-0.114516	0.194256	-0.590	0.5589	-0.171774
PEC60*PEC60	1	0.157359	0.247256	0.636	0.5282	0.157359

TABLE 1 OF IEFB BY SCS
CONTROLLING FOR PEC60=LOW

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1 3.13 20.00 7.69	3 9.38 60.00 42.86	1 3.13 20.00 5.33	5 15.63
MEDIUM	4 12.50 57.14 30.77	1 3.13 14.29 14.29	2 6.25 28.57 16.67	7 21.88
HIGH	8 25.00 40.00 61.54	3 9.38 15.00 42.86	9 28.13 45.00 75.00	20 62.50
Total	13 40.63	7 21.88	12 37.50	32 100.00

TABLE 2 OF IEFB BY SCS
CONTROLLING FOR PEC60=HIGH

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	1 7.69 100.00 25.00	0 0.00 0.00 0.00	1 7.69
MEDIUM	3 23.08 75.00 60.00	0 0.00 0.00 0.00	1 7.69 25.00 25.00	4 30.77
HIGH	2 15.38 25.00 40.00	3 23.08 37.50 75.00	3 23.08 37.50 75.00	8 61.54
Total	5 38.46	4 30.77	4 30.77	13 100.00

[1]PERCEIVED ECONOMIC SECURITY LOW=0-2

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

[1]PERCEIVED ECONOMIC SECURITY HIGH=3

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

SOCIAL COMPANIONSHIP EFFECT ON AVOIDING MONOTONY CONTROLLING FOR AGE

$R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	5.621367	38.644364	0.145	0.8851	2.168137
SCS	1	0.094946	2.157614	0.0440	0.9651	-0.118626
AGE	1	-0.092556	0.986723	-0.0938	0.9257	0.023502
SCS*SCS	1	0.267031	0.120057	2.224	0.0318	0.600820
AGE*SCS	1	-0.012582	0.027656	-0.455	0.6516	-0.141550
AGE*AGE	1	0.000739	0.006301	0.117	0.9072	0.041575

TABLE 1 OF IEFB BY SCS
CONTROLLING FOR AGE=70-75

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	1 4.76 50.00 11.11	1 4.76 50.00 20.00	0 0.00 0.00 0.00	2 9.52
MEDIUM	4 19.05 50.00 44.44	2 9.52 25.00 40.00	2 9.52 25.00 28.57	8 38.10
HIGH	4 19.05 36.36 44.44	2 9.52 18.18 40.00	5 23.81 45.45 71.43	11 52.38
Total	9 42.86	5 23.81	7 33.33	21 100.00

TABLE 2 OF IEFB BY SCS
CONTROLLING FOR AGE=76-85

IEFB(AVOIDING MONOTONY) SCS(SOCIAL COMPANIONSHIP)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	1 8.33 50.00 50.00	1 8.33 50.00 16.67	2 16.67
MEDIUM	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 8.33 100.00 16.67	1 8.33
HIGH	4 33.33 44.44 100.00	1 8.33 11.11 50.00	4 33.33 44.44 66.67	9 75.00
Total	4 33.33	2 16.67	6 50.00	12 100.00

[1]AGE LOW=70-75

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

[1]AGE HIGH=76 OR >

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]SOCIAL COMPANIONSHIP
LOW=0-1
MEDIUM=2
HIGH=3

WEEKLY CONTACT EFFECT ON AVOIDING MONOTONY CONTROLLING FOR ECONOMIC DISADVANTAGE

$R^2=0.12$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-6.344529	6.298826	-1.007	0.3199	2.462371
SCOWSCR	1	-0.173332	0.235786	-0.735	0.4666	-0.185432
ECDA	1	3.791355	2.488611	1.523	0.1355	-0.023509
SCOWSCR*SCOWSCR	1	0.016690	0.008787	1.900	0.0647	0.600852
ECDA*SCOWSCR	1	-0.011571	0.035260	-0.328	0.7445	-0.069428
ECDA*ECDA	1	-0.374544	0.241846	-1.549	0.1293	-0.374544

TABLE 1 OF IEFB BY SCOWSCR
CONTROLLING FOR ECDA=LOW

IEFB(AVOIDING MONOTONY)
SCOWSCR(ONCE/WEEK SOCIAL CONTACT)

Frequency Percent Row Pct Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	1 4.35 50.00 12.50	1 4.35 50.00 9.09	2 8.70
MEDIUM	1 4.35 16.67 25.00	3 13.04 50.00 37.50	2 8.70 33.33 18.18	6 26.09
HIGH	3 13.04 20.00 75.00	4 17.39 26.67 50.00	8 34.78 53.33 72.73	15 65.22
Total	4 17.39	8 34.78	11 47.83	23 100.00

TABLE 2 OF IEFB BY SCOWSCR
CONTROLLING FOR ECDA=HIGH

IEFB(AVOIDING MONOTONY)
SCOWSCR(ONCE/WEEK SOCIAL CONTACT)

Frequency Percent Row Pct Col Pct	LOW	MEDIUM	HIGH	Total
LOW	0 0.00 0.00 0.00	3 13.64 75.00 33.33	1 4.55 25.00 16.67	4 18.18
MEDIUM	2 9.09 33.33 28.57	2 9.09 33.33 22.22	2 9.09 33.33 33.33	6 27.27
HIGH	5 22.73 41.67 71.43	4 18.18 33.33 44.44	3 13.64 25.00 50.00	12 54.55
Total	7 31.82	9 40.91	6 27.27	22 100.00

[1]ECONOMIC DISADVANTAGE LOW=0-5

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]WEEKLY CONTACT
LOW=0-5
MEDIUM=6-10
HIGH=11 OR >

[1]ECONOMIC DISADVANTAGE HIGH=6

[2]AVOIDING MONOTONY
LOW=0-1
MEDIUM=2
HIGH=3

[3]WEEKLY CONTACT
LOW=0-5
MEDIUM=6-10
HIGH=11 OR >

INSTRUMENTAL SUPPORT EFFECT ON APPETITE CONTROLLING FOR PERCEIVED ECONOMIC SECURITY

$R^2=0.20$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	0.935308	1.144077	0.818	0.4186	2.830459
PIS	1	0.334183	0.357698	0.934	0.3559	-0.150038
PEC60	1	0.972307	0.947793	1.026	0.3113	0.663680
PIS*PIS	1	0.083573	0.069442	1.204	0.2360	0.334293
PEC60*PIS	1	-0.371747	0.139873	-2.658	0.0113	-0.743495
PEC60*PEC60	1	0.108717	0.223112	0.487	0.6288	0.108717

TABLE 1 OF APP59 BY PIS
CONTROLLING FOR PEC60=LOW

APP59(APPETITE) PIS(INSTRUMENTAL SUPPORT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
FAIR	4	3	2	9
	12.50	9.38	6.25	28.13
	44.44	33.33	22.22	
	36.36	30.00	18.18	
GOOD	3	6	7	16
	9.38	18.75	21.88	50.00
	18.75	37.50	43.75	
	27.27	60.00	63.64	
EXCELNT	4	1	2	7
	12.50	3.13	6.25	21.88
	57.14	14.29	28.57	
	36.36	10.00	18.18	
Total	11	10	11	32
	34.38	31.25	34.38	100.00

TABLE 2 OF APP59 BY PIS
CONTROLLING FOR PEC60=HIGH

APP59(APPETITE) PIS(INSTRUMENTAL SUPPORT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
FAIR	0	1	1	2
	0.00	7.69	7.69	15.38
	0.00	50.00	50.00	
	0.00	20.00	14.29	
GOOD	0	2	4	6
	0.00	15.38	30.77	46.15
	0.00	33.33	66.67	
	0.00	40.00	57.14	
EXCELNT	1	2	2	5
	7.69	15.38	15.38	38.46
	20.00	40.00	40.00	
	100.00	40.00	28.57	
Total	1	5	7	13
	7.69	38.46	53.85	100.00

[1] PERCEIVED ECONOMIC SECURITY LOW=0-2

[2] APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3] INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

[1] PERCEIVED ECONOMIC SECURITY HIGH=3

[2] APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3] INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

INSTRUMENTAL SUPPORT EFFECT ON APPETITE CONTROLLING FOR AGE

$R^2=0.21$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	55.511266	34.190766	1.624	0.1123	2.909386
PIS	1	-2.177374	1.355082	-1.607	0.1160	0.259178
AGE	1	-1.215451	0.877572	-1.385	0.1737	-0.668782
PIS*PIS	1	-0.063501	0.069995	-0.907	0.3697	-0.254006
AGE*PIS	1	0.033045	0.018418	1.794	0.0803	0.495671
AGE*AGE	1	0.006840	0.005630	1.215	0.2316	0.384746

TABLE 1 OF APP59 BY PIS
CONTROLLING FOR AGE=70-75

APP59(APPETITE) PIS(INSTRUMENTAL SUPPORT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
FAIR	2 9.52 66.67 28.57	0 0.00 0.00 0.00	1 4.76 33.33 12.50	3 14.29
GOOD	1 4.76 11.11 14.29	4 19.05 44.44 66.67	4 19.05 44.44 50.00	9 42.86
EXCELNT	4 19.05 44.44 57.14	2 9.52 22.22 33.33	3 14.29 33.33 37.50	9 42.86
Total	7 33.33	6 28.57	8 38.10	21 100.00

TABLE 2 OF APP59 BY PIS
CONTROLLING FOR AGE=76-85

APP59(APPETITE) PIS(INSTRUMENTAL SUPPORT)

Frequency / Percent / Row Pct / Col Pct	LOW	MEDIUM	HIGH	Total
FAIR	2 8.00 25.00 40.00	4 16.00 50.00 40.00	2 8.00 25.00 20.00	8 32.00
GOOD	2 8.00 15.38 40.00	4 16.00 30.77 40.00	7 28.00 53.85 70.00	13 52.00
EXCELNT	1 4.00 25.00 20.00	2 8.00 50.00 20.00	1 4.00 25.00 10.00	4 16.00
Total	5 20.00	10 40.00	10 40.00	25 100.00

[1]AGE LOW=70-75

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

[1]AGE HIGH=76 OR >

[2]APPETITE
FAIR=0-2
GOOD=3
EXCELLENT=4

[3]INSTRUMENTAL SUPPORT
LOW=0-1
MEDIUM=2-3
HIGH=4

APPENDIX L
SIGNIFICANT REGRESSIONS FOR CONTROL VARIABLES

RESPONSE SURFACE FOR
DIET QUALITY, SOCIAL COMANIONSHIP, ECONOMIC DISADVANTAGE
R^2=0.34

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	-14.862173	21.199391	-0.701	0.4873	18.414272
SCS	1	0.391467	2.586841	0.151	0.8805	-0.691964
ECDA	1	15.022834	8.369906	1.795	0.0802	-1.691303
SCS*SCS	1	-0.663184	0.404831	-1.638	0.1092	-1.492163
ECDA*SCS	1	0.227355	0.457644	0.497	0.6221	0.341032
ECDA*ECDA	1	-1.705517	0.815408	-2.092	0.0429	-1.705517

RESPONSE SURFACE FOR
APPETITE, WEEKLY CONTACT, FUNCTIONAL DISABILITY
R^2=0.34

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	25.366772	7.917261	3.204	0.0027	2.418946
SCOWSCR	1	-0.157228	0.217039	-0.724	0.4730	0.214484
FDSR	1	-35.402961	13.390101	-2.644	0.0116	-0.404239
SCOWSCR*SCOWSCR	1	0.002574	0.007492	0.344	0.7329	0.092675
FDSR*SCOWSCR	1	0.133953	0.169114	0.792	0.4330	0.168781
FDSR*FDSR	1	13.501775	5.616445	2.404	0.0209	0.595428

RESPONSE SURFACE FOR
APPETITE, INFORMATIONAL SUPPORT, FUNCTIONAL DISABILITY
R^2=0.35

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	25.558770	8.322937	3.071	0.0038	2.434091
PIFS	1	0.501456	0.792572	0.633	0.5305	0.114176
FDSR	1	-37.143515	13.962538	-2.660	0.0112	-0.376970
PIFS*PIFS	1	0.015116	0.098031	0.154	0.8782	0.034011
FDSR*PIFS	1	-0.388997	0.641072	-0.607	0.5474	-0.122534
FDSR*FDSR	1	14.847899	5.749640	2.582	0.0136	0.654792

RESPONSE SURFACE FOR
APPETITE, INSTRUMENTAL SUPPORT, FUNCTIONAL DIABILITY
R^2=0.33

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	26.940531	7.893536	3.413	0.0015	2.368356
PIS	1	-0.599754	0.646901	-0.927	0.3594	0.181924
FDSR	1	-37.665332	13.493498	-2.791	0.0080	-0.442860
PIS*PIS	1	0.012198	0.061550	0.198	0.8439	0.048790
FDSR*PIS	1	0.530517	0.522228	1.016	0.3158	0.222817
FDSR*FDSR	1	14.254315	5.733331	2.486	0.0172	0.628615

RESPONSE SURFACE FOR APPETITE, SOCIAL COMPANIONSHIP, FUNCTIONAL DISABILITY $R^2=0.38$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	27.689664	7.952870	3.477	0.0012	2.530060
SCS	1	-0.703301	0.820386	-0.857	0.3964	0.336667
FDSR	1	-38.816452	13.263842	-2.926	0.0056	-0.456970
SCS*SCS	1	-0.124981	0.098544	-1.268	0.2120	-0.281206
FDSR*SCS	1	1.076602	0.701988	1.534	0.1330	0.339128
FDSR*FDSR	1	14.473348	5.479211	2.642	0.0117	0.638275

RESPONSE SURFACE FOR APPETITE, TOTAL NETWORK SIZE, FUNCTIONAL DISABILITY $R^2=0.40$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	25.779148	7.671058	3.361	0.0017	2.326653
SNSCR	1	-0.084283	0.098504	-0.856	0.3973	0.328970
FDSR	1	-35.883296	12.749162	-2.815	0.0075	-0.431035
SNSCR*SNSCR	1	0.000879	0.001489	0.591	0.5581	0.148582
FDSR*SNSCR	1	0.065865	0.074513	0.884	0.3820	0.179810
FDSR*FDSR	1	13.516963	5.312168	2.545	0.0149	0.596098

RESPONSE SURFACE FOR APPETITE, FAMILY SIZE,FUNCTIONAL DISABILITY $R^2=0.42$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	25.217881	7.458668	3.381	0.0016	2.492898
SNF	1	-0.082457	0.119479	-0.690	0.4940	0.385875
FDSR	1	-35.455956	12.498715	-2.837	0.0071	-0.365999
SNF*SNF	1	0.000606	0.003028	0.200	0.8423	0.054709
FDSR*SNF	1	0.091202	0.090959	1.003	0.3220	0.181949
FDSR*FDSR	1	13.535321	5.208089	2.599	0.0130	0.596908

RESPONSE SURFACE FOR APPETITE, FRIENDS/NEIGHBOURS SIZE, FUNCTIONAL DISABILTY $R^2=0.37$

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	24.260968	7.768030	3.123	0.0033	2.345041
SNFR	1	0.019175	0.133710	0.143	0.8867	0.091536
FDSR	1	-34.793028	13.035469	-2.669	0.0109	-0.353148
SNFR*SNFR	1	0.003294	0.003007	1.095	0.2798	0.297242
FDSR*SNFR	1	-0.065045	0.107164	-0.607	0.5473	-0.129765
FDSR*FDSR	1	13.964605	5.426573	2.573	0.0139	0.615839

RESPONSE SURFACE FOR
APPEITE, EVERYDAY CONTACT, FUNCTIONAL DISABILITY
R^2=0.33

Parameter	Degrees of Freedom	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob > |T|	Parameter Estimate from Coded Data
INTERCEPT	1	25.901696	7.926569	3.268	0.0022	2.358161
SCEDSCR	1	-0.187775	0.457681	-0.410	0.6838	0.015167
FDSR	1	-36.835913	13.471128	-2.734	0.0093	-0.357754
SCEDSCR*SCEDSCR	1	0.035526	0.036324	0.978	0.3339	0.222039
FDSR*SCEDSCR	1	0.013397	0.390154	0.0343	0.9728	0.007033
FDSR*FDSR	1	14.503648	5.650136	2.567	0.0141	0.639611