

Running Head: Social Support and Eating Behavior in Diabetes

The Effects of Social Support on Eating Behavior in Patients with Diabetes

Gianna Marzilli

Williams College

Abstract

Self-efficacy, locus of control, and social support all moderate adherence to diabetes regimens (Gonder-Frederick, Cox, & Ritterband, 2002), but it is unclear exactly how. Based on previous research (Senecal, Nouwen, & White, 2000; Muraven & Baumeister, 2000), I hypothesized that dietary adherence in adults with diabetes is influenced by the behavior of others and that eating healthily would be more difficult for participants in the presence of those who were eating unhealthily, particularly if they lived with them or were low in self-efficacy. One hundred and five participants completed survey batteries via email. Results supported my hypotheses, although I was limited in my ability to distinguish well between types of social support. Future research possibilities and clinical applications are discussed.

The Effects of Social Support on Eating Behavior in Patients with Diabetes

Diabetes mellitus is a chronic endocrine disorder characterized by abnormalities in glucose metabolism due to problems with the production and/or utilization of the hormone insulin. Diabetes is one of the largest health care problems in the United States in terms of prevalence, cost, and burden placed on individuals living with the illness and results in high morbidity and mortality (Gonder-Frederick et al., 2002). The goal of contemporary diabetes treatment is to keep blood glucose (BG) levels as close to normal as possible through the use of medication, insulin therapy, BG monitoring, diet, and/or exercise.

A major aim in the management of diabetes is to decrease the risk of long term complications such as circulatory problems, renal failure, blindness, and peripheral neuropathy (Goodall & Halford, 1997). Stabilizing and reducing high BG levels can reduce the occurrence of such complications. To maintain BG levels in a normal range, individuals with diabetes are advised to follow a complex management regimen typically consisting of: BG testing several times daily, daily administration of insulin or medication, careful regulation of the timing and content of diet, and regular exercise.

Dietary adherence is more significantly related to glycemic control than many other aspects of diabetes self-care (Glasgow, McCaul, and Schafer, 1987). As such, it is central to the treatment of diabetes. However, it is also one of the most challenging aspects of diabetes regimens because it extends over time, requires adjustment on an ongoing basis, and consists of many conceptually different self-care behaviors (i.e. making appropriate food choices, limiting overall caloric intake, and timing meals appropriately) (Glasgow et al., 1984, 1987).

Eating, in contrast to pharmacological and physical aspects of diabetes care, is also a highly social behavior subject to the influence of others. It encompasses buying, preparing, and sharing food, and is laden with gendered as well as cultural significance for many people (Sherman et al., 2000). As such, patients are somewhat less adherent to dietary aspects of diabetes regimens than they are to taking the appropriate amount of insulin or testing their glucose levels (Glasgow et al., 1987). They report the highest frequency of barriers to dietary adherence compared to other aspects of care and tend to adhere poorly to dietary prescriptions (Glasgow et al., 1987). Most diabetic patients report deviating from recommended dietary guidelines at least several times per week, and deviations occur most frequently in settings of social and personal pressures to eat inappropriately (Goodall & Halford, 1997). As such, it seems like social support would be particularly important to maintaining adequate dietary self-care.

Given the difficulty and importance of achieving adherence, it is important to better understand what affects diabetic individuals' self-care, particularly their eating behavior and food choices. There are several factors that influence adherence to diabetes regimens, including self-efficacy, locus of control, and social support. High levels of self-efficacy, defined as a judgement of one's abilities to produce given attainments (Senecal et al., 2000), predict both adherence and glycemic control (McCaul, Glasgow, & Schafer, 1987). Internal locus of control, or the belief that diabetes management and outcome are determined by personal rather than situational factors (Gonder-Frederick et al., 2002) is also related to metabolic control (Bradley, 1994). Low levels of both self-efficacy and internal locus of control are considered barriers to diabetes management (Glasgow, Toobert, & Gillette, 2001). Lack of social support, particularly from friends and family, is

also considered a barrier to adherence and self-care, while high levels of support are related to better long-term management, health outcomes, and glucose control (Glasgow, Strycker, Toobert, & Eakin, 2000; Glasgow et al., 2001). In spite of evidence that social support, along with self-efficacy and locus of control, is important in predicting diabetes self-care, it is less clear how these factors specifically affect adherence to dietary regimens (Brawley & Culos-Reed 2000). Further research on how dietary adherence might be improved could lead to better clinical outcomes and reduction of long term complications for people with diabetes.

There is evidence that social support does play a key role in predicting dietary adherence (Sherman et al., 2000; Gonder-Frederick et al., 2002). Previous research indicates that family support for diabetes may be critical to adolescents' disease management. Adolescents who have more supportive families have better metabolic control than those who do not (Anderson, Miller, Auslander, & Santiago, 1981), and supportive behaviors that dealt with meals were perceived as some of the most helpful things family members could do to support adolescents' self-management (LaGreca & Bearman, 2002). Sherman et al. (2000) found that peers and family can provide emotional support for dietary adherence and that interactions with supportive others can improve adherence to dietary changes and provide good models for healthy eating. Higher barriers to adherence were also correlated with less adherence to dietary recommendations in adolescents (Schafer, Glasgow, McCaul, & Dreher, 1983). An individual's self-efficacy is also an important predictor of adherence to dietary treatments (Senecal et al., 2000), and interventions that increase self-efficacy also result in increased dietary self-care (Glasgow, Toobert, & Hampson, 1996).

Though research has identified social support as a key factor in dietary adherence, there has been little research investigating the difference between emotional and instrumental social support (i.e. supportive comments vs. supportive behaviors such as eating in the same way). Not much is known about *how* social support increases adherence (Culos-Reed, Rejeski, McAuley, Ockene, & Roter, 2000). Yet it seems that the distinction between emotional and instrumental support may be an important one, for family and friends may provide one and not the other. Even when family members are emotionally supportive of a patient's dietary adherence, they are often not interested in making similar changes in their own eating habits (Glasgow et al, 2001). As a result, inappropriate or undesirable food may be readily available, making it more difficult to adhere to dietary regimens. MacLean (1991) found that if appropriate food was easily accessible and inappropriate food was not, it was much easier to follow a diet. Peer support was also important to some people, and lack of such support made it harder to follow a diet. Some patients believed that such support was essential for managing their diabetes.

Furthermore, previous research indicates that self-control, including that required to adhere to a particular diet or meal plan, may function as a muscle. In other words, self-control may be a strength that can be depleted, implying that people should tend to fail at self-control when recent demands have depleted their resource (Muraven & Baumeister, 2000). Consistent with their limited strength model, Muraven and Baumeister found that resisting temptations such as food (when dieting) resulted in poorer self-control performance. Dieters who were presented with tempting food but did not eat it were more likely to break their diet subsequently than dieters who were not presented with tempting

food. It is therefore possible that when faced with temptation (such as the presence of another person eating differently than oneself), a diabetic patient might have difficulty subsequently maintaining dietary adherence even if those around them are quite emotionally (but not instrumentally) supportive.

Considering individual behavior as embedded in a larger social context is important to understanding adherence (Kidd & Altmann, 2000). Environments that facilitate appropriate types of social support are essential for improving outcomes for people with diabetes, especially since evidence suggests that success is greatest when family members and friends are willing to make changes in their own habits to accommodate another's dietary needs (Clark & Becker, 1998). However, much of the literature on dietary adherence and social support does not refer specifically to patients with diabetes. Social influences that may enhance or interfere with self-management and clinical outcome have not received much attention over the past decade, especially in adult populations, even though earlier studies suggested that family and spousal support have a significant impact on diabetes management (Glasgow & Toobert, 1988; Schafer, McCaul, & Glasgow, 1986). I therefore propose to explore the relationship between different types of social support and dietary adherence specifically within the context of diabetes self-management.

Since most of the research available on the influence of peers in diabetes care has been focused on children and adolescents, I will limit my study to that of adults with diabetes. Most available research also focuses on the role of social support in general or emotional support in particular. There seems to be a lack of research focused on how the *actions* of others might influence self-care in diabetes patients. Since dietary adherence is

one of the most important factors of diabetes care, I am interested in how the eating behaviors and food choices of others affect and influence the eating behaviors of adults with diabetes. Considering previous research on self-control and social influence, dietary adherence in adult patients with diabetes may be effected by the food choices and eating behaviors of those around them, specifically the family members, friends, and significant others with whom they live and eat. I am interested in whether the presence of a family member or significant other who is not eating in a way that would be good for the person with diabetes significantly affects the eating choices or behavior of the diabetic person.

I will also investigate the ways in which self-efficacy and locus of control interact with the presence of others in determining eating behavior. Social impact theory (Latane, 1981) posits that the influence of others is based partly on the strength of those others. Others who are close to a person might have more influence on him or her than acquaintances or strangers. As such, the actions of friends and family of people with diabetes, particularly those that live with them, might have more of an influence than those that live elsewhere might. Since research has shown that patients high in self-efficacy and internal locus of control have greater levels of adherence (Senecal et al., 2000), I expect that these patients will be less influenced by close others and hence in better metabolic control than those with lower levels of self-efficacy and higher external locus of control. I also hypothesize that it will be more difficult for people to eat healthily when with others than when they are alone, especially if they are low in self-efficacy or internal locus of control, or if those around them are not eating healthily. Finally, I am interested in exploring whether people will be more or less likely to make food choices that promote good blood sugar control based on how important social support is to them.

Method

Participants

Participants were 105 people (70 women and 35 men) recruited from an online community of people with diabetes. All were between the ages of 18 and 75 ($M = 44$, $SD = 11.71$) and had diabetes for at least half a year ($M = 25.24$, $SD = 13.32$). My sample included 96 people with Type 1 (insulin-dependent) diabetes and 8 people with Type 2 (non-insulin dependent) diabetes, although all were currently taking insulin and most (95.2%) used an insulin pump to administer it. The majority of participants (91.4%) used carbohydrate counting as their dietary management system, although a few people used food exchanges, calorie counting, or other methods. As a whole, the group was in good glycemic control, with glycosylated hemoglobin values ranging from 5.0 to 10.5 ($M = 6.86$, $SD = 0.96$) compared to a typical non-diabetic range of 4.0 to 6.0. Participants lived alone or with up to 5 other people ($M = 1.77$, $SD = 1.12$). Most lived with family (84.8%), usually a spouse or partner (78.1%), though some lived with close friends (3.8%), or both friends and family (1.9%). The majority of the sample (93.3%) was Caucasian, 1.9% each was black and Hispanic, and 1.0% each identified as Native American, Asian, or other.

Measures

My study is a questionnaire-based study composed mostly of surveys widely used in diabetes research and that have been shown to be reliable and valid. It also includes some scales developed solely for the purpose of this study that are based on other previously validated measures.

Demographics and Diabetes Self-Care. Demographic questions, as well as questions regarding participants' diabetes history and self-care habits were selected and

modified from the Diabetes Care Profile (DCP; Fitzgerald et al., 1996) and the Diabetes Health Profile (DHP-1; Meadows et al., 1996). Questions specifically regarding dietary habits were taken from Section IX of the DCP.

Self-Efficacy. Self-efficacy was measured using the Diabetes Empowerment Scale Short Form (DES-SF; Anderson, Fitzgerald, Funnell, & Marrero, 2000). The DES-SF is a shortened, 8-item version of the 28-item DES, which measures self-efficacy in relation to diabetes across three subscales: managing the psychosocial aspects of diabetes, assessing dissatisfaction and readiness to change, and setting and achieving diabetes goals. Answers range from 1 (strongly disagree) to 5 (strongly agree) and are averaged to come up with a total self-efficacy score between 1 and 5, with higher numbers corresponding to higher levels of self-efficacy.

The DES is a validated and reliable measure, with a coefficient alpha of 0.96 and a six-week test-retest correlation of 0.79. Although the DES is a more comprehensive measure than the DES-SF, the length of the short form provides a worthwhile advantage because it is brief and easy to understand. As participant time is at a premium and my analysis does not call for an assessment of individual subscales, the DES-SF offers a measure that functions equally to the original scale.

Locus of Control. Locus of control was measured using Form C of the Multidimensional Health Locus of Control Scales (MHLC; Wallston, Stein, & Smith, 1994). The MHLC Scales are intended to measure health locus of control, with Form C meant for people who have chronic health conditions. The MHLC-Form C is an 18-item measure consisting of 4 subscales: internality, chance externality, powerful others (doctors), and powerful others (other people). Higher scores indicate a higher locus of

control for a particular subscale. The MHLIC-Form C is a validated measure and is internally consistent, with coefficient alphas ranging from .70 to .87 across the different subscales. Test-retest reliability was also acceptable given the nature of the scale, ranging from .35 to .80 across subscales.

Social Support. I used several different measures to assess social support for diabetes self-care. The Chronic Illness Resources Survey (CIRS; Glasgow, Strycker, Toobert, & Eakin, 2000) is designed to assess support and resources at each of seven levels. I used three sections from the CIRS, each containing 7 or 8 questions, to evaluate levels of support from one's doctor and health care team and one's family and friends, as well as the helpful things that participants did for themselves. Higher scores indicate higher levels of support and use of resources from each level. The CIRS is internally consistent with a coefficient alpha of .90 for the whole survey and .91, .75, and .73 for the respective subscales that I used. Test-retest reliability was also good, with a one-month value of .83 for the entire CIRS and values of .60, .72, and .91 for the subscales.

In order to evaluate more specific questions related to dietary management, eating habits, and the effects of emotional and instrumental support from others, I developed my own survey consisting of 13 likert scale questions. The questions were modeled in part after those contained in the CIRS and in The Diabetes Social Support Questionnaire – Family Version (DSSQ-Family; LaGreca & Bearman, 2002). They are intended to reveal any differences that exist in participants' eating habits depending on who they are eating with and how those others are eating as well as how much emotional and instrumental support others provide when eating with participants. The questions also assess the level

of difficulty participants experience when trying to maintain their dietary regimens in the presence of others and how important receiving different types of support was to them.

Typical items on my Supplemental Social Support survey (SS; Marzilli, 2004) include: “If you live with other people, how often do they provide support by choosing to eat healthily along with you?” (Question 3) and “If the people I am eating with do not choose to eat healthily, eating in a way that helps me maintain good blood sugar control is....” (Question 10) Participants could choose from answers ranging from 1 (almost always) to 5 (almost never) for questions 1 through 5 and from 1 (very difficult) to 6 (very easy) for questions 6 through 11. For questions 12 and 13, which dealt with the importance of emotional or instrumental support, answers ranged from 1 (very important) to 5 (not important). The full text of my survey is presented in the appendix.

Finally, I used two questions from the DCP to assess how much instrumental support participants wanted from their family and friends and how much instrumental support they felt they actually received. Answers could range from 1 (strongly disagreeing that they wanted or that people gave a lot of support) to 5 (strongly agreeing that they wanted or that people gave a lot of support).

Procedure

I emailed surveys packets as Microsoft Word attachments to all people who responded to an initial recruitment letter sent to all members of an online diabetes community. Participants were told that it would take approximately one hour to complete a set of surveys regarding social support and dietary management in diabetes and that all responses would be kept confidential. I provided instructions for how to return completed surveys to me and gave participants the opportunity to sign up to receive my results

following the completion of data analysis. Participants filled out the survey on their computers and sent it back to me via email. After eliminating all incomplete surveys and corrupted files, the first 105 eligible surveys returned were included in my analysis.

Results

Descriptive data. Descriptive statistics for participants' levels of self-efficacy, locus of control, and chronic illness resources are presented in Table 1. In general, participants were high in self-efficacy and internal locus of control, as well as in level of social support from their health care teams and families. An independent samples t-test revealed that in general, women scored higher in self-efficacy than men, $t(103) = 2.115$, $p < .05$ (see Figure 1).

Self-Efficacy and Locus of Control. Pearson correlations for self-efficacy and locus of control are presented in Table 2. Self-efficacy was positively correlated with internal locus of control and negatively correlated with external (chance and others) locus of control. Glycosylated hemoglobin (H_{A1C}) levels were negatively correlated with self-efficacy, positively correlated with external (chance and others) locus of control, and although not significantly, negatively correlated with internal locus of control. As expected, individuals high in self efficacy who attribute their health outcomes to their own actions are in better metabolic control than those low in self-efficacy who attribute their health outcomes to chance or powerful others.

Social Support and Eating with Others. As predicted, paired samples t-tests indicated that eating well with others was more difficult than eating well alone, $t(103) = 4.89$, $p < .001$, (see Figure 2) and that it was also easier for participants to eat healthily when those around them also ate healthily compared to when they did not, $t(104) =$

11.61, $p < .001$ (see Figure 3). Table 3 lists Pearson correlations between self-efficacy, social support, and glucose control. Consistent with expectations, those with higher Ha_1C and lower self-efficacy levels had a more difficult time eating well both alone and with others, than those with lower Ha_1C and higher self-efficacy levels.

People high in self-efficacy found it easier than those low in self-efficacy to maintain healthy eating habits even when those around them ate unhealthily, though all participants found it easy to eat well when those around them did so. Interestingly, feeling that social support was very important was correlated with poorer glycemic control and difficulty eating healthily both when alone and with others, though people found it more difficult when with others, especially if those others were not eating healthily themselves. In general, the more supportive people were, the easier it was to remain healthy eaters in the presence of others, $r = -.209$, $p < .05$. As predicted, this was even more true when eating with people who lived with them, $r = -.444$, $p < .01$.

Emotional vs. Instrumental Support. A paired-samples t-test indicated that instrumental support was slightly more important than emotional support when trying to maintain healthy eating habits, $t(101) = 2.01$, $p < .05$ (see Figure 4). However, this barely reached significance. While it was harder for people to eat well if they did not have instrumental support, $r = -.206$, $p < .05$, than if they did not have emotional support, $r = -.116$, $p < .26$, the latter did not reach significance at all. In fact, measures of emotional and instrumental support were highly correlated with each other, $r = .76$, $p < .01$, indicating that participants may have viewed them as the same thing. As such, it was difficult to differentiate between them. However, it was harder for many people to maintain healthy habits when others around them were eating unhealthily and thus not

providing instrumental support. Clearly instrumental support is important, but people may be viewing it within the context of social support in general and not as a separate construct. As such, some questions regarding participants' evaluations of emotional vs. instrumental support were collapsed to yield variables representing total social support.

Discussion

As predicted, the eating behaviors of others can and do influence those of patients with diabetes, particularly if they live with them. Also as predicted, it was more difficult for people to maintain healthy habits in the presence of others who were not eating healthily, particularly if they were low in self-efficacy or high in external locus of control. This makes sense because people lower in self-efficacy and internal locus of control do not feel as capable of managing their diabetes independently. They may look to others for behavioral cues and therefore be more affected by their social surroundings. Indeed, exploratory analysis of the role of the perceived importance of social support indicated that if receiving support is important to people, they are more likely to be influenced by the behaviors of others. In addition, I was able to replicate previous research correlating high levels of self-efficacy with better glucose control. This also makes sense in light of my other findings, as people who are *not* as reliant on others for their self-care would probably be better able to make decisions that are better for their own health in spite of others' actions.

My findings also offer further support for Muraven and Baumeister's (2000) theory of self control as a limited resource. Patients who must resist tempting foods in the presence of others who are eating them are apparently less able to maintain their dietary regimens. Not only is this true at the time of temptation, but elevated H_{a1C} levels,

which indicate poorer control over time, indicate that it may also be true for subsequent instances of temptation.

There has been little distinction made in the literature regarding emotional vs. instrumental support. I attempted to distinguish between these two types of support to better understand social barriers to adherence in patients with diabetes. However, people's answers to questions specifically asking about emotional support vs. instrumental support did not differentiate much between the two. It is possible that conceptually, participants were considering instrumental support as falling under a general "total support" category. Nevertheless, there was still evidence that instrumental support plays a key role in dietary adherence because people found it significantly more difficult to eat well when others were not doing so.

The fact that people who live with diabetes patients are able to exert a particularly strong influence suggests important directions for clinical interventions. The use of family interventions in adults with diabetes has received little empirical attention, with the exception of studies including spouses and partners in weight-loss programs. However, there is evidence that family-based intervention may improve long-term metabolic control in pediatric patients (Gonder-Frederick et al., 2002). If family interventions or counseling could be incorporated into adult patients' diabetes care, perhaps an environment more conducive to healthy eating behaviors could be fostered.

In addition, since increased levels of self-efficacy are associated not only with better glucose control but better ability to resist temptation when it *is* present, clinical interventions that increase self-efficacy may help act as a buffer against the actions of others. This would be useful even if used in conjunction with family interventions, as it is

impossible to easily control one's environment to the extent that temptations will never be present.

In this study, I have replicated findings associating self-efficacy with better blood sugar control and demonstrated the influence of others' (particularly close others) *behavior* on people's dietary management in a context specific to diabetes management. Although my sample was one of convenience, it does indicate the importance of social support in maintaining adequate blood glucose control and control over eating behaviors and food choices, particularly among people who feel that support is important to them. I demonstrated that even if people are emotionally supportive, it is still more difficult for diabetic patients to eat healthily if those around them are not doing so. This represents an important way in which emotional support may not be adequate, and further attempts to differentiate between emotional and instrumental support are needed in order to better understand how social support functions in helping patients to maintain better control.

Gender difference is another area that deserves more attention. My results indicated that women are, in general, higher in self-efficacy than men, which implies that they should also be in better glycemic control and be less influenced by the actions of others that might be detrimental to their self-management. Further research is needed on why men are lower in self-efficacy and how their levels can be improved. In addition, little attention has been paid to the adjustment and coping in significant others of patients. A spouse or partner's level of adjustment to a loved one having diabetes could be related to the amount of emotional and instrumental support they are able to give. Research that directly evaluates the adjustment and actions of patients' family members could be helpful in creating environments conducive to healthy eating.

Future research should also study a more demographically diverse sample. Because all of my participants had access to personal computers, it is likely that their socioeconomic status is not reflective of the diabetic population as a whole. It may also be particularly useful to include more patients with Type 2 diabetes or who do not use insulin pumps, as an insulin pump affords significantly more dietary freedom than medication or multiple daily injections and may make adherence less problematic. However, if anything, I may have underestimated the effects of social influence. The people in my sample were highly motivated, in good control, and had high levels of self-efficacy and flexibility. Yet they still showed effects from the influence of others. Patients with lower levels of self-efficacy, worse control, and less flexibility may yield even more significant results. Further study could better ascertain the magnitude of and mechanisms behind others' influence on eating behavior in patients with diabetes and promote more effective interventions for dietary self-care.

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Appendix

Supplemental Social Support Survey

S-S**Dietary Questions: Place an X next to the number that best describes how you feel**

1. In general, how often do you try to choose foods that best help you maintain good blood sugar control?

- ₁ Almost Always
- ₂ Very Often
- ₃ Sometimes
- ₄ Not Very Often
- ₅ Almost Never

2. If you live **with other people**, how often do they provide **emotional support** to help you eat in a way that helps you maintain good blood sugar control? (if you live alone, skip this question)

- ₁ Almost Always
- ₂ Very Often
- ₃ Sometimes
- ₄ Not Very Often
- ₅ Almost Never

3. If you live **with other people**, how often do they provide support by **choosing to eat healthily** along with you? (if you live alone, skip this question)

- ₁ Almost Always
- ₂ Very Often
- ₃ Sometimes
- ₄ Not Very Often
- ₅ Almost Never

4. When eating out or eating at other people's houses, how often do your friends and family provide **emotional support** to help you eat in a way that helps you maintain good blood sugar control?

- ₁ Almost Always
- ₂ Very Often
- ₃ Sometimes
- ₄ Not Very Often
- ₅ Almost Never

5. When eating out or eating at other people's houses, how often do your friends and family provide support by **choosing to eat healthily** along with you?

- ₁ Almost Always
- ₂ Very Often
- ₃ Sometimes

- 4 Not Very Often
- 5 Almost Never

6. When I am **alone**, eating in a way that helps me maintain good blood sugar control is:

- 1 Very Difficult
- 2 Somewhat Difficult
- 3 A Little Difficult
- 4 A Little Easy
- 5 Somewhat Easy
- 6 Very Easy

7. When I am **with others**, eating in a way that helps me maintain good blood sugar control is:

- 1 Very Difficult
- 2 Somewhat Difficult
- 3 A Little Difficult
- 4 A Little Easy
- 5 Somewhat Easy
- 6 Very Easy

8. When I am with others who **live with me**, eating in a way that helps me maintain good blood sugar control is: (if you live alone, skip this question)

- 1 Very Difficult
- 2 Somewhat Difficult
- 3 A Little Difficult
- 4 A Little Easy
- 5 Somewhat Easy
- 6 Very Easy

9. When I am with others who **do not live with me**, eating in a way that helps me maintain good blood sugar control is:

- 1 Very Difficult
- 2 Somewhat Difficult
- 3 A Little Difficult
- 4 A Little Easy
- 5 Somewhat Easy
- 6 Very Easy

10. If the people I am eating with **do not** choose to eat healthily, eating in a way that helps me maintain good blood sugar control is:

- 1 Very Difficult
- 2 Somewhat Difficult
- 3 A Little Difficult
- 4 A Little Easy
- 5 Somewhat Easy
- 6 Very Easy

11. If the people I am eating with choose to eat healthily, eating in a way that helps me maintain good blood sugar control is:

- ₁ Very Difficult
- ₂ Somewhat Difficult
- ₃ A Little Difficult
- ₄ A Little Easy
- ₅ Somewhat Easy
- ₆ Very Easy

12. Receiving emotional support from the people I live with about eating in a way that helps me maintain good blood sugar control is:

- ₁ Very Important
- ₂ Somewhat Important
- ₃ A Little Important
- ₄ Not Very Important
- ₅ Not Important

13. Having the people I live with eat healthily along with me is:

- ₁ Very Important
- ₂ Somewhat Important
- ₃ A Little Important
- ₄ Not Very Important
- ₅ Not Important

Table 1

Mean Levels of Self-efficacy, Locus of Control (LC), and Chronic Illness Resources

Scale	N	M	SD
Self-efficacy	105	1.13	0.73
Internal LC	105	26.48	6.76
Chance LC	105	13.19	5.93
Powerful Others (Doctors) LC	105	12.72	2.76
Powerful Others (Others) LC	105	7.06	2.91
Health Care Team Support	105	21.89	5.87
Family Support	103	20.36	5.90
Personal Resources	102	20.66	5.44
Desire for Instrumental Support	99	3.09	1.41
Instrumental Support Given	100	3.11	1.38

Table 2

Correlations Between Self-efficacy, Locus of Control (LC), and Ha₁C

Scale	Self- efficacy	Internal LC	Chance LC	Doctors LC	Others LC	Ha ₁ C
Self- efficacy N	-	.30** 105	-.33** 105	.12 105	-.22* 105	-.24* 104
Internal LC N		-	-.36** 105	.16 105	-.12 105	-.08 104
Chance LC N			-	-.02 105	.42** 105	.27* 104
Doctors LC N				-	-.02 105	-.15 104
Others LC N					-	.22* 104
Ha ₁ C N						-

** . $p < .01$

* . $p < .05$

Table 3

Correlations Between Self-efficacy, Social Support (SS), and Ha₁C

Scale	Importance of SS	Self-efficacy	Ha ₁ C
Importance of SS N	-	-.05 102	-.30** 101
Supplemental SS Question 6 N	.20* 101	.31** 104	-.22* 104
Supplemental SS Question 7 N	.29** 102	.19 105	-.28** 104
Supplemental SS Question 8 N	.12 97	.16 97	-.09 96
Supplemental SS Question 10 N	.31** 102	.20* 105	-.23* 104
Supplemental SS Question 11 N	.10 102	.43** 105	-.08 104

Note. See Appendix A for Supplemental Support Questions Text.

** . $p < .01$

* . $p < .05$

Figure Captions

Figure 1. Self-efficacy by gender.

Figure 2. Eating alone vs. eating with others.

Figure 3. Influence of others' eating behavior on difficulty of eating healthily.

Figure 4. Importance of emotional vs. instrumental support for healthy eating.

Figure 1

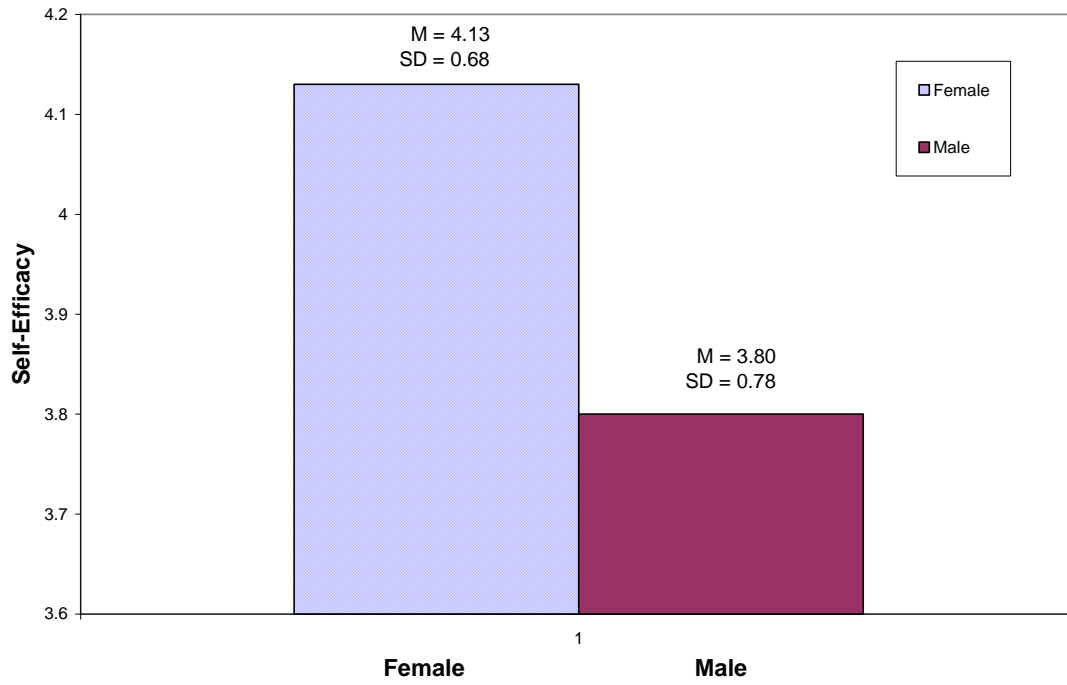


Figure 2

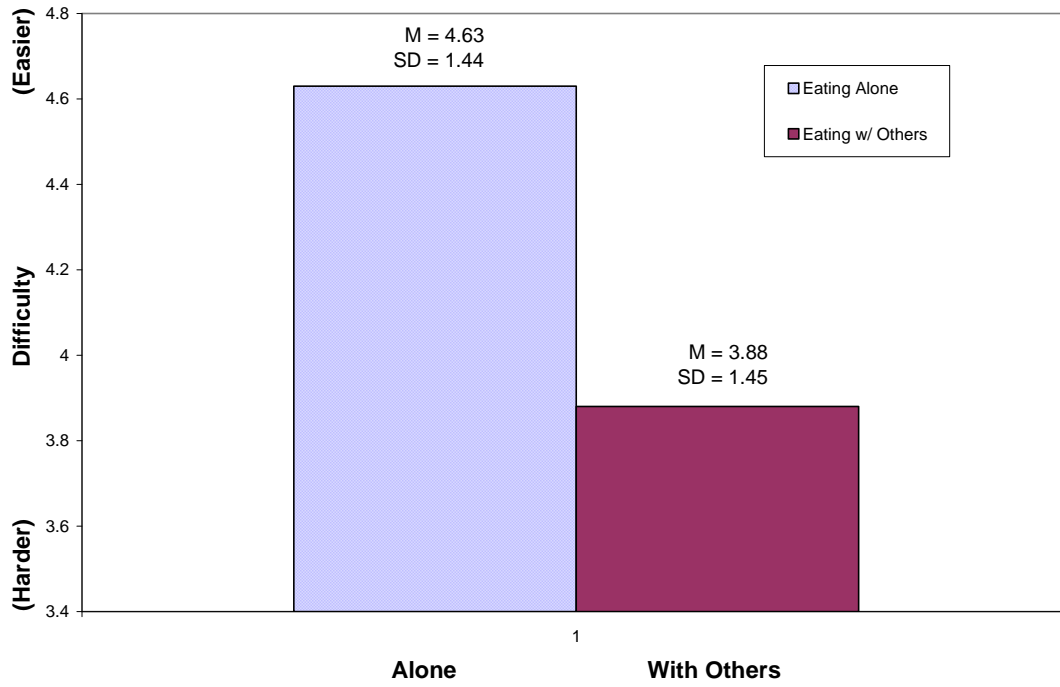


Figure 3

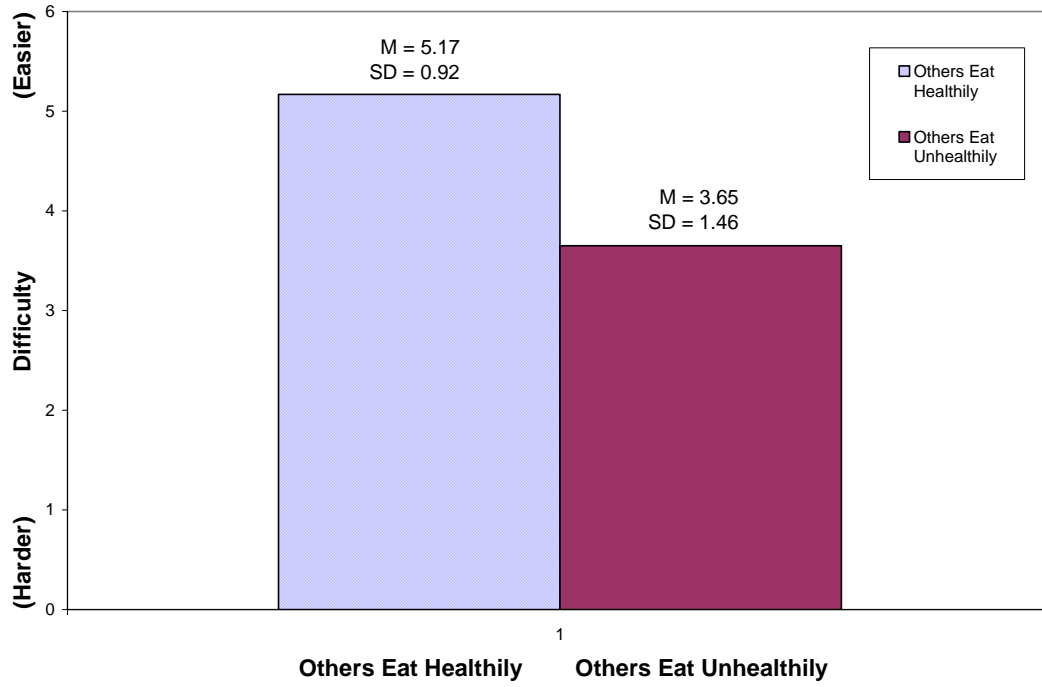


Figure 4

