

THE EFFECTS OF COMMUNAL EATING ON PERCEIVED SOCIAL SUPPORT AND
ACADEMIC SUCCESS IN FIRST YEAR COLLEGE STUDENTS

by

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Abstract

Family meals and meals with caregivers can be sources of social support. Current literature indicates that social support is important for physical and psychological health and well-being. There has been no published research looking at the role of communal meals in collegiate dining centers as sources of social support. This study investigated the possibility that communal meals in a collegiate dining center and eating with other people in these settings may be related to perceived social support, academic success, frequency of family meals, and/or degree of involvement in college extracurricular activities.

To investigate these relationships, first-year Kansas State University students living in the residence halls of the Derby Complex (Ford, Haymaker, Moore, and West Halls) were administered a survey about dining center usage habits. The survey included the previously tested Interpersonal Relationship Inventory Short Form by V.P. Tilden (n.d.) as a measure of perceived social support. Participants granted access to their first semester Kansas State University grade point average and semester dining center usage data. Surveys were completed online (n=216) and in paper format (n=89) for a total of 303 participants. There was no significant difference between the demographics of those that completed the online versus paper formats of the survey. Therefore, the online and paper formats of the survey were analyzed together. The data were analyzed for all participants and for males (n=94) and females (n=209) separately.

Results revealed multiple significant relationships ($p < 0.05$). Results related to grade point average and perceived social support revealed a significant positive relationship between frequency of eating in the dining center and grade point average for all participants combined.

This relationship was also noted for males and females analyzed separately. Frequency of eating with others was found to be significantly positively correlated to perceived social support score for all participants combined, and for males and females analyzed separately. Frequency of eating with others was significantly positively correlated with grade point average for males alone and females alone, but not all participants combined. Further research is needed to determine if the relationships are causal and if so, the direction of causality in the relationships.

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Chapter 1 - Literature Review

More than two million students live in collegiate residence hall facilities across the United States each year (US Census Bureau, 2003). Many of these students routinely consume meals at an on-campus dining center. Therefore, these dining centers have the potential to impact student health.

According to the World Health Organization, health is more than just physical wellbeing. The Preamble to the Constitution of the World Health Organization's constitution was updated in 1946 to define health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1946).

When one examines the role of a collegiate dining center on student health, it is important to assess the physical, mental, and social implications of eating in a dining center. There has been a good deal of research related to collegiate dining centers. Most of this research has focused on the foods people choose and consume in the dining center and food safety. There have been numerous studies showing that first-year students gain weight during their first year of eating in a collegiate dining center setting (Hoffman, Policastro, Quick, & Lee, 2006; Holm-Denoma, Joiner, Vohs, & Heatherton, 2008). There also have been studies on food group and nutrient consumption in collegiate dining centers. For example, students eating in collegiate dining centers have been found to consume more fruit and vegetables than students who live and dine off-campus (Adams & Colner, 2008; Brown, Dresen, & Eggett, 2005). Food safety studies have been conducted in collegiate food services to determine if the food served is safe (Lin, 2004; Sneed, Toma, & Unklesbay, 1998). Food safety, nutritional choices and the physical implications of these factors are important aspects of student health.

Due to the multidimensional nature of health (World Health Organization, 1946), one must investigate each aspect of health (physical, mental, and social) on each setting that has the potential to influence overall health and well-being. Research should be conducted beyond the physical implications of eating in a dining center. Unfortunately, little research has been conducted to determine the role of the collegiate dining center in the mental and social health of students.

Research has been conducted on family meals and the role that eating together plays during a child's development. There are multiple physical health benefits related to consuming family meals. For example, children who eat meals with family members tend to consume more nutrients, fruit, and vegetables (Gillman et al., 2000; Koszewski, Behrends, Nichols, Sehi, & Jones, 2011). Older adolescents in middle and high school also showed improved dietary profiles (Croll, Hannan, Neumark-Sztainer, Perry, & Story, 2003). Family meal research has extended beyond physical health and nutrition to show that family meals are a vehicle for social support (Fulkerson, Neumark-Sztainer, & Story, 2006; Mestdag & Vandeweyer, 2005; Neumark-Sztainer & Story, 2005) and that family meals promote the well-being of children (Eisenberg, Olsen, Neumark-Sztainer, Story, & Bearinger, 2004). Eisenberg's research found that the frequency of family meals was negatively associated with each of the following components which affect well-being: tobacco, alcohol, and marijuana use, low grade point average, depressive symptoms, and suicide ideation and attempts (Eisenberg, et al., 2004).

Some research has also been conducted on the benefits of eating meals with others in elderly patients with dementia. Most studies on this topic focus on the nutritional benefits and improved eating patterns of dementia patients who dine with others. However, there is evidence that when patients with dementia dine with caretakers, there is an increased perception of social

support by caretakers (Keller, Edward, & Cook, 2007) and measurable improvements in the eating behaviors, resident-resident interaction, and mood of the patients with dementia (Charras & Fremontier, 2010).

Overall, social support is important for health. General social support has been defined as any interpersonal or social relationship that might promote health and wellbeing (Cohen, Gottlieb, & Underwood, 2000; Sarason, 1990). There is evidence that social support and interpersonal relationships contribute to mental health and wellbeing (Cohen et al., 2000; Sarason, 1990). Additionally, research shows that there is a positive relationship between social support and physical health (Espelage, Hale, & Hannum, 2005).

The benefits of social support can be observed throughout the lifespan. In children, social support is positively correlated with academic success as indicated by grade point average of third through fifth grade students (Causey, Dubow, Hryshko, Reid, & Tisak, 1991; Eisenberg, et al., 2004). Similar research in an undergraduate collegiate population showed that a positive relationship persists between social support and academic success during college (DeBerard, Julka, & Spielmans, 2004). Lack of social support has been indicated as a risk factor for physical and psychological negative outcomes in adults in the United States (Balluz, Chapman, Mokdad, & Strine, 2008). Elderly individuals with higher levels of social support experienced more satisfaction with their quality of life and reported fewer symptoms of depression (Newsom & Schulz, 1996). Elderly people with higher levels of social support also reported better health outcomes (Baum, Everard, Fisher, & Lach, 2000).

Social support is extremely important for college students. In a study of Japanese college students, interpersonal support was found to be positively related to increased mental health and decreased symptoms of psychological distress, including depression and symptoms of loneliness

(Sumi, 2006). Research conducted with college students in the United States also demonstrated much higher incidence of depression in college students with low social support (Eisenberg & Hefner, 2009). Social support from parents has been linked to higher college grade point average (Assouline, Colangelo, Cole, Cutrona, & Russell, 1994).

In summary, there is evidence that family meals and meals with caregivers can be sources of social support. Current literature clearly indicates that social support is important for physical and psychological health and well-being. Social support in children has been linked with better academic adjustment and grade point average (Causey, et al., 1991). Familial social support provided by family meals has also been found to be related to more positive academic outcomes (Eisenberg, et al., 2004). Social support in college students (DeBerard et al., 2004) has also been found to be positively correlated with grade point average. Current literature shows that collegiate dining centers have an impact on health (Adams & Colner, 2008; Brown et al., 2005; Hoffman et al., 2006; Holm-Denoma et al., 2008). However, there has been little research on the social and psychological role of communal meals in collegiate dining centers.

This study collected fall semester grade point average for first-year freshmen in addition to data regarding perceived social support, dining center usage, and frequency of eating with others in a dining center. The purpose of this study was to investigate the possibility that communal meals in a collegiate dining center and eating with others may be related to perceived social support and grade point average for first-year students living in the residence halls.

Chapter 2 - Methodology

The methodology for this project was approved by the Committee for Research Involving Human Subjects (IRB) at Kansas State University. The IRB found this project exempt from further IRB review based on the 45 CFR 46.101, paragraph b, category 7 of the Federal Policy for the protection of Human Subjects. The IRB proposal number for this project was 6015.

To obtain the data needed for this research, a survey was created based on the primary variables of interest (frequency of eating in the dining center, frequency of eating with others, perceived social support, and grade point average) and secondary variables of interest (frequency of family meals and level of involvement in collegiate extracurricular activities). The survey included 50 multiple choice questions. The first 11 questions were used to collect demographic information including gender, year in college, race/ethnicity, extracurricular involvement, hall of residence, number of roommates, frequency of family meals during the senior year of high school, frequency of family meals during middle school/ junior high, and value placed on eating together with family. The next section of the survey included 13 questions pertaining to the participant's university dining center usage. This section sought information about: which dining the student center most frequently used, number of meals eaten per week, number of meals taken out of the dining center to eat per week, number of times per week one walked to the dining center with friends, number of times per week one sat with friends at the dining center, and number of people one usually sat with at breakfast, lunch, and dinner. This section also included four questions about how eating in the dining center makes the student feel: question 27 (Even though there are people sitting near you in the dining center, how often do you feel lonely or alone while in the dining center?), question 28 (When you are sitting alone in the dining center,

how often do you feel lonely?), question 29 (Does eating in the dining center make you feel more socially connected?), and question 30 (Does eating in the dining center make you feel less lonely?). The final section of the survey was the Short Form of the Interpersonal Relationship Inventory (Tilden, n.d.).

The Interpersonal Relationship survey was created by V.A. Tilden and colleagues in 1983 and has been validated and refined by a number of subsequent studies (Tilden & Stewart, 1985; Tilden & Galyen 1987; Tilden, Nelson, & May, 1990a; Tilden, Nelson, & May, 1990b; Weinert & Tilden, 1990; Tilden, Hirsch, & Nelson, 1994). This survey has been assessed for validity and reliability in samples including students (n=351), cancer patients (n=94), weight-control patients (n=92), HMO subscribers in health education classes (n=46), adults in the community (n=703), pregnant women (n=30), battered women (n=30), bereaved elderly (n=100), and active duty female service members (n=150) (Tilden & Stewart, 1985; Tilden & Galyen 1987; Weinert & Tilden, 1990; Nayback-Beebe & Yoder, 2011). Additional studies further validated the psychometric credibility of the Interpersonal Relationship Inventory (Tilden, et al., 1994).

The Short Form of the Interpersonal Relationship Inventory (Tilden, n.d.) was used, with permission from the author, to assess perceived social support. The Short Form of the Interpersonal Relationship Inventory includes 26 Likert scale items. Thirteen of the items are summed to yield a social support score. The remaining 13 questions are used to calculate a conflict score. The author of the survey defined perceived social support as "the perceived availability or enactment of helping behaviors by persons with whom one is engaged in relationships that are usually informal and non contractual" (Tilden, n.d.). Conflict was defined as " ...perceived discord or stress in relationships [that] can be occasional, periodic, or

consistent, and can either be caused by the behavior of others actually enacted, or by the absence of behavior enacted by others, such as withholding supportive behaviors" (Tilden, n.d.).

In the present study, participants were asked to grant access to their first semester grade point average and meal plan usage data in the informed consent form issued prior to survey administration. Participants provided their Wildcat Identification (WID) number to allow their survey data to be linked to their grade point average and meal plan usage data. Students who completed the survey were entered into a prize drawing for free laundry money for a semester and \$10 gift certificates redeemable at any housing-sponsored convenience store. A research assistant used the WID to identify winning students in order to distribute prizes.

The survey was administered in paper format for the pilot portion of the study (see Appendix A). An additional set of 5 questions was included at the end of the pilot survey to assess the appropriateness of length and clarity of the survey (see Appendix A). The pilot study was administered to 50 students in the Kramer complex (Marlatt and Goodnow Halls) at Kansas State University on October 26, 2011. Forty-six of 50 students completed the pilot survey.

Due to feedback from the pilot study, the order of the survey sections was reversed. The order of the sections for the final version of the survey was as follows: perceived social support (Interpersonal Relationship Inventory Short Form), followed by dining center usage information, and ending with demographic data. Placing demographic information at the end of the survey is preferable since research has shown that asking questions of about race and gender can bias subsequent responses (Steele, 2007). Question 22 from the pilot study (How many times per week do you walk to the dining center with friends?) was not included in the final version of the survey because responses to this question were found to be relatively highly related (Pearson Coefficient of 0.794, $p=0.000$) to responses to question 23 of the pilot study (How many times

per week do you sit with friends in the dining center?) . Two questions were added to the demographic section of the final study. On the final version of the study, participants were asked to report their age and their estimated first semester grade point average. Therefore, the final version of the survey included 50 multiple choice and one short answer question (age) (see Appendix B).

The final version of the survey was sent out electronically to all first-year students living in the Derby complex (Ford, Haymaker, Moore, and West Halls). These students (n=1,554) received an email asking them to participate in a research survey about the K-State dining centers. Participants were informed that, if they completed the survey, they would be entered in a prize drawing for free laundry money for the spring semester or gift cards redeemable at housing sponsored convenience stores.

The survey was launched on November 7, 2011 and closed on November 14, 2011. Two reminder emails with links to the survey were sent to students on November 10, 2011 and November 13, 2011 (see Appendix C).

Responses from participants answering a majority of the survey questions were included in the data analysis. The two main independent variables of interest were average meals per week eaten from the dining center and frequency of eating with others in the dining center. The actual dining center usage data set was used to calculate average number of meals consumed per week for students who granted access to this information. The total number of meals the participant used from August 22, 2011 through December 11, 2011 was divided by 15 weeks yielding meals used (eaten) per week. For students who did not grant access to this information, the self-reported value for question 10 (How many meals do you eat in the dining center in a

typical week? Include breakfast, lunch, and dinner meals) was used as the meals per week data point.

The frequency of eating with others was based solely off the response to question 13 of the survey (How many times per week do you sit with friends in the dining center? Include breakfast, lunch, and dinner). Possible responses for this item were: "None," "1-3 meals/week," "4-6 meals/week," "7-9 meals/week," "10-12 meals/week," "13-15 meals/week," and "More than 16 meals/week."

The two main dependent variables in this study were grade point average and perceived social support. The actual first semester grade point average issued by Kansas State University was used for all participants who granted access to this information. For participants who did not grant access to their first semester grade point average and students whose actual grade point average could not be obtained, an estimated grade point average was imputed based on the student's self-reported first semester grade point average and the actual grade point average of other participants who self-reported the same grade point average. Using this method, the researcher was able to obtain a valid approximation of grade point average for each participant.

The perceived social support score was calculated based on the responses to questions: 7.1, 7.11, 8.1, 8.2, 8.3, 8.4, 8.5, 8.7, 8.9, 8.10, 8.11, 8.13, and 8.14. See Table 2.1 for the text of these questions. The conflict score was calculated based on the responses to the following questions: 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.12, 8.6, 8.8, and 8.12. See Table 2.2 for the text of these questions. For each scale, responses corresponding to that scale were summed, creating a range of responses for each scale.

A secondary variable, degree of involvement, was calculated based on responses to questions 25 (Are you a member of a fraternity or sorority?), 26 (Are you active in a faith-based

or religious organization that meets on at least a weekly basis?), and 27 (Are you involved in other extracurricular activities such as sports or a club not including religious groups or Greek affiliations?). Each question answered in the affirmative earned the participant one point toward the score for total degree of involvement. Possible scores on this scale ranged from zero (not being involved in any extracurricular activities) to three (being involved in all three types of extracurricular activities asked about in the survey).

Frequency of family meals was calculated by summing the responses to questions 31 and 32, which addressed the frequency of family meals during the senior year of high school and middle school/junior high respectively. The response categories were assigned a value ranging from 1 to 5 so that: "Never"= 1, "1-3 times per week"= 2, "4-6 times per week"= 3, "7-9 times per week"= 4, and "10 or more times per week"= 5. The possible values for the frequency of family meals ranged from 2-10, with two meaning the respondent never ate with family during middle school/ junior high or high school, and ten meaning the respondent ate with family 10 or more times per week both in middle school/ junior high and in high school.

All data analysis was conducted using PASW Statistics 18, Release Version 18.0.0 (© SPSS, Inc., 2001, Chicago, IL, www.spss.com). The following correlations were conducted using the main dependent and independent variables. Each of these correlations was calculated once using all participants combined and a second time for males and females separately.

Dining center usage x grade point average

Dining center usage x social support score

Frequency of eating with others x grade point average

Frequency of eating with others x social support score

Dining center usage x frequency of eating with others

Social support score x grade point average

In addition to these correlations, 2-way analysis of variance was conducted to test the following null hypotheses:

Mean grade point averages for different levels of dining center usage by gender are not significantly different

Mean social support scores for different levels of dining center usage by gender are not significantly different

Mean grade point averages for different levels of frequency of eating with others by gender are not significantly different

Mean social support scores for different levels of frequency of eating with others by gender are not significantly different

The secondary information collected on family meals, level of involvement in extracurricular activities during college, and perceived level of conflict in personal relationships was also examined using the following correlations. Again, all analyses were conducted based on the responses of all participants combined, as well as males and females separately.

Frequency of family meals x grade point average

Frequency of family meals x social support score

Degree of involvement x grade point average

Degree of involvement x social support score

Social support score x conflict score

In addition to these correlations, 2-way analysis of variance was conducted to test the following null hypotheses:

Mean grade point averages for different levels of family meals by gender are not significantly different

Mean social support scores for different levels of family meals by gender are not significantly different

Mean grade point averages for different levels of degree of involvement by gender are not significantly different

Mean social support scores for different levels of degree of involvement by gender are not significantly different

Table 2.1

Individual Questions for the Social Support Score

- Q8.1: I know someone who makes me feel confident in myself.
- Q8.2: Some people I care about share similar views with me.
- Q8.3: There is someone I can turn to for helpful advice about a problem.
- Q8.4: I can talk openly about anything with at least one person I care about.
- Q8.5: There is someone I could go to for anything.
- Q8.7: I can count on a friend to make me feel better when I need it.
- Q8.9: It's safe for me to reveal my weaknesses to someone I know.
- Q8.10: Someone I care about stands by me through good times and bad times.
- Q8.11: I have the kind of neighbors who really help out in an emergency.
- Q8.13: If I need help, all I have to do is ask.
- Q8.14: I have enough opportunity to talk things over with people I care about.
- Q7.1: I have enjoyable times with people I care about.
- Q7.11: At least one person I care about lets me know they believe in me.

Table 2.2

Individual Questions for the Conflict Score

- Q7.2: I spend time doing things for others when I'd really rather not.
- Q7.3: Some people I care about invade my privacy.
- Q7.4: I am embarrassed by what someone I care about does.
- Q7.5: Someone I care about tends to take advantage of me.
- Q7.6: Some people I care about are a burden to me.
- Q7.7: I wish some people I care about were more sensitive to my needs.
- Q7.8: People I care about make me do things I don't want to do.
- Q7.9: There is tension between me and someone I care about.
- Q7.10: I have trouble pleasing some people I care about.
- Q7.12: Some people I feel close to expect too much of me.
- Q8.6: Some people in my life are too pushy.
- Q8.8: There is someone in my life who gets mad if we have different opinions.
- Q8.12: There is someone I care about that I can't count on.

Chapter 3 - Results

Demographics for the Sample and Population

A total of 216 people completed the online survey. Since a sample size of a 309 was needed for adequate power (based on a population of 1553, an alpha of 5%, and a beta of 95%), paper copies of the final version of the survey were administered during lunch (n= 28) and dinner (n=61) on Wednesday, November 16, 2011. Eighty nine additional paper surveys were completed by freshmen students living in the Derby complex who had not completed the survey online, resulting in a total of 303 survey responses¹.

The demographics of participants who completed the paper survey were similar to the demographics of participants who completed the survey online. The average age of those who completed the online survey was 18.3 years; for the paper survey it was 18.4 years. Of those who completed the online survey, 28% were male and 72% were female. Of those who completed the paper survey, 38% were male and 62% were female. 85% of respondents to both survey formats were Caucasian. Of students who completed the online survey, 4% identified as African American, 5% identified as Asian, and 3% identified as Hispanic. Of students who completed the paper survey, 6% identified as African American, 3% identified as Asian, and 1% identified as Hispanic. Of those who completed the online survey, 29% were from Ford Hall, 19% were from Haymaker Hall, 37% were from Moore Hall, and 15% were from West Hall. Of those who complete the paper survey, 26% were from Ford Hall, 30% were from Haymaker Hall, 33% were from Moore Hall, and 10% were from West Hall.

¹ One student who had previously completed the online survey filled out a paper survey at the lunch data collection period. A second student who had previously completed the online survey filled out a paper survey at the dinner data collection period. The second record for both of these students was discarded.

Level of extracurricular involvement for those who completed the online survey was similar to those who completed the paper survey. Of those who completed the online survey, 25% were involved in a fraternity or sorority, 39% were involved in a faith-based or religious organization, and 57% were involved in an extracurricular activity that was not Greek, religious, or faith-based. Of those who completed the paper survey, 22% were involved in a fraternity or sorority, 43% were involved in a faith-based or religious organization, and 54% were involved in an extracurricular activity that was not Greek, religious, or faith-based. Since the content of the online and paper surveys was identical and the sample who responded to each survey format was similar in demographic characteristics and level of extracurricular involvement, the paper and online survey responses were combined for all analyses.

In total, 303 participants completed the survey questions needed for the analysis including at least 10 of the 13 questions for each scale on the Interpersonal Relationship Inventory. All students sampled were first-year students living in the Derby Complex (Ford, Haymaker, Moore, and West Halls). This sample was comprised of 39% males (n=94) and 61% females (n=209). See Table 3.1. The age of participants ranged from 17-21 years with an average age of 18.3 years. 68.3% of participants were 18 years old (n=207) and 27.7% of participants were 19 years old (n=84) at the time the survey was administered (see Table 3.2). The sample was primarily composed of participants who self-identified as Caucasian, with 85.1% of participants identified as Caucasian (n=285), 4.6% identified as African American (n=14), 4.6% identified as Asian (n=14), and 2.6% identified as Hispanic (n=8) (see Table 3.3a). Students from each hall in the Derby complex participated in the survey. The highest number of participants was from Moore Hall, followed by Ford Hall, then Haymaker Hall, with the smallest

number of respondents from West Hall (see table 3.4 A). Most of the participants, 77.2%, reported living with one roommate (see Table 3.5).

The demographics of the sample were representative of the composition of all first-year students living in the Derby complex in fall 2011. Of the first-year freshmen living in the Derby Complex at the time of the study, 41% were male and 59% were female. The average age of this population was 18.4 years. Responses were distributed representatively among the halls. In fall 2011, Moore had the highest number of first-year freshmen residents and had the highest number of survey responses. Ford, with the second highest number of first-year freshmen students, had the second most survey responses (see Table 3.4b). The majority of first-year freshmen students living on campus live in standard rooms with one roommate, which was also reflected in the sample. The racial-ethnic demographics of the population were not known, but the sample was representative of the overall demographics of Kansas State University first-time freshmen students. In fall 2011, 79.0% of first-time freshmen identified as White, 5.15% identified as African American, 1.85% identified as Asian, and 5.77% identified as Hispanic (Kansas State University Fact Book, 2011) (see Table 3.3b).

<i>Table 3.1</i>		Gender of Participants	
	Frequency	Percent	
Male	94	31.0	
Female	209	69.0	
Total	303	100.0	

<i>Table 3.2</i>		Age of Participants	
		Frequency	Percent
Valid	17	3	1.0
	18	207	68.3
	19	84	27.7
	20	5	1.7
	21	3	1.0
	Total	302	99.7
Missing	System	1	0.3
Total		303	100.0

<i>Table 3.3 A</i>		Race/Ethnicity Demographic Information of Participants	
		Frequency	Percent
African American		14	4.6
Asian		14	4.6
Caucasian		258	85.1
Hispanic		8	2.6
Multiracial		4	1.3
Unknown		4	1.3
Native American		1	0.3
Total		303	100

Table 3.3 B Race/Ethnicity Demographic Information for First Time Freshmen at Kansas State University for Fall 2011
Information available online at <http://www.k-state.edu/pa/statinfo/factbook/>
Accessed 2/12/2012

Total Number of 1st Time Freshmen*		3,728
	Number	Percent of Total
Full-Time**	3,549	95.20%
Part-Time	179	4.80%
Men	1,854	49.73%
Women	1,874	50.27%
Non-Res. Alien	127	3.41%
Black	192	5.15%
American Indian	17	0.46%
Asian	69	1.85%
Hawaiian/Pacific Is	5	0.13%
Hispanic	215	5.77%
Multiracial	121	4.11%
Unknown	37	0.99%
White	2,945	79.00%

*First-time freshman refers to a student attending any institution for the first time at the undergraduate level. Includes students who entered with advanced standing (college credits earned before high school graduation).

**FT based on 12 cr hrs for undergraduates

Table 3.4 A Hall of Origin of Participants

		Frequency	Percent
Valid	Ford	85	28.1
	Haymaker	67	22.1
	Moore	109	36.0
	West	41	13.5
	Total	302	99.7
Missing	System	1	.3
Total		303	100.0

<i>Table 3.4 B</i>		Hall of Origin of All First Year Freshmen Students in the Derby Complex Fall 2011	
	Number of first year freshman residents	Percentage of first year freshmen in the Derby Complex	
Ford	439	28.1	
Haymaker	389	24.9	
Moore	505	32.3	
West	229	14.7	
Total	1562	100.0	

<i>Table 3.5</i>		Number of Roommates for Participants	
		Frequency	Percent
Valid	0	3	1.0
	1	234	77.2
	2	19	6.3
	3	42	13.9
	More than 3	2	.7
	Total	300	99.0
Missing	System	3	1.0
Total		303	100.0

Preparing the Data Set for Analysis

Real dining center usage data was available for the vast majority of participants (n= 289). For students who did not grant access to this information (n=14), the self-reported value for question 10 (“How many meals do you eat in the dining center in a typical week? Include breakfast, lunch, and dinner meals.”) was used as the meals per week data point. The correlation between actual meal usage and question 10 responses was 0.685 (p= 0.00) indicating a strong positive correlation. For data analysis, the meals-per-week data set was binned into the following categories, in order to have a useable sample size in each group: "Less than 7 meals/week," "7-9 meals/week," "9-11 meals/week," and "More than 11 meals/week." Both methods (meal service record and self-reported meal usage) were categorized in the same way.

For the frequency of eating with others data, the following collapsed response categories were used because of the very small counts for the "None" (n=7) and "More than 16" (n=17) response categories: "0-3 meals/week," "4-6 meals/week," "7-9 meals/week," "10-12 meals/week," "More than 13 meals/week."

The actual first semester grade point average issued by Kansas State University was used for all participants who granted access to this information (n= 266). For participants who did not grant access to their first semester grade point average (n=37) and students whose actual grade point average could not be obtained (n=20), an estimated grade point average was imputed based on the student's self-reported first semester grade point average and the actual grade point average of other participants who self-reported the same grade point average on the survey. For student who granted access to their grade point average, the correlation between actual grade point average and estimates grade point average was 0.702 (p=0.00). Using this method, the

researcher was able to obtain a valid grade point average for each participant². Grade point averages ranged from 1.07 to 4.0.

Most participants fully completed the questions related to social support (n=298) and conflict (n=298). For social support, two students were excluded from the data analysis because they responded to only two to five of the 13 social support survey questions. Three students responded to 12 of the 13 questions that comprised the social support scale. Two participants responded to 10 of the 13 questions on the conflict scale. Three participants responded to 12 of the 13 questions on the conflict scale. For the participants who responded to at least 10 of the 13 questions in a given section, the social support or conflict score was imputed based off of the average response to the answered questions for that portion of survey. Social support scores ranged from 26 to 65. Conflict scores ranged from 13 to 65.

Most participants responded to all of the questions necessary for the calculation of frequency of family meals (n=297) and degree of involvement (n=300). Scores for the frequency of family meals ranged from two to ten. Degree of involvement scores ranged from zero to three.

Qualitative Findings

Questions 17, 18, 19, and 20 of the survey were constructed to gauge participants' feelings and perceptions of eating in the dining center. Question 17 asked, "Even though there are people sitting near you in the dining center, how often do you feel lonely or alone while in the dining center?" Possible responses were "often," "sometimes," "rarely," "never," and "not applicable- I do not sit near other people in the dining center." 76.9% of participants reported

² One student did not have a grade point average because they did not grant access to grade point average and they did not self report a grade point average, resulting in no way to impute a valid grade point average for that student.

that they are rarely or never lonely when people are sitting near them in the dining center. 20.5% of participants reported that they are sometimes or often lonely even when there are people sitting near them in the dining center. Males and females answered this question similarly.

Question 18 asked, "When you are sitting alone in the dining center, how often do you feel lonely?" Possible responses were "often," "sometimes," "rarely," "never," and "not applicable- I never sit alone in the dining center." 32.0% of participants reported that they are sometimes or often lonely when sitting alone in the dining center. 43.6% of participants reported that they were rarely or never lonely when sitting alone in the dining center. Nearly a quarter (23.8%) of participants indicated that this question was not applicable to them because they "never sit alone in the dining center." Females were more likely to report often or sometimes feeling lonely with 35.8% of females giving a response of "sometimes" or "often" and only 24.5% of male giving a response of "sometimes" or "often." Likewise, males were more likely to report rarely or never being lonely when sitting alone. 50.0% of male respondents indicated that they were never or rarely lonely when sitting alone in the dining center while only 40.1% of female respondents gave these responses.

Question 19 asked, "Does eating in the dining center help you feel more socially connected?" Possible responses to this question were "yes- definitely," "yes- somewhat," "maybe- unsure," and "no- not at all." The majority of participants (62.4%) indicated that eating in the dining center made them feel more socially connected. Only 11.2% of respondents indicated that they did not feel that eating in the dining center made them feel more socially connected. Males and females responded similarly to this question with a slightly larger percentage of females giving a response of unsure. 27.5% of female respondents indicated that

they were unsure if eating in the dining center made them feel more socially connected versus 22.3% of male respondents.

Question 20 asked, "Does eating in the dining center help you feel less lonely?" Possible responses to this question were "yes- definitely," "yes- somewhat," "maybe- unsure," and "no- not at all." 44.9% of participants answered yes, 28.4% were unsure, and 26.1% reported eating in the dining center did not help them feel less lonely at all. Males and females responded similarly to this question with a slightly larger percentage of female respondents indicating that they were unsure if eating in the dining center helped them feel less lonely. Thirty percent of female respondents indicated that they were unsure if eating in the dining center made them feel more socially connected versus 25.5% of male respondents.

Primary Analyses of Interest

The correlation for the relationship between dining center usage and grade point average for all students (male and female) was 0.221 ($p=0.000$). This indicated that there is a significant positive relationship between dining center usage and grade point average for the sample as a whole. A significant positive relationship was also present for males alone with a Pearson Coefficient of 0.306 ($p=0.003$) and females alone with a correlation coefficient of 0.291 ($p=0.000$) (see Figure 3.1). When investigating the hypothesis that the mean grade point averages for different levels of dining center usage by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and dining center usage ($df=3$; $F=0.728$; $p=0.536$). The means of grade point average for the different levels of dining usage were statistically significant ($df=3$; $F=9.576$; $p=0.048$). The mean grade point average for the different levels of dining usage for males and females was

significantly different ($df=1$; $F=29.046$; $p=0.005$) with females having a higher grade point average than males (see Figure 3.1).

Dining center usage and perceived social support were not significantly correlated for the combined group, males alone, or females alone. The correlation for the relationship between dining center usage and social support for all students (male and female) was -0.019 ($p=0.745$), indicating no relationship between the two variables. For males alone, the Pearson correlation coefficient was 0.082 ($p=0.429$) and for females the correlation was -0.005 ($p=0.946$), again indicating no relationship (see Figure 3.2). When investigating the hypothesis that the mean social support scores for different levels of dining center usage by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and dining center usage ($df=3$; $F=0.958$; $p=0.413$). The means of the social support scores for the different levels of dining usage were not statistically significant ($df=3$; $F=0.254$; $p=0.855$). The means for the different levels of dining usage for males and females were not statistically significant ($df=1$; $F=6.843$; $p=0.060$) (see Figure 3.2).

The correlation for the relationship between the frequency of eating with others and grade point average for all students (male and female) was 0.086 ($p=0.138$). This indicated the relationship between the frequency of others and grade point average was not statistically significant. However, when looking at males and females separately, significant relationships were noted. For males alone, the Pearson Coefficient was 0.206 ($p=0.046$) and for females alone the correlation was 0.162 ($p=0.020$) (see Figure 3.3). When investigating the hypothesis that the mean grade point averages for different levels of frequency of eating with others by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and frequency of eating with others ($df=4$; $F=0.468$; $p=0.759$). The

means of grade point average for the different levels of eating with others were not statistically significant ($df=4$; $F=3.690$; $p=0.117$). The means for the different levels of eating with others for males and females were statistically significant ($df=1$; $F=21.100$; $p=0.000$) with females having a higher grade point average than males (see Figure 3.3).

The frequency of eating with others was positively correlated with perceived social support. The correlation between the frequency of eating with others and social support for all students (male and female) was 0.495 ($p=0.000$). For males alone the correlation was 0.325 ($p=0.001$) and for females the correlation was 0.458 ($p=0.000$), indicating a significant positive relationships between perceived social support and eating with others for each gender independently (see Figure 3.4). When investigating the hypothesis that the mean social support scores for different levels of frequency of eating with others by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and frequency of eating with others ($df=4$; $F=0.677$; $p=0.608$). The means of the social support scores for the different levels of eating with others were not statistically significant ($df=4$; $F=4.533$; $p=0.086$). The means for the different levels of eating with others for males and females were statistically significant ($df=1$; $F=11.632$; $p=0.005$) with females having a higher average perceived social support score than males (see Figure 3.4).

When looking at the two primary independent variables of interest, dining center usage and the frequency of eating with others, a strong and significant correlation was found. For males and females together the Pearson Coefficient was 0.468 ($p=.000$). For males alone, the correlation was 0.325 ($p=0.001$) and for females alone the correlation was 0.458 ($p=0.00$). It is logical that dining center usage and frequency of eating with others were highly correlated since

most of the participants reported usually eating with other people when they ate in the dining center.

A significant correlation was also noted between the two primary dependent variables, social support and grade point average for all students combined and females alone. The correlation between social support and grade point average for all students (male and female) was 0.162 ($p=0.005$). For females alone the relationship was significant with a correlation of 0.219 ($p=0.002$). For males alone, the correlation was -0.058 ($p=0.579$), indicating that there is not a significant relationship between social support and grade point average for males alone.

Figure 3.1

Dining Center Usage

Mean GPA by Frequency of Eating in the Dining Center for Males and Females

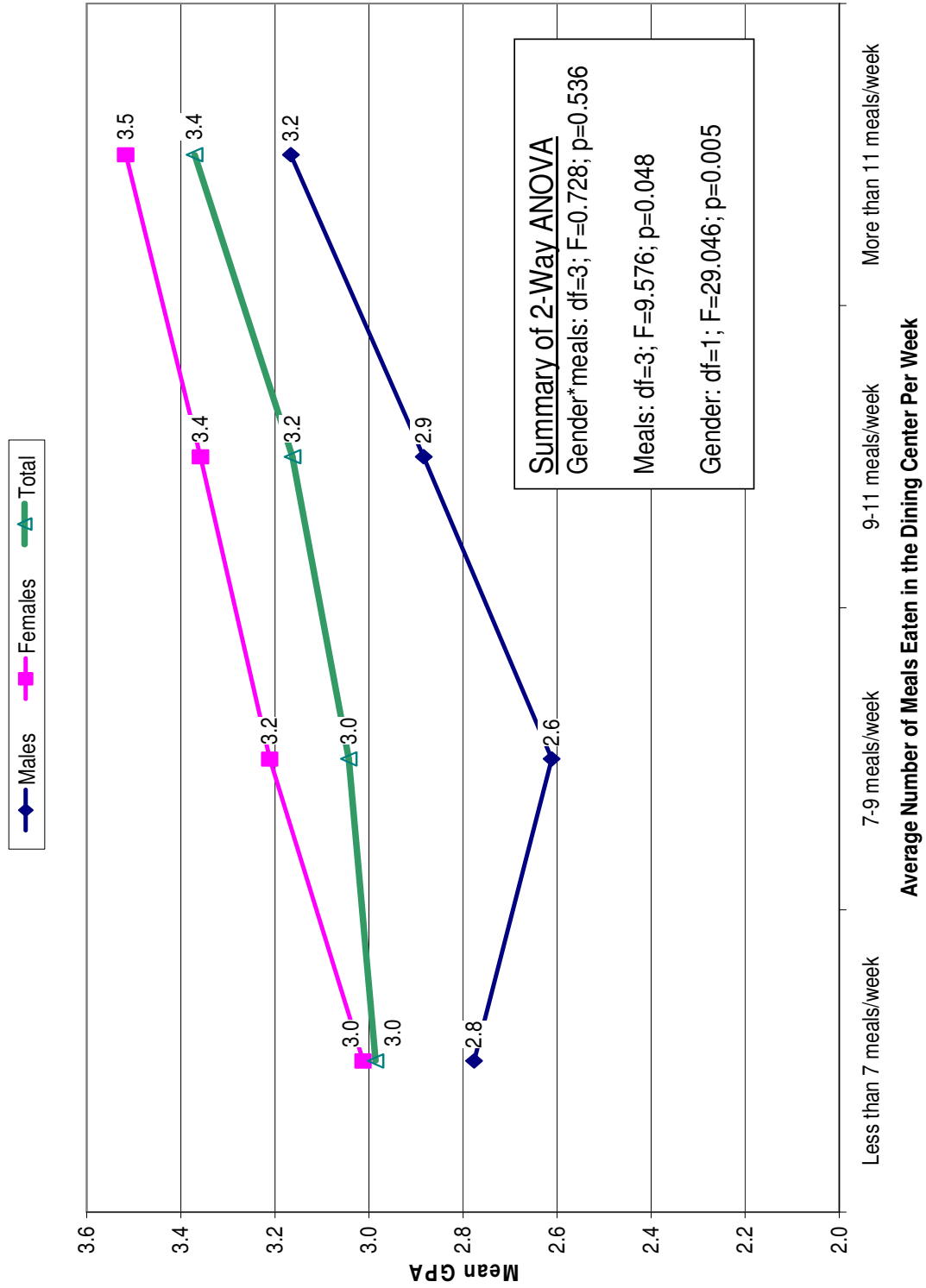


Figure 3.2

Dining Center Usage and Social Support

Social Support Score by Frequency of Eating in the Dining Center for Males and Females

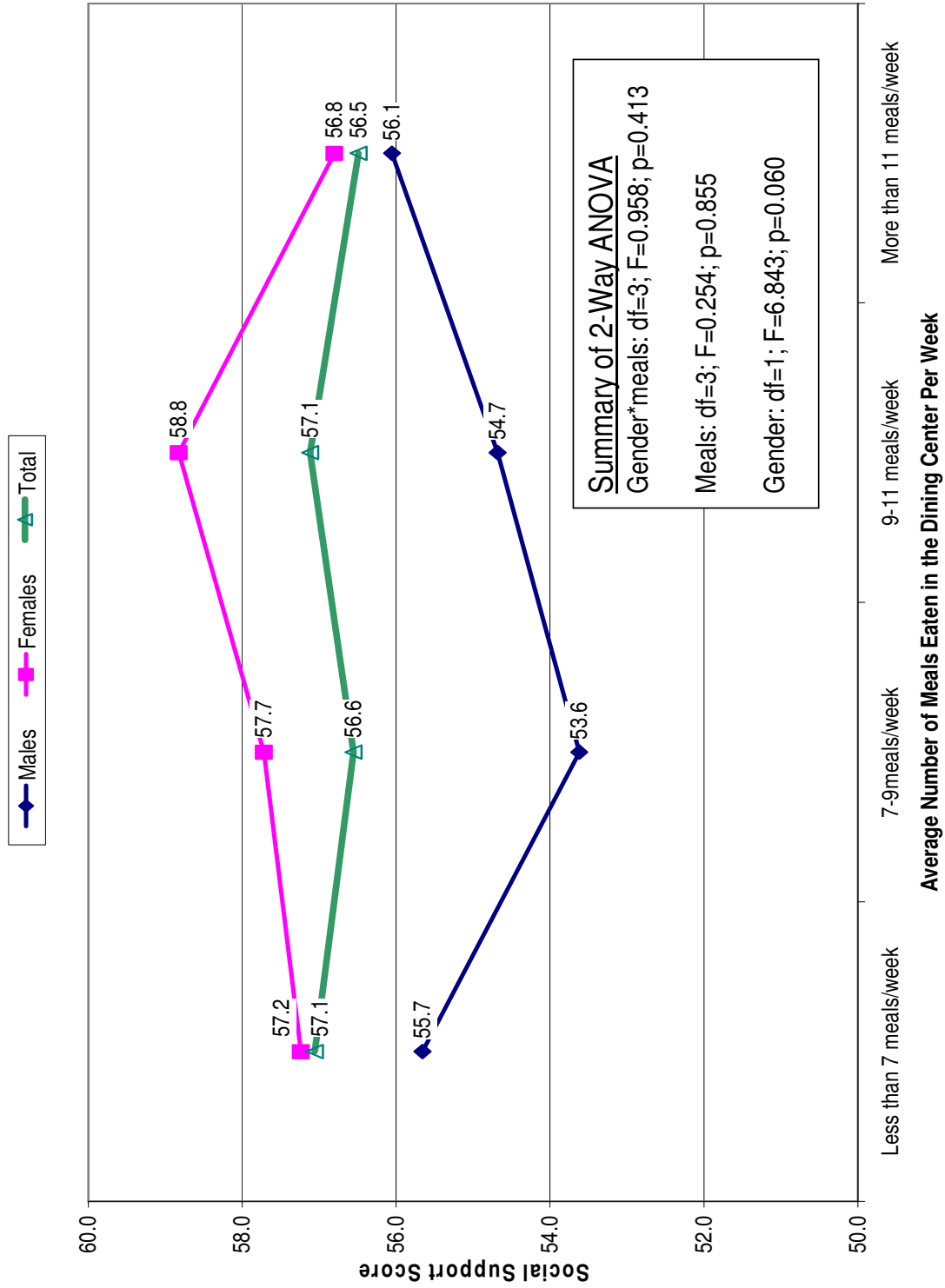


Figure 3.3

Frequency of Eating with Others and GPA

Mean GPA by Frequency of Eating with Other People in the Dining Center for Males and Females

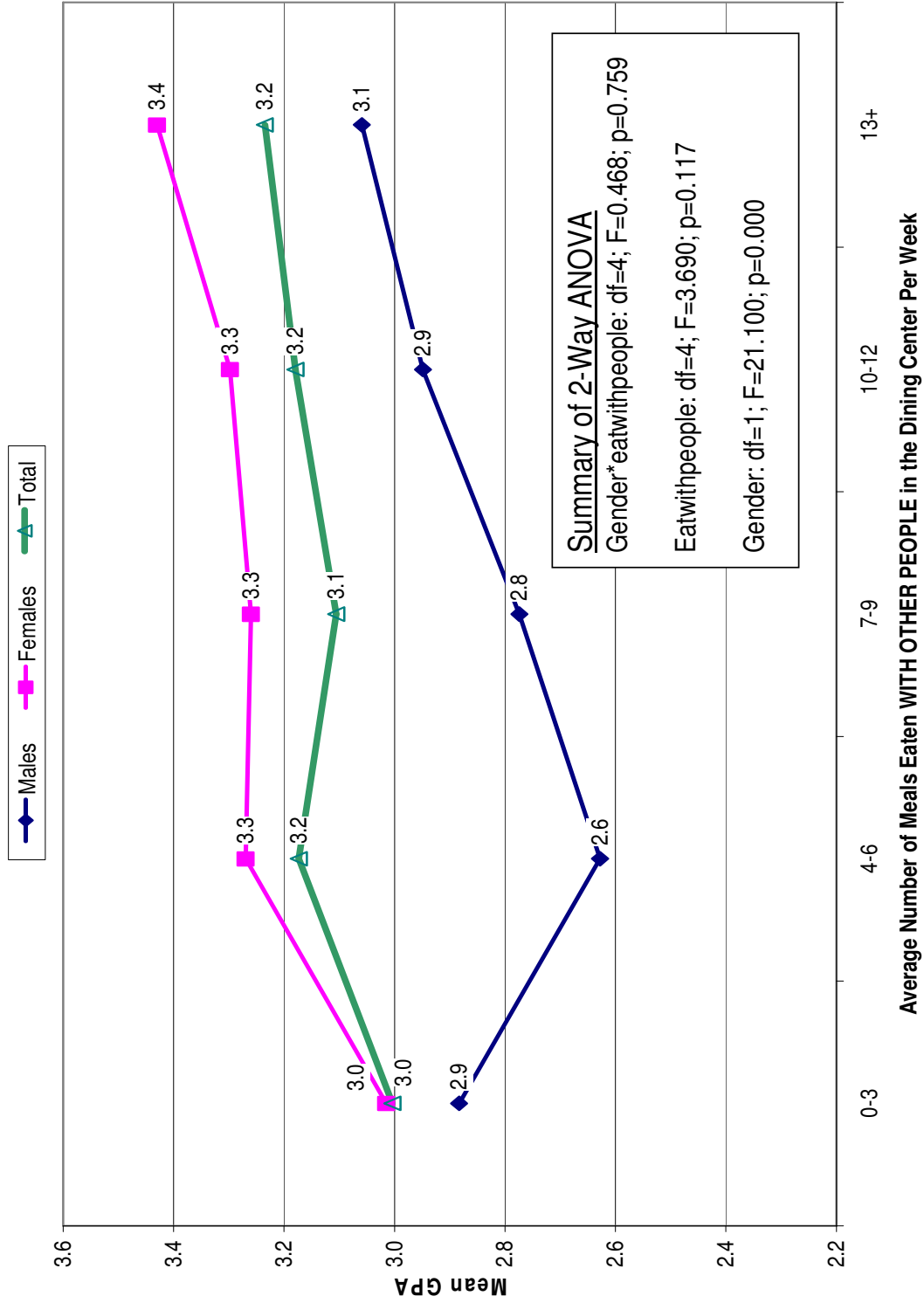
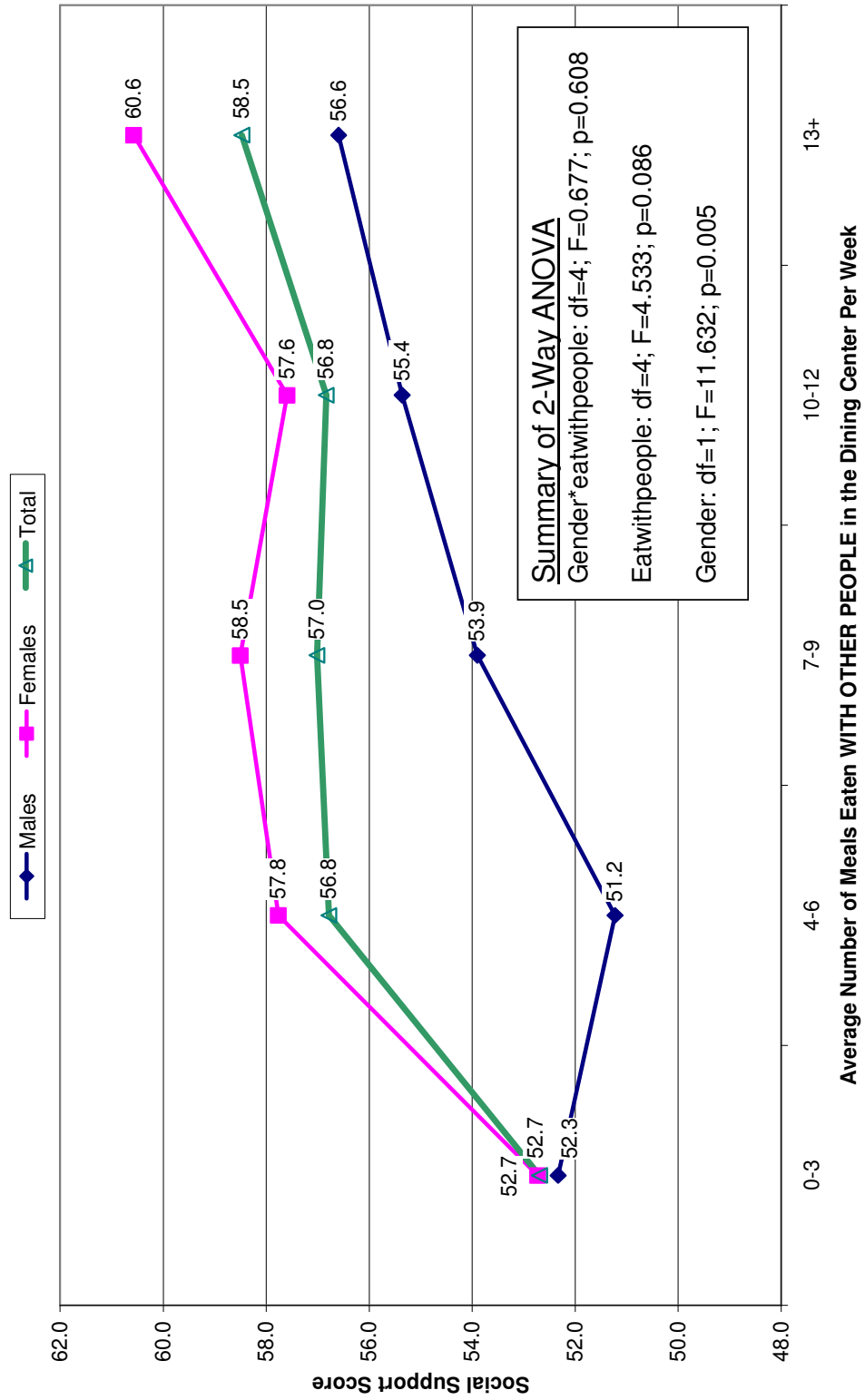


Figure 3.4

Frequency of Eating with Others and Social Support

Social Support Score by Frequency of Eating with Other People in the Dining Center for Males and Females



Secondary Analyses of Interest

A small, but significant relationship of 0.115 ($p=0.047$) was noted between frequency of family meals and grade point average for all participants combined. For males alone the correlation was stronger with a Pearson Coefficient of 0.236 ($p=0.023$). However, for females alone the relationship between frequency of family meals and grade point average was not significant with a Pearson Coefficient of 0.075 ($p=0.286$) (see Figure 3.5). When investigating the hypothesis that the mean grade point averages for different levels of family meals by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and frequency of family meals ($df=3$; $F=2.326$; $p=0.075$). The means of grade point average for the different levels of family meals were not statistically significant ($df=3$; $F=0.834$; $p=0.558$). The means for the different levels of family meals for males and females were not statistically significant ($df=1$; $F=6.589$; $p=0.070$) (see Figure 3.5).

Frequency of family meals and social support score were not significantly correlated for any of the groups. For males and females combined the correlation was 0.109 ($p=0.060$). For males alone the correlation was 0.117 ($p=0.264$) and for females alone the correlation was 0.114 ($p=0.104$) (see Figure 3.6). When investigating the hypothesis that the mean social support scores for different levels of family meals by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and frequency of family meals ($df=3$; $F=0.630$; $p=0.596$). The means of the social support scores for the different levels of family meals were not statistically significant ($df=3$; $F=3.209$; $p=0.182$). The means for the different levels of family meals for males and females were statistically significant ($df=1$; $F=11.346$; $p=0.018$) with females having a higher average perceived social support score than males (see Figure 3.6).

Degree of involvement was significantly correlated with grade point average for all participants (males and females) combined with a Pearson Coefficient of 0.258 ($p=0.000$). However, there was not a significant relationship between degree of involvement and grade point average for males alone with a correlation of 0.022 ($p=0.837$). Females alone, on the other hand, had a moderate positive relationship between degree of involvement and grade point average with a correlation of 0.322 ($p=0.000$) (see Figure 3.7). When investigating the hypothesis that the mean grade point averages for different levels of degree of involvement by gender are not significantly different, the two-dimensional analysis of variance indicated that there was an interaction between gender and involvement ($df=3$; $F=3.584$; $p=0.014$). The means of grade point average for the different levels of involvement were not statistically significant ($df=3$; $F=0.901$; $p=0.533$). The means for the different levels of involvement for males and females were statistically significant ($df=1$; $F=8.872$; $p=0.037$) with females having a higher grade point average than males (see Figure 3.7).

Degree of involvement was also significantly positively correlated with social support score for all participants (male and female) combined with a correlation of 0.238 ($p=0.000$). The correlation for males alone was 0.189 ($p=0.069$), indicating there was not a significant relationship between degree of involvement and perceived social support for males alone. Females alone demonstrated a strong positive correlation between degree of involvement and social support score with a correlation of 0.234 ($p=0.002$) (see Figure 3.8). When investigating the hypothesis that the mean social support scores for different levels of degree of involvement by gender are not significantly different, the two-dimensional analysis of variance indicated that there was no interaction between gender and degree of involvement ($df=3$; $F=0.762$; $p=0.516$). The means of the social support scores for the different levels of involvement were not

statistically significant ($df=3$; $F=4.861$; $p=0.113$). The means for the different levels of involvement for males and females were not statistically significant ($df=1$; $F=2.220$; $p=0.162$) (see Figure 3.8).

The social support score based on the Short Form of the Interpersonal Relationship Inventory (IPRI- Short Form) was a primary dependent variable throughout this study. A conflict score was also calculated using the IPRI- Short Form. Although the conflict score was not a primary or secondary variable of interest, it was found to be significantly related with several of the dependent and independent variables analyzed in this project. For all participants combined (male and female) a significant relationship was noted between conflict score and each of the following variables: social support score -0.340 ($p=0.000$), frequency of family meals -0.138 ($p=0.017$), and degree of involvement -0.125 ($p=0.030$). For males alone there was a significant relationship between conflict score and each of the following factors: social support score -0.382 ($p=0.000$), frequency of eating with others -0.251 ($p=0.015$), and degree of involvement -0.227 ($p=0.028$). For females alone there was a significant relationship between conflict score and each of the following factors: social support score -0.323 ($p=0.000$), grade point average -0.178 ($p=0.010$), and frequency of family meals -0.180 ($p=0.010$).

See Table 3.6 for a summary of primary and secondary correlations of interests for all participants (males and females combined). See Table 3.7 for a summary of correlations for males alone. See Table 3.8 for a summary of correlations for females alone.

Figure 3.5

Frequency of Family Meals and GPA

Mean GPA by Frequency of Family Meals for Males and Females

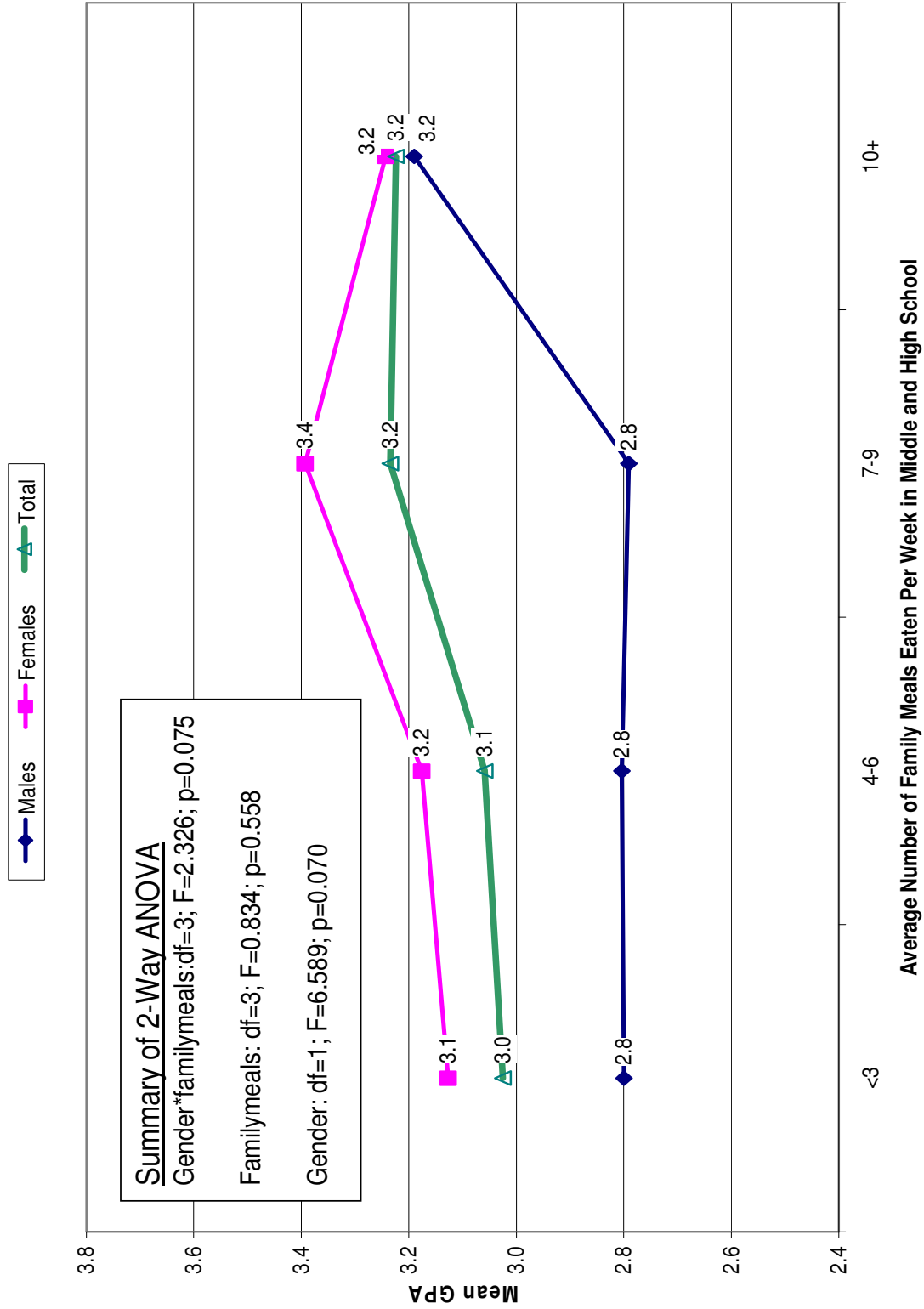


Figure 3.6

Frequency of Family Meals and Social Support

Social Support Score by Frequency of Family Meals for Males and Females

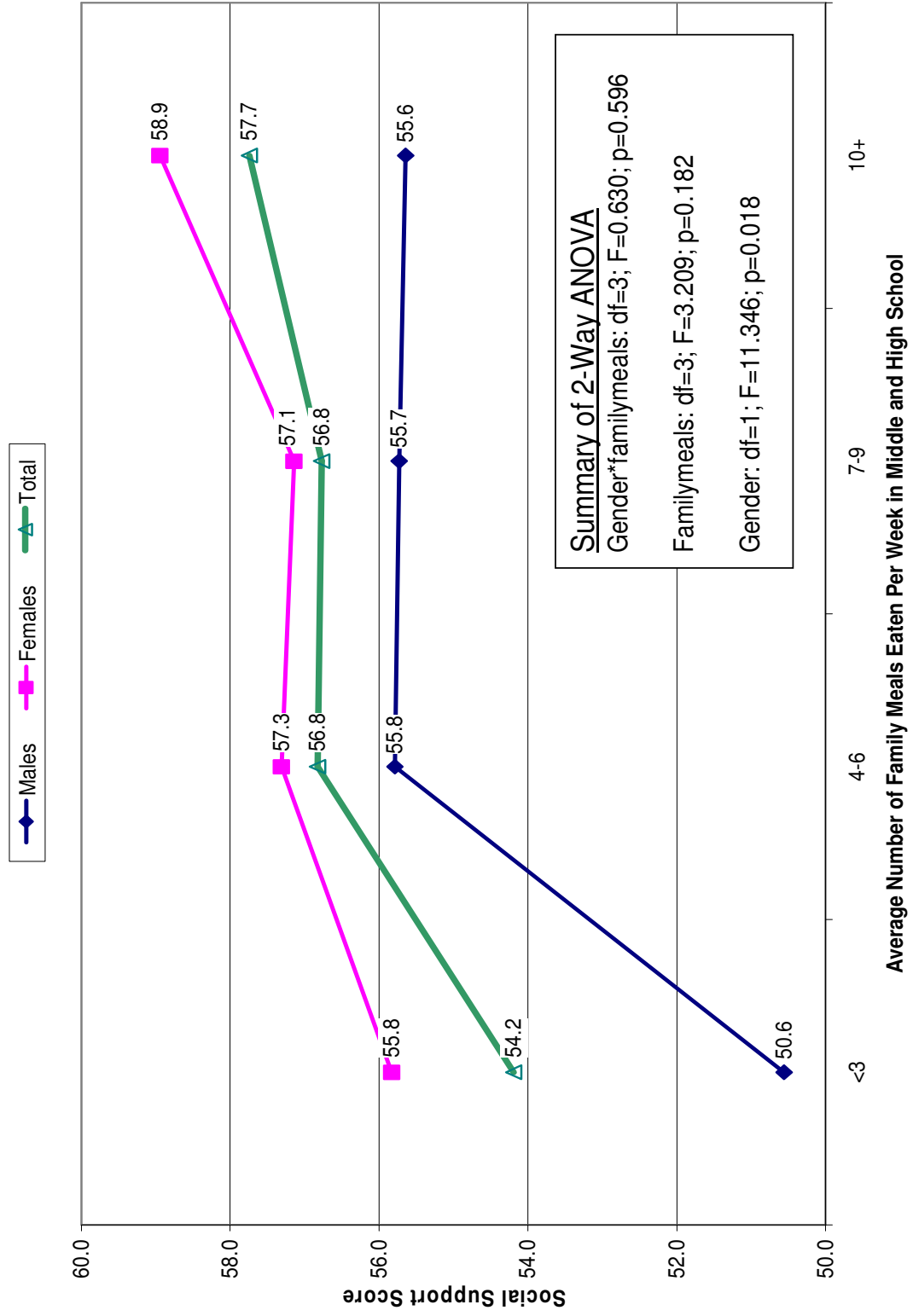


Figure 3.7

Degree of Involvement and GPA

Mean GPA by Degree of Involvement for Males and Females

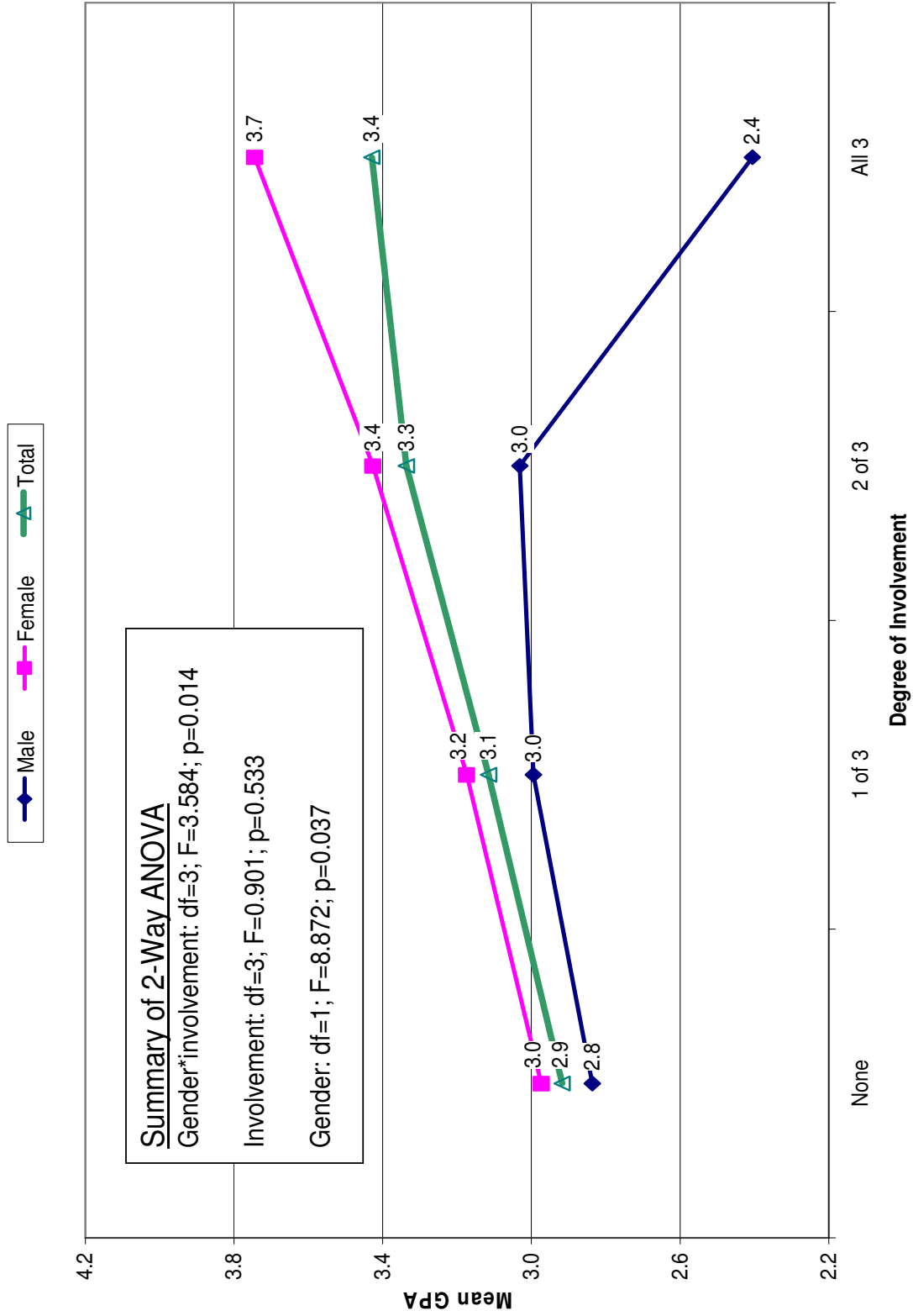


Figure 3.8

Degree of Involvement and Social Support

Social Support Score by Degree of Involvement for Males and Females

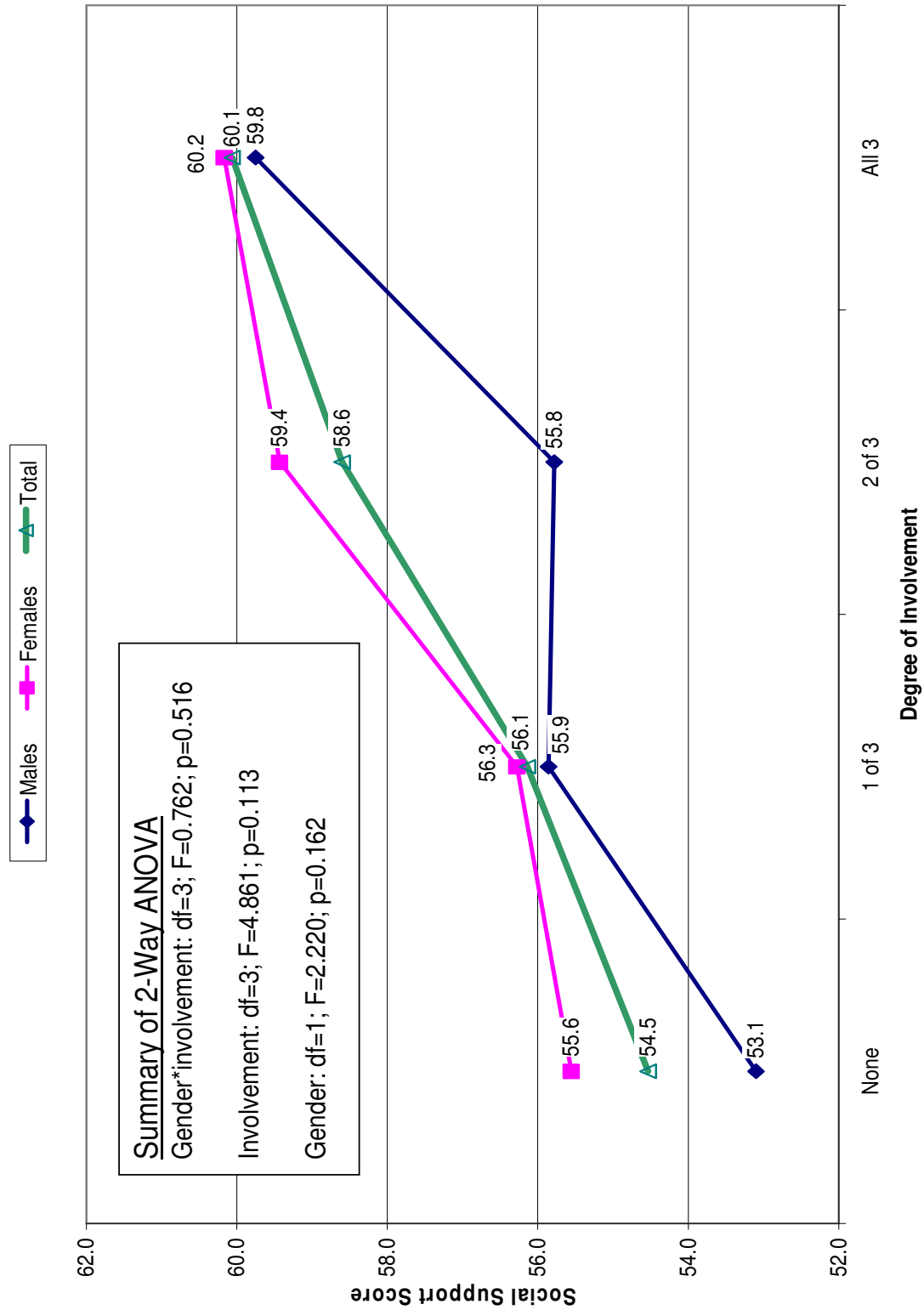


Table 3.6

Summary of Correlations for All Participants (Males and Females

Combined)

Significant relationships are **bolded** and **lightly shaded**

		Grade Point Average	Social Support Score	Conflict Score	Dining Center Usage	Eat With Others	Family Meals	Involvement
Grade Point Average	Pearson Correlation	1	.162	-.102	.221	.086	.115	.258
	Sig. (2-tailed)		.005	.075	.000	.138	.047	.000
	N	303	301	303	303	301	299	302
Social Support Score	Pearson Correlation	.162	1	-.340	-.019	.184	.109	.238
	Sig. (2-tailed)	.005		.000	.745	.001	.060	.000
	N	301	301	301	301	300	297	300
Conflict Score	Pearson Correlation	-.102	-.340	1	-.064	-.054	-.138	-.125
	Sig. (2-tailed)	.075	.000		.265	.349	.017	.030
	N	303	301	303	303	301	299	302
Dining Center Usage	Pearson Correlation	.221	-.019	-.064	1	.468	.020	.101
	Sig. (2-tailed)	.000	.745	.265		.000	.734	.079
	N	303	301	303	303	301	299	302
Eat With Others	Pearson Correlation	.086	.184	-.054	.468	1	.064	.097
	Sig. (2-tailed)	.138	.001	.349	.000		.272	.095
	N	301	300	301	301	301	297	300
Family Meals	Pearson Correlation	.115	.109	-.138	.020	.064	1	.093
	Sig. (2-tailed)	.047	.060	.017	.734	.272		.110
	N	299	297	299	299	297	299	299
Involvement	Pearson Correlation	.258	.238	-.125	.101	.097	.093	1
	Sig. (2-tailed)	.000	.000	.030	.079	.095	.110	
	N	302	300	302	302	300	299	302

Table 3.7

Summary of Correlations for Males AloneSignificant relationships are **bolded** and **lightly shaded**

		Grade Point Average	Social Support Score	Conflict Score	Dining Center Usage	Eat With Others	Family Meals	Involvement
Grade Point Average	Pearson Correlation	1	-.058	.075	.306	.206	.236	.022
	Sig. (2-tailed)		.579	.471	.003	.046	.023	.837
	N	94	94	94	94	94	93	94
Social Support Score	Pearson Correlation	-.058	1	-.382	.082	.218	.117	.189
	Sig. (2-tailed)	.579		.000	.429	.035	.264	.069
	N	94	94	94	94	94	93	94
Conflict Score	Pearson Correlation	.075	-.382	1	-.129	-.251	-.050	-.227
	Sig. (2-tailed)	.471	.000		.217	.015	.635	.028
	N	94	94	94	94	94	93	94
Dining Center Usage	Pearson Correlation	.306	.082	-.129	1	.325	.013	.125
	Sig. (2-tailed)	.003	.429	.217		.001	.903	.230
	N	94	94	94	94	94	93	94
Eat With Others	Pearson Correlation	.206	.218	-.251	.325	1	.160	.258
	Sig. (2-tailed)	.046	.035	.015	.001		.126	.012
	N	94	94	94	94	94	93	94
Family Meals	Pearson Correlation	.236	.117	-.050	.013	.160	1	.211
	Sig. (2-tailed)	.023	.264	.635	.903	.126		.042
	N	93	93	93	93	93	93	93
Involvement	Pearson Correlation	.022	.189	-.227	.125	.258	.211	1
	Sig. (2-tailed)	.837	.069	.028	.230	.012	.042	
	N	94	94	94	94	94	93	94

Table 3.8

Summary of Correlations for Females AloneSignificant relationships are **bolded** and **lightly shaded**

		Grade Point Average	Social Support Score	Conflict Score	Dining Center Usage	Eat With Others	Family Meals	Involvement
Grade Point Average	Pearson Correlation	1	.219	-.178	.291	.162	.075	.322
	Sig. (2-tailed)		.002	.010	.000	.020	.286	.000
	N	209	207	209	209	207	206	208
Social Support Score	Pearson Correlation	.219	1	-.323	-.005	.264	.114	.234
	Sig. (2-tailed)	.002		.000	.946	.000	.104	.001
	N	207	207	207	207	206	204	206
Conflict Score	Pearson Correlation	-.178	-.323	1	-.048	.008	-.180	-.077
	Sig. (2-tailed)	.010	.000		.487	.907	.010	.270
	N	209	207	209	209	207	206	208
Dining Center Usage	Pearson Correlation	.291	-.005	-.048	1	.458	.013	.153
	Sig. (2-tailed)	.000	.946	.487		.000	.857	.028
	N	209	207	209	209	207	206	208
Eat With Others	Pearson Correlation	.162	.264	.008	.458	1	.016	.117
	Sig. (2-tailed)	.020	.000	.907	.000		.823	.095
	N	207	206	207	207	207	204	206
Family Meals	Pearson Correlation	.075	.114	-.180	.013	.016	1	.045
	Sig. (2-tailed)	.286	.104	.010	.857	.823		.521
	N	206	204	206	206	204	206	206
Involvement	Pearson Correlation	.322	.234	-.077	.153	.117	.045	1
	Sig. (2-tailed)	.000	.001	.270	.028	.095	.521	
	N	208	206	208	208	206	206	208

Chapter 4 - Conclusions

Summary of Findings

The results of this research suggest that there are significant relationships between the variables of interest measured and analyzed in this study. There appears to be a positive correlation between frequency of eating in a collegiate dining center and grade point average. Frequency of eating with others in a collegiate dining center setting was positively correlated to the perceived social support score and grade point average. The frequency of family meals was positively correlated to grade point average, especially for males. Interestingly though, frequency of family meals did not appear to be related to perceived social support. Degree of involvement in extracurricular activities during college was positively correlated with grade point average and social support score, especially for females.

A positive relationship was noted between frequency of eating in the dining center and frequency of eating with others. This makes sense because most participants reported typically dining with others. Therefore, the more one eats in the dining center, the more one eats with other people and vice versa. Although the variables of frequency of eating in the dining center and frequency of eating with others seem similar, it is important to note that these two variables measured different aspects of the dining experience. This is supported by the differing relationships between these variables and perceived social support. Perceived social support was found to be related to eating with others, but not related to frequency of eating in the dining center.

Using two-way analysis of variance with this data set allowed trends in the means of the groups in the study to be more easily conceptualized. Both gender and frequency of eating in

the dining center appeared to be related to grade point average. The grade point average increased with increasing frequency of eating in the dining center for all participants, males alone, and females alone. Overall, males had lower grade point averages at all levels of dining center usage. No significant differences in means were noted in social support score between different levels of dining center usage. There was some difference in the level of eating meals in the dining center between genders, with females having higher perceived social support scores, but not enough so to be significant. None of the correlations between dining center usage and social support were significant. Frequency of dining center use and social support scores were not related in any meaningful way.

While there was not a significant difference found in the mean grade point average and levels of eating with others, a significant difference was noted for gender and level of frequency of eating with others. Females had higher grade point averages than males at all levels of frequency of eating with others. A similar trend was noted in frequency of eating with others and social support for males and females. There was not a significant difference in social support score for the different levels of eating with others, but upon examining the graph of these means, there does seem to be an increase in social support scores over the levels frequency of eating with others. There was a significant difference between the means for gender and levels of eating with others. Females had higher perceived social support score for all levels of frequency of eating with others.

There was not a significant difference in mean grade point average over the different levels of family meals. Frequency of family meals was not significantly different between genders. However, a significant positive correlation was noted between family meals and grade point average for all participants combined and males alone. This study only lends marginal

support for the positive relationship between frequency of family meals and academic success that has been noted in children and younger adolescent in previous literature (Eisenberg, et al., 2004). More research would need to be conducted to investigate if the positive relationship between frequency of family meals and academic success holds true for college-aged students. While there was not a significant relationship found in the mean social support score and levels of frequency of family meals, a significant trend was noted for gender and level of frequency of family meals. Females reported higher levels of perceived social support than males at all levels of family meals.

While there was no significant difference in mean grade point average over the different levels of involvement, examination of the graph of mean grade point average by degree of involvement for males and females, revealed several interesting things. The means for females has a positive, fairly linear relationship for grade point average over levels of involvement. Males seemed to trend upward in grade point average from no involvements to two involvements, but with three involvements mean grade point average dropped by 0.6 points from 3.0 to 2.4. It is possible that for males, involvement in three or more types of extracurricular activities detracts from their focus on academic success. More research would be needed to support this hypothesis. No trends in means were noted in social support score between different levels involvement. However, there is a slight increase in the perceived social support score for all participants over the increasing levels of involvement. Level of involvement was not significantly different between genders.

Overall, it is evident that there are differences in grade point average between males and females with females having a higher grade point average than males. There are also some differences in perceived social support between genders with females having higher perceived

social support scores than males. Dining center usage is positively related to grade point average. Frequency of eating with others is positively related to grade point average and perceived social support. These relationships lend support to the underlying hypothesis that eating in the dining center and eating with others is related to mental health and wellbeing. More research is needed to determine if dining center usage and/or eating with others could cause people to feel more socially supported and/or lead to higher academic achievement.

Strengths and Weaknesses of the Present Study

As is the case in any research, the present study had several strengths and weaknesses. Some of the main strengths of this study were due to the intentional research design. Completing a pilot study with participants who did not overlap with the primary population of interest ensured that the sample for the main study was not contaminated. The feedback and data from the pilot study were useful in determining questions that could be deleted, questions that needed to be added, and organizing the survey to have a better flow. After changes were made to the survey, the final version of the survey was administered to the target population at an ideal time in the academic year. Surveys were completed on November 7, 2011 through November 16, 2011. This time frame for survey completion was planned to be late enough in the year that students had established dining habits. If the survey was administered any later in the semester, students may have been distracted by Thanksgiving break or finals. This could have resulted in a much lower response rate or disruption of typical dining habits.

Participants who completed the survey were a good representation of the population of interest. The proportion of males and females who completed the survey was nearly identical to the gender ratio in the Derby Complex. Similarly, the number of respondents from each hall was proportionally consistent with the number of first-year students who live in each hall. The

racial/ethnic composition of the sample reflected the overall population of first-time freshmen students at Kansas State University. The percentage of Asian respondents was somewhat higher than the percentage of Asians in the freshman class as a whole. This makes sense because there are only four residence halls at Kansas State University which house students who need continuous housing. Most international students need continuous housing since going home for break periods would be very difficult and expensive. Three of the continuous housing halls are located in the Derby Complex. Therefore, the percentage of first-year students identifying as Asian is higher in the Derby Complex as compared to the overall population of first-year students at Kansas State University.

The overall number of respondents to the survey was only six participants short of the desired number. This is both a strength and weakness in the present study. Although 98% of the ideal sample size was obtained, it would have been better to have a few more participants. It would also have been ideal to collect this data at multiple institutions of higher education. The sample was solely drawn from Kansas State University students living in the Derby Complex of residence halls. While this is a good starting point for research, similar studies would need to be conducted at other universities to be able to more confidently apply the results of this study to college freshmen as a whole.

The most important weakness of this study is that it only collected data at one point in time. Without the collection of data at multiple points in time it is impossible to determine the potential direction of causality within these relationships. Another limitation of this study is that response to the survey was voluntary. There may have been response bias and differences between those that responded to the survey and those who did not respond. It is possible that students with higher grade point averages were more likely to participate in the survey, which

could have skewed survey results. If more studies are conducted on this topic, it may be helpful to control for grade point average when conducting the data analysis. Overall, the present study is a good starting point for research on the relationship between eating in a collegiate dining center and psychological and academic outcomes. With additional investigations, the findings of the present study could be refined and more could be learned within this area of research.

Implications for Future Research

Since more than two million students in the United States live in collegiate residence halls (US Census Bureau, 2003), it is important to conduct more research to better understand the relationships between frequency of eating in the dining center, frequency of eating with others, grade point average, and social support.

It could be that people who feel more socially supported to begin with are more likely to eat with others in college. However, it is equally plausible that people feel more socially supported when they eat with others. An intervention-type study could help clarify this relationship. An intervention could be created in which perceived social support was measured at baseline and then participants were assigned to eat meals alone or with others for several weeks. At the end of the study participants would again be surveyed to determine perceived social support. Looking at the change in perceived social support over the course of the study could indicate whether or not the frequency of eating with others caused changes in the perceived social support levels.

Similarly, an intervention could be set up to try and clarify the relationship between frequency of eating in the dining center and grade point average. It would be difficult to conduct this study with students already living and eating in the dining center. However, if a group of off-campus students agreed to eat at the dining center a certain number of times per week and

grade point average data were collected at the start and finish of the study, changes in grade point average could be investigated. This type of study would probably be time and cost prohibitive since grade point average is only assigned twice a year. Since classes and many other aspects of college life change semester to semester, it would be nearly impossible to say the any one thing, such as frequency of eating in the dining center, *caused* students to have a higher grade point average.

This study lends support to the importance of family meals and involvement in extracurricular activities during college. While there are innumerable influences on grade point average and perceived social support, the positive relationships noted in this study, in concert with the research of others, can be used as support for the importance of family meals and collegiate involvement. Even without further research, the present study can be used as support for the benefits of eating with others and eating in the collegiate dining center. More than 60% of the participants surveyed indicated that eating in the dining center made them feel more socially connected. Almost half of the participants in this study indicated that eating in the dining center helped them feel less lonely. Dining centers could use this information as an additional selling point for collegiate dining center meal plans.

The sample of participants in the present study was only comprised of first-year students living the residence halls at Kansas State University. Similar research would need to be conducted at multiple institutions of higher education to be able to generalize the findings of this study to first-year college students in the United States as a whole. It would be helpful for future research to include off-campus students and upperclassmen to see if the relationships found in the present study could be extrapolated to the larger population of university students. This research marks some of the first investigations into the relationship between eating with others in

a collegiate dining center setting and psychological and academic outcomes in college students.

Although this research leaves many unanswered questions, it can be used as background and fuel for further research in this field.

References

- Adams, T. B., & Colner, W. (2008, January). The association of multiple risk factors with fruit and vegetable intake among a nationwide sample of college students. *Journal of American College Health, 56*(4), 455-461.
- Assouline, S. G., Colangelo, N., Cole, V., Cutrona, C. E., & Russell, D. W. (1994). Perceived parental social support and academic achievement: An attachment theory perspective. *Journal of Personality and Social Psychology, 66*, 369+.
- Balluz, L., Chapman, D. P., Mokdad, A. H., & Strine, T. W. (2008). Health-related quality of life and health behaviors by social and emotional support; their relevance to psychiatry and medicine. *Social Psychiatry and Psychiatric Epidemiology, 43*, 151+.
- Baum, M. C., Everard, K. M., Fisher, E. B., & Lach, H. W. (2000). Relationship of activity and social support to the functional health of older adults. *The Journals of Gerontology, Series B, 55*, S208.
- Brown, L. B., Dresen, R. K., & Eggett, D. L. (2005). College students can benefit by participating in a prepaid meal plan. *Journal of the American Dietetic Association, 105*(3), 445-448.
- Causey, D., Dubow, E. F., Hryshko, A., Reid, G., & Tisak, J. (1991). A two-year longitudinal study of stressful life-events, social support, and social problem-solving skills: Contributions to children's behavioral and academic adjustment. *Child Development, 62*, 583+.
- Charras, K., & Fremontier, M. (2010). Sharing meals with institutionalized people with dementia: A natural experiment. *Journal of Gerontological Social Work, 53*, 436+.
- Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relationships and health. In S. Cohen, L. G. Underwood & B. H. Gottlieb (Eds.), *Social support measurement and intervention : A guide for health and social scientists* (pp. 3-25). New York: Oxford Press.
- Croll, J., Hannan, P. J., Neumark-Sztainer, D., Perry, C., & Story, M. (2003). Family meal patterns: Associations with sociodemographic characteristics and improved dietary intake among adolescents. (research). *Journal of the American Dietetic Association, 103*, 317+.
- DeBerard, M. S., Julka, D. L., & Spielmans, G. I. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal, 38*, 66-80.
- Eisenberg, D., & Hefner, J. (2009). Social support and mental health among college students. *American Journal of Orthopsychiatry, 79*, 491+.
- Eisenberg, M. E., Olsen, R.E., Neumark-Sztainer, D., Story, M., & Bearinger, L.H. (2004). Correlations between family meals and psychosocial well-being among adolescents. *Archives of Pediatric and Adolescent Medicine, 158*, 792-796.
- Espelage, D. L., Hale, C. J., & Hannum, J. W. (2005). Social support and physical health: The importance of belonging. *Journal of American College Health, 53*(6), 276-284.
- Fulkerson, J. A., Neumark-Sztainer, D., & Story, M. (2006). Adolescent and parent views of family meals. *Journal of the American Dietetic Association, 106*, 526-532.
- Gillman, M. W., Rifas-Shiman, S. L., Frazier, A. L., Rockett, H. R. H., Camargo, C. A., Jr, Field, A. E., et al. (2000). Family dinner and diet quality among older children and adolescents. *Archives of Family Medicine, 9*(3), 235-240.

- Hoffman, D. J., Policastro, P., Quick, V., & Lee, S. (2006). Changes in body weight and fat mass of men and women in the first year of college: A study of the "freshman 15.". *Journal of American College Health, 55*(1), 41-45.
- Holm-Denoma, J.M., Joiner, T.E., Vohs, K.D., & Heatherton, T.F. (2008). The "freshman fifteen" (the "freshman five" actually): Predictors and possible explanations. *Health Psychology, 27*(1), S3-s9.
- Keller, H. H., Edward, H. G., & Cook, C. (December/January 2007). Mealtime experiences of families with dementia. *American Journal of Alzheimer's Disease and Other Dementias, 21*(6), 431-438.
- meals and food and nutrition intake in limited resource families. *Family and Consumer Sciences Research Journal, 39*(4), 431-441.
- Lin, S. (2004). University foodservice employees' food safety knowledge, attitudes, practices and training. *Journal of Foodservice Management and Education, 1*
- Mestdag, I., & Vandeweyer, J. (2005). Where has family time gone? in search of joint family activities and the role of the family meal in 1966 and 1999. *Journal of Family History, 30*(3), 304-323.
- Nayback-Beebe, A.M., & Yoder, L.H. (2011) Psychometric Properties of the Interpersonal Relationship Inventory-Short Form for Active Duty Female Service Members. *Research in Nursing & Health, 34*, 241–252.
- Neumark-Sztainer, D., & Story, M. (2005, November; 2011/9). A perspective on family meals: Do they matter? *Nutrition Today, 40*(6), 661-666.
- Newsom, J. T., & Schulz, R. (1996). Social support as a mediator in the relation between functional status and quality of life in older adults. *Psychology and Aging, 11*, 34+.
- Sarason, B. R. (1990). *Social support: An interactional view*.
- Sneed, J., Toma, R., & Unklesbay, N. (1998, 11; 2011/9). Food Safety Attitudes, Practices, and Knowledge, pp. 8.
- Steele, C.M. (1997) A threat in the air. How stereotypes shape intellectual identity and performance. *American Psychologist, 52*(6), 613 -629.
- Sumi, K. (2006). Interpersonal relationships and mental health among Japanese college students. In M. V. Landow (Ed.), *College students: Mental health and coping strategies* (pp. 91-114). New York: Nova Science Publishers, Inc.
- Tilden, V.P. (n.d.). Interpersonal Relationship Inventory Short Form.
- Tilden, V.P., & Galyen, R. (1987). Cost and conflict: The darker side of social support. *Western Journal of Nursing Research, 9*(1), 174-175.
- Tilden, V. P., Hirsch, A. M., & Nelson, C. A. (1994). The interpersonal relationship inventory: Continued psychometric evaluation. *Journal of Nursing Measurement, 2*(1), 63.
- Tilden, V. P., Nelson, C., & May, B. A. (1990a). The IPR inventory: Development and psychometric characteristics. *Nursing Research, 39*(6), 337-343.
- Tilden, V.P., Nelson, C., & May, B.A. (1990b). Use of qualitative methods to enhance content validity. *Nursing Research, 39*(3), 172-175.
- Tilden, V.P., & Stewart, B.J. (1985). Problems in measuring reciprocity with difference scores. *Western Journal of Nursing Research, 7*(3), 381-385.
- US Census Bureau. (2003). *Population in group quarters by type, sex and age, for the united states: 2000 table 1* Available on-line:<http://www.census.gov/population/cen2000/phc-t26/tab01.pdf>

Weinert, C.A., & Tilden, V.P. (1990). Measures of social support: Assessment of construct validity. *Nursing Research*, 39(4), 212-215.

World Health Organization. (1946). *Preamble to the constitution of the world health organization*. Official Records of the World Health Organization, 2, 100.

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Appendix A - Pilot Survey



Graduate Research Project

Survey Description:

The following is a quick survey about dining habits and social support. More details about the survey are indicated below.

Please help a fellow K-Stater out and enter yourself to win free prizes by participating.

The survey will only take a few minutes!

This survey will be used as the data for a thesis project for a current K-State master's student.

All students who complete this survey will be entered into a prize drawing for free laundry money for a semester and \$10 gift certificates redeemable at any Quik Cats location.

Opening Instructions:

Please read the following informed consent form and print for your own records. A signature will be required on the next page indicating that you agree to this consent form.

KANSAS STATE UNIVERSITY

PROJECT TITLE: Communal Eating, Social Support, and Academic Success in First Year College Students

APPROVAL DATE OF PROJECT: 10/10/2011 EXPIRATION DATE OF PROJECT: None

PRINCIPAL INVESTIGATOR: Sandra B. Procter

CO-INVESTIGATOR(S): Abigail Bauer

CONTACT NAME AND PHONE FOR ANY PROBLEMS/QUESTIONS:

Dr. Sandra Procter procter@ksu.edu

Office phone: 785-532- 1675

IRB CHAIR CONTACT/PHONE INFORMATION:

• Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

• Jerry Jaax, Associate Vice President for Research Compliance and University Veterinarian, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

SPONSOR OF PROJECT: Incentives provided by K-State Housing and Dining Services

PURPOSE OF THE RESEARCH: The purpose of this research is to investigate the potential relationship between communal eating in a college/university setting, perceived social support, and academic success (as measured by first semester grade point average). The goal of this research is to lay the groundwork for future potential studies addressing the direction of the relationship between the variables of interest.

PROCEDURES OR METHODS TO BE USED: You will be asked to complete a brief, multiple-choice survey. As part of the survey, you will need to grant access to your first semester K-State grade point average and your dining center usage records.

LENGTH OF STUDY: The survey should take less than 10 minutes to complete.

RISKS OR DISCOMFORTS ANTICIPATED: There are no foreseeable risks or discomfort associated with the present research.

BENEFITS ANTICIPATED: If you complete this survey and grant access to dining usage and first semester grade point average, you will be entered in a drawing for free laundry money for the spring semester and \$10 gift certificates redeemable at any Quik Cats location.

EXTENT OF CONFIDENTIALITY: Your Wildcat Identification number (WID) will be used to link your grade point average and dining center usage to your on-line survey responses. The researcher will not access any of the participants' names. A research assistant will access names only in order to distribute prizes to the winners of the incentives for project participation.

TERMS OF PARTICIPATION: I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or academic standing to which I may otherwise be entitled. Participation in this survey will in no way affect my standing with Kansas State University Housing and Dining Services.

I verify that my digital signature on the following page indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have retained a printed a copy of this signed and dated consent form.

It is important to retain a copy of the informed information for your records. Please PRINT this page and the following page or save the pages to your computer and retain these documents for future reference.

Graduate Research Project

Page 1

Please answer the following questions regarding the informed consent information on the previous page. Remember to print or save this page along with the previous page for your records.

Question 1 ** required **

I have read the informed consent form and agree to the terms of the study.

Yes

No

Question 2 ** required **

I grant access to my dining center usage data for the fall 2011 semester for the purpose of this study.

Yes

No

Question 3 ** required **

I grant access to my fall 2011 semester grade point average (GPA) for the purpose of this study.

Yes

No

Question 4 ** required **

Enter your electronic signature (full name) below. This indicates that you are agreeing to the terms of study participation. If you do not agree to the study terms and therefore do not wish to participate in the study please close out of this survey now.

Characters Remaining:

Question 5 ** required **

Enter your Wildcat Identification number (WID).
(This is the nine digit number starting with the number 8 on your student ID)

Characters Remaining:

Question 6 ** required **

Please enter today's date below.

Characters Remaining:

Please answer the following questions regarding demographic information.

Question 7 ** required **

Gender

- Male
- Female
- Prefer not to answer

Question 8 ** required **

Year in college

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student

Question 9 ** required **

Which of the following describes you? (Select all that apply)

- African American
- Asian
- Caucasian/White
- Hispanic/Latino
- Prefer not to answer
- Other:

Question 10 ** required **

Are you a member of a fraternity or sorority?

- Yes
- No

Question 11 ** required **

Are you active in a faith-based or religious organization that meets on at least a weekly basis?

- Yes
- No

Question 12 ** required **

Are you involved in other extra curricular activities such as sports or an club not including religious groups or Greek affiliation?

Yes

No

Question 13 ** required **

Which residence hall do you live in?

Ford

Haymaker

Moore

West

Goodnow

Marlatt

Boyd

Putnam

VanZile

Other

Question 14 ** required **

How many roommates do you currently have?

0

1

2

3

More than 3

Question 15 ** required **

How frequently did you eat meals with your family during your senior year of high school? (Include breakfast, lunch, and dinner meals)

Never

1-2 times per week

3-4 times per week

5-6 times per week

7 or more times per week

Question 16 ** required **

How frequently did you eat meals with your family during middle school/ junior high? (Include breakfast, lunch, and dinner meals)

- Never
- 1-2 times per week
- 3-4 times per week
- 5-6 times per week
- 7 or more times per week

Question 17 ** required **

Do you value eating together as a family?

- Yes, I value eating meals as a family very much
- Yes, I somewhat value eating meals as a family
- I am indifferent towards eating meals as a family
- No, I do not value eating meals as a family

Please answer the following questions regarding dining center usage.

Question 18 ** required **

What dining center do you most frequently use at K-State?

- Derby
- Kramer
- Van Zile

Question 19 ** required **

How many meals do you eat in the dining center in a typical week?
(Include breakfast, lunch, and dinner meals)

- None, I never eat in the dining center
- 1-3 meals per week
- 4-6 meals per week
- 7-9 meals per week
- 10-12 meals per week
- 13-15 meals per week
- 16 or more meals per week

Question 20 ** required **

How many meals do you dash for in a typical week?
(Include breakfast, lunch, and dinner meals)

- I never dash for meals
- 1-2 meals per week
- 3-4 meals per week
- 5-6 meals per week
- 7-8 meals per week
- More than 9 meals per week

Question 21 ** required **

When you dash for a meal, do you typically eat alone, with 1-2 other people, or with 3 or more people?

- Alone
- With 1-2 other people
- With 3 or more people
- Not applicable, I do not dash for meals

Question 22 ** required **

How many times per week do you walk to the dining center with friends?
(Include breakfast, lunch, and dinner meals)

- Never
- 1-3 times per week
- 4-6 times per week
- 7-9 times per week
- 10-12 times per week
- 13-15 times per week
- 16 or more times per week

Question 23 ** required **

How many times per week do you sit with friends in the dining center?
(Include breakfast, lunch, and dinner meals)

- Never
- 1-3 times per week
- 4-6 times per week
- 7-9 times per week
- 10-12 times per week
- 13-15 times per week
- 16 or more times per week

Question 24 ** required **

How many people do you typically eat **BREAKFAST** with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat breakfast in the dining center

Question 25 ** required **

How many people do you typically eat **LUNCH** (noon-time meal) with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat lunch in the dining center

Question 26 ** required **

How many people do you typically eat **DINNER** (evening meal) with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat dinner in the dining center

Question 27 ** required **

Even though there are people sitting near you in the dining center, how often do you feel lonely or alone while in the dining center?

- I often feel lonely or alone
- I sometimes feel lonely or alone
- I rarely feel lonely or alone
- I never feel lonely or alone
- Not applicable, I do not sit with other people at the dining center

Question 28 ** required **

When you are sitting alone in the dining center, how often do you feel lonely?

- I often feel lonely
- I sometimes feel lonely
- I rarely feel lonely
- I never feel lonely
- Not applicable, I never sit alone in the dining center

Question 29 ** required **

Does eating in the dining center help you feel more socially connected?

- Yes, definitely
- Yes, somewhat
- Maybe, unsure
- No, not at all

Question 30 ** required **

Does eating in the dining center help you feel less lonely?

- Yes, definitely
 - Yes, somewhat
 - Maybe, unsure
 - No, not at all
-

Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and mark the circle that best fits your situation. There are no right or wrong answers.

Question 31 ** required **

These first statements ask you to disagree or agree.

1 - Strongly Disagree | 2 - Disagree | 3 - Neutral | 4 - Agree
5 - Strongly Agree

	1	2	3	4	5
31.1 I know someone who makes me feel confident in myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.2 Some people I care about share similar views with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.3 There is someone I can turn to for helpful advice about a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.4 I can talk openly about anything with at least one person I care about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.5 There is someone I could go to for anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.6 Some people in my life are too pushy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.7 I can count on a friend to make me feel better when I need it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.8 There is someone in my life who gets mad if we have different opinions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.9 It's safe for me to reveal my weaknesses to someone I know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.10 Someone I care about stands by me through good times and bad times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.11 I have the kind of neighbors who really help out in an emergency.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.12 There is someone I care about that I can't count on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.13 If I need help, all I have to do is ask.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.14 have enough opportunity to talk things over with people I care about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 32 ** required **

These next statements ask you how often something happens.

1 - Never | 2 - Almost Never | 3 - Sometimes | 4 - Fairly Often
5 - Very Often

	1	2	3	4	5
32.1 I have enjoyable times with people I care about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.2 I spend time doing things for others when I'd really rather not.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.3 Some people I care about invade my privacy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.4 I am embarrassed by what someone I care about does.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.5 Someone I care about tends to take advantage of me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.6 Some people I care about are a burden to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.7 I wish some people I care about were more sensitive to my needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.8 People I care about make me do things I don't want to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.9 There is tension between me and someone I care about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.10 I have trouble pleasing some people I care about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.11 At least one person I care about lets me know they believe in me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.12 Some people I feel close to expect too much of me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please answer the following questions about the readability and clarity of the survey questions you have just completed.

Question 33

Was the length of the survey appropriate?

Yes, just the right length

No, too long

No, too short

Question 34

How long did it take you to complete the survey?

Less than 5 minutes

5-10 minutes

11-15 minutes

More than 15 minutes

Question 35

Did you understand all of the questions in the **demographics** section? (Questions 7-17)

If you did not understand all of the questions, please indicate what you found confusing.

Yes

No

Further comments about your response:

Question 36

Did you understand all of the questions in the **dining center usage** section? (Questions 18-30)

If you did not understand all of the questions, please indicate what you found confusing.

Yes

No

Further comments about your response:

Question 37

Did you understand all of the questions in the **Interpersonal Relationship Inventory** section? (Questions 31-32)
If you did not understand all of the questions, please indicate what you found confusing.

Yes

No

Further comments about your response:

Question 38

Did you think that the order in which the questions were asked made sense?
If no, please indicate how you think the order should be changed to improve the flow of the survey.

Yes

No

Further comments about your response:

Question 39

Did you feel comfortable granting access to your GPA and dining center usage information for the purpose of this study?

If you did not feel comfortable granting this access, please indicate why.

Yes

No

Further comments about your response:

Closing Message

Thank you for completing this survey! You have been entered in a drawing for free laundry money for a semester and \$10 Quik Cats gift certificates.

Questions, comments, or concerns related to the survey or study should be directed to the Primary Investigator, Dr. Sandra Procter (procter@ksu.edu). Study results will be available electronically upon request made to the Primary Investigator, Dr. Sandra Procter (procter@ksu.edu). Study results will also be available at the checkers stands at the Derby Dining Center upon project completion.

Thank you again for your participation!

- End of Survey -

Appendix B - Final Version of the Survey

Graduate Research Project

Survey Description:

The following is a quick survey about dining habits and interpersonal relationships. More details about the survey are indicated below.

Please help a fellow K-Stater out and enter yourself to win free prizes by participating. All students who complete this survey will be entered into a prize drawing for free laundry money for a semester and \$10 gift certificates redeemable at any Quik Cats location.

The survey will only take a few minutes and will be used as the data for a thesis project for a current K-State master's student.

Opening Instructions:

Please read the following informed consent form and print for your own records. A signature will be required on the next page indicating that you agree to this consent form.

KANSAS STATE UNIVERSITY

PROJECT TITLE: Communal Eating, Social Support, and Academic Success in First Year College Students

APPROVAL DATE OF PROJECT: 10/10/2011 EXPIRATION DATE OF PROJECT: None

PRINCIPAL INVESTIGATOR: Sandra B. Procter

CO-INVESTIGATOR(S): Abigail Bauer

CONTACT NAME AND PHONE FOR ANY PROBLEMS/QUESTIONS:

Dr. Sandra Procter procter@ksu.edu

Office phone: 785-532- 1675

IRB CHAIR CONTACT/PHONE INFORMATION:

- Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.
- Jerry Jaax, Associate Vice President for Research Compliance and University Veterinarian, 203

Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

SPONSOR OF PROJECT: Incentives provided by K-State Housing and Dining Services

PURPOSE OF THE RESEARCH: The purpose of this research is to investigate the potential relationship between communal eating in a college/university setting, perceived social support, and academic success (as measured by first semester grade point average).

PROCEDURES OR METHODS TO BE USED: You will be asked to complete a brief, multiple-choice survey. As part of the survey, you will need to grant access to your first semester K-State grade point average and your dining center usage records.

LENGTH OF STUDY: The survey should take less than 10 minutes to complete.

RISKS OR DISCOMFORTS ANTICIPATED: There are no foreseeable risks or discomfort associated with the present research.

BENEFITS ANTICIPATED: If you complete this survey and grant access to dining usage and first semester grade point average, you will be entered in a drawing for free laundry money for the spring semester and \$10 gift certificates redeemable at any Quik Cats location.

EXTENT OF CONFIDENTIALITY: Your Wildcat Identification number (WID) will be used to link your grade point average and dining center usage to your on-line survey responses. The researcher will not access any of the participants' names. A research assistant will access names only in order to distribute prizes to the winners of the incentives for project participation.

TERMS OF PARTICIPATION: I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or academic standing to which I may otherwise be entitled. Participation in this survey will in no way affect my standing with Kansas State University Housing and Dining Services.

I verify that my digital signature on the following page indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have retained a printed copy of this signed and dated consent form. It is important to retain a copy of the informed information for your records. Please PRINT this page and the following page or save the pages to your computer and retain these documents for future reference.

Page 1 : Informed Consent

Please answer the following questions regarding the informed consent information on the previous page. Remember to print or save this page along with the previous page for your records.

Question 1 **** required ****

I have read the informed consent form and agree to the terms of the study.

Yes

No

Question 2 **** required ****

I grant access to my dining center usage data for the fall 2011 semester for the purpose of this study.

Yes

No

Question 3 **** required ****

I grant access to my fall 2011 semester grade point average (GPA) for the purpose of this study.

Yes

No

Question 4 **** required ****

Enter your electronic signature (full name) below. This indicates that you are agreeing to the terms of study participation.

If you do not agree to the study terms and therefore do not wish to participate in the study please close out of this survey now.

Characters Remaining:

Question 5 **** required ****

Enter your Wildcat Identification number (WID).

(This is the nine digit number starting with the number 8 on your student ID)

Characters Remaining:

Question 6 **** required ****

Please enter today's date below.

Characters Remaining:

Page 2 : Interpersonal Relationship Inventory

Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and mark the circle that best fits your situation. There are no right or wrong answers.

Question 7** required **

These next statements ask you how often something happens.

1 - Never | 2 - Almost Never | 3 - Sometimes | 4 - Fairly Often
5 - Very Often

	1	2	3	4	5
7.1 I have enjoyable times with people I care about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.2 I spend time doing things for others when I'd really rather not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.3 Some people I care about invade my privacy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.4 I am embarrassed by what someone I care about does.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5 Someone I care about tends to take advantage of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6 Some people I care about are a burden to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.7 I wish some people I care about were more sensitive to my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.8 People I care about make me do things I don't want to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.9 There is tension between me and someone I care about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.10 I have trouble pleasing some people I care about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.11 At least one person I care about lets me know they believe in me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.12 Some people I feel close to expect too much of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 8 required ****

These first statements ask you to disagree or agree.

**1 - Strongly Disagree | 2 - Disagree | 3 - Neutral | 4 - Agree
5 - Strongly Agree**

	1	2	3	4	5
8.1 I know someone who makes me feel confident in myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.2 Some people I care about share similar views with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.3 There is someone I can turn to for helpful advice about a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.4 I can talk openly about anything with at least one person I care about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.5 There is someone I could go to for anything.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.6 Some people in my life are too pushy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.7 I can count on a friend to make me feel better when I need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.8 There is someone in my life who gets mad if we have different opinions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.9 It's safe for me to reveal my weaknesses to someone I know.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.10 Someone I care about stands by me through good times and bad times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.11 I have the kind of neighbors who really help out in an emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.12 There is someone I care about that I can't count on.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.13 If I need help, all I have to do is ask.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.14 I have enough opportunity to talk things over with people I care about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 3 : Dining Center Usage

Please answer the following questions regarding dining center usage.

Question 9 required ****

What dining center do you most frequently use at K-State?

- Derby
- Kramer
- Van Zile

Question 10 required ****

How many meals do you eat in the dining center in a typical week?

(Include breakfast, lunch, and dinner meals)

- None, I never eat in the dining center
- 1-3 meals per week
- 4-6 meals per week
- 7-9 meals per week
- 10-12 meals per week
- 13-15 meals per week
- 16 or more meals per week

Question 11 required ****

How many meals do you dash for in a typical week?

(Include breakfast, lunch, and dinner meals)

- I never dash for meals
- 1-2 meals per week
- 3-4 meals per week
- 5-6 meals per week
- 7-8 meals per week
- More than 9 meals per week

Question 12 required ****

When you dash for a meal, do you typically eat alone, with 1-2 other people, or with 3 or more people?

- Alone
- With 1-2 other people
- With 3 or more people
- Not applicable, I do not dash for meals

Question 13 required ****

How many times per week do you sit with friends in the dining center?

(Include breakfast, lunch, and dinner meals)

- Never
- 1-3 times per week
- 4-6 times per week
- 7-9 times per week
- 10-12 times per week
- 13-15 times per week
- 16 or more times per week

Question 14 required ****

How many people do you typically eat **BREAKFAST** with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat breakfast in the dining center

Question 15 required ****

How many people do you typically eat **LUNCH** (noon-time meal) with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat lunch in the dining center

Question 16 required ****

How many people do you typically eat **DINNER** (evening meal) with when you eat in the dining center?

- 0 people
- 1-2 people
- 3 or more people
- Not applicable, I never eat dinner in the dining center

Question 17 required ****

Even though there are people sitting near you in the dining center, how often do you feel lonely or alone while in the dining center?

- I often feel lonely or alone
- I sometimes feel lonely or alone
- I rarely feel lonely or alone
- I never feel lonely or alone
- Not applicable, I do not sit near other people at the dining center

Question 18 required ****

When you are sitting alone in the dining center, how often do you feel lonely?

- I often feel lonely
- I sometimes feel lonely
- I rarely feel lonely
- I never feel lonely
- Not applicable, I never sit alone in the dining center

Question 19 required ****

Does eating in the dining center help you feel more socially connected?

- Yes, definitely
- Yes, somewhat
- Maybe, unsure
- No, not at all

Question 20 required ****

Does eating in the dining center help you feel less lonely?

- Yes, definitely
- Yes, somewhat
- Maybe, unsure
- No, not at all

Page 4 : Demographics

Please answer the following questions regarding demographic information.

Question 21 **** required ****

Gender

- Male
- Female
- Prefer not to answer

Question 22 **** required ****

Year in college

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student

Question 23 **** required ****

Age

Characters Remaining:

Question 24 **** required ****

Which of the following describes you? (Select all that apply)

- African American
- Asian
- Caucasian/White
- Hispanic/Latino
- Prefer not to answer
- Other:

Question 25 **** required ****

Are you a member of a fraternity or sorority?

- Yes
- No

Question 26 required ****

Are you active in a faith-based or religious organization that meets on at least a weekly basis?

- Yes
- No

Question 27 required ****

Are you involved in other extra curricular activities such as sports or an club not including religious groups or Greek affiliation?

- Yes
- No

Question 28 required ****

Please estimate your grade point average (GPA) for the Fall 2011 semester at K-State. (Estimates based on a 4-point scale)

- 3.5 - 4.0
- 3.0 - 3.5
- 2.5 - 3.0
- 2.0 - 2.5
- Below 2.0

Question 29 required ****

Which residence hall do you live in?

- Ford
- Haymaker
- Moore
- West
- Goodnow
- Marlatt
- Boyd
- Putnam
- VanZile
- Other

Question 30 required ****

How many roommates do you currently have?

- 0
- 1
- 2
- 3
- More than 3

Question 31 required ****

How frequently did you eat meals with your family during your senior year of high school? Remember to count both weekday and weekend meals. (Include breakfast, lunch, and dinner meals)

- Never
- 1-3 times per week
- 4-6 times per week
- 7-9 times per week
- 10 or more times per week

Question 32 required ****

How frequently did you eat meals with your family during middle school/ junior high? Remember to count both weekday and weekend meals. (Include breakfast, lunch, and dinner meals)

- Never
- 1-3 times per week
- 4-6 times per week
- 7-9 times per week
- 10 or more times per week

Question 33 required ****

Do you value eating together as a family?

- Yes, I value eating meals as a family very much
- Yes, I somewhat value eating meals as a family
- I am indifferent towards eating meals as a family
- No, I do not value eating meals as a family

Closing Message

Thank you for completing this survey! You will be entered in a drawing for free laundry money for a semester and \$10 Quik Cats gift certificates.

Questions, comments, or concerns related to the survey or study should be directed to the Primary Investigator, Dr. Sandra Procter (procter@ksu.edu). Study results will be available electronically upon request made to the Primary Investigator, Dr. Sandra Procter (procter@ksu.edu). Study results will also be available at the checkers stands at the Derby Dining Center upon project completion.

Thank you again for your participation!

Your survey has been successfully submitted.

Please close your browser to exit.

Appendix C - Survey Completion Reminder Prompts

From: Abigail Bauer <bauer1a@ksu.edu>

Subject: Quick Survey with PRIZES for Grad Student Thesis

You won't be able win free laundry money for a semester or \$10 gift certificates to Quik Cats without completing the following survey!

Please help me complete my master's degree by clicking on the link below and honestly answering each of the survey questions.

The survey will take less than 10 minutes to complete!

Please click on the Web address (URL) below to complete and submit the survey by 11/14/11. All responses are kept confidential.

<https://surveys.ksu.edu/TS?key=xxxxxxxxxx>

This Survey URL is for your use only. It cannot be used by anyone else.

If you cannot click on the Web address, please copy the underlined text and paste it into the address field of your Web browser.

If you experience any difficulties please contact Technical Support at (866) 282-8212 or (785) 532-0860, email: helpdesk@ksu.edu

If you do not want to participate in this survey visit

<https://surveys.ksu.edu/TS?key=xxxxxxxxxx&action=optOut>

to remove your email address.

If you have any questions contact helpdesk@ksu.edu