ABSTRACT

Megan C. Fox. SOCIAL SUPPORT, HEALTH BEHAVIORS, AND ACADEMIC SUCCESS IN COLLEGE STUDENTS. (Under the direction of Dr. Michael Brown) Department of Psychology, July 2010.

The purpose of this study was to examine whether perceived social support was associated with self-efficacy for health promoting behaviors, and whether self-efficacy for health promoting behaviors predicts academic success for college students. Gender differences in perceived social support were also examined. Participants were undergraduate students at a large public university in the Southeast enrolled in an introductory psychology course. Data collection was completed through the use of a demographic form, the *Interpersonal Support Evaluation List-College Version* (Cohen, Mermelstein, Kamarck, & Hoberman, 1985), *The Self-Reported Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993), and the acquisition of participants' college GPA from official university records.

Perceived social support was found to have a significant positive association with self-efficacy for health promoting behaviors. Significant positive associations accounting for at least 10% of the variance in the dependent variable were found between the total score of perceived social support and the mean composite score of self-efficacy for health promoting behaviors, perceived belonging support and self-efficacy for exercise, perceived appraisal support and self-efficacy for psychological well-being, and perceived appraisal support and self-efficacy for responsible health practices. Gender differences in perceived social support were also found with females reporting greater perceived social support. Females reported greater perceived appraisal, tangible, belonging, and self-esteem support. No relationship was found in this study between self-efficacy for health promoting behaviors and academic success. The results from this study

may be useful to college students looking to improve their health and for health professionals working to promote health in the college student population. Choosing a social support intervention is likely to increase self-efficacy for health promoting behaviors, which have been linked to their actual implementation (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004).

SOCIAL SUPPORT, HEALTH BEHAVIORS, AND ACADEMIC SUCCESS IN COLLEGE STUDENTS

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CHAPTER I

INTRODUCTION

Many college students struggle with responsibility for their personal health (Jackson, Tucker, Herman, 2007). They have new demands, stressors, and more autonomy that influence their health after leaving home. In order to meet these new challenges some make decisions and adopt lifestyle choices that may not be conducive to their personal health. It is important they adopt health-promoting lifestyles instead of making poor health choices. Furthermore, health-promoting lifestyles make it more likely that students will be successful in school. A healthy lifestyle reduces absenteeism and fosters mental health increasing the likelihood of academic success in college (Jackson, Tucker, & Herman).

In order to improve their health related behaviors, students must become aware of the behaviors that can positively influence their overall health (Jackson, Tucker, & Herman, 2007). They can do this by learning to identify factors that influence health promoting behaviors, such as exercise, eating healthy foods, and getting sufficient rest. They also need to be aware of cognitive-perceptual factors that are influential such as college students' definition of health, health value, perceived health status, perceived control, perceived self-efficacy, perceived benefits, and perceived barriers. All of these individual perceptions can be important in increasing overall health and decreasing health-risk behaviors. However, each of these factors can be moderated by demographic factors, biologic characteristics (e.g. body weight, height, and body fat), interpersonal influences (e.g. social support), situational factors (e.g. access to alternatives), and behavioral factors (e.g. past experiences; Jackson, Tucker, Herman). Many factors play a role in the average college student's health behaviors, but the roles of social support and self-efficacy for health promoting behaviors are of particular interest in this study.

Social support can be described as support availability, support satisfaction, the quality and number of support sources, type of support sources, knowing one is valued or cared about, and/or belonging to a social network (Cobb, 1976). The components of social support include tangible support, appraisal support, self-esteem support, and belonging support (Cohen, Mermelstein, Karmack, & Hoberman, 1985). Tangible support is defined as perceived availability of material aid. Tangible support is often best represented through parent-child relationships in which the parent provides material aids such as clothing, food, and shelter. However, tangible support can also be found when friends loan each other money or provide a temporary place to stay (Uchino, 2004). Appraisal support is the individual's perception that there is someone to talk to about problems. Appraisal support provides affirmation and feedback (Cooke, Rossmann, McCubbin, & Patterson, 1988). An example of appraisal support is when a friend listens and helps sort through a problem.

Self esteem support is the individual's perceived availability of a positive comparison when comparing one's self to others (Cohen & Hoberman, 1983). Persons with self-esteem support believe that they are valued and respected by others for who they are (Cooke, Rossmann, McCubbin, & Patterson, 1988). A practical example of self-esteem support is when others at work value ones talent and skill at the job. Belonging support is the perception that there are people available to spend time with and with whom one has a group affiliation (Cohen, Mermelstein, Kamrack, & Hoberman, 1985; Cohen & Hoberman). Belonging support creates a sense of social belonging because of shared social activities with others. An example of belonging support would be a friend with whom to watch a movie or play tennis (Uchino, 2004). The amount and kind of social support each person needs varies depending on individual characteristics and circumstances (Brown, Brady, Lent, Wolfert, & Hall, 1987).

Male and female college students have varying perceptions of social support (Badr, Acitelli, Duck, & Carl, 2001). Women tend to be more impacted by their perceptions of social support than men. They seek out and make more use of support, form and sustain more supportive relationships, use support in times of need, and are more likely to serve as a source of support than men. As a result, social support has a more direct impact on women's health.

Social support is hypothesized to be related to health promoting behaviors because social expectations can encourage health promoting behaviors, provide support to carry out these practices, and convey information about appropriate health practices (Yarcheski, Mahon, & Yarcheski, 2003). Social support is a powerful motivator that influences dietary habits and healthy lifestyle behaviors. Social support serves a function in healthy eating, exercise, reduction of stress, and responsible health practices (Fuemmeler et al, 2006; Gruber, 2008; Holohan, Valentiner, & Moss, 1995; Ruthig, Haynes, Stupnisky, & Perry, 2009; Weiss, Larsen, & Baker, 1995). Each of these health behaviors is valuable in the promotion of a healthy lifestyle. However, there is no current research on the relationship between social support and self-efficacy for health promoting behaviors with college students.

Self-efficacy for health promoting behaviors can described as self-perceived ability to implement health promoting behaviors. Self-efficacy for a particular health promoting behavior depends on one's expectations about successful completion of the health behavior, as well as perceived ability to exercise control over the health habit (Bandura, 1998). Health promoting behaviors are critical in proper nutrition, adequate exercise, maintaining psychological well-being, and engaging responsible health practices (Becker, Stuifbergen, Oh, & Hall, 1993). Students who place high value on health self-efficacy are likely to have a health promoting lifestyle (Jackson, Tucker, & Herman, 2007; Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee,

2004). This means that the perception of the ability to perform health promoting behaviors is predictive of implementation of these behaviors.

Healthy students learn better and are more successful in school (George, Dixon, Stansal, Gelb, & Pheri, 2008). Students with more health risks are less likely to be successful; reducing individual health risks increase the likelihood of academic success. The removal of even a single health risk can be beneficial. Healthy students are more engaged in learning and are able to think critically, creatively, and collaboratively (Pope, 2010). Diet, exercise, stress reduction, and responsible health practices are all influential in academic success (Friedlander, Reid, Shupak, & Cribble, 2007; Tomporowski, Davis, Miller, & Naglieri, 2008; Trockel, Barnes, & Egget, 2000). However, there is little information specific to college students regarding the relationship between self-efficacy for health behaviors and academic performance. Understanding this relationship may be important for college students looking for ways to improve their academic performance.

Statement of the Problem

Previous research has suggested a relationship between perceived social support, self-efficacy for health promoting behaviors, and academic success. Although college students' self-efficacy for health behaviors have been studied before, few studies have looked at both perceived social support and self-efficacy for health promoting behaviors in relationship to academic success. The purpose of this study is to examine the relationship between perceived social support and self-efficacy for health promoting behaviors, and to examine the predictive relationship between self-efficacy for health promoting behaviors and academic success. Gender differences in social support are also examined.

Research Questions

This study was designed to investigate the following research questions:

1. Is perceived social support associated with self-efficacy for health promoting behaviors?
2. Does self-efficacy for health promoting behaviors predict academic success?
3. Are there gender differences in perceived social support?

To answer these research questions, the following hypotheses will be tested at the .05 level of significance. The hypotheses are stated in null form.

$H_0$1: There is no significant relationship between perceived social support as measured by score on the *Interpersonal Support Evaluation List-College Version* (Cohen & Hoberman, 1983) and self-efficacy for health promoting behaviors as measured by score on the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).

$H_0$2: There is no significant relationship between self-efficacy for health promoting behaviors as measured by scores on the *Self-Rated Abilities for Health Practices Scale* (Becker Stuifbergen, Oh, & Hall, 1993) and academic success as measured by college Grade Point Average (GPA).

$H_0$3: There is no significant mean gender difference in perceived social support as measured by scores on the *Interpersonal Support Evaluation List-College Version* (Cohen & Hoberman, 1983).

Definitions:

The following operational definitions will be used in this study:

1. Perceived social support*:* The perception of the availability of social support measured by the total score on the *Interpersonal Support Evaluation List-College Version* (Cohen & Hoberman, 1983).
2. Perceived self-efficacy for health promoting behaviors: The perception of one's ability to implement general health promoting behaviors measured by the mean composite score on the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).
3. Academic success: Cumulative Grade Point Average (GPA) obtained from university records.
4. Perceived appraisal support: The perceived availability of someone with whom to talk to about one's problems measured by the score on the perceived appraisal support subscale on the *Interpersonal Evaluation List-College Version* (Cohen & Hoberman, 1983).
5. Perceived tangible support: Perceived availability of material aid from others measured by the score on the perceived tangible support subscale of the *Interpersonal Support Evaluation List-College Version* (Cohen & Hoberman, 1983).
6. Perceived belonging support: Perceived availability of people with whom one can do things measured by the score on the perceived belonging support subscale of the *Interpersonal Support Evaluation List-College Version* (Cohen & Hoberman, 1983).
7. Perceived self-esteem support: Perceived availability of a positive comparison when comparing one's self with others measured by the score on the perceived self-esteem

support subscale of the *Interpersonal Support Evaluation List College-Version* (Cohen & Hoberman, 1983).

8. Perceived self-efficacy for nutrition: The perceived ability to implement behaviors promoting good nutrition measured by the score on the nutrition subscale of the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).
9. Perceived self-efficacy for exercise: The perceived ability to implement exercise behaviors measured by the score on the exercise subscale of the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).
10. Perceived self-efficacy for psychological well-being: The perceived ability to implement behaviors promoting psychological well-being measured by the score on the psychological well-being subscale on the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).
11. Perceived self-efficacy for responsible health practices: The perceived ability to implement responsible health practices measured by score on the responsible health practices subscale on the *Self-Rated Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993).

CHAPTER II

REVIEW OF THE LITERATURE

Social Support

Social support has many components including tangible support, belonging support, appraisal support, and self-esteem support (Cohen & Hoberman, 1983). Tangible support is defined as perceived availability of material aid (Cohen, Mermelstein, Kamrack, & Hoberman, 1985). An example of tangible support is when friends loan each other money or provide a temporary place to stay (Uchino, 2004). Appraisal support is the individual's perception that there is someone to talk to about problems; it provides affirmation and feedback (Cooke, Rossmann, McCubbin, & Patterson, 1988). An example of appraisal support is when a friend listens and helps sort through a problem (Cohen, Mermelstein, Kamrack, & Hoberman; Cooke, Rossmann, McCubbin, & Patterson).

Self-esteem support is the individual's perception of a positive comparison when comparing one's self to others (Cohen & Hoberman, 1983). Individuals with self-esteem support believe that they are valued and respected by others for who they are (Cooke, Rossmann, McCubbin, & Patterson, 1988). A practical example of self-esteem support is when others at work value your talent and skill at the job. Belonging support is the perception that there are people available to spend time with and with whom one has a group affiliation (Cohen, Mermelstein, Kamrack, & Hoberman, 1985; Cohen & Hoberman). Belonging support creates a sense of social belonging because of shared social activities with others. An example of belonging support would be a friend with whom to watch a movie or play tennis (Uchino, 2004).

Social support tends to differ between college men and women (Wohlgemuth & Betz, 1991). Women have a larger support system, have a higher level of satisfaction with the support they receive from friends, and greater functional support including emotional support and tangible assistance. They are also more likely to interact frequently within their social network in terms of informational and emotional support than men (Hays & Oxley, 1986). One explanation for this is that women and men have different coping strategies. Women may rely more on support from fellow students, whereas men may rely more so on nonsocial coping mechanisms.

Males have been found to offer less social support overall than do females and are less likely to provide social support to both males and females (Hays & Oxley, 1986). Women, on the other hand, are more nurturing, supportive, and sensitive to the needs of others (Flaherty & Richman, 1989). Women place greater importance on social support and report greater perceived social support (Esperson, 1986; Cohen & Hoberman, 1983).

Cognitive developmental theory and social cognitive theory may explain gender differences in social behavior. Cognitive developmental theory posits that a child's cognitive organization develops as a result of observing others and incorporating their observations into social-role schemata. These schemata change across time and with experience. Children develop a gender identity and begin to value objects and actions consistent with their gender, which in turn garners approval from others, which is rewarding. They also develop stereotypic gender conceptions from what they see and hear. Eventually, children gain understanding of the idea of gender constancy or the idea that their gender is fixed and irreversible. From this point on children generally seek to

behave socially in a manner consistent with their gender, as they are motivated to be like others of the same sex (Kohlberg, 1966).

Social cognitive theory states that gender conceptions and roles are a result of social influences including modeling, direct teaching, and enactive experience. The first mode of influence is through modeling. Modeling of gender-linked behavior can come from observing parents, peers, media, or significant persons in social, educational, or occupational contexts. The second way gender development is promoted is through enactive experience (observing the outcomes of one's actions). Other's opinion of what is gender appropriate can also be an important influencing factor. The third way gender development is promoted is through direct teaching or instruction. Information is given about the gender appropriateness of certain types of conduct. The importance of each mode of gender development can vary depending on developmental status and rate of acquisition of gender-linked behaviors (Bussey & Bandura, 1999).

Social Support during College

Perceived availability of social support is important, whether it be friends or family. Students develop new social support systems during college (Hicks & Miller, 2006). The importance of high school friends and family lessens, and new friends gain increased importance. For this reason, increased social support from new friends is associated with personal-emotional, social, and overall adjustment in college more so than support from a student's family (Friedlander, Reid, Shupak, & Cribbie, 2007). However, family still plays an important role in their social support system.

The perception of support serves as a buffer against stress (Cohen & Hoberman, 1983). Appraisal support (the perception of the availability of persons to talk to about

one's problems) and self-esteem support (the perception of the availability of persons to bolster one's self-esteem) are responsible for the buffering effect of perceived social support. Appraisal support is likely to be important during college because threats to self esteem may be a particularly difficult stressor during college. Having someone to evaluate potential problems and come up with strategies to deal with them can serve as a means of coping with stressors.

Self-Efficacy for Health Promoting Behaviors

Self-efficacy for health promoting behaviors is the self-perceived ability to implement health promoting behaviors. Self-efficacy for a particular health promoting behavior depends on one's expectations about successful completion of the health behavior, as well as perceived ability to exercise control over the health habit (Bandura, 1998). Health promoting behaviors include proper nutrition, adequate exercise, maintaining psychological well-being, and engaging responsible health practices (Becker, Stuifbergen, Oh, & Hall, 1993). Students who place high value on health self-efficacy are likely to have a health promoting lifestyle (Jackson, Tucker, & Herman, 2007; Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). The perception of the ability to perform health promoting behaviors is predictive of the implementation of these behaviors.

Self-efficacy for nutrition is perceived ability to consume healthy food, eat a balanced diet, and maintain a healthy weight. It includes one's perceived ability to identify foods high in fiber, read food labels, and know how much water to drink every day. Many college students struggle with being able to maintain a healthy diet and adequate nutrition (American College Health Association, 2009; Melby, Femea, & Sciacca, 1986). Knowledge of nutrition is likely to increase nutrition self-efficacy and the

probability of performing these health behaviors (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). For this reason, some colleges and universities provide nutrition education geared specially towards college students (Cousineau, Goldstein, & Franko, 2004).

The perceived ability to find exercise enjoyable and locate accessible places in the community to exercise are examples of exercise self-efficacy. The perceived ability to be aware of exercises that do not strain or hurt the body, know how to stretch properly, and be familiar with when to quit exercise can also be essential (Becker, Stuifbergen, Oh, & Hall, 1993). Physical activity is associated with health and fitness, and has become increasingly important now as more college students are reported to engage in sedentary lifestyles (Pinto & Marcus, 1995; Rouse & Biddle, 2010; Turbow, 1985). Exercise self-efficacy increases the likelihood of implementing of exercise behaviors (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004).

Maintenance of psychological well-being is another crucial health practice. The ability to stay relaxed, reduce levels of stress, feel good about one's self, and sort out difficult problems with friends and family are just a few ways to maintain a healthy psychological well-being (Becker, Stuifbergen, Oh, & Hall, 1993). College students face many stressors due to examinations, public speaking, interpersonal relationships, and the transition from the home environment to the independent college environment (Grace, 1997). College students can also encounter feelings of depression as a result of problems involving significant others, social adjustment, leaving home for the first time, grades, and future job prospects (Oswalt & Finkelberg, 1995). College students who know how

to reduce stress and counter depression are likely to engage in behaviors that promote psychological well-being (Kamademas & Kalantzi-Azizi, 2004).

Responsible health practices are the foundation for overall health promotion. Self-efficacy for responsible health practices includes the perceived ability to find needed health information, watch for negative changes in the body's condition, and recognize what symptoms should be reported to a doctor or nurse. Correct medication use, the ability to find a doctor or nurse who gives good advice about how to stay healthy, and knowing how to get help when it's necessary are other examples of self-efficacy for health practices (Becker, Stuifbergen, Oh, & Hall, 1993). Perceived self-efficacy to engage in responsible health practices while in college can be essential to implementing these behaviors and complying with behavioral health recommendations (Frank, Heiby, & Lee, 2007).

Social Support and Health Promoting Behaviors

College students who report higher levels of social support are more likely to engage in health promoting behaviors. Social support serves a function in healthy eating, exercise, reduction of stress, and responsible health practices (Fuemmeler et al, 2006; Gruber, 2008; Holohan, Valentiner, & Moss, 1995; Ruthig, Haynes, Stupnisky, & Perry, 2009; Weiss, Larsen, & Baker, 1995). Each of these health behaviors is valuable in the promotion of a healthy lifestyle.

Eating a balanced diet, checking food labels for nutritional value, and selection of healthy food choices, such as fruits and vegetables, are important positive health behaviors (Fuemmeler et al., 2006; Steptoe, Perkins-Porras, Rink, Hilton, & Cappucio, 2004). Social support serves a prominent role in the promotion of these behaviors

because of its influence on dietary behavior and the consumption of a healthy diet (Gruber, 2008). Females in particular report receiving more encouragement to practice good dietary habits and watch their weight than do males. Gruber suggests that this gender difference may exist because females are expected by their peers to be more intentional about following healthy dietary practices. Peer groups for women which consist of at least half men are the most supportive of healthy dietary habits.

Understanding the relationship between social support and diet is important in fostering sources of positive support for healthy eating habits (Stanton, Green, & Fries, 2007). Social support interventions to influence diet can come in many forms such as individual, group, peer-mediated, or professionally led programs (Hogan, Linden, & Najarian, 2002). All forms of social support interventions have been found to be effective and useful in promoting social support, which in turn influence good long-term health outcomes.

Exercise also increases as a function of social support (Gruber, 2008). This is particularly true for college women who report getting more encouragement to exercise from friends and peers. This may be because women receive more support overall for their health actions than men, and their peers are more critical of their exercise habits. Significantly higher levels of support were reported by women when their peer group was composed mainly of men. Conversely, men reported that they receive more encouragement/criticism for their exercise habits and weight when their peer group was composed mainly of women.

Increased levels of exercise also influence other positive health behaviors. One study with adolescents found that those who participate in high levels of vigorous

physical activity or exercise used marijuana less frequently, had a healthier dietary intake, used stress management techniques more frequently, and reported higher quality of sleep than adolescents with less vigorous physical activity (Delisle, Werch, Wong, Bian, & Weiler, 2010). For these reasons, high levels of exercise appear to play an important role in increasing positive health behaviors, increasing overall health, and promoting protective health behaviors.

Maintenance of psychological well-being such as managing stress and dealing with feelings of depression is another method of health promotion. Stress in college can come from many sources including changes in sleeping habits, vacations and breaks, changes in eating habits, increased work load, and new responsibilities (Ross, Niebling, & Heckert, 1999). Predictors of depression in college include being female, white, GLBT, in an emotionally abusive relationship, self-described as heavier in weight, and use of cigarettes or marijuana (Leino & Kisch, 2005). Stress and depression in college are associated with negative outcomes such as substance use, weight gain, eating problems, lower levels of self esteem, poor health habits, reduced perceptions of health status, and suicidal ideation (Broman, 2005; Economos, Hildebrandt, & Hyatt, 2008; Furr, Westefield, McConnell, Jenkins, 2001; Hayes, Harris, Carver, 2004; Hirsch & Ellis, 1993; Hudd, Dumlao, Erdmann-Sager, et al., 2000; Koenig & Wasserman, 1995; Leino & Kisch).

Social support serves as a buffer or protective factor against stress in college (Holohan, Valentiner, & Moss, 1995). Higher levels of perceived social support are related to decreased levels of stress and improved psychological health (Ruthig, Haynes, Stupnisky, & Perry, 2009). College students tend to seek out sources of social support as

their stress levels increase (Smith & Renk, 2007). Advice and encouragement from sources of support promote reliance on active problem solving, logical analysis, and information seeking. These techniques assist students in dealing with environmental stressors (Holohan, Valentiner, & Moss). These types of coping strategies lead to decreased stress and reduce negative mental health outcomes related to increased stress.

Social support is a protective factor against depression in college students; higher levels of perceived social support are associated with lower levels of depression (Ruthig, Haynes, Stupnisky, & Perry, 2009; Zimet, Dahlem, Zimet, & Farley, 1988). Social support helps fulfill needs for affiliation, belonging, respect, social recognition, affection, and nurturance which counter depressive symptomatology (Aneshensel & Stone, 1982). Social support also buffers against stress, another factor associated with higher levels of depression.

Responsible health practices in general are also impacted by social support. Responsible health practices include behaviors such as figuring out where to get information on taking care of one's health, watching for negative changes in the body's condition, recognizing which symptoms should be reported to a doctor, using medication correctly, getting health advice from a doctor, and getting help when needed (Becker, Stuifbergen, Oh, & Hall, 1993). Social support can also influence health protective behaviors by influencing health value and effort to change health-related behaviors which are positively and directly related to implementation of health protective behaviors (Weiss, Larsen, Baker, 1995). A peer group that models health protective behaviors or places greater value on a healthy lifestyle is likely to influence self-participation of other college students.

Social Support and Self-Efficacy for Health Promoting Behaviors

Bandura's (1998) social cognitive theory can explain the relationship between social support and self-efficacy for health promoting behaviors. Social support can increase self-efficacy for health promoting behaviors through verbal support and persuasion, and observation models within one's environment. Verbal support and persuasion strengthen one's beliefs in the ability to succeed and master health promoting behaviors. This increases motivation and effort along with sustainability of health behaviors. Social models help improve self-efficacy for health promoting behaviors because viewing persons similar to one's self succeed in health promoting behaviors increases the belief in one's capability to master comparable health behaviors. Social models also can provide instruction about effective strategies for health promotion.

Applications of social cognitive theory suggest that in order for social support to be health promoting it must increase competence and self-efficacy in health promoting behaviors (Bandura, 1998). Increasing self-efficacy for health promoting behaviors is important because this factor is linked to a healthy lifestyle for college students (Jackson, Tucker, & Herman, 2007; Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). College students who perceive that they are able to perform health promoting behaviors are also more likely to implement these health behaviors.

Health Practices and Academics

Healthy students learn better and are more successful in school (George, Dixon, Stansal, Gelb, & Pheri, 2008) and the removal of even a single health risk can be beneficial. Healthy students are more engaged in learning and are more able to think critically, creatively, and collaboratively (Pope, 2010). Diet, exercise, and maintenance of

psychological well-being are all influential in promoting academic success (Friedlander, Reid, Shupak, & Cribble, 2007; Tomporowski, Davis, Miller, & Naglieri, 2008; Trockel, Barners, & Egget, 2000). Students with more health risks are less likely to be academically successful, and reducing individual health risks increase the likelihood of academic success.

Many college students struggle with maintaining a healthy diet and eating habits tend to worsen during college. The American College Health Association (2009) reports that 11.3 percent of college students are obese and 21.2 percent are overweight. Examples of eating habits that may contribute to this phenomenon are lack of fruit and vegetable consumption and increased fast food intake (Melby, Femea, & Sciacca, 1986; Sneed & Holdt, 1991). These types of dietary behaviors can negatively impact college students' academic achievement (Kobayashi, 2009).

Some college students become preoccupied with their weight and develop eating disorders (Choate, 2010). The American College Health Association (2009) reports that 1.8 percent of college students suffer from anorexia or bulimia. Eating problems and body dissatisfaction interfere with class attendance, concentration, and assignment completion (Yanover & Thompson, 2008). The interference caused by eating problems and body dissatisfaction is associated with a lower college GPA.

Exercise has a sizeable influence in college students' GPA. Students who exercise vigorously seven days a week have on average a GPA 0.4 points higher than those who do not exercise (Parker-Pope, 2010). Strength training in particular is significantly related to higher college grade point averages (Trockel, Barnes, & Egget, 2000) as is aerobic exercise for academic success in children (Wittberg, Northrup, & Cottrel, 2009). Exercise

may influence academic performance because it "increases cerebral blood flow, alters arousal and associated neurohormonal balance, changes nutritional status, and promotes the growth of interneuronal connections" (Shephard, 1996, p. 33). These factors may increase cognitive ability, which enhances academic performance. Turbow (1985), however, found that excessive exercise (7 or more hours a week) is linked to decreased academic performance. Time spent exercising can take away from time spent attending class, studying, or completing work, which negatively impacts academic performance (Griffiths, 1997).

Psychological well-being is another health behavior that has been implicated in academic success. How students adapt to and cope with stress and depression has an impact on their academic performance. Depression is likely to negatively impact academic success in college due to missed classes, assignments, and exams (Hysenbegasi, Hass, & Rowland, 2005). As a result, depressed students fall behind in courses and fail to complete courses entirely. Stress has similar effects on academic performance (Kamarudin, Aris, Ibrahim, 2009; Struthers, Perry, & Menec, 2000). Students who report higher stress levels or depressive symptoms while in college are more likely to have a lower GPA and overall academic performance (Deroma, Leach, & Leverett, 2009; Hysenbegasi, Hass, & Rowland, 2005; Pritchard & Wilson, 2003).

Interpersonal Self Evaluation List-College Version

The *Interpersonal Self Evaluation List-College Version (ISEL-CV;* Cohen & Hoberman, 1983) was developed to assess the function that others (i.e. friends, relatives, and acquaintances) serve in the improvement of health and well-being (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Items on the *ISEL-CV* examine "supportive

elements of relationships which college students might be expected to experience" (Cohen & Hoberman, p. 103). This measure contains four subscales: tangible support, appraisal support, self-esteem support, and belonging support. The tangible support subscale measures perceived availability of material aid; the appraisal subscale measures perceived availability of someone to talk to about one's problems; the self-esteem subscale measures the ability to have a positive comparison to others or the availability of others to bolster one's self esteem; and the belonging subscale measures the perceived availability of people to do things with and the feeling of social group affiliation (Cohen & Hoberman; Cohen, Mermelstein, Kamrack, & Hoberman).

The *ISEL-CV* consists of 48 items or statements that evaluate perceived availability of social resources. The items are counterbalanced so that half of all items within each of the four categories are negative statements (i.e. I don't know anyone at school or in town who would get assignments for me from my teachers if I was sick) and the other half are positive (i.e. I know someone at school or in town who would bring my meals to my room or apartment if I were sick). Respondents are asked to select whether the statement is "probably true" or "probably false" about themselves. The *ISEL-CV* is then scored by summing the number of items in which the respondent indicated support. Scores for the four individual subscales are derived by summing the 12 items corresponding within the subscale indicating support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

Mean correlations between items in each subscale and correlations for the whole scale were examined. Mean correlations for each subscale were: tangible support (r = .49); belonging support (r = .52); self-esteem support (r =.44); and appraisal support (r =

.59). The ranges for these subscale correlations with the whole scale were: tangible support (r = .35-.63); belonging support (r = .30-.62); self-esteem support (r = .28-.58); and appraisal support (r = .52-.67). Intercorrelations between subscales were also examined. The belonging subscale was found to be moderately correlated with the tangible support (r = .56) and appraisal support (r =.48) subscales. This is particularly noteworthy because feelings of belonging may be necessary in order to approach someone for tangible or appraisal support (Cohen & Mckay, 1984).

The *ISEL-CV*'s psychometric properties were examined in seven studies. Three of the studies were conducted at the University of Oregon using undergraduate students enrolled in introductory psychology classes and freshmen undergraduates in dormitories. Mean scores for the *ISEL-CV* ranged from 34.33 to 38.80 with standard deviations of 7.3 and 7.5. Scores for females were typically higher than those of males (Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

A positive correlation was found between the *ISEL-CV* and the *Inventory of Socially Supportive Behaviors* (r =.46), which measures perceptions of social support within the last month (Barrera, Sandler, & Ramsay, 1981; Cohen, Mermelstein, Kamarck, & Hoberman, 1985). The *ISEL-CV* was also found to correlate with the *Moos University Residence Environment Scale* (r =.62) on the subscales of involvement and emotional support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Moos & Moos, 1981).

Adequate internal and test-retest reliability was reported for this measure. Cronbach's alpha scores range from .77 to .86: appraisal support (α = .77-.92); self-esteem support (α = .60-.68); belonging support (α = .75-.78); and tangible support (α =.73-.81). Four week test-retest correlations were as follows: total score (r = .87);

appraisal support (r = .87); belonging support (r = .82); self-esteem support (r = .71); and tangible support (r = .80). The *ISEL-CV* was taken twice six months apart by one third (n = 122) of the Oregon II sample. Test-retest correlations were as follows: total score (r = .72); tangible support (r = .73); self-esteem support (r = .66); belonging support (r = .47); and appraisal support (r = .45; Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

Self-Rated Abilities for Health Practices Scale

The *Self-Rated Abilities for Health Practices Scale (SRAHPS;* Becker, Stuifbergen, Oh, & Hall, 1993) is based on Bandura's definition of self-efficacy (Bandura, 1982). Bandura defined self-efficacy as one's perceived ability to execute courses of action to deal with situations. Self-efficacy was targeted specifically to health behaviors in the development of this measure (Becker, Stuifbergen, Oh, & Hall, 1993).

The *SRAHPS* includes 28 items, for which respondents are asked to rate their ability to perform various health practices on a 5-point scale. The 28 items are summed to yield a total score, and the scale is divided into subscales, each consisting of 7 items. These subscales include: exercise, nutrition, responsible health practices, and stress management. Total scores can range from 0 to 112, and scores on each individual subscale can range from 0 to 28 (Becker, Stuifbergen, Oh, & Hall, 1993).

The *SRAHPS* was tested on several samples to determine reliability and validity of the measure. The first sample included those who attended a 2-day community health fair. The sample consisted of 188 individuals (73 men and 114 women) with a mean age or 37.4 years. This sample yielded a mean score of 84.69, an average item mean of 3.02, and a standard deviation of 16.91. A factor analysis was performed to examine the factor structure of the scale. A four factor solution emerged suggesting that the scale items

clustered into the four proposed subscales: exercise, nutrition, responsible health practices, and psychological well-being. Cronbach's alpha for the total scale was .94, and was .92, .81, .90, and .86 for the exercise, nutrition, psychological-well being, and responsible health practices subscales, respectively. The instrument's concurrent validity was examined by comparing the *SRAHPS* to the *General Self-Efficacy Scale* (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982), a scale that is used to measure general perceived self-efficacy. The total scores on the two scales were moderately correlated (r = .43). Correlations between the *General Self-Efficacy Scale* and individual subscales were as follows: responsible health practices (r = .44), psychological well-being (r =.43), exercise (r = .28), and nutrition (r = .26). All correlations were significant at $p < .01$ (Becker, Stuifbergen, Oh, & Hall, 1993).

The *SRAHPS* was tested with 111 students in an undergraduate class on health promotion (Becker, Stuifbergen, Oh, & Hall, 1993). Students were asked to complete the *SRAHPS*, the *Health-Promoting Lifestyle Profile* (Walker, Sechrist, & Pender, 1987), and the *Barriers to Health Promoting Activities for Disabled Persons Scale* (Becker, Stuifbergen, & Sands, 1991). The *Health-Promoting Lifestyle Profile* is a self-report measure that examines the frequency of engaging in activities directed toward increasing health and well-being. This measure has been used widely in health promotion research and consists of the following six subscales: exercise, self-actualization, health responsibility, interpersonal support, nutrition, and stress management. The *Barriers to Health Promoting Activities for Disabled Persons Scale* measures beliefs about how various factors interfere with one's ability to take care of one's health. Cronbach alpha

coefficients of .82 or higher are reported for both measures (Becker, Stuifbergen, Oh, & Hall, 1993).

The reliability of the *SRAHPS* was examined by testing the stability of scores over two different administrations two weeks apart (Becker, Stuifbergen, Oh, & Hall, 1993). Pearson correlation coefficients were: total score (r = .70); nutrition (r = .63); psychological well-being (r = .63); exercise (r = .69); and responsible health practices (r = .73). Cronbach alpha coefficients were: total score (α = .94); nutrition (α = .81); psychological well-being (α = .86); exercise (α = .89); and responsible health practices (α = .88). The validity of the scale was examined by comparing it with other measures. The total score on the *SRAHPS* was correlated with the total score on the *HPLP* (r = .69). The exercise subscale on the *SRAHPS* was most highly correlated with the *HPLP* exercise subscale (r = .58), while the psychological well-being subscale was most highly correlated with the *HPLP* self-actualization (r = .65), stress management (r = .55) , and interpersonal support (r = .56) subscales. Scores on the *SRAHPS* were negatively correlated with the *Barriers to Health Promoting Activities for Disabled Persons Scale* (r = .55). All the above reported correlations were significant at $p < .01$.

The *SRAHPS* was administered a sample of 117 adults with disabilities recruited from a statewide disability advocacy group to determine if scores on the scale could distinguish between individuals with different resources and perceived abilities from those of as sample of persons from the health fair. Cronbach alpha coefficients were: total score (α = .91); nutrition (α = .76); exercise (α = .90); psychological well-being (α = .86); and responsible health practices (α = .77). The total mean score for adults with disabilities was 79.87, with a standard deviation of 17.03, which was lower than those in

the health fair sample (Becker, Stuifbergen, Oh, & Hall, 1993). This may indicate that self-efficacy is more related to ability to perform health practices for persons with disabilities, and consequently predictive of their actual implementation.

Results from the three samples indicate acceptable levels of reliability and validity for the *SRAHPS*. The factor analysis conducted supports the use of the proposed four-factor structure (nutrition, exercise, psychological well-being, and responsible health practices). Positive correlations were found between the *SRAHPS* and the measures of *General Self-Efficacy* and *Health Promoting Lifestyle Profile*. Negative correlations were found between the *SRAHPS* and the *Barriers to Health Promoting Activities for Disabled Persons Scale*. The total mean score on the *SRAHPS* was lower for the sample of adults with disabilities sample (Becker, Stuifbergen, Oh, & Hall, 1993).

CHAPTER III

METHOD

Participants

Participants included 280 undergraduate students who were enrolled in an introductory psychology course at large public university in eastern North Carolina. The total sample consisted of 165 females and 115 males. Just over 62 percent were freshman, 27.9% were sophomores, 8.2% were juniors, and 1.8% were seniors. The racial distribution of the sample was as follows: 75.7% Caucasian, 18.6% African American, 1.8% Hispanic, 1.4% Asian, and 2.5% other. More than 75% of the participants were 18 or 19 years old. Students who participated in the study were fulfilling a portion of their course requirement, but enrolled in the study on a volunteer basis.

Instrumentation

Social Support. Perceived Social support was measured using the *Interpersonal Support Evaluation List*, *College Version (ISEL-CV;* Cohen & Hoberman, 1983). This functional measure of perceived availability of social support contains 48-items which are answered as probably false (PF) or probably true (PT) for the individual. The dimensions of social support measured with this questionnaire are tangible support, belonging support, appraisal support, and self-esteem support. One item was omitted in the appraisal support composite, therefore the composite is based on 11 items instead of 12. Respondents were asked to rate whether they believe the items were probably true or probably false as descriptive of themselves. Higher scores on support domains indicate greater perceived social support (Cohen & Hoberman, 1983).

This measure has both adequate internal consistency and test-retest reliability. A Cronbach's alpha of .77 to .86 has been reported for the total score of the *ISEL-College Version* (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). The Cronbach's alpha for the *ISEL-CV* subscales ranged from .77-.92 for appraisal, .60-.68 for self-esteem, .75-.78 for belonging, and .71-.74 for tangible support. The Cronbach's alpha for the current study are as follows: .85 for the total score, .82 for appraisal support, .56 for self-esteem support, .71 for belonging support, and .65 for tangible support.

The *ISEL-CV* test- retest correlations with a four week interval were as follows: total score (.87), appraisal support (.87), belonging support (.82), self-esteem support (.71), and tangible support (.80). Correlations at a six month test-retest interval were as follows: total score (.72), tangible support (.73), self-esteem support (.66), belonging support (.47), and appraisal support (.45) (Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

Concurrent validity was established by comparing scores on the ISEL-CV to scores on other measures of social support. A positive correlation was found between the *ISEL-CV* and the *Inventory of Socially Supportive Behaviors* (r =.46), which measures perceptions of social support within the last month (Barrera, Sandler, Ramsay, 1981). The *ISEL-CV* was also found to correlate with the *Moos University Residence Environment Scale* (r =.62) on the subscales of involvement and emotional support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Moos & Moos, 1981).

Self-Efficacy for Health Promoting Behaviors. Self-efficacy for health promoting behaviors was assessed using the *Self-Rated Abilities for Health Practices Scale (SRAHPS)*, which assesses health-self-efficacy (Becker, Stuifbergen, Oh, & Hall, 1993).

This 28-item, 5-point scale contains four subscales: exercise, nutrition, responsible health practices, and psychological well being. Each subscale consists of seven items and respondents are asked to rate the extent to which they perform health practices related to each of the four domains on a scale from 0 to 4. Higher scores in a particular domain indicate greater self-efficacy for health practices related to that domain. The total score range when all domains are included is from 0-112.

This measure demonstrates adequate reliability and validity as indicated by results from its use with three different samples. Measures of internal consistency indicated Cronbach's alpha as follows: total scale score (.94), exercise (.92), nutrition (.81), psychological well-being (.90), and responsible health practices (.86). Test/retest reliability (2 weeks between first and second administration) resulted in Pearson correlation coefficients as follows: total scale score (.70), nutrition (.63), exercise (.63), psychological well-being (.69), responsible health practices (.73). Measures of test-retest reliability produced Cronbach's alpha coefficients as follows: total scale score (.94), nutrition (.81), exercise (.86), psychological well-being (.89), and responsible health practices (.88). In examination of concurrent validity, significant positive correlations were found between the *SRAHPS* and the measures of *General Self-Efficacy* (Sherer, Maddux, Mercandante, Prentice-Durnn, Jacobs, & Rogers, 1982) and *Health Promoting Lifestyle Profile* (Walker, Sechrist, & Pender, 1987). Expected negative correlations were found between the *SRAHPS* and the *Barriers to Health Promoting Activities for Disabled Persons Scale* (Becker, Stuifbergen, & Sands, 1991).

Demographic Factors. Each participant was asked to complete a demographic information form along with their health questionnaires. The demographic characteristics

of age, gender, race, year in college, and GPA were collected. Academic success was evaluated by examining actual cumulative GPA collected from official university records.

Procedures

Participants volunteered through the psychology department's participant pool. They signed up for one of ten available sessions containing twenty-five participants. Each session took approximately 30 minutes.

Upon arrival to a session, each participant was asked to complete a consent form for the study. Next, they were asked to complete a packet of questionnaires including the *Interpersonal Support Evaluation List-College Version*, the *Self-Rated Abilities for Health Practices Scale,* and demographic information.

Data Analyses

Spearman correlation coefficients were used to determine the degree of association between the individual factors of perceived social support and mean composite factor scores of self-efficacy for health promoting behaviors. The total score on the measure of perceived social support and the mean composite total score on the measure of self-efficacy for health promoting behaviors were examined for associations. A multiple regression was conducted using mean composite factor scores and mean composite total score of the self-efficacy for health promoting behaviors measure to predict grade point average (GPA). A chi-square test of independence was used to examine whether there was a difference in the total score of perceived social support reported between males and females. Factor scores of the social support measure were

also examined using a chi-square test of independence to determine if there were mean differences according to gender.

CHAPTER IV

RESULTS

Social Support and Self-Efficacy for Health Promoting Behaviors

The Spearman correlation coefficient between the total score of perceived social support and the mean composite of self-efficacy for health promoting behaviors was significant, ($r = .40$, $p < .01$). Table 1 presents the Spearman correlation coefficients between the individual factors perceived social support (tangible support, belonging support, appraisal support, self esteem support) and the mean factor composites of self-efficacy for health promoting behaviors (nutrition, psychological well-being, exercise, and responsible health practices). Significant positive correlations ($p < .05$) were found among all factor composites except that self-esteem support was not significant with self-efficacy for nutrition or exercise. Significant correlations ranged from .36 (appraisal support for responsible health practices) and .13 (tangible support for exercise). Although significant correlations were found, this does not mean that every significant correlation accounts for enough variance in the dependent variable to be profoundly meaningful. With 278 degrees of freedom, an r of only .125 is needed at the $p \geq .05$ level to be significant. To determine the variance accounted for by this r value the value is squared (r^2) to acquire the coefficient of determination. An r of .125 is indicative of only a slight associational trend, and only accounts for 1.25% of the variance in the dependent variable. A small r value results in a significant association because as sample size increases, extremely small correlations gain significance. For this reason, an r correlation accounting for at least 10% for the variance in the dependent variable was used as a standard in this study to determine which significant correlations were strong enough

Table 1.

Spearman Correlations among the Factor Scores of Perceived Social Support and Mean Composites Factors of Self-Efficacy for Health Promoting Behaviors

Factor Composites		2	3	4	5	6	7	8
1. Tangible Support	r	**.42****	**.39****	**.21****	**.18****	**.21****	**.13***	**.24****
	N	280	280	279	280	280	280	280
2. Belonging Support	r		**.40****	**.34****	**.15****	**.30****	**.34****	**.24****
	N		280	279	280	280	280	280
3. Appraisal Support	r			**.21****	**.22****	**.34****	**.28****	**.36****
	N			279	280	280	280	280
4. Self Esteem Support	r				.08	**.30****	.08	**.21****
	N				279	279	279	279
5. Nutrition	r					**.34****	**.60****	**.51****
	N					280	280	280
6. Psychological Well-Being	r						**.47****	**.62****
	N						280	280
7. Exercise	r							**.52****
	N							280
8. Responsible Health Practices	r							
	N							

Note: * $p < .05$, ** $p < .01$
Correlations are in bold type.

to determine a meaningful association. Associations accounting for at least 10% of the variance were found between the total score for perceived social support and the mean composite of the total score for self-efficacy for health promoting behaviors; perceived belonging support and self-efficacy for exercise; perceived appraisal support and self-efficacy for psychological well-being; and between perceived appraisal support and self-efficacy for responsible health practices.

Self-Efficacy for Health Promoting Behaviors and GPA

Multiple linear regression analyses were performed using the simultaneous forced entry method to examine whether the factor composites of self-efficacy for health promoting behaviors significantly predict college GPA and to identify which composites were the best predictors. Tests for multicollinearity among the four predictor variables were not significant.

The regression model for the mean composite of self-efficacy for health promoting behaviors was not significant $\{F_{(1, 278)} = 0.199, p < 0.656\}$ and accounted for less than 1% of the adjusted variance. Table 2 reports the regression coefficients produced when the outcome measure (college GPA) is regressed on the four self-efficacy for health promoting behaviors composite predictor factors and sex of the participant. Of the four predictor composite factors none were found to significantly predict college GPA. Examination of the standardized beta weights of the four predictor composite factors revealed that responsible health practices was the strongest predictor of college GPA, followed by exercise. Multiple regression analyses were also conducted for males and females separately. For males, the multiple regression ANOVA model was not

Table 2.

Regression of College GPA on Predictor Composites

Predictor Composites	*b*	SE *B*	β	t	*p*
Nutrition	.055	.075	.58	.731	.465
Psychological Well-Being	-.050	.078	-.052	-.643	.521
Exercise	.049	.065	.060	.755	.451
Responsible Health Practices	-.114	.093	-.106	-1.215	.225
Sex	-.102	.083	-.075	-1.230	.220
CONSTANT	2.954	.234		12.624	.000

Note:

b - Unstandardized beta coefficient

SE *B* - Standard Error of b

β – Standardized beta coefficient

t- *t*-test value

p- Probability level

significant {$F_{(1, 113)} = .069$, $p < .794$}. The multiple regression for males accounted for than 1% of the adjusted variance in prediction of college GPA. As shown in Table 3, of the four composite predictors, none significantly predicted the outcome. The multiple regression ANOVA model for females was not significant {$F_{(1, 163)} = .210$, $p = .647$} and accounted for less than 1% of the variance in the prediction of college GPA (see Table 4).

Sex Differences among Social Support Total Score and Subscales

A chi-square test of independence was computed between the gender of participants on the total score and individual factor scores of perceived social support. The chi-square test was significant for both the total score and individual factor scores of perceived social support, with females receiving higher scores than males. The chi-square for the total score of perceived social support was significant ($\chi^2 = 456.22$, $p < .01$), with females scoring significantly higher than males. The chi-square for the tangible support factor was significant, ($\chi^2 = 135.81$, $p < .01$), with females reporting significantly greater tangible support than males. The chi-square of the belonging support factor was significant, ($\chi^2 = 106.86$, $p < .01$), with females reporting significantly greater belonging support than males. The chi-squire of the appraisal support factor was significant, ($\chi^2 = 145.29$, $p < .01$), with females reporting significantly greater appraisal support than males. The chi-square for the self-esteem support factor was significant, ($\chi^2 = 73.105$, $p < .01$), with females reporting significantly greater self-esteem support than males.

Table 3.

Regression of Male College GPA on Predictor Factor Composites

Predictor Composites	*b*	SE *B*	β	t	*p*
Nutrition	.25	.099	.29	.255	.799
Psychological Well Being	-.245	.117	-.274	-2.096	.38
Exercise	.124	.095	.160	1.297	.198
Responsible Health Practices	-.046	.135	.045	.343	.732
CONSTANT	2.786	.334		8.350	.000

Table 4.

Regression of Female College GPA on Predictor Factor Composites

Predictor Composites	*b*	SE *B*	β	t	*p*
Nutrition	.092	.111	.90	.830	.408
Psychological Well Being	.068	.105	.068	.651	.516
Exercise	.008	.088	.010	.093	.926
Responsible Health Practices	-.215	.131	-.197	-1.647	.101
CONSTANT	2.940	.311		9.462	.000

CHAPTER V

DISCUSSION

The purpose of this study was to examine whether perceived social support was associated with self-efficacy for health promoting behaviors, and whether self-efficacy for health promoting behaviors predicts academic success for college students. Gender differences in perceived social support were also examined. Participants were undergraduate students at a large public university in the Southeast enrolled in an introductory psychology course. Data collection was completed through the use of a demographic form, the *Interpersonal Support Evaluation List-College Version* (Cohen, Mermelstein, Kamarck, & Hoberman, 1985), *The Self-Reported Abilities for Health Practices Scale* (Becker, Stuifbergen, Oh, & Hall, 1993), and the acquisition of participants' college GPA from official university records.

Perceived Social Support and Self-Efficacy for Health Promoting Behaviors

The first hypothesis of this study examined whether perceived social support was associated with self-efficacy for health promoting behaviors. A significant positive association was found between social support and self-efficacy for health promoting behaviors. Previous studies have not examined the role of perceived social support in self-efficacy for health promoting behaviors before with college students. Social support has been associated with an increase in college students' implementation of health promoting behaviors, such as healthy eating, reduction of stress, lower levels of depression, increased exercise, and responsible health practices (Fuemmeler et al, 2006; Gruber, 2008; Holohan, Valentiner, & Moss, 1995; Ruthig, Haynes, Stupnisky, & Perry, 2009; Weiss, Larsen, & Baker, 1995; Zimet, Dahlem, Zimet, & Farley, 1988). Although

self-efficacy and actual implementation of health promoting behaviors are related, these are two different concepts.

The positive relationship between perceived social support and self-efficacy for health promoting behaviors may be explained using social cognitive theory (Bandura, 1998). Social cognitive theory posits that perceived self-efficacy is the ability to execute actions with expected results. Four main sources are believed to regulate personal self-efficacy: mastery experiences, vicarious experiences provided through social models, social persuasion, and the reduction of stress reactions, negative emotional proclivities, and misinterpretations of physical states.

The two most important sources of self-efficacy that may explain the relationship between social support and self-efficacy for health promoting behaviors are social models and social persuasion. Social models from one's social support group may be important in enhancing self-efficacy for health promoting behaviors because viewing persons similar to one's self succeed in health promoting behaviors strengthens one's beliefs in the capability to master comparable health behaviors. Social models can also provide instruction and knowledge about effective strategies for health promotion. Social persuasion from one's sources of social support can strengthen one's belief in the ability to succeed and master these health promoting behaviors.

College students who perceive that they are able to perform health promoting behaviors are more likely to implement them (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). Social support influences both the value placed on health and the effort to change health-related behaviors. Health value and effort to change health-related behaviors are positively and directly related to implementation of health protective

behaviors (Weiss, Larsen, Baker, 1995). Therefore, college students who select peers who model health protective behaviors or place greater value on living in a healthy lifestyle are more likely to increase the value placed on their own health and implementation of health behaviors.

This study also examined the correlation between the mean composite factors of perceived social support (tangible support, belonging, appraisal, self-esteem) and mean composite factors of self-efficacy for health promoting behaviors (nutrition, psychological well-being, exercise, and responsible health practices). Significant positive correlations were found among all factor composites except for perceived self-esteem support with self-efficacy for nutrition and self-efficacy for exercise. Significant correlations accounting for at least 10% of the variance in the dependent variable were found between perceived belonging support and self-efficacy for exercise; perceived appraisal support and self-efficacy for psychological well-being; and perceived appraisal support and self-efficacy for responsible health practices. Previous research has not examined the relationship between the individual factors of perceived social support and the individual factors of self-efficacy for health promoting behaviors with college students. The same factors of social support have been linked to the actual implementation of various health behaviors in the general population. For example, tangible support, appraisal support, self-esteem support, and belonging support have all been implicated in stress reduction and the maintenance of psychological well-being (Cohen & McKay, 1984).

The factors of perceived social support play a critical role in self-efficacy for health promoting behaviors. For example, college students who perceive self-esteem

support are likely encouraged by others of their capability to deal with stress and depression, thus increasing their self-efficacy for the maintenance of psychological well-being. This relationship is essential for college students to understand who are looking to improve the their health, as increasing self-efficacy for health promoting behaviors has been linked to implementation of health promoting behaviors (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004).

Perceived self-esteem support did not have significant correlations with self-efficacy for nutrition or exercise in the current study. There is no existing research on perceived self-esteem support and its relationship to self-efficacy for nutrition with college students. However, a relationship has been found between self-esteem and behaviors promoting good nutrition for college students (Megel et al., 1994). It is likely that social support enhances one's self-esteem and perceived capability to engage in behaviors promoting good nutrition. There is also no other research on the relationship between self-esteem support and self-efficacy for exercise for college students. This makes it difficult to determine if the results of the current study are unique. It is likely that there is a relationship between these two variables. For example, those whose self-esteem is supported by others as a result of their physical appearance may be more likely to engage in increased exercise to maintain self-esteem support.

Self-Efficacy for Health Promoting Behaviors and Academic Success

The second hypothesis was whether self-efficacy for health promoting behaviors predicted academic success. Self-efficacy for health promoting behaviors did not predict academic success, nor did individual factor scores on the health practices measure. Previous studies have not examined the role of self-efficacy for health promoting

behaviors in academic success with college students, but have examined the relationship between actual implementation of health behaviors and academic success. Participating in behaviors that promote exercise, nutrition, and maintenance of psychological well-being has been linked to college academic success (Deroma, Leach, & Leverett, 2009; Friedlander, Reid, Shupak, & Cribble, 2007; George, Dixon, Stansal, Gelb, & Pheri, 2008; Pritchard & Wilson, 2003; Trockel, Barnes, & Egget, 2000).

A possible explanation for why self-efficacy for health promoting behaviors may not have predicted academic success in this study is because the responses of the sample were not varied enough for significant results. Average scores for all items on the self-efficacy for health behaviors measure generally fell between 2.5 and 3.5. This indicates little variability in participant responses in regard to their perceived ability to perform health promoting behaviors. With little variability in responses, the possibility for significant results indicating the predictive value of self-efficacy for health promoting behaviors in academic success decreases.

Gender Differences in Social Support

The third hypothesis of this study examined whether there were gender differences in perceived social support. A gender difference was found with females reporting greater perceived social support. Examination of individual factors of social support revealed that women reported significantly greater perceived tangible support, appraisal support, belonging support, and self-esteem support as compared to males. This is consistent with previous research which found gender differences in perceived social support (Wohlgemuth & Betz, 1991). Women have a larger support system, higher satisfaction with the support they receive from friends, utilize emotional support more

than men in stressful situations, and have greater functional support including emotional support and tangible assistance than men (Day & Livingstone, 2003; Hays & Oxley, 1986). Cognitive developmental theory and social cognitive theory offer possible explanations for these observed differences (Bussey & Bandura, 1999; Kohlberg, 1966).

Cognitive developmental theory posits that a child's cognitive organization develops as a result of observing others and incorporating their observations into social-role schemata (Kohlberg, 1966). Children develop a gender identity and begin to value objects and acts consistent with their gender, which results in approval from others. They also develop stereotypic gender conceptions from what they see and hear. Children generally seek to behave in a manner consistent with their gender, as they are motivated to be like others of their same sex.

Cognitive developmental theory can explain gender differences in social support. Children learn to identify with their gender through observation and seek to behave like others of their same sex. These gender-linked behaviors include social behavior. As children become adults, they become more aware of social support behaviors that characterize their gender, and are motivated to have similar social support behaviors. This may explain why females in this study reported greater perceived social support, as well as greater appraisal, tangible, belonging, and self-esteem support than did males.

Social cognitive theory also posits that gender conceptions and roles are a result of social influences (Bussey & Bandura, 1999). There are three different modes of influence in gender development. The first mode is modeling of gender-linked behavior, from observing parents, peers, media, or significant persons in social, educational, or occupational contexts. The second mode of influence on gender development is through

enactive experience or reinforcement of behaviors based on the observed outcomes of one's actions. The third mode of influence on gender development is through direct instruction or teaching. Information is given about certain types of conduct and their link to gender. Gender conceptions may therefore be socially modeled, observed, or be provided through instruction from others.

Implications

Understanding the relationship between perceived social support and self-efficacy for health promoting behaviors is helpful for college students who are looking to improve their health. Choosing a social support system that promotes or reinforces health promoting behaviors is likely to increase one's self efficacy for health promoting behaviors. Social persuasion from social support sources can be important in strengthening one's belief in his or her capability to perform health promoting behaviors. For example, joining a diet group in which others offer support and encourage one's capability for dieting and losing weight can increase the perception of being able to diet and lose weight effectively. Furthermore, watching others similar to one's self successfully perform health promoting behaviors increases the observer's perception of success with the same behaviors. For example, observing that a friend jogs every day enhances the observer's perception of personal capability to perform the same behavior. Increasing one's self-efficacy or perceived capability to perform health promoting behaviors increase the likelihood one will actually implement these behaviors (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). Therefore, a social support can increase self-efficacy for health promoting behaviors which increases the likelihood of implementing these behaviors.

The results of this study may also help college health professionals to better understand how social support is related to self-efficacy for health promoting behaviors. This knowledge will be useful in designing social support interventions targeted at increasing self-efficacy for health promoting behaviors. Social support interventions can include individual, group, peer-mediated, or professionally led interventions (Hogan, Linden, & Najarian, 2002). The use of social support interventions influences good long-term health outcomes and has been linked to lower rates of morbidity and mortality from a variety of diseases as well as enhancing cardiovascular, endocrine, and immune systems (Uchino, 2004; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). The adoption of social support interventions at universities may prove to be useful in enhancing both social support and health in college students.

Recognizing gender differences in social support can also help college health professionals design social support interventions. Women report greater perceived social support than men, and also have stronger perceptions of tangible, appraisal, belong, and self-esteem support. Women place greater importance on social support and are more likely to interact within their social support network in terms of informational and emotional support than men (Hays & Oxley, 1986). This may mean that women would benefit most from social support interventions because of their perceived access to social support and tangible assistance from social support sources. Health professionals should take this into consideration and understand that men may not benefit as well from social support interventions as women.

Limitations

There were several limitations to the study. First, this study was limited to one university in the Southeast. This may make it difficult to generalize the results to students at other schools in other parts of the country. The use of volunteers may have also skewed the results, since students who did not choose to participate or who were unavailable may have unique characteristics that were not represented in the results. Another limitation is that all data collected was self-reported, with the exception of the participants' GPA. Self-report data has the potential for participants to report what they believe the researcher expects to see or to report what reflects positively on their own abilities, knowledge, beliefs, or opinions. Finally, other factors related to social support, self-efficacy for health promoting behaviors, and academic success could have served as moderating variables. This could have an impact on the validity of the results because a third variable may explain the observed results of this study. Some of these factors could include the students' coping ability, health value, aptitude, previous academic performance, study habits, and socioeconomic background (Duyme, 1988; Jackson, Tucker, & Herman, 2007; Margolis, 1989; Robbins, Spence, & Clark, 1991).

Suggestions for Future Research

Additional research is necessary to further explain the relationship between self-efficacy for health promoting behaviors and academic success. Further research could also be useful in examining whether a measure of objective social support would have a relationship with self-efficacy for health promoting behaviors. Examining social support, both perceived and actual, and their relationship to the implementation of health promoting behaviors could be useful. Results from this study could also be used to

further a more comprehensive study on factors associated with self-efficacy for health promoting behaviors. Many different cognitive perceptual factors have been implicated to directly influence self-efficacy for health promoting behaviors such as an individual's perceived health status, perceived control, perceived health benefits, and perceived barriers (Jackson, Tucker, & Herman, 2007; Palank, 1991; Voh Ah, Ebert, Ngamvitroj, Park, Duck-Hee, 2004). Understanding the influence of these factors could be helpful in understanding how to increase self-efficacy for health promoting behaviors.

Conclusion

This study found that perceived social support and the individual factors of perceived social support had significant and positive relationships to self-efficacy for health promoting behaviors and the individual factors of self-efficacy for health promoting behaviors. Gender differences in social support were also found. The results from this study may be useful to college students looking to improve their health and for health professionals working to promote health in the college student population. Choosing a social support method is likely to increase self-efficacy for health promoting behaviors, which have been linked to their actual implementation (Von Ah, Ebert, Ngamvitroj, Park, & Duck-Hee, 2004). Further research examining the relationship between self-efficacy for health promoting behaviors and academic success, the relationship between objective versus subjective social support and implementation of health behaviors, and a study of other factors likely to influence self-efficacy for health promoting behaviors could be useful.

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APPENDIX A

DEMOGRAPHIC INFORMATION FORM

Circle the answer that best describes you and your academic status on the sheet provided for items 1-4.

1. Gender:
    A) Male
    B) Female

2. Academic Classification:
    A) Freshman
    B) Sophomore
    C) Junior
    D) Senior

3. Age:
    A) 17 or younger
    B) 18
    C) 19
    D) 20
    E) 21
    F) 22
    G) 23 or older

4. Race:
    A) White
    B) African American
    C) Hispanic
    D) Asian
    E) Other

APPENDIX B

INTERPERSONAL SUPPORT EVALUATION LIST

Instructions:

This scale is made up of a list of statement each of which may or may not be true about you. For each statement we would like you to circle **Probably TRUE (PT)** if the statement is true about you or **Probably False (PF)** if the statement is not true about you.

You may find that many of the statements are neither clearly true nor clearly false. In these cases, try to decide quickly whether probably true or probably false is most descriptive of you. Although some questions will be difficult to answer, it is important that you pick one alternative or the other. Remember to circle only one.

Please read each item quickly but carefully before responding. Remember that this is not a test and there are no right or wrong answers.

1. I know someone who would loan me $50 so I could go away for the weekend.	PT	PF
2. I know someone would give me some old dishes if I moved into my own apartment.	PT	PF
3. I know someone who would loan me $100 to help pay my tuition.	PT	PF
4. If I need it, my family would provide me with an allowance and spending money.	PT	PF
5. If I wanted a date for a party next weekend, I know someone at school or in town who would fix me up.	PT	PF
6. I know someone at school or in town who would bring my meals to my room or apartment if I were sick.	PT	PF
7. I don't know anyone who would loan me several hundred dollars to pay a doctor bill.	PT	PF
8. I don't know anyone who would give me some old furniture if I moved into my own apartment.	PT	PF
9. Even if I needed it my family would (or could) not give me money for tuition and books.	PT	PF
10. I don't know anyone at school or in town who would help me study for an exam by spending several hours reading me questions.	PT	PF
11. I don't know anyone at school or in town who would loan me their car for a couple of hours.	PT	PF
12. I don't know anyone at school or in town who would get assignments for me from my teachers if I was sick.	PT	PF
13. There are people at school or in town who I regularly run with, exercise with, or play sports with.	PT	PF
14. I hang out in a friend's room or apartment quite a lot.	PT	PF
15. I can get a date who I enjoy spending time with whenever I want.	PT	PF

16. If I decided at dinner time to take a study break this evening and go to a movie, I could easily find someone to go with me.	PT	PF
17. People hang in my room or apartment during the day or in the evening.	PT	PF
18. I belong to a group at school or in town that meets regularly or does thing together regularly.	PT	PF
19. I am not a member of any social groups (such as church groups, clubs, teams, etc.)	PT	PF
20. Lately, I often feel lonely, like I don't' have anyone to reach out to.	PT	PF
21. I don't have friends at school or in town who would comfort me by showing some physical affection.	PT	PF
22. I don't often get invited to do things with other people.	PT	PF
23. I don't talk to a member of my family at least once a week.	PT	PF
24. I don't usually spend two evenings on the weekend doing something with others.	PT	PF
25. I know someone who I see or talk to often with whom I would feel perfectly comfortable talking to about problems I might have budgeting my time between school and my social life.	PT	PF
26. I know someone who I see or talk to often with whom I would feel perfectly comfortable talking to about any problems I might have adjusting to college life.	PT	PF
27. I know someone who I see or talk to often with whom I would feel perfectly comfortable talking to about sexually transmitted diseases.	PT	PF
28. I know someone who I see or talk to often with whom I would feel perfectly comfortable talking to about any problems I might have meeting people.	PT	PF
29. I know someone who I see or talk to often with whom I would feel perfectly comfortable discussing any sexual problems I might have.	PT	PF
30. I know someone who I see or talk to often with whom I would feel perfectly comfortable talking to about any problems I might have with drugs.	PT	PF
31. There isn't anyone at school or in town with whom I would feel perfectly comfortable talking about any problems I might have with making friends.	PT	PF
32. There isn't anyone at school or in town with whom I would feel perfectly comfortable talking to about any problems I might have getting along with my parents.	PT	PF
33. There isn't anyone at school or in town with whom I would feel perfectly comfortable talking to about difficulties with my social life.	PT	PF

34. There isn't anyone at school or in town with whom I would feel perfectly comfortable talking to about my feelings of loneliness and depression.	PT	PF
35. I don't' know anyone at school or in town who makes my problems clearer and easier to understand.	PT	PF
36. Lately, when I've been troubled I keep things to myself.	PT	PF
37. Most people who know me well think highly of me.	PT	PF
38. Most of my friends think that I'm smart.	PT	PF
39. Most of my friends don't do as well as I do in school.	PT	PF
40. I will have a better future than most other people will.	PT	PF
41. Most of my friends have not adjusted to college as easily as I have.	PT	PF
42. Most people think that I have a good sense of humor.	PT	PF
43. I don't feel friendly with any teaching assistants, professors, campus or student officials.	PT	PF
44. Most of my friends are more satisfied or happier with themselves than I am.	PT	PF
45. Most of my friends are more popular than I am.	PT	PF
46. Most of my friends are more interesting than I am.	PT	PF
47. Most of my friends have more control over what happens to them than I.	PT	PF
48. Most people are more attractive than I am.	PT	PF

APPENDIX C

SELF-RATED ABILITIES FOR HEALTH PRACTICES SCALE

The following scale asks whether you are able to perform various health practices within the context of your lifestyle and any disabilities you may have. This includes any assistance you have available to you, such as an attendant to help with stretching exercises, for example. Read each statement and use the following scale to indicate how well you are able to do each of the health practices, not how often you actually do it.

0 = Not at all
1 = A little
2 = Somewhat
3 = Mostly
4 = Completely

I AM ABLE TO:

1. Find healthy foods that are within my budget	0	1	2	3	4
2. Eat a balanced diet.	0	1	2	3	4
3. Figure out how much I should weigh to be healthy	0	1	2	3	4
4. Brush my teeth regularly	0	1	2	3	4
5. Tell which foods are high in fiber content	0	1	2	3	4
6. Figure out from labels what food are good for me	0	1	2	3	4
7. Drink as much water as I need to drink every day	0	1	2	3	4
8. Figure out things I can do to help me relax	0	1	2	3	4
9. Keep myself from feeling lonely	0	1	2	3	4
10. Do things that make me feel good about myself	0	1	2	3	4
11. Avoid being bored	0	1	2	3	4
12. Talk to a friends and family about the things that are bothering me	0	1	2	3	4
13. Figure out how I respond to stress	0	1	2	3	4
14. Change things in my life to reduce my stress	0	1	2	3	4
15. Do exercises that are good for me	0	1	2	3	4
16. Fit exercise into my regular routine	0	1	2	3	4
17. Find ways to exercise that I enjoy	0	1	2	3	4
18. Find accessible places for me to exercise in the community	0	1	2	3	4
19. Know when to quit exercising	0	1	2	3	4
20. Do stretching exercises	0	1	2	3	4
21. Keep from getting hurt when I exercise	0	1	2	3	4

22. Figure out where to get information on how to take care of my health	0	1	2	3	4
23. Watch for negative changes in my body's condition (pressure sores, breathing problems)	0	1	2	3	4
24. Recognize what symptoms should be reported to a doctor or nurse	0	1	2	3	4
25. Use medication correctly	0	1	2	3	4
26. Find a doctor or nurse who gives me good advice about how to stay healthy	0	1	2	3	4
27. Know my rights and stand up for myself effectively.	0	1	2	3	4
28. Get help from others when I need it	0	1	2	3	4

APPENDIX D

INORMED CONSENT FORM

INFORMED CONSENT

Megan Fox
School Psychology Graduate Student
East Carolina University
252-328-1369

Michael Brown, Ph.D.
Psychology Department
East Carolina University
252- 328-4170

As a graduate student in School Psychology at East Carolina University, I am conducting a study with students who are registered in Psychology 1000 courses at East Carolina University. This form is to provide consent to participate in this study, which is under the direction of Dr. Michael Brown.

PURPOSE AND PROCEDURES

The purpose of this research study is to understand more about factors that influence student learning. Participation in this study will involve responding to a 48-item questionnaire designed to measure social support, and a 28-item questionnaire designed to measure health behaviors. In addition, you will also be asked to answer a short demographic questionnaire about yourself.

POTENTIAL RISKS AND DISCOMFORTS

There are no identified risks associated with this study.

POTENTIAL BENEFITS

There may be no personal benefit from your participation, but the knowledge received may be of value to humanity.

SUBJECT PRIVACY AND CONFIDENTIALITY OF RECORDS

The results of the study will contain personally identifiable information. GPA will be collected from East Carolina University transcript records and paired with questionnaire information.

PARTICIPATION/COMPENSATION

By participating in this study some students may receive research participation credit for Psychology 1000.

VOLUNTARY PARTICIPATION

Participating in this study is voluntary. You may stop at any time without losing benefits that you should normally receive. You may stop at any time you choose without penalty.

CONSENT TO PARTICIPATE

The investigators will be available to answer any questions concerning this research, now or in the future. The investigators, Megan Fox or Dr. Michael Brown, can be contacted at the above addresses or phone numbers.

I have read all of the above information, asked questions and received satisfactory answers in areas I did not understand.

_____

Participant's Name (PRINT) Date

_____

Participant's Signature

APPENDIX E

UMCIRB APPROVAL LETTER

University and Medical Center Institutional Review Board
East Carolina University • Brody School of Medicine
600 Moye Boulevard • Old Health Sciences Library, Room 11-09 • Greenville, NC 27834
Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb
Chair and Director of Biomedical IRB: L. Wiley Nifong, MD
Chair and Director of Behavioral and Social Science IRB: Susan L. McCammon, PhD

TO: Megan Fox, Graduate Student, Department of Psychology, ECU

FROM UMCIRB

DATE: November 12, 2009

RE: Human Research Activities Determined to Meet Exempt Criteria

TITLE: "Social Support, Health Behaviors, and Academic Success in College Students"

UMCIRB #09-0826

This research study has undergone IRB review on 11/10/09. It is the determination of the IRB Chairperson (or designee) that these activities meet the criteria set forth in the federal regulations for exemption from 45 CFR 46 Subpart A. This human research activity meets the criteria for an exempt status because it is research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects and any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
The Chairperson (or designee) deemed this **unfunded** study **no more than minimal risk.** This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any changes must be submitted to the UMCIRB for review prior to implementation to allow determination that proposed changes do not impact the activities eligibility for exempt status. Should it found that a proposed change does require more substantive review, you will be notified in writing within five business days.

The following items were reviewed in determination exempt certification:
- Internal Processing Form Exempt Application; (dated 9/18/09)
- Informed Consent (received 11/7/09)
- Experimentrak Recruitment Script
- Demographic Information
- ISEL-College Version
- Self-Rated Abilities for Health Practice Scale

It was furthermore determined that the reviewer does not have a potential for conflict of interest on this study.

The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies that fall under the purview of Food and Drug Administration regulations. The UMCIRB follows applicable International Conference on Harmonization Good Clinical Practice guidelines.