DISSERTATION

EXAMINING THE RELATIONSHIP BETWEEN HEALTH-RELATED BEHAVIORS AND SUBJECTIVE WELL BEING AMONG COLLEGE STUDENTS

Submitted by

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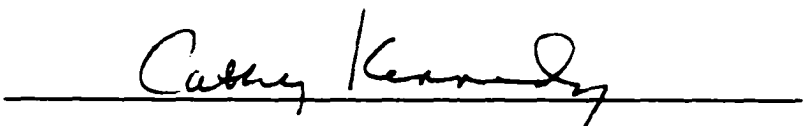
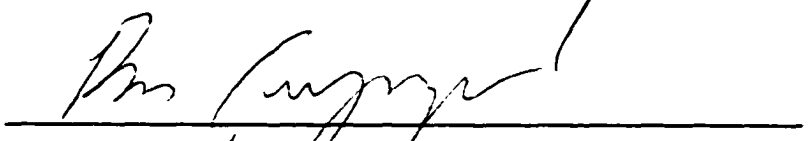
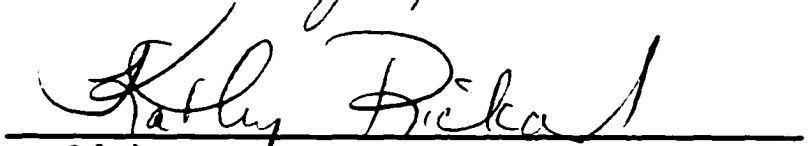
WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY NICOLLE LEVY ENTITLED EXAMINING THE RELATIONSHIP BETWEEN HEALTH-RELATED BEHAVIORS AND SUBJECTIVE WELL BEING AMONG COLLEGE STUDENTS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work







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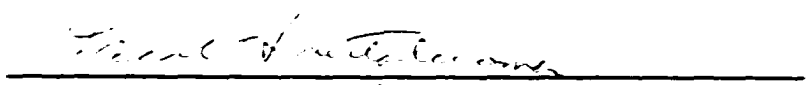

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ABSTRACT OF DISSERTATION

EXAMINING THE RELATIONSHIP BETWEEN HEALTH-RELATED BEHAVIORS AND SUBJECTIVE WELL BEING AMONG COLLEGE STUDENTS

This exploratory study examined the relationship between health-related behaviors and subjective well being (SWB). SWB refers to the subjective evaluation of one's life satisfaction and affective experiences. The association between health-related behaviors and subjective physical health was also explored. Students' readiness to change was also assessed. The data was separated into three categories: health promoting behaviors (e.g. healthy eating, exercise, sleep, social support, responsible drinking, and condom use), health compromising behaviors (e.g. drinking and driving, fighting, safety, sexual abuse, and alcohol, marijuana and cigarette use), and psychological variables (e.g. depression and perception of weight). SWB was measured with the Satisfaction With Life Scale (Diener et al., 1983) and the Index of Psychological Well-Being (Berkman, 1971). The results revealed that several health promoting, health compromising, and psychological variables were related to emotional well being, satisfaction with life, and subjective health. Although, only a few of the individual variables were predictive in nature, the categories of health promoting

behaviors and the psychological variables were found to be predictive of SWB, while behaviors in all three categories were predictive of physical health. Furthermore, it was found that most students were not highly motivated to change their current set of health behaviors. Based on these findings, potential treatment and intervention strategies are then discussed.

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CHAPTER 1

INTRODUCTION

There is currently a great deal of accumulated evidence suggesting that environmental stress affects physiological health (Baum & Posluszny, 1999). A variety of psychosocial and behavioral factors that influence health and disease processes have been identified (Hoffman & Driscoll, 2000; Myers, Sweeney, & Witmer, 2000). In fact, it has been found that health outcomes are often more closely related to psychosocial factors than to the presence or absence of an objective disease (Hoffman & Driscoll, 2000). Currently, the 10 leading causes of death in the United States are strongly associated with life-style choices that involve self-destructive and negligent behaviors. For example, there are several external risk factors that contribute to the nation's primary cause of death, heart disease. They include behaviors such as tobacco use, limited physical activity, and poor diet. All of these behaviors have been found to contribute to high blood pressure, obesity, and high cholesterol (McGinnis & Foege, 1993).

Although the fields of psychology and medicine have begun to recognize the comorbidity of psychological and physical disorders, limited resources have been invested in disease prevention and health promotion (Salovey, Rothman, Detweiler, & Steward, 2000). In response, there has been a call for social and behavioral contributions to health research (Anderson, 1997). Over the past few decades health care has shifted away from traditional medical views towards more holistic perspectives on health and prevention (e.g., Anderson, 1997; Dunn, 1961; Engel, 1980; Hettler, 1980; Witmer & Sweeney, 1992). The holistic perspective takes a life span approach and incorporates knowledge from multiple disciplines. This emerging wellness model stresses a biopsychosocial approach to prevention and early intervention, and places a heavy emphasis on implementing healthy and consistent behavioral practices.

The current wellness literature appears to differentiate little between the concepts of holistic health, wellness, and well-being. Thus, for the purposes of this study, these terms will be used interchangeably. The concept of wellness has existed for several decades and has been explained from a variety of viewpoints. In 1964,

the World Health Organization (WHO) defined optimal health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1964, p.1). The concept of holistic health has been embraced by medical professionals and scientists alike (Pingitore, 1999). In fact, this position has been shared by a variety of health professionals including Anderson (1997), at the time a social scientist at the National Institute of Health (NIH), who asserted, "For health research to meet its fullest potential, we must remove the artificial separation between biomedical research and behavioral and social sciences research and view them as equal and complementary partners in achieving the nation's goals" (p. 1071).

Since the WHO's definition, several wellness models have emerged that address a comprehensive array of health and life behavior areas (e.g., Ardell, 1984; Ryan & Travis, 1981).

One significant theory is that of Hettler (1984), who has often been referred to as the founder of college wellness programs. Hettler (1984) viewed wellness as "an active process through which individuals become aware of and make

choices toward a more successful existence" (p. 13). This multidimensional process is comprised of six components: (a) social, (b) occupational, (c) spiritual, (d) physical, (e) intellectual, and (f) emotional. Hettler was concerned with the limitations in the quality of health care in the United States, and wanted to help people make informed choices concerning their health and well-being. He believed that universities have a responsibility to set trends in lifestyle improvement endeavors. In addition to introducing this theory into the college health literature, he developed university programming that encouraged students to take more personal responsibility for their healthcare by being aware of their wellness needs.

In 1991, Sweeney and Witmer proposed a holistic, developmental model of wellness and prevention. Their theory summarizes a broad array of literature from multiple disciplines that supports the different elements in their model. They assert that traditional models of wellness lacked an emphasis on psychological health, and redefined wellness as "a way of life oriented toward optimal health and well being in which body, mind, and spirit are

integrated by the individual to live more fully within the human and natural community" (p. 252). The original model, which they termed the Wheel of Wellness, proposed five interrelated tasks: (a) spirituality, (b) self-regulation, (c) work, (d) friendship, and (e) love. These five tasks are seen as characteristics of healthy functioning and major components of wellness. Following the creation of this model, Myers, Sweeney, and Witmer (2000) developed counseling interventions based on the use of this model. However, the model is relatively new and still in need of empirical support.

Although the concept of holistic health was created to incorporate aspects of both mind and body, the literature on psychological well being continues to focus solely upon mental health outcomes (Fava, 1999; Ryff & Singer, 1996). For example, Ryff and Keyes (1995) developed a multidimensional, theoretical model of psychological well being. Their model assesses six dimensions of well being, which include: (a) self-acceptance, (b) positive relations with others, (c) autonomy, (d) environmental mastery, (e) purpose in life, and (f) personal growth. Although this theory defines the essential features of psychological

well-being, it does not address the contributions psychological well-being plays in physical health. One purpose of this study is to incorporate both the psychological and physical aspects of well being into one study.

Behavioral practices are receiving more attention as they are recognized as the primary determinants of physical health (Salovey et al., 2000). It has clearly been established that health-related behaviors contribute to improved physical health (Anderson, 1997; U.S. Department of Health and Human Services [USDHHS], 1996). However, there is also growing evidence to support that these behaviors contribute to improved mental health. Therefore, it is essential to not only understand the psychosocial influences that contribute to physical health behaviors but also recognize the impact each of these behaviors may have on emotional well being.

Health and disease are influenced by behaviors that either convey risks or protect against them. There is large body of evidence indicating that more than half of the premature deaths in the U.S. are due to behavioral and social factors (Anderson, 1997; Myers et al., 2000). For

example, it has been found that using tobacco contributes to the most deaths per year, followed by eating an unhealthy diet, participating in low levels of activity, consuming alcohol in excess, using firearms, performing unsafe sexual behavior, and using illicit drugs (McGinnis & Foege, 1993). Conversely, behaviors such as engaging in regular physical activity, eating a healthy diet, avoiding drugs and alcohol, obtaining social support, and getting enough sleep are known to enhance health and play an important role in physical health and longevity (Weidner, Kohlmann, Dotzaurer, & Burns, 1996).

It has been noted that healthy functioning occurs on a developmental continuum, and healthy behaviors at one point in life affect later development and functioning as well (Myers et al., 2000). Furthermore, a recent study found that many college students in the United States engage in behaviors that place them at a risk for serious health problems (Douglas, Collins, Warren, Kann, Gold, Clayton, Ross, & Kolbe, 1997). Thus, the wellness behaviors of college students are of special concern because the habits students' develop during the college years will likely continue into adulthood (Haberman & Luffey, 1998). In

2000, the American College Health Association created a task force to develop national health objectives and determine how well colleges and universities were achieving these health goals. The task force found that wellness factors such as safety and violence, sexual behavior, physical activity, sleep habits, body weight and nutrition, alcohol, tobacco and drugs, depression and suicide, and access to health information are all pertinent to the college population. These various health-related behaviors can be described as voluntary lifestyle choices and represent areas where it is possible to create behavior change. It is therefore vital to examine each of these behaviors in order to understand their contributions to well-being.

In 1993, it was found that sedentary activity patterns combined with poor dietary habits accounted for at least 300,000 deaths (McGinnis & Foege, 1993). Additionally, it has been reported that 60% of American adults do not engage in regular exercise, while 25% do not engage in any physical activity (USDHHS, 1996). Moreover, physical activity was found to decline with age, beginning at adolescence. Recent studies indicate that there are a

large percentage of college students who do not get regular, adequate exercise. Sedentary lifestyles are starting to characterize a substantial proportion of young adults on a college campus, further contributing to the trend of overweight American adults. One study found that only 35-37% of college students report having a regular schedule of exercise (Pinto, Cherico, Szymanski, & Marcus, 1998). However, a large national survey found that 57% of students reported participating in either vigorous or moderate physical activity at least 3 or more times a week (Douglas et al., 1997). Despite this profound lack of activity, research indicates that there are numerous benefits to both cardiovascular and strength training activities. It is commonly known that cardiovascular exercise can enhance circulatory functioning and can decrease the relative risk of cancer, while increased muscle tone has been found to enhance bone density. Moreover, a combination of these activities can lower blood pressure, increase longevity, and help one maintain a healthy weight (USDHHS, 1996). Yet, there are also many psychological benefits of being physically active (Baum & Posluszny, 1999). In addition to lowering

psychological stress, physical exercise can lead to a positive mood state and increased self confidence (Koff & Bauman, 1997; Morse, Walker, & Monroe, 1994; Plante & Rodin, 1990). In studies examining the benefits of physical activity for college students, exercise was also been found to decrease anxiety and depression, reduce test anxiety, and improve self esteem (Pinto et al., 1998). Physical activity can also help students achieve their academic goals. In a study examining the relationship between health-related variables and academic performance among first year students, strength training was significantly predictive of GPA.

Eating a healthy diet low in fat and cholesterol has also received attention for lowering the risk of physical health outcomes such as cardiovascular disease, hypertension, and certain types of cancer (McGinnis & Foege, 1993; USDHHS, 1996). Furthermore, reducing one's fat intake can help decrease the risk of various chronic diseases. However, diet has also been positively associated with improved performance, an increase in positive moods, and a longer lifespan (Wurtman & Suffes, 1996). Yet, in a study by Douglas et al, (1997) one fifth

of all students surveyed were overweight, and only 26% had met the National Cancer Institute guidelines of eating five or more servings of fruits and vegetables. Several obstacles have been identified which may contribute to students' poor dietary habits. Students often reported eating the same foods every day and received little education around appropriate nutrition. Factors such as perceptions of a healthy diet, a lack of cooking experience, and time constraints may all limit their food choices and have a negative effect on their intake (Haberman & Luffey, 1998).

Although a search of the literature revealed minimal research discussing the nutrition of college students, there is a great deal of information regarding body image and students' dissatisfaction with their weight and overall physical appearance. Thus, when discussing the variables of activity and diet, it is also important to include students' views of their weight and other weight related attitudes. There is a growing problem in this society especially regarding young women and body image dissatisfaction. Sociocultural factors are thought to play a central role in the promotion of body image

dissatisfaction. The societal obsession with weight is so strong that a moderate degree of body dissatisfaction is currently normative among women (Stice & Shaw, 1994). Negative body images can influence decisions regarding diet and level of activity, and has been strongly related to eating pathology. Weight preoccupation and body image dissatisfaction contribute to the development and continuation of engaging in eating disordered behaviors (Scarano & Kalodver-Martin, 1994). If one has negative body image attitudes, then one becomes vulnerable to negative experiences of the self as a whole (Stice & Shaw, 1994). Therefore, in addition to an increased need for education regarding nutrition, students also need further education to determine a healthy weight (Haberman & Luffey, 1998).

Sleep is another contributor to well-being. It has been noted that sleep quality, defined as the integration of several variables including sleep quantity, the length of time to fall asleep, number of awakenings at night, length of time to fall back asleep after awakening, and general satisfaction with sleep, has a greater impact on well-being and subjective health than does sleep quantity

alone (Pilcher, Ginter, & Sadowsky, 1997; Pilcher & Ott, 1998). In other words, better sleep, rather than just longer periods of sleep, produced improved health (Pilcher & Ott, 1998). Pilcher and Ott (1998) also found that as sleep quality decreased, complaints about psychological and physical health, tension, depression, anxiety, fatigue, and confusion increased. Additionally, Trockel, Barnes and Egget (2000) found that weekday and weekend wake up times had the largest relative negative effects on first year college student academic achievement.

The influence of social support on health is also well established (Salovey et al., 2000). Most studies indicate a positive effect of social support on mental health (Dalgard, Bjork, & Tambs, 1995). Furthermore, research continually supports the fact that people in high involvement relationships are more likely to engage in preventive health behaviors (e.g. Coburn & Pope, 1974; Langlie, 1977; Gottleb & Green, 1984; Broman, 1993). Conversely, people who experience a deprivation of stable, positive relationships and lack belongingness can suffer high levels of mental and physical illness and are prone to a broad range of behavioral problems ranging from traffic

violations to criminality to suicide (Baumeister & Leary, 1995). Broman (1993) examined the relationship between social support and health-related behaviors such as alcohol consumption, the use of tobacco products, regular sleep, eating breakfast, getting preventive check-ups, engaging in regular exercise, and using seat belts in automobiles. He found that social relationships are important to health behaviors such that fewer relationships lead to poorer health behaviors, whereas more social relationships lead to better health behaviors. It was also found that the loss of a relationship could temporarily result in poorer health behaviors. Combinations of social relationships, however, do little to predict health behaviors above and beyond a single supportive relationship (Broman, 1993). When looking at first year college students, Demakis and McAdams (1991) found that the quality of students' supportive networks and the network's perceived availability were predictors of emotional well-being. Additionally, outside social support from family members and friends was found to moderate the effects of test anxiety in college students (Orpen, 1996).

Health-related behaviors have frequently been found to cluster. For example, individuals who avoid certain unhealthy foods are more likely to get plenty of sleep, exercise, see their physician, use alcohol in moderation, and not smoke (Wankel & Sefton, 1994). An association has also been found between living a physically active lifestyle, maintaining a healthy weight, eating a healthy diet, smoking less, and reporting a positive mood (Hoffman & Driscoll, 2000). College students who exercised had a tendency to use alcohol and drugs less than students who do not report exercising on a regular basis (Nieman, 1990). It has also been suggested that this clustering of positive healthful behaviors may be reinforced by social support (Fontane, 1996).

While there are many behaviors that can enhance physical well being, there are also several behaviors that can seriously compromise health. Health risk behaviors have also been found to cluster. Among adolescents, smoking bears a strong positive relationship to alcohol and illicit drug use. Using a large representative national sample, Emmons, Wechsler, Dowdall, & Abraham (1998) found that high risk behaviors such as using marijuana, drinking

heavily, and having multiple sex partners were the strongest correlates of smoking among the young adult population. Due to the high comorbidity of these variables, it is important to recognize and understand the characteristics, patterns of use, and prevalence rates of each individual risk factor.

Although alcohol and drug use appeared to decline as individuals aged, tobacco use remained relatively stable over the years (Moskal, Dziuban, & West, 1999). Cigarette smoking is the leading cause of death in the United States among adults (Foster, 1997). It has been linked to diseases such as cancer, hypertension, and cardiovascular disease (USDHHS, 1996). While overall smoking prevalence in the U.S. has reduced over the last 20 years, there has only been a small reduction in smoking prevalence among adolescents and young adults (Emmons et al., 1998). Furthermore, most first time tobacco use occurs during high school, and earlier use has been associated with continued use as an adult. In 1996, the National Household Survey on Drug Abuse found that 69% of young Americans began smoking before the age of 18 and few started after the age of 22 (Everett, Husten, Kann, Warren, Sharp, & Crossett, 1999).

Thus, most undergraduates who report smoking most likely started before entering college or began during their college career. In one study by Everett and colleagues (1999), 29% of college students reported they were current cigarette smokers. The same study revealed that students who were dissatisfied with their educational experience were more likely to be smokers. Additionally, there is evidence that heavy drinking and frequent attendance at parties where alcohol is common decreases the likelihood of smokers attempting to quit.

The presence of illicit drug use among college students has been well documented for decades (Gledhill-Hoyt, Lee, Strote & Wechsler, 2000). Patterns of polydrug use among college students indicate that marijuana and other drug use is highly associated with the use of tobacco and alcohol. Three national surveys, utilizing thousands of students from colleges all over the U.S., found that although reported past 30-day marijuana use declined from 1980 to 1990, it increased in the following decade, reaching a reported 18.6% use rate in 1998. The results from the 1995 National College Health Risk Behavior Survey (NCHRBS) revealed that nearly half of all students had used

marijuana in their lifetimes, and 14% have used it during the 30 days preceding the survey. However, the rates of using other illicit drugs such as cocaine, barbiturates, amphetamines, and LSD were significantly less than the rates of marijuana use (Gledhill et al., 2000; Douglas et al., 1997; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999).

Alcohol use contributes to nearly 10% of preventable deaths. It contributes to liver problems, hypertension, and memory deficits (Hoffman & Driscoll, 2000). Alcohol use among college students has also been related to unsafe sexual behaviors, violent behaviors, and academic problems (Douglas et al., 1997). One major problem on college campuses is binge drinking, which has frequently been measured in the college health literature as five or more drinks in a row within the past two week period. "Students' heavy episodic alcohol use, or binge drinking, is by far the single most serious public health problem confronting American colleges" (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998, p. 57). There has been a growing rate of binge drinking on college campuses. In 1993 and 1997, two of five students met the criteria for

binge drinking, while two of three fraternity or sorority members were identified binge drinkers. Binge drinking is associated with elevated risks for interpersonal, health, and safety problems (Wechsler et al., 1998). Heavy use of alcohol also places people at an increased risk for physical injury and death from motor vehicle accidents and falls. Another negative consequence of drinking large amounts of alcohol is the risk of addiction. In a study performed by Clements (1999), one quarter of his sample met the criteria for either alcohol abuse or dependence within the last 12 months. Lastly, drinking even moderate amounts of alcohol have been associated with increased sexual arousal and decreased sexual inhibition (Anderson & Mathieu, 1996). Moreover, high sexual risk takers drink more frequently and consume larger quantities of alcohol per occasion (Smith & Brown, 1999).

Increased sexual risk taking, such as unprotected sex and sex with multiple partners, has also been well documented among adolescents (Smith & Brown, 1999). Late adolescence is often considered a time of sexual exploration and development. Thus, sexual health has become another area of importance in health promotion due

to the rise of HIV, AIDS and other sexually transmitted diseases. By examining the sexual behaviors of young adults, it may be possible to identify the patterns of behaviors that place individuals at risk. The NCHRBS (1995) found that among all students surveyed, 86.1% reported having had sexual intercourse, and 34.5% reported having six or more sex partners during their lifetimes. Among the students who reported engaging in sexual intercourse during the 3 months preceding the survey, 29.6% reported using a condom during their last sexual experience, while 79.8% reported using some form of contraception on that occasion. It has been revealed that college men are more likely than college women to drink alcohol in order to make it easier to have sex and to have sex with multiple and casual partners. Men were as likely as women to initiate the use of condoms for anal or vaginal intercourse. (Anderson & Mathieu, 1996). However, the rates between alcohol use and condom use between heterosexual couples is unclear due to several mediating variables such as personal values, peer associations, and the purposes for drinking (Anderson & Mathieu, 1996).

Alcohol may also play a role in increasing students' risks of intentional or unintentional injuries. Intentional injuries refer to involvement in a physical or sexual assault as either the perpetrator or victim. There have been several types of college aggression associated with alcohol and other drugs which include violence against property (e.g. vandalism or theft), verbal harassment or assault against others, physical assault and/or battery against others (Rivinus & Larimer, 1993). For instance, alcohol consumption has been found to increase the likelihood of sexual violence. A high association of dating violence with alcohol and other drugs has also been noted in college student research for over 40 years (Rivinus & Larimer, 1993). Between 15-30% of college women have sexually assaulted, and studies indicate that 40-60% of victims were under the influence of alcohol or other drugs at the time (Koss, 1993).

Behaviors that fall under the category of unintentional injury include wearing a seatbelt while riding in an automobile, or wearing a helmet during activities such like riding a motorcycle, bicycle or when in-line skating. The NCHRBS found that 9.2% of students

reported never using a seatbelt. Data regarding helmet use was unavailable. Drinking and driving would also be considered another unintentionally injurious behavior. The NCHRBS found that 27.4% of all students reported they had drunk alcohol and driven a car or other vehicle during the 30 days preceding the survey.

Gender has been heralded as one of the most important determinants of health behavior (Ratner, Bottorff, Johnson, & Hayduk, 1994). On average, men engage in fewer health promoting behaviors, live less healthy lifestyles, and are less likely to seek medical care than women (Oleckno & Blacconiere, 1990). Traditional age college men are also more likely than women to engage in multiple risk taking activities. These behaviors include smoking, drug use, carrying weapons, fighting, engaging in riskier sexual practices, and driving (Courtenay, 1998). Men were also found to be more likely than women to have a current alcohol-use disorder (Clements, 1999). In California, males were less likely to use a seatbelt, accounted for 85-90% of all bicycle related deaths and 80% of all bike-related injuries. Since unhealthy behaviors frequently happen in clusters, the interaction of these dangerous

behaviors can compound men's health risks. Moreover, significant differences have been found between women and men in biological and spiritual well-being, diagnosis and treatment of physical and mental disorders, multiple role stress, vocational patterns, economic resources and social support networks (Crose, Nicholas, Gobble, & Frank, 1992). In one study, college men identified they had important physical and emotional needs but took little action to address them (Davies, McCrae, Frank, Dochnahl, Pickering, Harrison, Zakrzewski, & Wilson, 2000). Davies et al. (2000), also found that men identified the primary barriers to seeking assistance with health behaviors as socialization, the need to feel independent, and a desire to conceal their vulnerability. However this information should not misinterpreted to mean that women do not engage in any risky behaviors. Consistent condom use was reported significantly more often by male students than by females. Consuming alcohol puts women at risk for being victims of sexual aggression. Several studies have found that college women more commonly report cigarette smoking than men (Jensen, Peterson, Murphy, & Emmerling, 1992). Although men may engage in less healthy forms of physical activity,

women are more likely to cut out fat and restrict their caloric intake unnecessarily, leading to the high number of women who have been diagnosed with eating disorders.

While there clearly are multiple health reasons for encouraging college students to engage in a variety of health-related behaviors and avoid health-risk behaviors, there are other psychosocial reasons as well. Trockel et al. (2000) identified several health-related variables that have a significant relationship with grade point average. Moreover, impaired academic performance has been found to increase stress and depression levels during the academic year (Arthur, 1998). Thus, students may not only have to deal the consequences of poor academic performance but struggle depression or anxiety as well.

Subjective Well Being

One clear benefit of engaging in wellness behaviors is improved physical health. Another benefit might be enhanced subjective well being (SWB). Over the last thirty years, there has been increasing empirical research in the area of SWB. SWB is comprised of three primary components: a cognitive component, which is operationalized as life satisfaction, positive affect, and negative affect. These

variables are all interrelated and together form the global factor of SWB (Diener, Suh, Lucas, & Smith, 1999). Each of the components can then be separated into subcomponents. For example, life satisfaction can be divided into satisfaction with the various domains of life such as marriage, work, and recreation. Positive and negative affective states can be divided into specific emotions (e.g., joy, pride, anger, and sadness). Breaking SWB down into specific concepts allows researchers to assess this construct on both the global and specific level.

In order to better understand SWB, it is first important to distinguish it from psychological well being. SWB is not identical to psychological health (Diener, 1997). It has been found to differ from psychological well being in that SWB only refers to subjective experiences, and is not defined by other important psychological variables (e.g., Ryff, 1989; Ryff & Keyes, 1995). Thus, SWB is not a sufficient condition for overall psychological well being. Nevertheless, there are still many benefits to examining SWB. Diener (1997), a pioneer in this area, has stated, "In the field of SWB, a person's belief about his or her own well-being is of paramount importance. Rather

than a standard imposed by a mental health professional, SWB grants importance to the experience of people" (pp. 2-3). Thus, placing a strong value on a subjective experience differentiates SWB from other constructs in traditional psychology, but also shares similarities with several contemporary perspectives (e.g., feminist psychology and constructivism).

Personality has been posited as one of the most consistent predictors of SWB (Diener et al., 1999). Traits such as extraversion, neuroticism, self-esteem, optimism, and expectancy for control exhibit some of the strongest relations with SWB. There is also evidence to support that genetics may be partially responsible for this relation (Diener et al., 1999). In 1996, Lykken and Tellegen found that 40-55% of the variance in current SWB was genetic, and 80% of long term SWB was heritable. Additionally, various studies have revealed that demographic factors such as age, sex, income, race, education, and marital status have accounted for 8-20% of the variance in SWB reports (Andrews & Withey, 1976; Campbell, Converse, & Rodgers, 1976; Argyle, 2000).

It is known that people's subjective evaluation of behaviors greatly influences whether or not they will engage in those behaviors (Fishbein & Ajzen, 1975). Thus, if people perceive that engaging in healthy behaviors will contribute to their overall level of well being, they may be more likely to participate in a wellness program. For example, one recent study revealed that people who were happier perceived themselves as better able to engage in health promoting behaviors and had greater confidence that these behaviors would relieve their illness (Salovey et al., 2000).

The standard method of measuring SWB is through self report surveys. The assumption behind the use of self-reports is that it allows respondents to be in the privileged position of reporting their experiences. Measures of SWB have been found to be reliable over time and focus on global, longer term states rather than momentary moods. Although there has not been an assessment instrument to date that measures both aspects of SWB (i.e., cognitive and affective), there are several instruments created for both domains. Additionally, researchers have found measures of life satisfaction and emotional well

being to be strongly associated with each other (Diener, 1994).

Researchers have found that college students consider happiness and life satisfaction to be extremely important (Diener et al., 1999). Thus, holistic wellness activities that are initiated to improve the experience of college students can be expected to result in higher reports of both physical and psychological well-being (Hermon & Hazler, 1999). Students also appear to be aware of the multiple dimensions of wellness. Using Hettler's (1984) six wellness dimensions, Archer, Probert, and Gage (1987) examined student perceptions of wellness. It was found that students believed that the physical dimensions of wellness (i.e., nutrition, exercise, sleep, and safety) had the strongest effect on their overall wellness. Students also acknowledged the emotional dimension, which was defined as awareness, expression of feelings, and feelings about self, as an important aspect of wellness. Although relaxation was not viewed as an important task, worrying, poor sleep habits, and depression were rated as being detrimental to wellness. Lastly, potential enjoyment of an activity, time, and availability of the activity were

identified as factors that could influence how often students participated in wellness behaviors.

Readiness to Change

Behavior change is a complex process that depends on an individual's awareness and recognition that change is necessary. Readiness to change has been identified as an essential behavioral component of health prevention, promotion, and maintenance interventions (Prochaska, DiClemente, & Norcross, 1992). However, it has been estimated that across populations with active health problems, only 10-15% are prepared to take action to improve their condition upon entering treatment (Prochaska, DiClemente, & Norcross, 1992).

As a way to understand the change process, Prochaska et al., (1992) developed the Stages of Change Model, a transtheoretical stage model, to explain how individuals of all ages change unwanted behaviors, as well as create and maintain new habits. The Stages of Change Model consists of five stages: (a) precontemplation, (b) contemplation, (c) preparation, (d) action, and (e) maintenance. Individuals in the precontemplation stage do not define their behavior as a problem, and have no desire to create

change. In the contemplation stage, individuals have some interest in creating change, but their commitment or behavioral follow through is minimal. The individual in the preparation stage forms intentions to change in the near future. The intention is often manifested in small behavioral experiments. It should be noted that initiation of the preparation stage does not always lead an individual to the next stage. Change is actually implemented in the action phase. During this stage, there are behavioral changes. Individuals also develop an awareness of what strategies and behaviors are effective. In the final stage, maintenance, individuals continue efforts to maintain the changes and consolidate gains made as a result of the action. Many interventions have resulted in poor outcomes because of false assumptions by researchers that participants are equally motivated and ready for change.

Although health change is an individual process, behaviors occur within a social context. The college campus is one system in which there are several social variables that contribute to wellness behaviors of college students. The characteristics of a university can have a significant impact on students' performance and development

(Stabb, Harris, & Talley, 1995). Various groups can be found within the larger institutional structure and student subcultures are the major socialization units for college students. Therefore, understanding how a campus acknowledges and accommodates these subcultures and endorses their wellness behaviors is essential to understanding the effectiveness of college wellness programs.

Often, students will wait to receive help until they begin to experience major academic impairment or no longer feel like they are able to help themselves. If a more proactive, psycho-educational approach could be taken in which students became more invested in their own mental and physical health, then there would be the potential to create long-term lifestyle changes. There is emerging evidence that empowering people to manage their biopsychosocial needs and to become active participants in their health care can be both health and cost effective (Hoffman & Driscoll, 2000). As Hettler (1984) stated, "It seems ludicrous to prepare a student for a lifetime career in their area of interest and not prepare them for the responsibilities of maintaining their life" (p. 17).

Purpose of Study

Psychoeducation and prevention are important aspects of counseling. Yet, despite the overlap between college counseling and college health, many health professionals have not been exposed to preventive health concepts as part of their clinical training (Steenbarger, Conyne, Baird, & O'Brian, 1995). Despite the mounting evidence establishing the mind/body relationship, there has been a lack of emphasis placed on holistic wellness in mental health. Although there has been a growing movement in psychology towards health and positive psychology, there is still a dearth of outcomes research that examines the benefits of health-related behaviors on mental health. The majority of holistic health research has been unidirectional, such that most studies address the psychological and psychosocial factors that effect physical health. Taylor and Aspinwall (1990) noted that medical citations on health-related quality of life continue to outnumber psychological citations by a ratio of 10:1.

The purpose of this study is to examine the relationship between students' wellness behaviors and their subjective well being. The researchers hope to gain a

better understanding of the specific contributions that wellness behaviors will make towards students' emotional well being, satisfaction with life, and physical health. The information revealed by this study can help researchers design stronger interventions for both counseling and outreach. Typically, students' motivation and readiness for change is ignored in intervention design (Thombs & Briddick, 2000). Therefore, this study will also include an assessment of participants' readiness. The information provided can hopefully lead to interventions that are well-matched to students' level of readiness.

Due to the scarcity of information on health-related behaviors and SWB, this study is primarily exploratory in nature. However, some relationships will be expected based on previous research. The specific hypotheses are as follows:

1) Health-related behaviors will contribute to subjective well being.
2) Health-related behaviors will contribute to enhanced physical well being, such that people who engage in more health-related behaviors will report feeling physically healthier.

3) In concordance with earlier findings regarding gender and SWB (Myers, 2000; Diener et al., 1999), it is predicted that there will be no relationship between gender and SWB.

CHAPTER 2

METHODS

Participants

Participants were 475 students from Introduction to Psychology (PY100) courses and other undergraduate courses at Colorado State University. Participants' ages ranged from 18 to 49 with a mean age of 19. Most of participants were female (67.4%) while 26.3% were male, although 6.1% of the participants did not disclose their gender. The academic level of participants ranged from freshman to fifth year undergraduate, although three individuals identified their year in school as "other". The percentage of participants reporting that they were full time students was 98.5%. With regards to ethnicity, 86.5% of participants identified as White, 7.1% identified themselves as Hispanic, 2.8% as Asian or Pacific Islander, 1.5% as Black, and 1.9% as Other. Given that only a small number of participants endorsed most of the non-White ethnic groups, ethnicity was coded into two categories: non-Hispanic Whites and individuals other than non-Hispanic Whites. International students comprised 1.3% of the participant population. Of the participants who described

their relationship status, 64.3% reported themselves as single, 2.5% as married/partnered, and 33.2% as engaged or committed. The majority of the participants reported their sexual identity as heterosexual (97.2%), with 0.4% identifying as homosexual, and 1.5% as bisexual.

Instruments

National College Health Assessment Survey.

The American College Health Association (ACHA) developed the National College Health Assessment Survey (ACHA-NCHA) (2000) to examine behavioral factors that affect the health of college students. The ACHA-NCHA was designed to help institutions of higher education learn more about the risks and protective behaviors, perceived norms, incidence and prevalence of a variety of health conditions that may affect student wellness (see Appendix A).

The ACHA-NCHA is comprised of 58 items that assess six areas of wellness: (a) general health and safety, (b) alcohol and drug use, (c) sex behaviors and perceptions, (d) weight, nutrition and exercise, (e) physical and mental health, and (f) impediments to academic performance. Responses to items are either are either multiple choice or Yes/No. Items were originally grouped according to the

aforementioned topic areas and separate analyses were conducted for each set of grouped items. However, several of the factor reliabilities were found to be low when this grouping method was utilized. Thus, for the purpose of this study, separate factor analyses were performed, yielding 19 factors from the original six areas of wellness. These factors were broken down into four general categories.

The first category includes demographic variables such as age, sex, ethnicity, year in school, and working for pay. The second category is health-promoting behaviors, which includes healthy eating, exercise, sleep, responsible drinking behaviors, and condom use. Health compromising behaviors such as drinking and driving, fighting, safety behaviors, sexual abuse, using alcohol, marijuana and cigarettes, the number of alcoholic drinks consumed in the last two weeks, and the number of times one engaged in binge drinking over the last two weeks comprise the third category. Lastly, symptoms of depression and perception of weight create the fourth category. The item "Considering your age, how would you describe your general health?" was used as the outcome measure for subjective health.

Participants were asked to rate their response on a five-point Likert scale (5=Excellent to 1=Poor).

The Satisfaction With Life Scale (SWLS) (Diener et al., 1983) is a five-item questionnaire that assesses life satisfaction as a cognitive-judgmental process. Responses to each item are based on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) (see Appendix A). Previous reliability work on the SWLS revealed a test-retest reliability of .82, and a coefficient alpha of .87 (Diener et al., 1983). The SWLS correlated at .02 with the Marlow-Crowne, an instrument used to measure social desirability, indicating that the SWLS is not evoking a social desirability response set. Internal consistencies for this sample yielded a Cronbach's alpha score of .89, with the item-total correlations for the five items of: .75, .78, .81, .72, and .66, showing a good level of internal consistency for the scale.

The Index of Psychological Well-Being (IPWB) (Berkman, 1971) is an instrument created to measure emotional well-being. It consists of eight items assessing affect. There are separate scores for negative feelings and positive feelings. Respondents are asked to report the frequency

with which they experience these feelings. Responses to each item are based on a 3-point scale: Never, Sometimes, and Often (see Appendix A). Weights of 0,1, and 3 respectively were assigned to the responses. Reliability analysis for this study, revealed a coefficient alpha of .64. One item, "So restless you couldn't sit in a chair" was discarded because it was found to dramatically reduce the reliability of the scale.

Additional Questions. The researcher worked in conjunction with the Colorado State University Wellness Advisory Committee, which was comprised of individuals from several departments on the Colorado State University campus. Participating members created items about student awareness and utilization of campus resources. The University Counseling Center, the Student Recreation Center, and the Student Health Center contributed 14 additional questions. The information collected was then shared with the committee to help assess student needs and plan future wellness interventions. In addition to these items, the researcher included questions relating to academic major, social support, and readiness for change. However, only the readiness to change items and four questions assessing

social support were utilized for the purposes of this study (see Appendix A).

Procedure

Undergraduate research assistants administered all instruments. Students were given an informed consent form (see Appendix A) before beginning participation in the study. Participants then received the assessment packet and were informed that although there were no time limitations it was estimated that this study would take no longer than 1 hour to complete. After the participants completed the survey, they were given a written debriefing form (See Appendix A). Participant identification remained anonymous. To ensure anonymity, participants were randomly assigned a number that appeared on the testing packet, and all data was coded utilizing only this number. All data were entered and subsequently verified by two research assistants. Data analyses were conducted through the use of SPSS.

CHAPTER 3

RESULTS

Descriptive Statistics and Correlations

Frequencies of the responses to all of the ACHA-NCHA items may be found in Appendix B. Tables 1-3 display all correlations between the IPWB, SWLS, and independent variables. All of the measures and composite variables have acceptable levels of reliability. However, it should be noted that the Cronbach alpha coefficients for the IPWB (.64) and the health behavior composites of social support (.65), condom use (.63), and sexual abuse (.62) are relatively weak and could be problematic in making predictions for individuals or small groups. Yet, Murphy and Davidshofer (1998) reported that reliabilities greater than .60 allow for dependable conclusions about groups of substantial size.

The correlational findings are consistent with the first hypothesis such that several health related behaviors were found to be significantly correlated with both the IPWB and the SWLS. There were eight predictors significantly correlated with emotional well being (EWB) and seven correlated with satisfaction with life (SWL).

Only the variable of healthy eating was found to be significantly correlated with emotional well being (r =.13, p<.01) but not life satisfaction (r =.04, p=.46). The correlations were also generally consistent with the second hypothesis such that ten health-related behaviors were found to be significantly correlated with physical health. No predictors were so highly correlated that there were problems with multicollinearity.

The readiness to change items were reliable and yeilded a Chronbach's alpha of .81. Table 4 displays the frequencies of participants' response to each item. Over 50% of participants identified as actively engaging in physical activity and healthy eating. However, over 50% also reported that they had not thought about or had any intention of changing their levels of alcohol, tobacco, or drug use. The majority of students also reported regularly engaging in safe sex practices (30.6%) and getting regular check ups (38.2%).

Inferential Analyses

Hierarchical regressions were performed to investigate the contributions made by the demographic variables and the three categories of health-related behaviors on the

dependent measures (i.e. emotional well being, life satisfaction, and physical health). After the test of the overall model was obtained, usefulness analyses were performed. Demographic variables were always entered in first as control variables. Then, in the second step, two of the three categories were entered together, leaving the last category to be entered third. This allowed the researchers to observe the contributions made by the final step independent from the others. Each category was entered as the third step in order to examine the contributions of each category above and beyond the effects of the others.

Emotional well being and health related behaviors

The contributions made by the health related behaviors towards the prediction of EWB was examined by first entering the demographic variables in Step 1. Then, a series of three regressions were performed to examine the independent contributions of the psychological variables, health compromising variables, and health promoting variables. The psychological variables significantly predicted emotional well being even beyond the effects of other variables, ($\Delta R^2 = .18$, $p<.001$). Health promoting

behaviors were also found to significantly predict emotional well being beyond the effects of the other variables (ΔR^2 = .09, p<.001). The overall model was significant as well, R^2 = .40, F(20, 315)= 10.58, p<.001. Specifically, there was three health-related variables that significantly contributed to the variance accounted for in this model: social support (B=.28, t=5.79, p<.001), symptoms of depression (B=-.45, t = -9.34, p<.001), and fighting (B=.09, t=2.00, p<.05). Eating healthy approached significance (B=.09, t=1.90, p<.06).

Satisfaction with Life and Health-Related Behaviors

The analysis performed to examine the contributions made by health related behaviors to life satisfaction paralleled that which was carried out for the IPWB. The demographic controls were entered first, followed by a series of three regressions where the steps were varied. Health related variables accounted for 28% of the variance in the SWLS. The psychological variables significantly predicted life satisfaction even beyond the effects of other variables, (ΔR^2 = .08, p<.001). Once more, health promoting behaviors were found to significantly predict life satisfaction beyond the effects of the other variables

(ΔR^2 = .08, p<.001). The full model was significant as well, R^2 = .28, $F(20, 315)$ = 6.01, p<.001. Again, there were three health-related variables that significantly contributed to the variance accounted for in this model: social support (B= .28, t=5.17, p<.001), symptoms of depression (B= -.30, t=-5.62, p<.001), and gender (B= -.11, t=-2.08, p<.05).

Physical Health and Health-Related Variables

Hypothesis 2 posited that health-related variables would be related to physical health. The same statistical analyses were performed for physical health. Health related behaviors accounted for 28% of the variance in physical health. All three categories were found to significantly predict physical health above and beyond the effects of the other variables. The psychological variables significantly predicted physical health beyond the effects of other variables, (ΔR^2 = .04, p<.001). The category of health compromising behaviors was found to be a predictor of physical health (ΔR^2 = .04, p<.05). Lastly, health promoting behaviors were also found to significantly

predict physical health beyond the effects of the other variables (ΔR^2 = .16, p<.001). The full model was significant as well, F(20, 315) = 6.20, p<.001. There were four variables that contributed to the variance accounted for in this model: exercise (B= .31, t = 5.77, p<.001), perception of weight (B= -.19, t= -3.73, p<.001), social support (B= .13, t=2.42, p<.05), and healthy eating (B= .12, t=2.35, p<.05). Tables 5-7 display the results of the overall regressions and Tables 8-10 display the significance levels for the individual variables.

CHAPTER 4

DISCUSSION

The purpose of this exploratory study was to examine the relationship between health-related behaviors and the subjective well being of college students. A second hypothesis was also posited that health related behaviors would contribute to subjective physical health. The findings supported the general hypotheses such that several behaviors were found to significantly contribute to subjective well being and physical well being. It should be noted that the primary purpose of this study was to explore which health variables, if any, were related to subjective well being. It was revealed that the categories of health promoting behaviors and psychological variables were found to significantly predict emotional well being and satisfaction with life. Whereas, health compromising behaviors, health promoting behaviors and psychological variables were all significantly predictive of physical health. These findings support the biopsychosocial model of well being and further strengthen the position that individuals should be conceptualized using a holistic health perspective. However, due to the conservative

nature of the analyses performed, very few individual variables were found to be predictive in nature. Therefore, while it is important to discuss each of the variables and their unique contribution to the dependent measures, it should be recognized that this study did not take into account possible moderating relationships. More liberal analyses may identify other behaviors that contribute to SWB. The results of this study could serve as the springboard for future research where specific hypotheses can be tested.

Although there was support for the first two hypotheses, the third hypothesis regarding gender was not confirmed. Gender was identified as a significant predictor of life satisfaction but not emotional well being. This study did not investigate gender differences, but speculation based on previous research might lead one to conclude that gender played a moderating role in life satisfaction. However, previous research indicates that demographic variables such as gender typically yield relatively small effect sizes (Diener et al., 1999). Thus, future research should examine gender differences more closely.

Subjective well being was significantly correlated with several health compromising, health promoting, and psychological variables. Exercise, sleep, social support, drinking responsibly, alcohol, marijuana, and cigarette use, perception of one's weight, and depression were all behaviors found to be significantly related to emotional well being and life satisfaction, although healthy eating was only related to EWB. These results are consistent with the current body of literature that substantiates the relationship between health and well being (Salovey, Rothman, Detweiler, & Steward, 2000). The findings from this study also suggest that for college students there is a clear link between health behaviors and happiness.

The lack of a significant relationship between sexual behaviors (i.e. condom use and sexual abuse) and SWB was unexpected. This may be due to low endorsement of those items. Students may not have felt comfortable disclosing any information regarding their sexual behaviors or revealing a history of abuse. Yet, another interpretation of these results could be that students do not feel that those behaviors bear any relation to their current state of happiness.

Several significant correlations were found between health-behaviors and subjective physical health. Healthy eating, regular exercise, quality sleep, social support, perception of weight, depression, drinking and driving, substance use, and binge drinking were all significantly related to feeling physically healthy. These findings offer additional support to the already vast body of health and wellness literature that has established the strong and vital role of behavioral practices in the maintenance of health.

The most profound finding from this study is the strong predictive nature of social support on SWB and physical health. These results affirm that social support is a critical component in physical and emotional well being. It has been previously established that interpersonal relationships are a prominent psychosocial concern of college students. Additionally, romantic relationships were strong predictors of overall life satisfaction for college students (Emmons & Diener, 1985). The results of this study indicate that the benefits of social support extend beyond the psychological realm. In another study examining college student wellness, close

relationships and socializing were ranked as the most important wellness activities (Archer, Probert, & Gage, 1987). Indeed, perceived emotional support has been found to function as a buffer for significant life events and can reduce the consequences of stressful experiences (Edwards, Hershberger, Russell & Market, 2001). Social support has also been found to have a positive effect on well being independent of life stressors (Demakis & McAdams, 1999). Furthermore, combinations of social ties may strengthen the impact of social relationships on health behaviors (Demakis & McAdams, 1991). For example, compared with those having few social ties, people supported by close relationships were less vulnerable to ill health and premature death (Myers, 2000, p. 62). It is also important to note that negative social interactions have been found to impact health. Edwards and colleagues (2001) found that negative social exchange was a significant predictor of physical symptoms such that the absence of negative social interactions was associated with better physical health. Furthermore, it has been suggested that poorer health contributes to more negative perceptions of social interactions and can lead to less future support. The

impact of interpersonal relationships and its effect on wellness is still under much investigation. However, it has been postulated that there is a reciprocal relationship between emotional experience and social support (Cohen & Syme, 1985).

> Social support, through the stability, predictability, and control that it provides, leads people to feel positively about themselves and their environment. These feelings, in turn, motivate people to want to take care of themselves, interact more positively with others, and demonstrate resilience in times of stress. The combination of these factors facilitates continued physical and psychological health and further strengthens the individual's social network. Individuals who are happy find it easier to develop a rich network of social support as compared with those who are more dour. (Salovey et al., 2000, p.117).

Thus, it is also likely that social support may have moderated the effects of other health behaviors on the outcome measures.

The cluster of health promoting behaviors, in addition to offering physical benefits, were found to be predictive of emotional well being and satisfaction with life. This is also consistent with the literature stating that these behaviors are protective and can minimize the direct effects on the physiological sources of risk. Indirect

effects can also be exerted by reducing the impact of stress and enhancing mood (Baum & Posluszny, 1999).

When the specific health behaviors were examined, depression was found to be the only other predictor of SWB. Depression is clearly tied to emotional health and its absence would intuitively be related to positive emotional well being and life satisfaction. The symptoms of depression can have a pervasive influence across all dimensions of health status (Hoffman & Driscoll, 2000). It can decrease quality of life and, in some cases, restrict functioning. Depressive symptoms are associated with limitations in physical and social well being. Moreover, several studies have reported that college students commonly report concerns with depression (Arthur, 1998).

Students identified that being in a physical fight was one risk behavior they perceived as interfering with their emotional well being. These results are similar to those found in the NCHRBS (1995) survey, which states that approximately 13% of students were in at least one physical fight. This finding is concerning for several reasons. In addition to the fact that rates of violence are rapidly growing in this country, injury-related risk behaviors are

likely to cluster. Students who have been in a physical fight are also likely to not wear a seat belt, carry a weapon, and consider suicide (Barrios, Everett, Simon & Brener, 2000). More information is necessary in order to understand the motivations for these fights. Moreover, there is a high comorbidity of physical assaults and alcohol consumption within the college population. A high association of violence with alcohol and other substance use has been noted in college student research for decades (Rivinus & Larimer, 1993). Thus, the relationship between violence, alcohol, and their impediment to SWB should be investigated in future research.

An interesting finding of this study was the lack of influence of health compromising behaviors on SWB. It is probable that this phenomenon can be explained by the social norms that surround many of these behaviors in a college environment. Drinking and smoking do not occur in isolation, they occur in the context of an overall lifestyle (Emmons et al., 1998), and this type of "party" lifestyle is often endorsed by college students. Furthermore, despite the staggering statistics about the causes of premature deaths, most students probably do not

believe that this information is relevant to them at this point in their lives.

Another explanation for this finding is that some individuals may use these behaviors as mood regulation strategies. People may hold expectations that some health compromising behaviors can influence their emotional state by repairing a mood or inducing a positive mood state (Salovey et al., 2000).

Subjective physical health was the other dependent measure in this study. In addition to social support, the daily amount of fruits and vegetables consumed, the amount of exercise one gets in a week, and perceptions of weight were significantly predictive of physical health. It is important to remember that this study examined subjective physical health, not objective physical health. It has been found that the impact of one's health on their well being has more to do with the perception of their situation rather than objective outcomes (Diener, 1999).

The results regarding diet and exercise are in accordance with the previous literature which states that these behaviors are essential to positive health, illness prevention and weight management. Exercise is also a

method of stress management and altering aspects of physical functioning (e.g. circulatory functioning, muscle tone, endocrine activity). These results also suggest that although students may not be aware of the impact that some health compromising behaviors may have on their long-term health, they do recognize the benefits of some health promoting behaviors.

Between the growing rates of obesity and the pervasive cultural and societal messages that contribute to body image dissatisfaction and eating pathology, it is nc surprise that perception of body weight was a predictor of subjective health. Maintaining appropriate weight is an important part of a having positive self image. Although the literature typically addresses body image in regards to women, a recent study revealed that men identified physical appearance, fitness, maintaining desired weight, and eating habits as a significant area of concern as well (Davies et al., 2000).

In addition to understanding how health-related behaviors are associated with SWB and physical health, it is also important to recognize how contextual influences, such as readiness to change and developmental level, may

have affected the outcomes. With regard to students' readiness to change, the results indicated that students were not highly motivated to change. For most items, students indicated that they were already engaging in certain behaviors or that they had not thought about or had any intention of changing others. Students reported regularly engaging in health promoting behaviors such as exercise, stress management, and eating healthy. Conversely, they reported that they had not thought about changing behaviors such as alcohol, drug, or tobacco. This suggests that the majority of participants do not view most of their current behavior patterns as problematic. Another unique aspect of this study was that it asked two types of precontemplative questions. Students could respond that they had "not thought about changing" or had "no intention of changing". Participants who chose these responses might either lack the knowledge about the risks associated with these behaviors or they may be resistant to change because of a heavy investment in the behavior (DiClemente, 1991).

If students are not ready to change their current set of behaviors, then health educators first need to create outreach information that will attract their attention.

Many interventions are inconsistent with students' experiences such that they do not see many of their behaviors as risky, or as interfering with their lives (Fischhoff, 1999). One recommendation is to utilize interventions that implement harm reduction strategies (Thombs & Briddick, 2000). These are intervention strategies that emphasize positive health behaviors, such as transportation services for intoxicated individuals, which are instituted in order to protect those who decide to place themselves at risk (Erickson, Riley, Cheung & O'Hare, 1997).

Developmental level is another factor that could be useful in understanding the choices and behaviors of college students. Although it might be expected that most college students function at the highest level of Piaget's cognitive development model (i.e. formal operations), recent findings have suggested that people do not always exhibit formal operational reasoning in late adolescence and young adulthood (Boyes & Chandler, 1992). One study found that students' responses often reflected concrete operational and, at times, preoperational levels of reasoning about illness and psychological problems

(Oprendek & Malcarne, 1997). Level of reasoning was not significantly associated with age. Additionally, students' reasoning level regarding the cause of psychological problems was lower than their reasoning level regarding the cause of physical illness. Furthermore, within both the psychological and illness domains, treatment and prevention were found to be the most difficult for students to grasp. This indicates that some students may not be able to understand a complex explanation about the cause, treatment, or prevention of illness or psychological problems given to them by healthcare providers. Thus, it is also important for practioners to thoroughly assess students' understanding of their presenting concerns. Since the ability to consider all possible alternatives to a problem is achieved only in formal operations, obtaining information regarding the developmental level of students could assist in the creation of more effective approaches to health prevention on college campuses.

Another developmental consideration is the psychosocial level of students. Erikson (1959) defined the tasks of young adulthood as identity development and achievement, and the establishment of intimacy with others.

These tasks speak to students' strong need for social support. It was found that undergraduates with lower identity scores seemed less prepared for intimacy tasks and reported less social support from others (Broman, 1993). This may be due to their inability to recognize when support is available. Since accomplishing these developmental tasks are an important and necessary part of human development, some students may be more focused on mastering these tasks than on paying attention to their health needs. Thus, it is important for health professionals to create outreach materials and strategies that are developmentally appropriate and appealing to students.

Limitations

Although the results of this study may have some useful applications, there are some limitations that should be noted. The singular geographic location of the university may lead to difficulties in generalizing the results to other regions. The homogeneity of the sample may also make it difficult to generalize these results. The overwhelming majority of participants reported their ethnicity as Caucasian. The restriction in ethnicity

leaves question as to whether a more diverse participant sample would have yielded the same results. When addressing holistic health issues with ethnically and culturally diverse populations, biological, cognitive, linguistic, social, and emotional factors should all be taken into consideration (Young & Zane, 1995). Cultural norms may differ with respect to social support networks, diet, patterns of emotional expression, and use of resources (Hoffman & Driscoll, 2000). As the demographics of the United Stated continue to shift, it is crucial for health care practioners to be culturally responsive. Future research should explore the relationship between health behaviors and SWB with a more diverse sample. Additionally, the age range of this sample is restricted such that the majority of participants are first year students, thus, the results may not be representative of all college students. Finally, the objective of this study was to explore students' subjective sense of well being. Self-report is, therefore, an appropriate method to utilize; however, it is possible that students may not have accurately reported their experiences.

Implications and generalizations

It has been suggested that the college years may be the most stressful in one's life. Thus, college is an opportunity for students to learn about and begin engaging in healthy behaviors that they can carry with them into the future. One goal of working with college students is to deliver effective and appropriate services. The results of this study provide some therapeutic and educational implications for a variety of health care professionals who work with the college student population.

Mental health practioners not only need to be aware of the role depressive symptoms play in the lives of college students, but also to recognize the positive impact health promoting behaviors have on students' subjective well being. Although it is somewhat normative for students to experiment with behaviors such as drinking alcohol and sexuality, it is necessary for therapists to educate their clients about their potential risks. Furthermore, this study has evidenced that health-promoting behaviors contribute to SWB; thus, clients should be encouraged to utilize these behaviors as effective coping strategies.

University health promotion programs should examine how the campus community endorses health-promoting behaviors and the messages they send about health-risk behaviors. The information yielded from this study could also be used to design outreach programs that educate and encourage students to engage in health promoting behaviors while warning of the dangers of health-risk behaviors. However, as mentioned earlier, college students are sophisticated in their interpretation of health related information. Researchers and health educators need to focus on the influencing cultural norms of this population in order to help shift student norms towards healthier lifestyles. General student development programs that help students in their overall growth are likely to have a positive influence on their ability to behave in healthier ways and overcome specific barriers.

Previous findings have identified personality as the strongest predictor of SWB (Diener, 2000), but the results of this study suggest that health behaviors also make a significant contribution. This study was exploratory in nature and succeeded at identifying some variables that influence SWB. Additional research on the role of social

support as a moderating variable is needed. A more specific investigation should also occur where discrete variables such as gender and violence can be studied. It would also be interesting to examine the relationships between the predictor variables to facilitate a better understanding of their interactions with one another.

Conclusion

The amount of information that is known about SWB is still rudimentary. There is insufficient information to tell the whole story about how to increase happiness. The results of this study contribute to the growing body of knowledge about the factors contributing to SWB. In addition to continuing our search for an understanding of the psychosocial contributors to physical health, there is a need for the continued integration of genetic, situational, environmental, psychological, and social factors in the understanding of SWB. It is the hope of the researcher that this study can help practioners remove the artificial gap between physical health and well being, thus creating interventions that can improve the overall quality of life. By embracing a holistic health perspective with a college population, the hope is to not only better address

current concerns but also prevent long term health and psychological problems in the future.

Table 1. Intercorrelations and internal consistency reliabilities for demographics variables.

	1	2	3	4	5	6	7	8
1. EWB	.64							
2. SWLS	.55**	.89						
3. Health	.30**	.30**	--					
4. Age	.06	-.03	-.02	--				
5. Sex	.01	-.06	.08	.14**	--			
6. Ethnicity	.05	.06	.04	.03	-.04	--		
7. Work	.05	-.01	-.05	.21**	.04	-.10*	--	
8. Year in school	.06	-.04	-.00	.70**	.08	-.05	.36**	--

Note. *p < .05, ** p< .001. All significance tests are two-tailed. Coefficient alpha reliabilities appear in the diagonal. Items without a reliability score are single-item measures.

Table 2. Intercorrelations and internal consistency reliabilities for health-promoting behaviors and psychological variables.

	1	2	3	4	5	6	7	8	9	10	11
1. EWB	.64										
2. SWLS	.55**	.89									
3. Health	.30**	.30**	--								
4. Healthy Eating	.13**	.04	.23**	--							
5. Exercise	.15**	.12**	.38**	.31**	.80						
6. Sleep	.15**	.13**	.18**	.16**	.17**	--					
7. Social Support	.40**	.38**	.17**	.01	.12*	.05	.65				
8. Safe Drinking	-.12**	-.17**	-.08	-.08	-.02	-.06	-.08	.94			
9. Condom Use	.02	.09	.01	.05	.01	-.04	.14**	-.31**	.63		
10. Perception of weight	-.13**	-.09*	-.22**	-.02	.01	-.09	-.03	-.04	.07	--	
11. Depression	-.52**	-.37**	-.18**	.01	-.05	-.12*	-.27**	.16**	-.11*	.10*	.82

Note. *p < .05, ** p< .001. All significance tests are two-tailed. Coefficient alpha reliabilities appear in the diagonal. Items without a reliability score are single-item measures.

Table 3. Intercorrelations and internal consistency reliabilities for health compromising behaviors.

	1	2	3	4	5	6	7	8	9	10
1. EWB	.64									
2. SWLS	.55**	.89								
3. Health	.30**	.30**	--							
4. Drinking and Driving	-.03	.01	-.11*	.82						
5. Fighting	.06	.03	.05	.05	--					
6. Safety	-.02	-.04	.03	-.01	.02	.72				
7. Sexual abuse	-.07	-.04	-.02	.06	.04	-.01	.62			
8. Alcohol/Pot/Cigarettes	-.11*	-.15**	-.18**	.18**	.06	.14**	.09*	.75		
9. Number of alcoholic drinks in last two weeks	-.01	-.05	-.14**	.12*	.05	.08	.13**	.51**	--	
10. Number of times binge drinking in last two weeks	-.03	-.06	-.12**	.19**	.14**	.19**	.09	.61**	.55**	--

Note. *p < .05, ** p< .001. All significance tests are two-tailed. Coefficient alpha reliabilities appear in the diagonal. Items without a reliability score are single-item measures.

Table 4. Percentages of responses to readiness to change items.

	Have not thought about Changing	Not in next 6 months	Will change in next 30 days	Started changing this behavior	Engage in this behavior regularly	No intention of changing
Physical activity	8.6	5.6	17.2	31.4	30.1	7.1
Practice safe sex	21.6	4.0	6.1	11.9	30.6	25.8
Regular check ups	20.6	10.8	5.9	7.2	38.2	17.4
Handle stress better	15.6	7.4	16.5	35.5	14.1	11.0
Not use tobacco	20.6	6.5	5.1	11.8	19.9	36.3
Eat healthy	6.0	7.3	12.4	38.4	24.9	10.9
Not use drugs	24.6	4.3	2.3	8.2	21.2	39.4
Lower alcohol	23.9	9.6	3.6	12.3	12.9	37.7

Table 5. Regression results with psychological variables as last step.

	Emotional Well Being	Satisfaction with Life	Physical Health
Step 1			
Demographics[a]	R^2 = .01	R^2 = .01	R^2 = .01
Step 2			
Health promoting behaviors[b] Health compromising behaviors[b]	R^2= .23 ΔR^2 =.22	R^2 = .20 ΔR^2 = .19	R^2 = .24 ΔR^2 = .23
Step 3			
Psychological variables	R^2= .40 ΔR^2 = .18	R^2 = .28 ΔR^2 = .08	R^2 = .28 ΔR^2 = .04

a. Predictors: Ethnicity, age, gender, work for pay, year in school

b. Predictors: Exercise, drinks in last 2 weeks, drinking and driving, sexual abuse, social support, fighting, safety, sleep, condom use, healthy eating, responsible drinking, binge drinking, alcohol/pot/cigarette use

c. Predictors: Perception of weight, symptoms of depression

Table 6. Regression results with health compromising behaviors as last step.

	Emotional Well Being	Satisfaction with Life	Physical Health
Step 1			
Demographics[a]	R^2 = .01	R^2 = .01	R^2 = .01
Step 2			
Health promoting behaviors[b]	R^2 = .39 ΔR^2 = .38	R^2 = .26 ΔR^2 = .25	R^2 = .25 ΔR^2 = .23
Psychological variables[b]			
Step 3			
Health compromising variables[c]	R^2= .40 ΔR^2 = .01	R^2 = .28 ΔR^2 = .02	R^2 = .28 ΔR^2 = .04

a. Predictors: Ethnicity, age, gender, work for pay, year in school

b. Predictors: Exercise, responsible drinking, social support, perception of weight, sleep, healthy eating, condom use, depression.

c. Predictors: Drinking and driving, fighting, safety, sexual abuse, number of drinks of last 2 weeks, binge drinking, alcohol/pot/cigarette use

Table 7. Regression results with health promoting behaviors as last step.

	Emotional Well Being	Satisfaction with Life	Physical Health
Step 1			
Demographics[a]	R^2 = .01	R^2 = .01	R^2 = .01
Step 2			
Health compromising behaviors[b] Psychological variables[b]	R^2 = .32 ΔR^2 = .31	R^2 = .20 ΔR^2 = .19	R^2 = .12 ΔR^2 = .11
Step 3			
Health promoting variables[c]	R^2= .40 ΔR^2 = .09	R^2 = .28 ΔR^2 = .08	R^2 = .28 ΔR^2 = .16

a. Predictors: Ethnicity, age, gender, work for pay, year in school

b. Predictors: Number of drinks in last 2 weeks, drinking and driving, depression, fighting, safety, perception of weight, sexual abuse, alcohol/pot/cigarette use, binge drinking

c. Predictors: Exercise, sleep, social support, healthy eating, condom use, responsible drinking

Table 8. Beta weights and T-test results from regression.

Dependent Variable: Emotional Well Being

	Unstandardized Coefficients		Standardized Coefficients
	B	S.E.	Beta
(Constant)	12.814	1.479	
Age	-7.285E-03	.048	-.009
Gender	-.353	.241	-.073
Year in school	.109	.123	.059
Work for pay	7.320E-02	.079	.045
Ethnicity	.552	.319	.081
Healthy eating	.330	.175	.091
Sleep	4.073E-02	.053	.036
Exercise	5.515E-02	.058	.046
Social support	.237	.041	.276**
Responsible drinking	-6.212E-03	.010	-.036
Condom use	-7.624E-02	.060	-.063
Safety	7.351E-02	.095	.036
Sexual abuse	8.429E-02	.159	.025
Fighting	.504	.254	.091*
Drinks in last 2 weeks	1.678E-02	.048	.019
Binge drinking	3.934E-02	.070	.035
Alcohol/marijuana /cigarette use	-3.521E-02	.030	-.077
Drinking and driving	-1.813E-02	.084	-.010
Depression	-.118	.013	-.454**
Perception of weight	-.203	.146	-.064

*$p<.05$, **$p<.001$

Table 9. Beta weights and T-test results from regression.

Dependent Variable: Life Satisfaction

	Unstandardized Coefficients		Standardized Coefficients
	B	S.E.	Beta
(Constant)	21.42	4.46	
Age	-.123	146	-.058
Gender	-1.506	.725	.113*
Year in school	.147	.370	.029
Work for pay	9.465E-02	.237	.021
Ethnicity	1.449	.963	.077
Healthy eating	-.230	.528	-.023
Sleep	.213	.160	.069
Exercise	.175	.174	.053
Social support	.639	.124	.272**
Responsible drinking	-3.798E-02	.029	-.079
Condom use	-2.968E-03	.180	-.001
Safety	.206	.285	.037
Sexual abuse	.359	.480	.038
Fighting	1.207	.766	.079
Drinks in last 2 weeks	3.189E-03	.145	.001
Binge drinking	.134	.212	.044
Alcohol/marijuana/ cigarette use	-.135	.090	-.108
Drinking and driving	.273	.254	.054
Depression	-.214	.038	-.301**
Perception of weight	-.539	.440	-.062

*$p<.05$, **$p<.001$

Table 10. Beta weights and T-test results from regression.

Dependent Variable: physical health

	Unstandardized Coefficients		Standardized Coefficients
	B	S.E.	Beta
(Constant)	3.371	.624	
Age	-9.742E-03	.020	-.033
Gender	8.982E-02	.101	.048
Year in school	5.300E-03	.052	.007
Work for pay	-3.138E-02	.033	-.050
Ethnicity	-3.329E-02	.135	-.013
Healthy eating	.173	.074	.124*
Sleep	2.457E-02	.022	.057
Exercise	.141	.024	.305**
Social support	4.175E-02	.017	.126*
Responsible drinking	2.097E-03	.004	.031
Condom use	-3.093E-02	.025	-.066
Safety	4.622E-03	.040	.006
Sexual abuse	7.659E-03	.067	.006
Fighting	9.370E-02	.107	.044
Drinks in last 2 weeks	-3.439E-02	.020	-.102
Binge drinking	-2.360E-02	.030	-.055
Alcohol/marijuana/ cigarette use	-1.151E-02	.013	-.066
Drinking and driving	-5.943E-02	.036	-.083
Depression	-9.281E-03	.005	-.093
Perception of weight	-.230	.061	-.188**

*$p<.05$, **$p<.001$

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Appendix A

Academic Major (circle one): Psychology Exercise Science

Undecided Other (please write in) _____

Please answer the following questions honestly and to the best of your knowledge. Please indicate how ready you are to change your behaviors in the following areas:

1 **I have not thought about changing my behavior.**
2 **I have thought about changing, but I am not ready to implement these changes.**
3 **Although I have not done anything yet, I plan to change this month.**
4 **I have started to change this behavior.**
5 **I engage in this behavior on a regular basis and have done so for at least 6 months.**
6 **I have no intention of changing this behavior.**

____	**Exercise**	____	**Not use tobacco**
____	**Practice safe sex**	____	**Eat a healthy diet**
____	**Get a regular physical check-up**	____	**Not use illegal drugs**
____	**Handle my stress better**	____	**Not use alcohol**

Please answer the following questions honestly and to the best of your knowledge. Please circle the answer that best describes your feelings. There are no right or wrong answers.

I think I may have been the victim of a stalking since coming to college.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

I think I have a reading problem.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

I believe that I should get at least 8 hours of sleep a night to function well.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

Appendix A

I feel like I have a strong social support network.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

I feel attached to my immediate family.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

I can count on my friends to be there for me when I need them.

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

When I have a problem, there are people on campus whom I can talk to (e.g.,instructors).

1	2	3	4	5
Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**

---

1. How many times per week do you use the Student Recreation Center? Check only one.

___ Never Used
___ Less than once a week
___ Once or twice a week
___ Three to four times a week
___ Five or more times a week

If you do not use the Recreation Center or use the Center less than once a week, please answer the following question. If you use the Center more frequently, please skip to question number 3.

2. I do not use the Student Recreation Center because: (Check all that apply)

___ Working out is not a priority for me.
___ I feel it takes too long to be fit.
___ The Recreation Center is too crowded.
___ Access is a concern (e.g., parking problems, safety issues walking to car).
___ I feel self-conscious working out in front of other people.
___ I do not know what is available.
___ I do not feel comfortable with my level of fitness in order to participate.
___ The hours do not meet my needs.
___ The types of fitness classes are not what I want.
___ There is not enough equipment.
___ The equipment does not meet my needs.

3. Please check the campus activities you are aware of:

___ Intramural Sports
___ Club Sports
___ Lifestyle non-credit courses (e.g., yoga, martial arts, dance, music, massage, etc.)
___ Use of the Student Recreation Center
___ Equipment check out in the Student Recreation Center
___ Lounge/study area in the Student Recreation Center
___ Physical Therapy at the Student Recreation Center
___ Fitness Assessments
___ Personal Training
___ Aerobics classes
___ Massage

4. Please check the activities you have participated in previous semesters:

___ Intramural Sports
___ Club Sports
___ Lifestyle non-credit courses (e.g., yoga, martial arts, dance, music, massage, etc.)
___ Use of the Student Recreation Center
___ Equipment check out in the Student Recreation Center
___ Lounge/study area in the Student Recreation Center
___ Physical Therapy at the Student Recreation Center
___ Fitness Assessments
___ Personal Training
___ Aerobics classes
___ Massage

5. Please check the activities you are currently participating in this semester:

___ Intramural Sports
___ Club Sports
___ Lifestyle non-credit courses (e.g., yoga, martial arts, dance, music, massage, etc.)
___ Use of the Student Recreation Center
___ Equipment check out in the Student Recreation Center
___ Lounge/study area in the Student Recreation Center
___ Physical Therapy at the Student Recreation Center
___ Fitness Assessments
___ Personal Training
___ Aerobics classes
___ Massage

6. How do you get information about recreation programs? (Check all that apply)

___ At the Student Recreation Center
___ The Collegian (newspaper)
___ Word of mouth (i.e., from friends, RA's, instructors, etc.)
___ In the Lifestyle magazine
___ Other (please write in) _____

Please check one:
___ I am currently a non-smoker
___ I used to smoke, but quit
___ I am currently a smoker

If you currently use tobacco and would like to quit, please answer the following questions.
Indicate your #1 answer by placing a 1 next to the item, #2 answer by placing a 2 next to that item, etc.

Please indicate the top 2 barriers to trying to quit using tobacco.

___ Lack of resources
___ Do not want to quit
___ Most of my friends smoke
___ I live with or am around other smokers for large parts of the day
___ I have no other effective ways to deal with stress
___ I have no tools to deal with triggers (i.e., smoking after meals)
___ Other (please write in) _____

Please indicate the top 2 resources that would make it easier to quit using tobacco.

___ Supportive family and/or friends
___ Group of others trying to quit (i.e., co-workers, friends, etc.)
___ One on one assistance with a health professional
___ Self-help books
___ Internet resources
___ Other _____

Appendix A

Please indicate the top 2 most likely places you would go in order to get help with quitting smoking.

___ Internet
___ Medical Professionals
___ Health Promotion Staff on Campus
___ Family/Friends
___ Co-Workers
___ Self-help books
___ Other _____

What do you see as the top 3 advantages to quitting smoking (check all that apply).

___ More money
___ Smell better
___ Decrease health risks
___ Breathe easier
___ Please family and friends
___ Improve my overall health
___ More time to do other things
___ Improve my physical activity level
___ Feel better
___ Other _____

Appendix A

Using the 1-7 scale below, indicate your agreement with each item by circling the appropriate number. Please be open and honest in responding. The 7-point scale is **1=strongly disagree, 2=disagree, 3=slightly agree, 4=neither agree nor disagree, 5=slightly agree, 6=agree, 7=strongly agree.**

In most ways my life is close to my ideal.

1 2 3 4 5 6 7

The conditions of my life are excellent.

1 2 3 4 5 6 7

I am satisfied with my life.

1 2 3 4 5 6 7

So far I have gotten the important things I want in life.

1 2 3 4 5 6 7

If I could my life over, I would change almost nothing.

1 2 3 4 5 6 7

Here is a list that describes some of the ways people feel at different times. How often do you feel each of these ways? Please circle one **(0) Never (1) Sometimes (3) Often**

Very lonely or remote from other people

(0) Never (1) Sometimes (3) Often

Particularly excited or interested in something

(0) Never (1) Sometimes (3) Often

Depressed or very unhappy

(0) Never (1) Sometimes (3) Often

Bored

(0) Never (1) Sometimes (3) Often

On top of the world

(0) Never (1) Sometimes (3) Often

So restless you couldn't sit long in a chair

(0) Never (1) Sometimes (3) Often

Vaguely uneasy about something without knowing why

(0) Never (1) Sometimes (3) Often

Pleased about having accomplished something

(0) Never (1) Sometimes (3) Often

Appendix A

INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

TITLE: Examining the relationship between wellness behaviors and subjective well being.

NAME OF PRINCIPAL INVESTIGATOR: Kathryn Rickard, Ph.D.
NAME OF CO-INVESTIGATOR: Nicolle Levy, M.S.

CONTACT NAME AND PHONE NUMBER FOR QUESTIONS/PROBLEMS:
For any questions or problems, please contact: Kathy Rickard at (970) 491-5121

PURPOSE OF RESEARCH: The purpose of this study is to examine the relationship between health related behaviors and subjective well being. This study will also include a brief assessment of students' readiness to change, and awareness and utilization of campus resources.

PROCEDURES/METHODS TO BE USED: You will receive an assessment packet containing questionnaires regarding health behaviors such as nutrition, sexual practices, exercise, drug and alcohol use, physical and mental health, and safety. You will also be asked about your level of subjective well being, which is often referred to as happiness. Lastly, your knowledge of certain campus resources will also be assessed. Although there are no time limitations, it is estimated that this study will take no longer than 1 hour to complete. You are to answer the questions to the best of your ability, keeping in mind that there are no right or wrong answers.

RISKS INHERENT IN THE PROCEDURES: There are no known risks. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

BENEFITS: Although there are no direct benefits to participants of this study, it may help increase your awareness of your health behaviors and the available campus resources.

CONFIDENTIALITY: Your responses to the questionnaires will be kept confidential. Participant identification will remain anonymous. To ensure anonymity, you will be randomly assigned a number that will appear on the testing packet, and all data will be coded and analyzed utilizing only this number. There is no way for this number to be traced back to you.

LIABILITY: The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury. Questions about participants' rights may be directed to Celia S. Walker at (970) 491-1563.

PARTICIPATION: Your participation in this research is voluntary. If you decide to participate in this study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. Furthermore, if you are uncomfortable about answering any items on this survey, you do not have to respond to that particular question.

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing two pages.

_____
Participant name (printed)

_____ _____
Participant signature Date

_____ _____
Witness to signature (project staff) Date

PARENTAL SIGNATURE FOR MINOR
(Obtain permission ONLY if you are under 18 years of age)

As parent or guardian, you authorize _____(print name) to become a participant for the described research. The nature and general purpose of the project have been satisfactorily explained to you by _____ and you are satisfied that proper precautions will be observed.

_____
Minor's date of birth

_____
Parent/Guardian name (printed)

_____ _____
Parent/Guardian signature Date

_____ _____
Witness to signature (project staff) Date

Appendix A

DEBRIEFING FORM

Thank you for your participation in this study. This study fulfills the requirement for a doctoral dissertation project. The results of this study will help increase our understanding of the types of health behaviors college students' typically engage in, and how these behaviors contribute to your subjective well being. Subjective well being, for the purposes of this study, was conceptualized as your satisfaction with life, sometimes referred to as "happiness".

Additionally, you were asked several questions about your knowledge and utilization of certain campus resources. The results of this study will be shared with those campus agencies and the CSU wellness committee in order to assist with future health promotion programming.

If you would like more information about this study and/or are interested in the results of this research, please feel free to contact Kathy Rickard at (970) 491-5121.

The following phone numbers are from several campus resources. If any personal concerns or questions arose for you during your participation in this study, we encourage you to speak to someone about these issues.

University Counseling Center	491-6053
Hartshorn Health Service	491-7121
Center for Drug and Alcohol Education	491-1702
Health Education	491-1723
Victim Assistance Team	491-6384
Academic Advancement Program	491-6129
Learning Assistance Center	491-5527
HELP/Success Center	491-7095
University Mentoring Program	491-6473
The Career Center	491-5707
Office of Equal Opportunity	491-5836
Student Legal Services	491-1482
University Police Department	491-6425

<u>Student Advocacy Groups</u>

Asian/Pacific American Student Services	491-6154
Black Student Services	491-5781
El Centro Student Services	491-5722
Gay, Lesbian, Bisexual, Transgendered Students Services	491-4342
Native American Student Services	491-1332
Office of Resources for Disabled Students	491-6385
Women's Programs and Studies	491-6384

I. Percentages of responses to safety items by gender.

Within the last school year how often did you?	Females (N= 320)					
	N/A	Never	Rarely	Sometimes	Mostly	Always
Wear a seatbelt?	0	.6	2.8	5	23.4	67.8
Wear a helmet riding a bike?	34.7	40.9	8.8	6.6	5.0	4.1
Wear a helmet riding a motorcycle?	76.6	5.6	1.3	2.2	1.9	12.5
Wear a helmet inline skating?	71.9	23.1	.9	1.3	.6	2.2

Within the last school year how often did you?	Males (N= 124)					
	N/A	Never	Rarely	Sometimes	Mostly	Always
Wear a seatbelt?	0	3.2	9.7	4.8	23.4	58.9
Wear a helmet riding a bike?	16.9	51.6	12.2	11.3	6.5	.8
Wear a helmet riding a motorcycle?	77.4	5.6	0	3.2	2.4	11.3
Wear a helmet inline skating?	60.5	32.3	.8	3.2	2.4	.8

Within the last school year, were you?	Females (N=320)	Males (N=125)
In a physical fight?	4.1	22.4
Physically assaulted (not sexual)	3.4	4.0

Within the last school year, have you experienced:	Females (N=320)	Males (N=125)
Verbal threats for sex against your will?	5.6	4
Sexual touching against your will?	16	4.8
Attempted sexual assault against your will?	5.6	0
Sexual penetration against your will?	2.5	.8

Within the last school year, have you been in an:	Females (N=316)	Males (N=125)
Emotionally abusive relationship?	17.7	16
Physically abusive relationship?	3.5	3.2
Sexually abusive relationship?	2.2	.8

II. Percentages of responses to substance abuse items by gender.

Female (N=320)	Cigarettes	Cigars	Smokeless Tobacco	Alcohol	Marijuana	Cocaine	Amphetamines	Roofies, GBH or Liquid X (intentional)
N/A	56.2	75	91.2	16.9	55.1	93.8	86.9	96.6
Not in 30 days	19.1	19.4	7.2	10.6	18.2	4.7	9.1	3.1
1-2 days	4.7	4.7	1.3	22.2	10	.6	.9	.3
3-5 days	2.5	.9	.3	15.6	4.1	.3	.9	0
6-9 days	1.9	0	0	13.8	4.7	.3	.9	0
10-19 days	3.1	0	0	17.8	3.1	.3	.3	0
20-29 days	2.8	0	0	3.1	3.1	0	1.3	0
Used all 30 days	9.7	0	0	0	1.6	0	0	0

Males (N=125)	Cigarettes	Cigars	Smokeless Tobacco	Alcohol	Marijuana	Cocaine	Amphetamines	Roofies, GBH or Liquid X (intentional)
Never used	60.8	49.6	75.8	14.5	54.4	93.6	92.8	96.8
Not in 30 days	12.0	33.6	9.7	11.3	13.6	3.2	4.8	2.4
1-2 days	9.6	11.2	4.8	12.1	8.8	.8	.8	.8
3-5 days	.8	2.4	2.4	17.7	5.6	1.6	0	0
6-9 days	1.6	1.6	0	18.5	3.2	0	.8	0
10-19 days	4.0	1.6	1.6	20.2	5.6	0	.8	0
20-29 days	4.0	0	1.6	5.6	7.2	.8	0	0
Used all 30 days	7.2	0	4.0	0	1.6	0	0	0

Within the last 30 days, did you:	Females (N=235)	Males (N=98)
Drive after drinking any alcohol at all?	41.3*	45.9
Drive after having 5 or more drinks?	11.0*	15.3

*Outliers removed

	Females (N= 316)			Males (N=125)		
	Min.	Max.	Mean	Min.	Max.	Mean
Last time you "partied/socialized", number of hours drinking alcohol	0	14	3.0	0	20	3.8
Last time you "partied/socialized", number of alcoholic drinks (#13)	0	20	4.3	0	20	6.8

	Females (N= 316)			Males (N=125)		
	Min.	Max.	Mean	Min.	Max.	Mean
In the last 2 weeks, on how many occasions did you drink the same or more alcohol as indicated in time #13	0	11	1.6	0	20	1.9
In last 2 weeks, how many times, if any, have you had 5 or more alcoholic drinks at a sitting?	0	9+	1.2	0	9+	2

Females (N=318)

During the last school year, if you partied/socialized, how often did you:	NA	Always	Usually	Sometimes	Rarely	Never
Alternate non-alcoholic with alcoholic beverages	18.9	6.9	15.7	26.4	14.8	17.0
Determine, in advance, not to exceed a set number of drinks	19.8	14.5	17.6	14.2	14.8	19.2
Choose not to drink alcohol	7.8	11.9	24.5	34.8	15.0	6.0
Use a designated driver	19.6	51.1	18.6	7.6	.9	2.2
Eat before and/or during drinking	20.1	24.5	35.8	15.1	3.1	1.3
Have a friend let you know when you've had enough	20.1	18.5	14.7	17.9	12.9	15.7
Keep track of how many drinks you were having	19.5	28.9	24.8	13.8	8.8	4.1
Pace your drinks to 1 or fewer per hour	19.5	8.2	13.2	13.8	24.8	20.4
Avoid drinking games	18.0	12.9	10.4	20.5	16.4	21.8
Drink an alcohol look-alike	14.8	1.9	4.4	15.7	18.6	44.7

Males (N=125)

During the last school year, if you partied/socialized, how often did you	N/A	Always	Usually	Sometimes	Rarely	Never
Alternate non-alcoholic with alcoholic beverages	15.2	5.6	8.8	21.6	16.8	32.0
Determine, in advance, not to exceed a set number of drinks	14.4	12.0	14.4	16.8	17.6	24.8
Choose not to drink alcohol	11.2	4.8	17.6	41.6	16.0	8.8
Use a designated driver	14.4	46.4	21.6	5.6	5.6	6.4
Eat before and/or during drinking	14.4	27.2	36.0	17.6	2.4	2.4
Have a friend let you know when you've had enough	16.0	12.0	16.0	11.2	18.4	26.4
Keep track of how many drinks you were having	14.4	24.0	24.0	12.8	18.4	6.4
Pace your drinks to 1 or fewer per hour	14.4	3.2	8.8	14.4	34.4	24.8
Avoid drinking games	14.5	12.9	13.7	20.2	19.4	19.4
Drink an alcohol look-alike	12.8	1.6	2.4	11.2	13.6	58.4

Females (N=318)

If you drink alcohol, within the last school year, have you experienced any of the following as a consequence of your drinking?	N/A Don't Drink	Yes	No
Physically injured yourself	19.8	20.4	59.7
Physically injured another person	19.8	3.1	77.0
Been involved in a fight	19.8	5.0	75.2
Did something you later regretted	19.8	37.4	42.8
Forgot where you were or what you did	19.8	29.2	50.9
Had someone use or threaten to use force to have sex with you	20.1	.9	78.9
Had unprotected sex	19.8	13.8	66.4

Males (N=125)

If you drink alcohol, within the last school year, have you experienced any of the following as a consequence of your drinking?	N/A Don't Drink	Yes	No
Physically injured yourself	16.1	18.5	65.3
Physically injured another person	16.9	9.7	73.4
Been involved in a fight	16.1	8.1	75.8
Did something you later regretted	16.3	16.3	45.5
Forgot where you were or what you did	16.9	29.0	54.0
Had someone use or threaten to use force to have sex with you	16.9	0	83.1
Had unprotected sex	16.1	22.6	61.3

III. Percentages of responses to sex behaviors by gender.

	Female (n=320)			Male (n=122)		
	Min	Max	Mean	Min	Max	Mean
Within the last school year, with how many partners have you had sex (oral, vaginal, anal)?	0	50	1.5	0	11	1.4

Female (n=318)

Within the last 30 days, if you are sexually active, how many times did you have:	Oral sex	Vaginal intercourse	Anal sex
Never did this activity	28.4	37.7	85.6
Not in last 30 days	25.9	15.7	11.0
1-2	20.9	11.9	2.8
3-4	8.8	6.3	.3
5-6	6.6	7.2	0
7-8	4.4	6.9	0
9-10	1.9	2.2	0
11+	3.1	11.9	.3

Male (n=121)

Within the last 30 days, if you are sexually active, how many times did you have:	Oral sex	Vaginal intercourse	Anal sex
Never did this activity	28.1	35.5	77.3
Not in last 30 days	21.5	21.5	16.0
1-2	19.8	8.3	3.4
3-4	11.6	5.0	1.7
5-6	3.3	5.8	0
7-8	7.4	6.6	0
9-10	3.3	2.5	0
11+	5.0	14.9	1.7

Females (n=317)

Within the last 30 days, if you are sexually active, how often did you or your partner use a condom during:	Oral sex	Vaginal intercourse	Anal sex
Never did this activity	30.3	38.8	83.6
Not in last 30 days	22.1	12.9	9.8
Never	45.4	15.8	5.7
Rarely	0	4.7	0
Sometimes	0	2.8	0
Mostly	.9	6.6	0
Always	1.3	18.3	.9

Males (n=122)

Within the last 30 days, if you are sexually active, did you or your partner use a condom during:	Oral sex	Vaginal intercourse	Anal sex
Never did this activity	24.6	34.2	74.1
Not in last 30 days	23.8	20.8	14.7
Never	48.4	10.0	9.5
Rarely	.8	4.2	0
Sometimes	0	5.8	0
Mostly	0	10.8	0
Always	2.5	14.2	1.7

Females (n=317)

If you are sexually active, did you use a condom the last time you had:	Oral sex	Vaginal sex	Anal sex
Never did this sexual activity	29.7	37.7	89.9
No	68.5	31.8	7.9
Yes	1.9	30.5	2.2

Males (n=122)

If you are sexually active, did you use a condom the last time you had:	Oral sex	Vaginal sex	Anal sex
Never did this sexual activity	25.4	36.9	82.6
No	72.1	23.8	14.0
Yes	2.5	39.3	3.3

Within the last school year, if you are sexually active, have you/your partner used emergency contraception?	No	Yes	Not sexually active
Females(n=313)	56.2	7.7	36.1
Males (n=107)	53.3	8.4	38.3

Within the last school year, have you unintentionally become pregnant or gotten someone else pregnant?	No	Yes	Have not had vaginal intercourse within last year
Females (n=313)	61.0	3.2	35.8
Males (n=122)	64.8	2.5	32.8

Have you ever been tested for HIV infection?	NO	YES
Female (n=311)	78.8	21.2
Male (n=121)	83.5	16.5

IV. Percentages of amount of credit card debt.

If you have a credit card(s) how much total credit debt did you carry last month?	Females n=319	Males n=123
None, I don't have any credit cards/I'm not responsible for paying	52.7	48.0
None, I pay the full amount each month	31.3	35.0
$1-$99	1.3	4.1
$100-$249	1.3	2.4
$250-$499	2.2	.8
$500-$999	2.5	2.4
$1,000-$1,999	3.4	3.3
$2,000-$2,999	.6	.8
$3,000-$3,999	.9	0
$4,000-$4,999	.9	.8
$5,000-$5,999	1.3	0
$6,000 +	1.6	2.4

V. Percentages of cumulative GPA.

What is your approximate cumulative grade average?	**Females** n=301	**Males** n=118
A	29.7	35.5
B	53.4	55.1
C	14.4	8.6
D/F	2.5	.7

VI. Percentages of responses to perception of weight

How would you describe your weight?	Females n=311	Males n=119
Very underweight	.6	2.5
Slightly underweight	9.3	16.8
About the right weight	56.3	64.7
Slightly overweight	32.5	16.0
Very overweight	1.3	0

Are you trying to do any of the following about your weight?	Females n=312	Males n=119
I am not trying to do anything about my weight	9.9	26.1
Stay the same weight	28.5	22.7
Lose weight	60.9	21.0
Gain weight	.3	30.0

VII. Percentages of responses to healthy eating and exercise items.

How may servings of fruits and vegetables do you usually have per day?	Females n=314	Males n=119
I don't eat fruits and vegetables	1.0	.8
1-2	61.5	75.6
3-4	32.8	16.0
5 or more	4.8	7.6

On how may of the past 7 days did you participate in vigorous exercise for at least 20 minutes or moderate exercise for at least 30 minutes?	Females n=320	Males n=124
0 days	17.5	13.7
1 day	14.7	12.1
2 days	16.9	17.7
3 days	17.5	21.8
4 days	12.2	11.3
5 days	10.0	12.1
6 days	6.9	5.6
7 days	4.4	5.6

On how may of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	Females n=319	Males n=124
0 days	28.8	24.2
1 day	14.1	13.7
2 days	16.3	16.1
3 days	14.1	14.5
4 days	12.2	10.5
5 days	8.5	11.3
6 days	3.8	4.8
7 days	2.2	4.8

VIII. Percentages of responses to sleep item.

On how may of the past 7 days did you get enough sleep so that you felt rested when you woke up in the morning?	Females n=319	Males n=124
0 days	9.1	6.5
1 day	13.8	12.9
2 days	19.4	13.7
3 days	17.2	17.7
4 days	13.8	16.1
5 days	14.1	16.1
6 days	7.2	11.3
7 days	5.3	5.6

IX. Percentages of responses to mental health items by gender.

Females (n=319)

Within the last school year how many times have you?	Never	1-2 times	3-4 times	5-6 times	7-8 times	9-10 times	11+ times
Felt things were hopeless	31.0	31.0	9.7	9.1	6.0	1.6	11.6
Felt overwhelmed by all you	3.8	10.6	16.6	18.8	9.7	10.6	30.0
Felt exhausted (not from physical activity)	4.4	15.7	17.6	16.6	9.1	8.8	27.9
Felt very sad	13.4	25.3	18.8	10.3	9.1	8.8	14.1
Felt so depressed that it was difficult to function	48.4	27.8	7.2	3.4	3.8	3.4	5.9
Seriously considered attempting suicide	84.7	10.0	2.2	.9	.3	.6	1.3
Attempted suicide	96.6	2.8	0	0	0	0	.6

Males (n=124)

Within the last school year how many times have you?	Never	1-2 times	3-4 times	5-6 times	7-8 times	9-10 times	11+ times
Felt things were hopeless	36.6	36.6	10.6	3.3	1.6	2.4	8.9
Felt overwhelmed by all you	8.1	25.8	21.8	16.1	6.5	3.2	18.5
Felt exhausted (not from physical activity)	10.5	20.2	21.8	16.1	7.3	5.6	18.5
Felt very sad	21.0	33.1	17.7	9.7	4.8	3.2	10.5
Felt so depressed that it was difficult to function	51.6	26.6	4.0	2.4	8.1	.8	6.5
Seriously considered attempting suicide	85.5	8.9	3.2	0	.8	0	1.6
Attempted suicide	97.6	2.4	0	0	0	0	0

Have you ever been diagnosed with depression	Females n=320	Males n=124
Yes	37.5	91.9
No	62.5	8.1

	Females n=40	Males n=10
	YES	YES
If yes: Have you been diagnosed with depression within the last school year?	37.5	60
Are you currently in therapy for depression?	32.5	50
Are you currently taking medication for depression?	40	70

X. Percentages of responses to physical health items.

Females (N=320)

Have you:	Yes	No
Been vaccinated against hepatitis B?	88.2	11.8
Been vaccinated against meningococcal disease?	54.2	45.8
Been vaccinated against chicken pox?	63.1	36.9
Been vaccinated with measles, mumps & rubella?	96.7	2.9
Been vaccinated against the flu in the last year?	30.7	69.3
Had a dental exam and cleaning in the last year?	91.7	7.9
Performed breast self-exam in the last month?	36.1	63.9
Had a routine gynecological exam in the last year?	54.1	45.9
Had your blood pressure checked in the last 2 years?	95.0	5.0
Had your cholesterol checked in the last 5 years?	53.3	46.7
Used sunscreen daily?	24.0	76.0

Males

Have you:	Yes	No
Been vaccinated against hepatitis B? N=102	90.2	8.8
Been vaccinated against meningococcal disease? N=87	66.7	33.3
Been vaccinated against chicken pox? N=109	71.6	28.4
Been vaccinated with measles, mumps & rubella? N=110	96.4	3.6
Been vaccinated against the flu in the last year? N=103	45.6	54.4
Had a dental exam and cleaning in the last year? N=121	83.5	16.5
Performed testicular self-exam in the last month? N=118	44.1	55.9
Had your blood pressure checked in the last 2 years? N=114	93.9	6.1
Had your cholesterol checked in the last 5 years? N=94	58.5	41.5
Used sunscreen daily? N=119	10.1	89.1

Within the last year, have you had any of the following?	Females N=320		Males N=119	
	Yes	No	Yes	No
Allergy problems	54.5	45.5	52.5	47.5
Anorexia	3.5	96.5	0	100
Anxiety Disorder	9.5	90.5	.3.	96.7
Asthma	14.5	85.5	11.6	87.6
Bulimia	4.4	95.6	0	100
Chronic Fatigue Syndrome	4.4	95.6	0	100
Depression	21.5	78.5	16.7	83.3
Diabetes	1.3	98.7	.8	99.2
Endometriosis	2.2	97.8	0	100
Genital Herpes	2.5	97.5	0	100
Genital Warts (HPV)	3.2	96.8	0	100
Hepatitis B or C	.6	99.4	0	100
High blood pressure	1.9	98.1	.8	99.2
High Cholesterol	2.8	97.2	0	100
HIV Infection	.6	99.4	0	100
Repetitive stress injury	5.4	94.6	5.9	94.1
Seasonal Affective Disorder	2.5	97.5	0	100
Substance Abuse Problem	3.5	96.5	5.0	95.0
Back Pain	49.2	50.8	42.4	57.6
Broken bone/fracture	10.1	89.9	4.2	95.8

	Females		Males	
	Yes	No	Yes	No
Bronchitis	12.3	87.7	5.0	95.0
Chlamydia	1.6	98.4	0	100
Ear infection	20.3	79.7	9.2	90.8
Gonorrhea	.6	99.4	.8	99.2
Mononucleosis	5.0	95.0	1.7	98.3
Pelvic Inflammatory Disease	1.9	98.1	0	100
Sinus Infection	39.4	60.6	29.4	70.6
Strep Throat	33.1	66.9	19.8	80.2
Tuberculosis	.3	99.4	0	100

Females (N=320)

Within the last school year, have any of the following affected your academic performance?	NA	Yes, but no affect to grades	Lower grade on exam	Lower grade in course	Got an I or dropped the course
Alcohol use	35.8	55.7	6.6	1.9	0
Allergies	47.3	50.2	1.9	.6	0
Assault (physical)	96.3	3.7	0	0	0
Assault (sexual)	95.9	3.8	0	.3	0
Attention Deficit Disorder	95.0	3.1	.9	.9	0
Cold/Flu/Sore Throat	15.7	59.2	22.6	1.9	.6
Concern for a troubled friend or family	23.1	54.7	17.5	3.1	1.6
Chronic illness (diabetes, asthma, etc)	86.8	10.7	1.3	.3	.9
Chronic pain	92.5	5.0	1.6	.3	.6
Death of a friend or family member	64.1	21.9	7.8	4.7	1.6
Depression/Anxiety/Seasonal Affective Disorder	76.6	13.4	5.0	3.4	1.6
Drug use	79.3	15.7	2.5	1.9	.6
Eating disorder/problem	87.8	10.0	1.3	.6	.3
HIV Infection	99.4	.6	0	0	0
Injury	73.4	21.9	2.8	1.6	.3
Internet use/computer games	50.3	43.8	4.7	1.3	0
Learning disability	96.3	2.8	.3	.3	0

	NA	Yes, but no affect to grades	Lower grade on exam	Lower grade in course	Got an I or dropped the course
Mononucleosis	92.5	5.3	.3	1.3	.6
Pregnancy (yours or partner)	94.1	4.1	.6	.6	.3
Relationship difficulty	48.0	35.7	12.2	3.1	.9
STD	94.0	5.4	0	.6	0
Sinus infection/ear infection/ bronchitis/strep throat	46.4	39.2	12.9	1.3	.3
Sleep difficulties	35.1	40.4	20.1	3.8	.6
Stress	15.3	52.2	26.1	4.8	1.6

Males (N=123)

Within the last school year, have any of the following affected your academic performance?	NA	Yes, but no affect to grades	Lower grade on exam	Lower grade in course	Got an I or dropped the course
Alcohol use	32.5	53.7	10.6	1.6	1.6
Allergies	51.6	46.8	1.6	0	0
Assault (physical)	94.3	5.7	0	0	0
Assault (sexual)	96.7	3.3	0	0	0
Attention Deficit Disorder	93.4	5.0	.8	0	.8
Cold/Flu/Sore Throat	25.4	56.6	17.2	.8	0
Concern for a troubled friend or family	40.7	43.1	13.0	2.4	.8
Chronic illness (diabetes, asthma, etc)	91.1	8.1	0	.8	0
Chronic pain	90.2	8.9	.8	0	0
Death of a friend or family member	64.2	23.6	9.8	2.4	0
Depression/Anxiety/Seasonal Affective Disorder	76.4	15.4	4.9	.8	2.4
Drug use	69.9	22.0	4.1	3.3	.8
Eating disorder/problem	96.7	3.3	0	0	0
HIV Infection	96.7	3.3	0	0	0
Injury	68.0	29.5	.8	1.6	0
Internet use/computer games	39.0	45.5	10.6	4.9	0
Learning disability	93.5	4.1	1.6	0	.8
Mononucleosis	92.7	5.7	.8	.8	0

	NA	Yes, but no affect to grades	Lower grade on exam	Lower grade in course	Got an I or dropped the course
Pregnancy (yours or partner)	94.4	3.2	.8	.8	.8
Relationship difficulty	47.2	36.6	13.0	3.3	0
STD	95.9	4.1	0	0	0
Sinus infection/ear infection/ bronchitis/strep throat	65.0	31.7	3.3	0	0
Sleep difficulties	35.0	43.9	17.9	2.4	.8
Stress	26.6	51.6	16.1	4.0	1.6

XI. Percentages of responses of work for pay.

How many hours a week do you work for pay?	Females	Males
0 hours	.3	.8
1-9 hours	62.3	60.0
10-19 hours	9.1	5.6
20-29 hours	15.4	16.0
30-39 hours	6.9	12.8
40 hours	4.7	4.0
More than 40 hours	.9	.8

XII. Percentages of responses to social support items.

Females (n=318)	SA	A	DK	D	SD
I feel like I have a strong social support network	18.6	57.1	11.7	10.1	2.5
I feel attached to my immediate family	47.8	41.5	5.3	3.8	1.6
I can count on my friends to be there for me when I need them	42.5	45.0	8.5	2.8	1.3
When I have a problem, there are people on campus whom I can talk to	18.9	44.0	28.6	6.6	1.6

Note: SA=strongly agree, A=agree, DK=don't know, D=disagree, SD=strongly disagree

Males (n=124)	SA	A	DK	D	SD
I feel like I have a strong social support network	21.8	53.2	13.7	6.5	4.8
I feel attached to my immediate family	39.8	46.3	4.9	6.5	2.4
I can count on my friends to be there for me when I need them	29.0	50.8	10.5	5.6	4.0
When I have a problem, there are people on campus whom I can talk to	12.9	46.0	29.8	7.3	4.0

Note: SA=strongly agree, A=agree, DK=don't know, D=disagree, SD=strongly disagree