

Comparison of Healthy Lifestyle Habits
in High School Students

by

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A Research Paper

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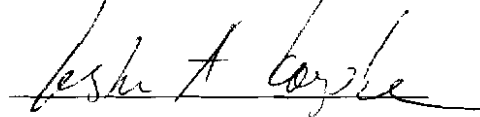
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A handwritten signature in black ink, appearing to read "Leslie Koepke", written over a horizontal line.

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ABSTRACT

The purpose of this study is to compare healthy lifestyle habits of freshmen to the healthy lifestyle habits of juniors. Data will be collected through a wellness survey distributed to rural midwestern High School physical education students in grades nine and eleven during term four of the 2007 school year. The study will compare healthy lifestyle habits between high school freshmen and high school juniors, the difference in perception between the two grades, including gender, and to seek evidence of teens exhibiting behaviors that were considered risky.

This research will also attempt to make students aware of lifestyle choices made, in hopes that they will either maintain and/or improve their wellness in the future. Moreover, the results will help determine if current activities, opportunities, and programs offered at the high school are promoting positive health behaviors in all environments.

There are seven dimensions of wellness that will be considered: social, emotional, physical, career, intellectual, environmental, and spiritual. General findings are more consistent in healthy lifestyles between genders than between grades. Results indicated that junior high school students are more likely to develop and maintain positive and healthy relationships than freshmen students. Additionally, females are more likely to communicate in positive ways, sharing their feelings and using "I messages" than males their same age. The majority of both grades understand and consider the consequences of their behavior on others, but teenage boys tend to be more aggressive than teenage girls.

Nearly one-third of each grade does not exercise aerobically at least three times per week, and both grades have the majority of students not eating breakfast every morning. Young women tend to be more environmentally aware, while young men tend to portray more risky behavior. Results on STDs, violence, environmental impacts, and spirituality are discussed, as well as the invincibility teenagers associate with themselves. Conclusions and recommendations on healthy lifestyles and teenage wellness within each wellness area will also be explored.

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Chapter I: Introduction

The teenage years are a time for exploration, friends, Friday night football games, homecoming, prom, activities, learning, socialization, growth, and increased independence. Along with these exciting events, adolescents also have to make choices about study habits, cope with stress, decipher raging hormones, learn what they love, and ultimately decide who they are and what they want to become.

Parents, teachers, and communities have issued a distinct cry for help regarding the youth of today. Society is questioning the health and wellness, choices and decisions, and the current knowledge and tools given to American teenagers. Are they actually using the knowledge gained to become responsible citizens, caring individuals, and life-long learners, or merely storing it away and acting on impulse? Are the future leaders of this country thinking about college applications and scholarships, registering for classes, making positive relationships, finishing homework, helping out at home, and obtaining a summer job?

In contrast, are teens planning drinking parties in cornfields, engaging in sexual behaviors, and driving without seatbelts or with drivers who are drinking? Are they contemplating suicide, struggling with the death of someone close, or abusing drugs, tobacco, or alcohol? Can teenagers make informed decisions about exercise, nutrition, and sleep, while tending a broken heart or writing a term paper? This unpredictable nature of adolescent's poses a very general, but important question: do teenagers lead healthy lifestyles?

Changes occurring in the brain, or developmental growth, primes adolescent curiosity towards sex, increases risk taking behaviors, changes sleep patterns, and may prove to be an explanation for engaging in conflicts with adults or peers. During this time, the brain actually forms and shapes itself through experience. Interactions with people and the environment

directly influence the brain's transition from childhood to adolescence (White, 2005). Numerous aspects in society and the environment influence impulsive decision-making and contribute to lifestyles that are too risky.

Television and video games have direct bearing on how the brain processes during childhood and adolescence and affects all seven wellness domains. KidsHealth (n.d.) cited that by age eight, youth will observe 200,000 acts of violence on television. Some video games even use violence to solve problems or promote fun, in turn, jeopardizing the social health of teens. Moreover, watching television is the most common youth activity, second only to sleeping, and may also contribute to childhood obesity, as those who consistently spend more than four hours per day sitting in front of a screen are more likely to be overweight (Television's Effect on Reading and Academic Achievement, n.d.).

In addition to violence, T.V. also promotes risky behaviors such as drinking, having premarital sex, using drugs, and smoking cigarettes. These actions are sometimes portrayed as favorable by the media and movie stars, possibly allowing teens to associate them as cool or the current trend of activities to engage participation. The Center for Disease Control (CDC), reported just over 35% of high school freshmen and 47% of juniors had one or more drinks on one or more days preceding the survey. Similarly, teenage boys are more likely to smoke than teenage girls, and 17.4% of freshmen light up on one or more days before the survey compared to nearly 24% of eleventh graders (CDC, 2004).

As incoming high school students, freshmen are growing and changing in many different ways. Their young bodies are transforming physically, their brains are being shaped and sculpted to their experiences, they may be emotionally or socially unstable due to friendships and family issues, and academics could be harder or more intense than previous classes. The arrival in a

new environment may entice freshmen to be more prone to risky behavior due to peer pressure, poor decision-making skills, anxiety, or low self esteem. On the other hand, these fourteen and fifteen year olds may be insecure, shy, and quiet, or focused on starting their high school careers with good grades and a clean slate. They may work hard to be successful, find a tight friendship group, and be positive role models to younger peers.

In comparison with the underclassmen, high school juniors and seniors have had more time to grow and develop in most dimensions of wellness through two or three years of high school. Some have been introduced and exposed to risky behavior, forcing them to use critical thinking and decision-making skills. Others may comprehend concepts related to health and wellness, and demonstrate the ability to practice these health-enhancing behaviors, while others will make poor decisions (Tackmann, 2005). Additionally, Meeks, Heit, and Page (2003) suggested that teenagers need to develop and maintain health-related fitness and skill-related fitness. Most high school students do not obtain and practice this knowledge until they are juniors, seniors, or have completed the late adolescence stage, which ranges from seventeen to twenty-one years old.

Adolescence is a prime period to promote wellness with the intention of setting “in motion a lifetime of good health outcomes” (Hatcher & Scarpa, 2002, p. 3). The challenge facing educators is to provide these young adults with the tools to adopt healthy behavior changes over a lifetime, and not just for the short term or one class period during the school year (Hatcher & Scarpa, 2002). The idea is that youth will not only understand the pieces of a healthy lifestyle, but practice putting the puzzle together by making educated decisions about health and their behavior. Health behavior changes include, but are not limited to: promoting exercise and

nutrition, smoking education, proper sleep habits, injury and accident prevention, environmental awareness, coping skills, and dealing with stress in a positive manner.

Statement of the Problem

Each day youth make choices that will affect both how long and how well they will live. Some of these decisions will directly impact their future and well-being. Teens of the 21st century may not be taking enough responsibility for their actions or understand that knowledge alone will not assure a lifetime of health and happiness. Ultimately, by practicing the skills and habits teens acquire and form, it will help shape who they are and what they will become (Hales, 2003). This study is designed to determine if healthy lifestyle habits are choices made by adolescents, and if there is a difference in choices depending on age or grade of students.

Purpose of the Study

The purpose of this study is to compare healthy lifestyle habits of freshmen to the healthy lifestyle habits of juniors. Data will be collected through a wellness survey distributed to high school physical education students in grades nine and eleven during term four of the 2007 school year.

Research Questions

This comparative study will attempt to answer the following three research questions:

1. Is there a difference in perception of healthy lifestyles between high school freshmen and high school juniors?
2. Is there a difference in perception of healthy lifestyles and wellness between genders?
3. Is there evidence that teens exhibit behaviors that are considered risky?

Definition of Terms

In order to be consistent and have clarity, for the purpose of this study there are multiple terms defined below. They are:

Adolescence – “The bridge from childhood to adulthood” (Marks & Rothbart, 2003, p. 6).

Career Wellness – “The process of making and maintaining choices related to work include working in a job for which we are all suited and from which we gain satisfaction” (Tackmann, 2005, p. 11).

Emotional Wellness – “The process of accepting our worth, creating, recognizing, and expressing our feeling, and talking to ourselves in healthy ways. Creating and maintaining a positive realistic self-concept is also part of this process” (Tackmann, 2005, p. 10).

Environmental Wellness – “The process of making choices which will contribute to sustaining or improving the quality of life in the universe, including air, water, and land quality” (Tackmann, 2005, p. 12).

Health – “Being sound in body, mind, and spirit, not merely the absence of disease or infirmity, but a state of complete physical, mental, and social well-being” (Hales, 2003, p. 14).

Intellectual Wellness – “The process of using our minds to create a greater understanding and appreciation of the universe and ourselves” (Tackmann, 2005, p. 12).

Lifestyle – “A lifestyle is the way a person lives. This includes patterns of social relations, consumption, entertainment, and dress. A lifestyle typically also reflects an individual's attitudes, values or worldview” (Wikipedia, n.d., n.p.).

Physical Wellness – “The process of making choices to create flexible, cardio-vascular fitness, energetic and strong bodies. The choices we make are related to exercise, nutrition, rest

and sleep, stress management, management of injury and illness, and the uses of drugs” (Tackmann, 2005, p. 11).

Social Wellness – “The process of creating and maintaining healthy relationships through the choices we make” (Tackmann, 2005, p. 10).

Spiritual Wellness – “The process of discovering meaning and purpose in life and demonstrating values through behaviors” (Tackmann, 2005, p. 13).

Wellness – “A deliberate lifestyle choice characterized by personal responsibility and optimal enhancement of physical, mental, and spiritual health” (Hales, 2003, p. 14).

Wellness Health – “A system of preventive care that takes into account the whole individual, his won responsibility for his well-being, and the total influences – social, psychological, spiritual, and environmental – that affect health, including nutrition, exercise, relaxation, and stress reduction” (adapted by Weidner, n.d., n.p.).

Assumptions of the Study

It is assumed that the students taking the survey will be honest with all of their answers and that they will know and understand the words and questions posed. Also assumed is that there is adequate research in the area of wellness and health in high schools or healthy lifestyle habits of high school students to give a sufficient overview of this subject. Finally, it is assumed that each parent will sign a consent form and all subjects chosen will voluntarily participate.

Limitations of the Study

Limitations of the study include the possibility of students answering the survey questions according to how they think the instructor would want them to answer or they would answer incorrectly on purpose. It is also possible that students may not understand words or questions associated with the survey. An additional limitation is not receiving parent permission

from students, or students choosing to not participate. Finally, this study is limited by the participants living in a rural, Midwest small city with little ethnic or socioeconomic variation among the subjects. Therefore the results of the study are limited in their generalizability.

Methodology

Consent forms (Appendix A) were sent to 100 parents/guardians of students within the school. After all consent forms were collected and placed in a separate envelope, the researcher gave the students the Seven Dimensions of Wellness survey (Appendix B), adapted with permission, from the book *Outrageous Teaching Techniques in Health Education*, by Deborah Tackmann (2005). Students from different grades were surveyed physical education classes. Each student was asked to circle his or her correct grade and gender on the top of the assessment. Aside from this demographic portion, the survey had seven different sections: Career, Emotional, Physical, Social, Intellectual, Environmental, and Spiritual wellness. The students read each statement and rated themselves on a scale from 5 (always) to 1 (never), or does not apply (DNA), circling the answer that best described themselves.

At the end of each section, students were asked to add their total score. Upon completion of all seven sections, each section total was added for a grand total. Those students who needed additional assistance with math skills were given the necessary support. When the scores were calculated, students read the wellness assessment that correlated with their total score. Students placed their survey in an envelope that was different from the one containing the signed consent forms. No identifiers were used on the survey or consent form to protect the anonymity of the participants.

Data was collected over a five day time period or one full week of school, during the month of May, 2007. The researcher double checked the addition of scores and compared the

results of freshmen and junior surveys to see if there was a difference in healthy lifestyle choices between the two grades and by gender.

Chapter II: Literature Review

Introduction

The time of adolescence is a time of rapid and dramatic change in all domains: physical, cognitive and psychosocial. Physically adolescents go through growth spurts unlike any experienced before and each individual goes through these growth spurts independently from other adolescents. The rapid, unexpected and unpredictable physical changes that occur happen in conjunction with the biological changes of puberty, which allow reproduction to be possible. Cognitively, adolescents begin to develop formal operation thinking (Piaget) which allows them to consider possibilities, question the norm, consider abstract thought, and develop alternative hypotheses, not only about their daily experiences, but as well as about the broader, philosophical and political issues impacting the world. Additionally, due to their expanded thought capacity, adolescents develop a sort of egocentric thought about themselves. This egocentricism appears in three ways: through “invincibility” which contributes to adolescents thinking they are invulnerable to the worlds harm and that they can do anything and not be impacted negatively; through “imaginary audience” where the adolescent believes the world is always observing them and so their looks, appearance and behaviors are being critically examined by others at all times; and finally through “personal fable” where the adolescent believes their life is unique, mythical and unlike anyone else they know. This leads to their thinking their relationships are unlike any the world has seen before and that their goals are unlike anyone elses. Psychosocially, adolescents enter the stage defined by Erikson as “Role Identity vs. Role Confusion” which causes them to ponder the eternal question of “who am I”, where do I fit in, and how do others see me? This internal questioning combined with the expanded ability to consider possibilities for their lives along with seeing their bodies change in

unexpected ways contributes to the adolescent's decision making abilities in significant ways. Having parents who provide high expectations with common sense reasoning, and choosing friends who share similar values all contribute to the adolescents well being and to their decision making in the areas of wellness (Berger, 2006)

This chapter will discuss the seven dimensions of wellness: Career, Emotional, Physical, Social, Intellectual, Environmental, and Spiritual. Specific studies, research, and statistics of teenage behavior and lifestyles will also be detailed. The chapter will conclude with reported documentation of how educating adolescents and giving them opportunities to practice this knowledge can benefit their futures and society. Since the dimensions of wellness can be visualized as a wheel with seven connecting spokes, information given on each area may overlap into the next.

Career Wellness

Since the wheel of wellness is interrelated, one cannot separate one spoke from the other. Placing value on emotional, physical, and social health, for example, is just as important as paying attention to the spiritual, intellectual, environmental, and career dimensions of wellness. In order for teens to achieve productive career and future lifestyles, Zunker (2002) stresses the importance of learning and evaluating "their circumstances" (p. 453), and using school programs to plan for the years ahead.

High school is the transition age where teens are expected to accept responsibility, increase independent actions, have greater awareness of the work world, and be prepared to transition into the next stage of life. Some teens, however, will not make it to the workforce stage. According to Paulson (2006) "they're the kids who fall through the cracks, the ones who rarely get extra attention or tutoring – who, very often, disappear even from the statistics" (n.p.).

More than 33% of high school students drop out of school or do not get their diploma on time. Of these students, almost 90% had passing grades upon departing. This would be the code definition for saying they were capable of graduating and finishing high school, but for reasons such as pregnancy, family, learning disabilities, or apathy they dropped out instead.

This staggering number of high school dropouts, nation wide, is a serious issue. Current research has shown a \$9,200 income difference between high school graduates and high school drop outs, and reflects that dropouts either end up in jail or are more likely to rely on government assistance (Paulson, 2006).

Currently, most teens have a career of going to school. The goal of wellness in this area is for teens to become aware of personal characteristics, skills, aptitudes, and interests. Increasing awareness and respect for diversity in the work force is another objective. Moreover, “developing a positive attitude toward work” (Zunker, 2002, p. 466), and being aware of the relationship between future choices and performance in school are essential in preparing young adults for a career.

Meeks, Heit, and Page (2003) identified the following very specific strategies teenagers can practice to prepare for career wellness. First, selecting high school courses, studying hard and receiving a high school diploma and carefully planning for post-high school education are of utmost importance. Talking to adults who have careers of interest and accepting volunteer opportunities are two more strategies for teens to exercise. Teens should also seek out a part-time job, have a positive attitude, and display a good work ethic, which is comprised of discipline, commitment, and motivation.

In contrast to diligent career planning and wellness, an article from Novant Health EAP & Work Life Services (n.d.) showed that 55% of the American workforce is not satisfied with

their current employment. Additionally, Novant Health (n.d.) referenced the Bureau of Labor Statistics, stating that 67% of laborers would like to currently change not just jobs, but careers. Another research report revealed that during their working years, American occupations and careers are likely to change, not once, but four or five times (Novant Health, n.d.).

These statistics clearly reinforce the importance of educating youth in regards to careers, vocational satisfaction, and balancing work and leisure time. Occupational health, however, is just one spoke of seven on the wellness wheel, and is equally important to its six siblings.

Emotional Wellness

Spoke number two, emotional health, is the feelings and moods possessed, and will become the basis for how teens see themselves. Striving for emotional wellness will help develop patience, flexibility, and the ability to adapt to situations (Hales, 2003). Meeks, Heit, and Page (2003) agreed with Hales and added:

“This is the area of health that focuses on taking responsibility for health, practicing life skills for health, gaining health knowledge, making responsible decisions, using resistance skills when appropriate, developing good character, choosing behavior to promote a healthy mind, expressing emotions in healthy ways, following a plan to manage stress, and being resilient during difficult times.” (p. 179)

In an age of emotional extremes, can teenagers focus on and positively express themselves while thinking; do I look fat in this outfit? Will he ask me out? Will she say yes? Do people like me? Are people looking at my pimples? Since emotional wellness has an unlimited number of aspects to it, the following paragraphs will only focus on responsible decision making, developing good character, morals and values, and improving self-esteem.

High school students have the tough act of making personal decisions regarding their actions. Some weigh the pros and cons and consider the consequences before making a choice, while others make decisions solely based on what their friends are doing. A number of teens combine their thoughts, morals, values, feelings, and desires in order to make choices, while classmates and peers give in to peer pressure or simply make choices by means of apathy (Meeks, Heit, & Page, 2003).

The responsible decision making model outlined by Meeks, Heit, and Page (2003) lists six steps that teens can follow to ensure decisions made lead to actions that: “promote health, protect safety, follow laws, show respect for others, follow guidelines set by parents and other responsible adults, and demonstrate good character” (p. 190-191). These measures are significant to emotional wellness, considering that 30% of high school students nationwide have ridden in a vehicle with a driver who was drinking. Even more shocking is the fact that 16.5% of teens made a suicide plan and 17% carried a weapon, a gun, knife, or club to school with them (CDC, 2004). By abiding to the above guidelines, teens may practice thinking in the moment, but making decisions for the future.

Developing good character follows in line with responsible decision-making and can be defined as who an individual is when nobody is watching. Good character relies heavily on morals and values and using self-control to act on those beliefs. An example of good decision-making would be a junior high school student finding a wallet in the men’s restroom. Since he values honesty, he would turn it into the office, without taking any money and therefore showing good character.

Those who display positive morals and values and have good character are more likely to feel good about themselves and have a good self-esteem, or, “ones’ belief of ones’ own worth”

(Meeks, Heit, & Page, 2003, p. 194). While self-esteem in freshmen students may become negative their first year of high school, there is documentation that they will become more positive as they progress through their high school years (Hales 2003). Additionally, Hales (2003) described self-esteem as having pride and confidence in oneself, and forming positive relationships and friendships. Moreover, self-esteem is planted in individuals from childhood. Constant criticisms and reminders of minor faults can undermine the positive affirmations given to youngsters. Compliments and encouraging words have proven effective in enhancing self-esteem and emotional well being (Hales, 2003). By understanding the proper balance of wellness, parents, teachers, and communities can help increase the emotional wellness of adolescents.

Physical Wellness

Emotional health and self-esteem are directly linked to physical wellness, which includes physical activity, nutrition, sleep, appropriate sexual activity, and abstaining from substance abuse. Results from the Girl Scout Research Institute concluded that body image, emotions, and self-esteem play a critical role in feeling good, being well, and having support from family and friends in regards to diet and exercise. Almost all the girls involved in the study agreed that their emotional health was just as important as their physical health (Walter, 2006).

Perhaps physical wellness is one the hottest topics and most recognized among children and adolescents today. The nightly news reports information on the childhood obesity epidemic resulting in state governments enacting nutrition and wellness policies to be enforced in all schools by the 2006-2007 school year. Many efforts state and nation-wide are stressing the importance of current behavior of teens and reducing the risk of disease and injury, making the basics of exercise, nutrition and sleep the staples of adolescent physical wellness.

Hales (2003) described the lack of physical activity as the “sedentary death syndrome” (p. 108). Henner (2001) referred to advertising agencies for nutrition as “the fast food conspiracy, aka, ‘pester power’” (p. 16). Promoting unhealthy foods in eye-catching ways entices youth to nag parents for those products full of calories, sugar, and fat. For most parents, giving in to these nutrient deficient foods is easier than debating or fighting with their child, and therefore contributing to the growing obesity count.

In addition to a poor diet and lack of physical activity, teens stay up later, experience restless sleep, and awaken later due to natural circadian rhythms. This normal pattern in sleep, however, is not combated by positive physical health among teens. The sugar highs, fatty foods, inactivity, early start times at school, friends, jobs, cell phones, computers, and video games all accumulate to form “sleep debt” (Hales, 2003, p. 132). The sleep debt for most teenagers is about two hours each night, as they only sleep between 7 and 8 hours. The recommended amount of sleep for teenagers is between 8.5 and 9.25 hours each night. Insufficient sleep during this time period has been shown to contribute to behavior and emotional problems, missing classes, tardiness, lack of energy, mood swings, lower test scores, and is known to contribute to traffic accidents and unintentional injuries (Marks & Rothbart, 2003; White, 2005).

Similar to insufficient sleep, alcohol, drugs, and tobacco play a large role in unintentional injury in teens. According to the National Center for Injury Prevention and Control (2000-2004), unintentional injury is the number one cause of death for teenagers 15-19 years old. Every year the use of alcohol and other drugs is the instigator in many drownings, murders, rapes, traffic and fire fatalities, child abuse cases, assaults, suicides, and deaths from chronic diseases (Meeks, Heit & Page, 2003). Driving at night or after drinking, not wearing seatbelts, and being reckless behind the wheel also increased the likelihood of accidents, injuries, and fatalities.

Alcohol, tobacco, and other drugs, along with accidents, are very much preventable, but youth seem to not be taking this risky behavior seriously. Everyday teens choose to use substances that can stain their lungs, shorten their breath, damage their body and soul (or someone else's), and destroy brain cells (Marks & Rothbart, 2003). In the report of Youth Risk Behavior Surveillance – United States, 2003, reported by the Center of Disease Control (2004), current teenage alcohol use in the United States was almost 45%. This percentage was higher among upperclassman (11th and 12th graders) than underclassmen (9th and 10th graders). Similarly, nearly 22% of teenagers had smoked more than one cigarette per day during the 30 days preceding the survey (CDC, 2004).

A study conducted by Ramrakha et al, (2007) revealed that youngsters age 5-11 who had high levels of antisocial behavior, were associated with an increased risk of early sexual activity. The study further presented evidence between poor parental relationships and early sexual debut, and involvement with delinquent peers and risky sex. The indications of these findings establish links between risky sexual behavior as adolescents, and emotional and behavioral issues, including antisocial behavior and poor parental connections occurring early in life (Ramrakha et al., 2007). Rink, Tricker, & Harvey (2007) found relationships between depression and sexual intercourse among female adolescents in their study to examine the influence of early sexual behavior. Risk factors for sexual intercourse at a young age included depression in combination with a connection to the environment. Teenage girls who were depressed and unsure of sex, but who had a close relationship with both parents, their peers, and school environment delayed the onset of sexual intercourse. Those young women, who had poor father-daughter, peer, and school relationships, and displayed symptoms of depression, were more at risk for an early onset of sexual activity (Rink, Tricker, & Harvey, 2007). These statements reflect how depression,

family life, friends, and the school environment play a role in and are risk factors of teens deciding when to start sexual relationships.

An early onset of sexual activity in adolescents may also result in unstable emotional and physical wellness. Approximately 34% of high school students nation-wide are engaging in sexual intercourse (CDC, 2004). This number has decreased in recent years as Rathus, Nevid and Fichner-Rathus (2005) reported results from a survey in 2000 stating that almost half of all high school students were sexually active. Even though these numbers seem to be promising, the risky behavior of teens is not decreasing at a pace that is acceptable for parents, teachers, and communities. Sexually transmitted diseases among youth are an equally prominent issue when discussing sexual behavior, and are included as one of the top six risky behaviors of teenagers.

The top six categories of risky behavior in today's students are: behaviors that contribute to unintentional and intentional injuries, the number one cause of death among teens, tobacco use, alcohol and other drugs, sexual behavior contributing to STDs, poor nutrition, and lack of physical activity (CDC, 2004). All of these fall into the physical wellness dimension and can be prevented through practice, knowledge, and prevention programs.

The Surgeon General, Vice Admiral Richard Carmona (2005) put the following facts into perspective. Today there will be 4000 teens who will try their first cigarette. Of those, 2000 will become daily chain smokers. Nearly 9 million, 15%, or 1 in every 7 teens is over weight. Three out of every four overweight teens will become obese as adults. The average child watches more than four hours of television per day and for the first time in history, adolescents are developing type II diabetes and high blood pressure. Carmona (2005) also made reference to the quality of the environment, chemical use in foods, emotional disturbances among teens, suicide (the third

leading cause of death in teens), and proclaimed that these statistics are “unacceptable, and preventable” (n.p.).

The challenge facing teens in regards to physical wellness was stated best by Walter (2006) when she reported findings from the Girl Scout Research Institute. The study found that girls, specifically, understand the basics of eating healthy, exercising regularly, and getting sufficient sleep, but choose not to act on this knowledge. This may be relevant to all teens, as knowledge about health and wellness is taught and available. Several may think they are healthy, but according to physical wellness standards are not. Some know they are unhealthy, but just don't care. Still others try to be healthy, but find it too much work to become and stay well.

Choate (2007) discusses the opposite end of the physical wellness challenge: the desire to be thin. Early in adolescence, a focus on appearance, weight and shape can become the key components to female identities. The emphasis on thinness comes from the media and social messages of the ideal image. Teenage girls look toward Hollywood, magazine advertisements and commercials for information on how to achieve the perfect shape and size, and social approval and success. In order to survive these pressures, some young women learn how to form negative coping mechanism, including anorexic and bulimic behaviors, instead of questioning the unrealistic standards posed by the mass media (Choate, 2007).

In a recent study of body image and adolescents, Ata, Ludden, and Lally (2007) found that both teenage boys and teenage girls were dissatisfied with their appearance. Males are concerned with increasing their upper body, while females concentrated on decreasing overall body size. The young women in the study displayed more characteristics to be at risk for eating disorders, while young men displayed at risk behaviors associated with greater pressure to be

bigger and low parental support. Both genders were found to have low self-esteem, which contributed to risky eating behaviors (Ata, Ludden & Lally, 2007)

Environmental Wellness

Environmental wellness is focused on keeping teens educated and up to date on environmental issues, helping keep the air clean and water safe, and limiting noise levels. Protecting the natural environment, improving aesthetic beauty and becoming health advocates for the environment are also important pieces of environmental wellness (Meeks, Heit, & Page, 2003).

The Earth and everything in, on, and around it, will directly and indirectly effect individual well-being. Changes in the climate temperature and rainfall patterns, for instance, will change the ecosystem and may become hazardous to human health. Hales (2003) reported findings from recent studies calculate 25%-40% of disease around the world is due to the environment. Human life and the environment depend on each other, meaning that the quality of life is directly related to the quality of the environment, and visa versa.

Teenagers have more impact on indoor and outdoor air pollution than they may think. Carnoma (2005) believed that a good number of Americans spend more time indoors than outdoors and in many instances, the quality of indoor air has a greater effect on wellness than outdoor air. Smoking is the most hazardous form of indoor air pollution and accounts for one in every seven high school students. This 15% of students have one or more cigarettes per day and contribute to in and outdoor air pollution by releasing carcinogens into the air of homes and vehicles (CDC, 2004). In addition to homes and vehicles being polluted, Carmona (2005) also indicated that one in five schools have air quality concerns contributing to indoor pollution and poor air quality.

Noise pollution is another form of environmental awareness and is a factor at rock concerts, in personal sound systems, and when wearing loud headphones or ear pieces. Volumes that exceed the safety zone set by environmentalists can cause permanent hearing loss. Teens may not be aware that loud music through sub woofers, other speakers, and head phones will, over time, cause hearing damage (Meeks, Heit, & Page, 2003). Other contributors to noise pollution include jack hammers, lawnmowers, airplanes, and large trucks.

Pesticides and chemical use in food products also contribute to environmental pollution and awareness. Henner (2001) pointed out that “15,000 high-production-volume synthetic chemicals” (p. 27) are currently in production and available mix with other ingredients for production of food. Approximately one-third of the nation’s food supply includes residues of pesticides, and groundwater has had evidence of pesticides and chemicals collected (Hales, 2003). Despite knowing very little about the role of environmental carcinogens in disease, Henner (2001) seemed convinced that the increase in leukemia, childhood cancer, brain tumors, and asthma, along with widespread abnormal development of the nervous system is due to environmental pesticides and synthetic chemicals in food.

In conjunction with not smoking, being aware of the amount of chemicals in food is one of the most important steps teens can take for becoming environmentally well. Teens have a greater exposure opportunity to toxicants than adults because, pound for pound, they eat more food, drink more water, and breathe more air (Henner, 2001). Young children are even more susceptible due to increased hand-to-mouth actions and playing closer to the ground.

Henner (2001) also declared that adolescents are more vulnerable when it comes to metabolism, detoxification systems, and excretion systems as they are maturing and less able to process toxicity, chemicals, and pollutants. Moreover, the developmental process is disturbed as

the lungs, nervous, immune, and reproductive systems are not equipped to adapt for repairs due to environmental toxicants. Worst-case scenarios can result in irreversible dysfunction of multiple body systems, obesity, and diabetes (Henner, 2001).

Years of breathing polluted air, drinking poor quality water, and eating foods with thousands of chemicals and pesticides can contribute to respiratory disease, cancer, heart disease, miscarriages, weakened immunity, or birth defects in offspring. Some teens are doing their part by using trashcans, recycling, prerecycling (buying recycled products), and staying informed on environmental issues. Others need to be aware, understand, and respect their environment, and actively participate in the process of becoming environmentally well.

Intellectual Wellness

Intellectual wellness is the process of using the mind to collect and manage thoughts, make decisions, enhance critical thinking skills, acquire knowledge, be aware of surroundings and challenge the mind over a lifetime. Together, all of these are a combination of educational achievement, creativity, and personal growth (Adolescent Health, 2007).

The function of an adolescent brain is, for the most part, in a ten year transition from childhood to adulthood. White (2005) contributed the network changes in the brain to the choices teens make regarding their behavior. Ultimately, the experiences and opportunities adolescents are exposed to have an effect on the brain and how it will react to future situations. Further research suggested that teens in early adolescence “perceive the world in concrete terms and rarely see beyond the present” (Teen Health Connection, n.d., n.p.). As youth progress towards late adolescence, they have made gains in problem solving and weighing tough decisions against consequences. Although those in late adolescence are refining thinking skills and expressing

themselves conceptually, they are still “inexperienced in life” (Teen Health Connection, n.d., n.p.) and have been known to act without thinking.

Intellectual wellness is more than just making decisions; it also encompasses educational achievement and creativity. Reading scores for high school seniors have steadily declined since 1992 for all students except those performing at the 90th percentile (National Assessment of Educational Progress (NAEP), (n.d.)). It is also debated that calculators contribute to some loss of cognitive capacities as students rely on them to perform basic tasks instead of processing them from practice, experience, and memory. Additionally, students may be more willing to try multiple calculations without knowing or understanding why the computation is important. Proponents of calculators argue that students are more confident, learn more math, and develop a better sense of numbers (Starr, 2002).

With high school math and reading scores steadily declining, there is question as to whether students are using their minds enough and in creative ways. The answer is no. Hollenbeck (2007) passionately described how television, video games, and the Internet, “the treacherous technological traitors” have surpassed the “imagination’s reign” (n.p.). In lieu of educational programming and computers, the act of intellectual stimulation by reading books has become cumbersome. The imagination and adventure created by reading is removed for the viewer of T.V. and video games, as they do not require any thoughtfulness or originality. Not only does reading require intellect and inventiveness, it also introduces individuals to heroes and positive role models. This is an excellent example of how experiences help mold and shape the mind through critical thinking, imagination, and creativity (Hollenbeck, 2007; White, 2005).

Perhaps by reading more, watching less T.V., and decreasing the amount of time playing video games and text messaging, adolescents would take greater responsibility for achieving

excellence in education. Carmona (2005) believes that math and science education are not improving fast enough for the informational and technological world. He further encouraged all students to stay in school and focus on standing out in science and math courses.

When push comes to shove, the mind processes and develops through experiences. Parents, teachers, communities, and society as a whole can assist in the process of raising a child by being a positive role model through thoughts, actions, and words. Encouraging intellectual wellness over a lifetime will help equip teens in preparation for what the world throws at them.

Social Wellness

Social wellness refers to how individuals develop relationships, interact with others, use conflict resolution skills, and display proper communication skills. A majority of teenagers spend most of their time socializing during their high school years. At this stage in life, adolescents are learning how to satisfy their social roles, struggling to live peacefully with fellow classmates and family members, volunteering in the community, and wondering if or when to become sexually active (Hatcher & Scarpa, 2002; MacDonald, 2001; Meeks, Heit, & Page, 2003).

As with the previous five dimensions of wellness, the nation as a whole is focusing time and energy to improve the social health of teens. More specifically, youth violence and risky sexual behavior has drawn the attention of state and government officials. The current teenage generation seems to be the least violent of past generations, but still accounts for almost half of all reported violent crimes (Hales, 2003). Hales (2003) and MacDonald (2001) agreed that even though teen violence appears to be declining, it still is an on-going, very serious problem. The Center for Disease Control (2004) reported one-third of students in the nation have been in a physical fight one or more times during a one year period, and males were more likely to engage in physical behavior than females.

Even more staggering is the report from the National Center for Injury Prevention and Control (NCIPC, 2001-2004), listing homicide as the second leading cause of death for individuals age 15-19. Moreover, the United States remains the top country in the world for murder among youth, including the increase of mass murders on school grounds (Hales, 2003).

Possible roots of this social aggression include biological causes such as traumatic brain injury, brain tumors, drinking after head injuries, and developmental factors including behavior disorders. Hales (2003) discussed the possibilities of youth being violent from a very young age or whether they “learn” (p. 583) such behavior as they transition from the childhood stage to the adolescence stage. Hensley (2007) and Makinson & Myers (2003) integrate negative behavior with a wellness wheel of life tasks, including spirituality, (hub of the wheel), self-direction, work and school, friendship and love. Since the interactions among these tasks are all connected, a change in any area will cause a positive or negative influence among the individual. Those who choose healthy behaviors may experience wellness in multiple areas, whereas those who choose to participate in unhealthy and risky behaviors will experience a lack of wellness in multiple areas. Violent behaviors, therefore, stem from a lack of continuity in the wellness wheel of life tasks, among other risk factors (Makinson and Myers, 2003).

Some teens may display more violent behavior resulting from depression, anger, or exposure to trauma or violence as a child. Television and video games portraying violent behavior are seen again in this portion of wellness and may contribute to youth violence in America. Commercials and programs often illustrate sex, drugs, cigarettes, alcohol, and violence as exciting, fun, and trendy. KidsHealth (2005) reported teens that are exposed to a lot of sexual content on television are more likely to initiate sexual intercourse or engage in other sexual behaviors than “peers who do not view sexually explicit shows” (n.p.).

Researchers also testified that children who viewed violence on television or video games have been linked to aggression later in life or they have been traumatized by the threat of violence, images of natural disasters, and victimization of children (Hales, 2003; KidsHealth, 2005; MacDonald, 2001). The CDC (2004) conveyed that 17.1% of students nationwide carried a weapon to school on one or more days in the month before the survey, showing that students do not feel safe in their school environment or are looking to engage in violence. Watching television aimed for adult audiences may negatively influence viewing habits of teens, resulting in significant personal consequences (Williams, 2003).

White (2005) has already discussed how experience helps with brain development. Education and parental policing of the television will help make a large dent in the positive social well-being of adolescents.

Spiritual Wellness

Spiritual wellness integrates morals, values, and beliefs with the actions of everyday life. For a teenager, finding a purpose and meaning in life, as well as a sense of direction and awareness of a higher being or force, contributes to spiritual wellness. Youth who examine their morals and values, show respect for human life, education, family, religion, health, community service, and diversity are practicing spiritual wellness (University of California-Merced, n.d.).

Teens that have a sense of hope and practice optimism will also recognize their meaning and purpose in life. In their discussion of violence and spirituality among teens, Makinson and Myers (2003) describe those teens that feel a strong connection to a power outside of themselves, as being less prone to violent behavior toward themselves or others. On the other hand, those children who are not exposed to spiritual experiences that help give them a sense of purpose and

meaning in life, resulting in abandonment, may use violence as a coping mechanism for their feelings of pain and sadness (Makinson and Myers, 2003).

Spiritual health encases the other six dimensions of wellness, and can be visualized as the center of the wheel with six spokes extending from the hub. Without morals, values, and respect, the other dimensions will not function as well (Tackmann, 2005, rev). Likewise, Hales (2003) adapted John Travis's model of wellness to show that like an iceberg, only the individual current state of wellness is noticeable. Sitting just below the surface are lifestyle habits and behaviors, cultural, social, psychological, and emotional health. The realm of spiritual meaning and being sits at the base of the iceberg, ultimately supporting the entirety of weight. Finally, Hensley (2007) promotes a wheel of wellness model from Myers, Sweeney and Witmer, comprised of five interrelated life tasks. Again, the center of the wheel is spirituality, enclosed by self-direction, work and leisure, love, and friendship. The concept of this model encourages holistic wellness; the mind, the body, and the spirit.

In an analysis of teens, research acknowledged that most are searching for spiritual wellness. The current trend of some 22 million adolescents is personalizing existing religions and beliefs to match individual needs. In due course, they are creating their own faith by taking "bits and pieces" (Maranville, 2000, n.p.) of Christianity, Judaism, Buddhism, and Islam. Many teens are even shopping for religions on the Internet. Maranville (2002) called this available resource "Spiritual Supermarkets" (n.p.) and reflected that "Cyber Churches will account for anywhere between 10%-20% of all organized churches within the next decade" (n.p).

While 78% of teens show strong ambition and genuine morals and values, there are millions who are lost, do not know where they fit in, feel sad or hopeless, and participate in morally risky behavior such as smoking, drinking, and having premarital sex (Maranville, 2000).

The CDC reported in the Youth Risk Behavior Surveillance-United States, 2003, that just under one-third of adolescents felt sad or hopeless everyday for two or more weeks in a row. Even more alarming were the statistics that showed nearly 17% of teens seriously considered attempting suicide and had made a plan to commit suicide. The actual act of committing suicide is the third leading cause of death in teens, right behind homicide and unintentional injuries (Carmona, 2005; CDC, 2004). All three top ten causes of death may be prevented as adolescents absorb healthy morals, values and hope about their future.

The actions of premarital sex, drugs, alcohol, and other risky behavior have been previously addressed, and have shown to be directly related to strong or weak individual morals and values. Hales (2003) and Maranville (2000) both agreed that adolescents are in lack of positive role models from parents and other important adults in their life. Television, yet again, enters into the domain of spirituality, and tends to dictate what teens do and why they perform certain actions. Maranville (2000) blamed parents for the destructive and risky behavior teens practice saying that parents have not fulfilled their responsibility for guiding their children or being positive role models.

On the positive side, spirituality and social support from religious institutions has motivated many young adults to volunteer their time to community service work. These same teens tend to be less likely to participate in risky behavior, including violence, respect themselves and others, and put others before them. They also are more resilient in responses to trauma and crisis situations (Makinson and Myers, 2003). Moreover, this group of students know how to manage stress and cope in positive ways, communicate using "I messages" (Tackmann, 2005, p. 10), forming loyal friendship groups, and becoming better role models than their parents (Hales, 2003; Maranville, 2000).

Carmona (2005) applauded all the youth who carry hope and optimism for each new day, and congratulated those who do not drink, smoke, do drugs, stay in school, and volunteer. He commented that the “enthusiasm of children and teens is often overlooked” (n.p.) as are the positive contributions to all dimensions of wellness that go unnoticed. The nation as a whole, but particularly parents and educators, must make health literacy a priority. “The greatest science in the world isn’t worth the paper it’s proved on if it can’t be translated into real use” (Carmona, 2005, n.p.)

Chapter III: Methodology

This chapter will detail the methodology used for comparing the healthy lifestyles of high school freshmen to the healthy lifestyles of juniors. Included in the comparison was gender as well as grade level. A description of the subjects, selection sample, instrumentation, and data collection will all be addressed. The chapter will conclude with data analysis procedures and limitations.

Description of Subjects

The population used for this study included all freshmen physical education (PE) or PE I and Junior PE III classes at a High School in small town western, Wisconsin. The High School principal approved this research prior to submitting the survey to students. Additionally, students were given a letter and parent permission form to have signed and returned. A copy of the consent form is located in Appendix A.

Due to school district policy, subjects participating in the study were not able to partake in the survey unless it was part of the district curriculum. Since the survey was taken from a portion of the health and physical education curriculum, administration allowed the survey to take place during physical education class time.

The 9th and 11th grade classes were chosen because both classes are required by the state of Wisconsin in order to graduate from high school. Seniors are not required to take physical education classes and would therefore register for an elective class if interested in pursuing additional courses. Seniors may consequently alter the data as they already value a healthy lifestyle by choosing to participate in an elective PE class. Juniors were therefore selected as they were the oldest available students, besides seniors, to compare to freshmen. Similarly,

sophomores may be too close in age to freshmen to represent a statistical significant difference in lifestyles.

Selection of Sample

At the beginning of the 2006-07 school year, the guidance department used a specific computer program to randomly select students for each PE I and PE III class taught for the year. For the purpose of this study, cluster sampling was used and two entire classes were chosen from each grade level (9 and 11) to participate in the study. Approximately 30 subjects were enrolled in each class, allowing there to be a total of 60 freshmen and 60 junior participants.

Instrumentation

The survey used for this study was taken and adapted with permission from Deborah Tackmann's (2005) book "*Outrageous Teaching Techniques in Health Education.*" The Seven Dimensions of Wellness survey was a personal assessment used to help make students aware of lifestyle choices made in hopes of maintaining and/or improving wellness in the future. The format of the survey was a Likert Scale in which students rated themselves on a scale from 5 (always) to 1 (never), or does not apply, circling the answer that best described themselves. In order to avoid double-barreled questions, the box entitled Does Not Apply was added to the instrument.

Since this survey was designed to meet the specific needs of this study, there were no measures of validity or reliability available. A copy of the finalized survey is located in Appendix B.

Data Collection Procedures

After permission was granted from the high school administration and all consent forms were collected and placed in a separate envelope, students were given the Seven Dimensions of

Wellness survey. Each student was asked to circle his or her correct grade and gender on the top of the assessment. Aside from this demographic portion, the survey had seven different sections: Career, Emotional, Physical, Social, Intellectual, Environmental, and Spiritual wellness. The students read each statement and rated themselves on a scale from 5 (always) to 1 (never), or does not apply, circling the answer that best described themselves. The entire survey was 66 questions plus 4 bonus questions that could only help student scores.

At the end of each section, students were asked to add their total score. Upon completion of all seven sections, each section total was added for a grand total. Those students who needed additional assistance with math skills were given necessary support. When their scores were calculated, students read the wellness assessment that was associated with their total score. Students randomly placed their survey in an envelope that was different and separate from the one containing the signed consent forms. There were no identifiers on the survey or consent form letters to insure anonymity of the participants.

The researcher double checked the addition of scores to be sure the math was done correctly. Data was collected over a five day time period or one full week of school, during the month of May in 2007.

Data Analysis Procedures

Since this data was nominal and ordinal, all appropriate descriptive statistics were utilized including means and frequency counts. Data was analyzed using nonparametric tests of significance, specifically, T-Tests, which addressed the research questions and the significance of each. Additionally, cross-tabulations were prepared to compare male with female responses and freshmen high school students with junior high school students.

Limitations of Method, Sample, and Procedures

Ideally, each class size should have been equal in number. Due to circumstances out of the guidance department's control, however not all classes were exactly the same size or had a one-to-one ratio of gender. Next, only one school district participated in this study, therefore results should be used to infer to school districts of similar size with caution. Furthermore, some students did not understand the questions in the survey which resulted in their responses being inaccurate. A few students did not read the questions that had words they did not understand and skipped the question. Finally, some students may have answered in the way they thought the researcher would have wanted them to answer.

Chapter IV: Results and Discussion

Results

The purpose of this study was to compare healthy lifestyle habits of freshmen to the healthy lifestyle habits of juniors. Data was collected through a wellness survey distributed to high school physical education students in a rural western Wisconsin city, grades nine and eleven, during term four of the 2007 school year.

The sample consisted of 96 subjects, 50 of whom were enrolled in 9th grade, and 46 were enrolled in 11th grade. Of the 96 participants, females were the majority in numbers with 56 responding to the survey, compared to 40 males. Data was analyzed using crosstabulations, frequency counts, percentages, and independent groups T-Tests.

Item Analysis - Grade

Crosstabulations, frequency counts and percentages between grade and all items from the Seven Dimensions of Wellness questionnaire were conducted. Below are tables of the notable items from the survey. Some students did not respond to questions on the survey as the question did not apply to them. "Does not apply" is not represented in each table, but the total number of participants answering each question is represented.

Social item 1 "*I have many positive and healthy relationships*" indicated that 11th graders responded twice as likely to always manage healthy relationships in comparison to 9th graders.

Table 1 indicates the count and percent within grade that have positive and healthy relationships.

Table 1

I have many positive and healthy relationships

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	13	25	11	1	0	50
	%within	26.0%	50.0%	22.0%	2.0%	.0%	100.0%
11 th	Count	22	22	2	0	0	46
	%within	47.8%	47.8%	4.3%	.0%	.0%	100.0%
Total	Count	35	47	13	1	0	96
	%within	36.5%	49.0%	13.5%	1.0%	.0%	100.0%

Table 2 demonstrates results of 9th and 11th graders working "to decrease violence at all levels." Almost half of the freshmen always or sometimes work to decrease violence at all levels, while nearly 75% of juniors always or sometimes work to decrease violence at all levels. Neither juniors nor freshmen chose never or does not apply as a choice to decreasing violence at all levels, and one junior chose to answer as "does not apply" to bring the total of juniors to 45 instead of 46.

Table 2

I work to decrease violence at all levels

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	10	16	14	10	0	50
	%within	20.0%	32.0%	28.0%	20.0%	.0%	100.0%
11 th	Count	18	16	8	3	0	45
	%within	40.0%	35.6%	17.8%	6.7%	.0%	100.0%
Total	Count	28	32	22	13	0	95
	%within	29.5%	33.7%	23.2%	13.7%	.0%	100.0%

In the emotional wellness area, a high percentage of both freshmen and juniors reported having worth. A combined 80% of freshmen and 84.8% of juniors replied always or frequently to the statement "*I have worth.*" Table 3 illustrates this comparison.

Table 3

I have worth

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	20	20	7	3	0	50
	%within	40.0%	40.0%	14.0%	6.0%	.0%	100.0%
11 th	Count	27	12	7	0	0	46
	%within	58.7%	35.6%	15.2%	.0%	.0%	100.0%
Total	Count	47	32	14	3	0	96
	%within	49.0%	33.2%	14.6%	3.1%	.0%	100.0%

In the physical wellness portion of the survey, nearly two-thirds of the juniors and almost exactly two-thirds of the freshmen reported exercising as least three times a week. That leaves at least one-third of students in both grades that sometimes, rarely or never aerobically exercise three times per week. Table 4 illustrates the results from the statement "*I exercise aerobically at least three times a week.*"

Table 4

I exercise aerobically at least three times a week

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	23	10	12	3	2	50
	%within	46.0%	20.0%	7.0%	6.0%	4.0%	100.0%
11 th	Count	15	14	7	6	4	46
	%within	32.6%	30.4%	15.2%	13.0%	8.7%	100.0%
Total	Count	38	24	19	9	6	96
	%within	39.6%	25.0%	19.8%	9.4%	6.3%	100.0%

Table 5 gives evidence that 56% of ninth graders and 52% of juniors sometimes or rarely eat foods high in nutritional value or low in fat and calories. The statement "*I eat foods high in nutrition and low in fat and calories*" is item number three of the physical wellness portion of the survey.

Table 5

I eat foods high in nutrition and low in fat and calories

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	6	16	19	9	0	50
	%within	12.0%	32.0%	38.0%	18.0%	0.0%	100.0%
11 th	Count	3	18	17	7	1	46
	%within	6.5%	39.1%	37.0%	15.2%	2.2%	100.0%
Total	Count	9	34	36	16	1	96
	%within	9.4%	35.4%	37.5%	16.7%	1.0%	100.0%

"I protect myself from sexually transmitted diseases" is described in table 6. The majority of both grades always protect themselves from sexually transmitted diseases, while a total of seven freshmen and three juniors replied frequently, sometimes, or never. Note that two freshmen and one junior responded to this question as "does not apply," totaling the number of freshmen students at 48 and junior students at 45.

Table 6

I protect myself from sexually transmitted diseases

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	41	3	3	0	1	48
	%within	85.4%	6.3%	6.3%	0.0%	2.1%	100.0%
11 th	Count	42	3	0	0	0	45
	%within	93.3%	6.7%	0.0%	0.0%	0.0%	100.0%
Total	Count	83	6	3	0	1	93
	%within	89.2%	6.5%	3.2%	0.0%	1.1%	100.0%

Question number eight in the career wellness section of the survey, reported the majority of juniors (79%) sometimes, frequently or always read often and enjoy it. Table 7 compares the statement "*I read often and enjoy it*" between ninth and eleventh graders. Freshmen are more than twice as likely (46%) to never or rarely, read often and enjoy it, than their older classmates.

Table 7

I read often and enjoy it

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	10	7	10	13	10	50
	%within	20.0%	14.0%	20.0%	26.0%	20.0%	100.0%
11 th	Count	13	14	10	5	4	46
	%within	28.3%	30.4%	21.7%	10.9%	8.7%	100.0%
Total	Count	23	21	20	18	14	96
	%within	89.2%	21.9%	20.8%	18.8%	14.6%	100.0%

Table 8 reveals data from question two of the intellectual wellness portion of the survey. The statement "*I listen to ideas different than mine*" indicated that very few students, (four freshmen and two juniors), never or sometimes listen to ideas that are different from their own. The majority in each grade frequently or always listened to different ideas other than their own.

Table 8

I listen to ideas different than mine

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	29	17	3	0	1	50
	%within	58.0%	34.0%	6.0%	0.0%	2.0%	100.0%
11 th	Count	30	14	2	0	0	46
	%within	65.2%	30.4%	4.3%	0.0%	0.0%	100.0%
Total	Count	59	31	5	0	0	96
	%within	61.5%	32.3%	5.2%	0.0%	1.0%	100.0%

Intellectual question number 10 "*I view mistakes as learning points*" is outlined in table 9. A total of 74% of freshmen and 87% of juniors stated they frequently or always viewed mistakes as learning points.

Table 9

I view mistakes as learning points

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	24	13	10	0	3	50
	%within	48.0%	26.0%	20.0%	0.0%	6.0%	100.0%
11 th	Count	28	12	5	1	0	46
	%within	60.9%	26.1%	10.9%	2.2%	0.0%	100.0%
Total	Count	52	25	15	1	3	96
	%within	54.2%	26.0%	15.6%	1.0%	3.1%	100.0%

Spiritual wellness question number 2 "*I have a sense of meaning and purpose in life*" is highlighted in Table 10. Of the freshmen answering the question, 90% responded that they frequently or always have a sense of meaning and purpose in life. 82.6% of the juniors reported that they too frequently or always have a sense of meaning and purpose in life. Table 11 illustrates question number 5 in the spiritual dimension that states "*I am free of self-destructive behaviors.*" Nearly one-third of each grade reported never, rarely, or sometimes being free of self-destructive behaviors. Finally, the spiritual wellness statement "*I value and appreciate life,*" is discussed in Table 12. The majority of both grades, 82% of freshmen and almost 70% of juniors stated that they always value and appreciate life.

Table 10

I have a sense of meaning and purpose in life

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	29	16	3	1	1	50
	%within	58.0%	32.0%	6.0%	2.0%	2.0%	100.0%
11 th	Count	26	12	7	1	0	46
	%within	56.5%	26.1%	15.2%	2.2%	0.0%	100.0%
Total	Count	55	28	10	2	1	96
	%within	57.3%	29.2%	10.4%	2.1%	1.0%	100.0%

Table 11

I am free of self-destructive behaviors

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	15	19	8	6	1	50
	%within	30.6%	38.8%	16.3%	12.2%	2.0%	100.0%
11 th	Count	22	11	8	5	0	46
	%within	47.8%	23.9%	17.4%	10.9%	0.0%	100.0%
Total	Count	37	30	16	11	1	96
	%within	38.9%	31.6%	16.8%	11.6%	1.1%	100.0%

Table 12

I value and appreciate life

Grade	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
9 th	Count	41	6	2	1	0	50
	%within	86.0%	12.0%	4.0%	2.0%	0.0%	100.0%
11 th	Count	32	10	4	0	0	46
	%within	69.6%	21.7%	8.7%	.0%	0.0%	100.0%
Total	Count	73	16	6	1	0	96
	%within	76.0%	16.7%	6.3%	1.0%	0.0%	100.0%

Of the bonus items on the survey, "*Always wear a life jacket when you are in a boat,*" Table 13, and "*Always wear a helmet when you bike, rollerblade, or ride a motorcycle,*" Table 14, had the majority of freshmen and juniors not adding the extra five points onto their total points. Twice as many freshmen and over half of the juniors surveyed did not wear a lifejacket on a boat compared to those who always wore a lifejacket on a boat. Likewise, almost 90% of freshmen and over 70% of juniors did not always wear a helmet when biking, rollerblading, or riding a motor cycle.

Table 13

Add 5 points if you always wear a lifejacket when you are in a boat

Grade	Count/%	No 0 Points	Yes 5 Points	Total
9 th	Count	35	15	50
	%Within	70.0%	30.0%	100.0%
11 th	Count	26	20	46
	%Within	56.5%	43.5%	100.0%
Total	Count	61	35	96
	%Within	63.5%	36.5%	100.0%

Table 14

Add 5 points if you always wear a helmet when you bike, rollerblade, or ride a motorcycle

Grade	Count/%	No 0 Points	Yes 5 Points	Total
9 th	Count	44	6	50
	%Within	88.0%	12.0%	100.0%
11 th	Count	34	12	46
	%Within	73.9%	26.1%	100.0%
Total	Count	78	18	96
	%Within	76.0%	18.8%	100.0%

Independent groups T-tests on all items from the seven dimensions of wellness questionnaire using grade as the independent variable were conducted. Of the 66 questions on the survey, there were a total of 19 items found to be statistically significant. Tables representing these items are listed in Appendix C.

In the social dimension of wellness there were 5 items found as statistically significant. They included *"I have managed positive and healthy relationships"* ($p = .001$); *"I resolve conflict in positive and healthy ways"* ($p = .05$); *"I consider consequences of my behaviors on those around me"* ($p = .01$); *"I work to decrease violence at all levels"* ($p = .01$); and *"I recognize part of the group"* ($p = .05$).

In the emotional dimension of wellness there were two items found to be statistically significant. They were "*I listen to my inner self*" ($p = .05$); and "*I seek help if I have a problem*" ($p = .05$).

In the physical dimension of wellness there was one item found as statistically significant, which was "*I wear my seatbelt*" ($p = .05$).

In the career dimension of wellness there was one item found as statistically significant, that was "*I read often and I enjoy it*" ($p = .05$).

Intellectual dimension of wellness there were four items found as statistically significant. These included; "*I read material*" ($p = .05$); "*I question biases*" ($p=.01$); "*I read the newspaper*" ($p = .05$); and "*I challenge myself*" ($p = .05$).

In the environmental dimension, there were two statistically significant items found. These were "*I choose silent versus noisy sports*" ($p = .01$); and "*I would prefer to plant a tree than to cut one down*" ($p = .05$).

In the spiritually dimension of wellness there was one item found as statistically significant, which was "*I accept my mortality*" ($p = .05$).

In the grand total reporting for all dimensions, including the bonus items, there was a statistically significant difference between grades at the $p = .05$ level.

Item Analysis - Gender

Crosstabulations, frequency counts and percentages between gender and all items from the Seven Dimensions of Wellness questionnaire were also conducted. Social question number two "*I resolve conflict in healthy and positive ways*" is highlighted in Table 15. Although the majority of both males and females reported frequently or always using positive or healthy ways

Table 16 discusses the level of communication between males and females. Females are almost twice as likely to always or frequently “*communicate directly using ‘I’ messages.*” Seven out of 40 males reported never or rarely using “I” messages to communicate, while only five out of 56 females reported never or rarely using “I” messages.

Table 16

I communicate directly using ‘I’ messages

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	5	16	12	2	5	40
	%within	12.5%	40.0%	30.0%	5.0%	12.5%	100.0%
Female	Count	11	27	13	5	0	56
	%within	19.6%	48.2%	23.2%	8.9%	0.0%	100.0%
Total	Count	16	43	20	7	5	96
	%within	16.7%	44.8%	26.0%	7.3%	5.2%	100.0%

Emotional wellness question number three, "*I share my feelings with others,*" is compared between male and female freshmen and juniors in table 17. Nearly 85% of females are likely to always, frequently or sometimes share their feelings with others, while just over 60% of males share their feelings with others. That leaves nearly 40% of males that rarely or never share their feelings.

Table 17

I share my feelings with others

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	9	13	3	10	5	40
	%within	12.5%	32.5%	7.5%	25.0%	12.5%	100.0%
Female	Count	22	11	14	9	0	56
	%within	39.3%	19.6%	25.0%	16.1%	0.0%	100.0%
Total	Count	31	24	17	19	5	96
	%within	32.3%	25.0%	17.7%	19.8%	5.2%	100.0%

"I seek help if I have a problem" is emotional question number 10 and is illustrated in Table 18. Females are twice as likely to always or frequently ask for help when they have problems as compared to males.

Table 18

I seek help if I have a problem

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	6	9	14	10	1	40
	%within	15.0%	22.5%	35.0%	25.0%	2.5%	100.0%
Female	Count	12	24	11	7	2	56
	%within	21.4%	42.9%	19.6%	12.5%	3.6%	100.0%
Total	Count	18	33	25	17	3	96
	%within	18.8%	34.4%	26.0%	17.7%	3.1%	100.0%

The majority of both genders, 85 out of 96 total students, choose to always be tobacco free. Table 19 demonstrates physical wellness question number four, "*I choose to be tobacco free.*" Just over 91% of females in ninth and eleventh grade chose to not smoke, and 85% of males in each of the two grades also chose to be tobacco free.

Table 19

I choose to be tobacco free

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	34	0	2	1	3	40
	%Within	85.0%	0.0%	5.0%	2.5%	7.5%	100.0%
Female	Count	51	1	2	1	1	56
	%Within	91.1%	1.8%	3.6%	1.8%	1.8%	100.0%
Total	Count	85	1	4	2	4	96
	%Within	88.5%	1.0%	4.2%	2.1%	4.2%	100.0%

Males and females were almost equal with the percentage, 89.2% and 89.3% respectively, of always protecting themselves from sexually transmitted diseases (STD). A total of 6 females and 3 males frequently or sometimes protect themselves from STDs: one male answered never to this question. It is reflected in the total that three males responded "does not apply" to this statement. Table 20 shows all of the percentages and counts between freshmen and junior males and females for "*I protect myself from sexually transmitted diseases.*"

Table 20

I protect myself from sexually transmitted diseases

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	33	1	2	0	1	37
	%Within	89.2%	2.7%	5.4%	0.0%	2.7%	100.0%
Female	Count	50	5	1	0	0	56
	%Within	89.3%	8.9%	1.8%	0.0%	0.0%	100.0%
Total	Count	83	6	3	0	1	96
	%Within	89.2%	6.5%	3.2%	0.0%	1.1%	100.0%

"I read often and enjoy it," is the eighth question of the career wellness portion of the survey. According to Table 21, half of all males (47%) taking the survey never or rarely read often and enjoy it. On the other hand, just under a quarter (22%) of freshmen and junior girls never or rarely read often and enjoy it. Females are twice as likely to sometimes, frequently or always read often and enjoy it as compared to their male classmates.

Table 21

I read often and enjoy it

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	6	8	7	11	8	40
	%Within	15.0%	20.0%	17.5%	27.5%	20.0%	100.0%
Female	Count	17	13	13	7	6	56
	%Within	30.4%	23.2%	23.2%	12.5%	10.7%	100.0%
Total	Count	23	21	20	18	14	96
	%Within	24.0%	21.9%	20.8%	18.8%	14.6%	100.0%

In close comparison to Table 21 "*I read often and enjoy it,*" Table 22 represents intellectual wellness statement number one and discusses "*I read material which makes me think.*" Nearly all of the females surveyed sometimes, frequently, or always read material which make them think. Just over three-quarters of the males read material that make them think.

Table 22

I read material which makes me think

Gender	Count/%	Always	Frequently	Sometimes	Rarely	Never	Total
Male	Count	11	12	8	5	4	40
	%Within	27.5%	30.0%	20.0%	12.5%	10.0%	100.0%
Female	Count	19	27	9	0	1	56
	%Within	33.9%	48.2%	16.1%	0.0%	1.8%	100.0%
Total	Count	30	39	17	5	5	96
	%Within	31.3%	40.6%	17.7%	5.2%	5.2%	100.0%

Tables 23 and 24 are bonus questions three, "*Always wear a lifejacket in a boat*" and four, "*Always wear a helmet when you bike, rollerblade, or ride a motorcycle.*" Seven out of ten males do not always wear a lifejacket in a boat and just over one out of every two females do not always wear a lifejacket. An even larger percentage of males, 85%, do not always wear a helmet while rollerblading, biking, or riding a motorcycle. Females were close behind with 78% not wearing a helmet for the above mentioned activities.

Table 23

Add 5 points if you always wear a lifejacket when you are in a boat

Gender	Count/%	No 0 Points	Yes 5 Points	Total
Males	Count	28	12	40
	%Within	70.0%	30.0%	100.0%
Females	Count	33	23	56
	%Within	58.9%	41.1%	100.0%
Total	Count	61	35	96
	%Within	76.0%	36.5%	100.0%

Table 24

Add 5 points if you always wear a helmet when you bike, rollerblade, or ride a motorcycle

Gender	Count/%	No 0 Points	Yes 5 Points	Total
Males	Count	34	12	40
	%Within	85.0%	30.0%	100.0%
Females	Count	44	23	56
	%Within	78.6%	41.1%	100.0%
Total	Count	78	35	96
	%Within	81.3%	36.5%	100.0%

Independent groups T-tests on all items from the seven dimensions of wellness questionnaire using gender as the independent variable were conducted. There were 7 items that were statistically significant.

In the social dimension of wellness there was 1 item found as statistically significant. Social statement four was "*I try to communicate directly using "I" messages*" ($p = .05$).

There was one item found to be statistically significant in the emotional dimension of wellness between genders. "*I share my feelings with others*" ($p = .05$) was statement number three in this category.

There were no items found as statistically significant between genders in the emotional dimension of wellness. In the physical dimension, however, there was one statement, "*I choose to be alcohol free*" ($p = .05$), that was statistically significant between genders.

In the career dimension of wellness there was one item found to be statistically significant. Career statement number eight was "*I read often and enjoy it*" ($p = .05$).

There were two items in the intellectual dimension of wellness that were found to be statistically significant between males and females. These included "*I read material, which makes me think*" ($p = .05$); and "*I challenge myself and view learning as a lifelong process*" ($p = .05$).

In the environmental dimension of wellness category, there was one item found to be statistically significant between males and females. This item was statement nine and reads, "*I would prefer to plant a tree than to cut one down*" ($p = .05$).

Discussion

This study was designed to compare junior and freshmen high school students' perceptions of wellness and a healthy lifestyle as well as perceptions of males and female students with regards to wellness and a healthy lifestyle. Results gave a better understanding of current student wellness, lifestyles, and risky behavior between and within gender and grade. Based upon the findings, high school students participating in this study seem to be socially healthy. A certain amount of social maturity between grades and genders is evident in the crosstabulations. Five of the six items in this category were statistically significant between grades, suggesting a positive relationship between grade and mature socialization; as students progress through their high school years, the more mature they become. Females in this area seemed to have a slight edge in social maturity.

The majority of all participants, especially females, have positive relationships, communicate using "I" messages, are aware of consequences linked to their behavior, and recognize the importance to be a part of a group, not always the center of attention. An

interesting statistic illustrates a large number of students who participated in the study sometimes or frequently resolved conflict in healthy or positive ways. The percentages between grades and gender were almost equal, showing evidence of students trying to work through their own problems as they progress through high school, but not always being able to get the decision making process quite right to resolve conflicts. Although the majority of males in both grades reported frequently or always working to decrease violence, many seemed to struggle with decreasing violence as just under half reported rarely or sometimes working hard to decrease violence at all levels. Violence in general may stem from a variety of experiences, including television, violent video games, parental guidance and support, influence of peer groups, and lack of spirituality.

In the emotional wellness area, most of those surveyed seem to think they are important, have worth, express anger in healthy ways, give honest compliments, and laugh at their mistakes. According to the results, females tend to recognize their feelings and share them with others more than males do. Additionally, females in both grades were twice as likely to seek advice if there was a problem versus males in their corresponding grades. This may be due to socialization effects, or growth and development differences between genders. Females may feel more confident sharing their feelings, talking to others, making sound decisions and practicing traits of good character than their male classmates.

Those students who display positive morals and values, and have good character may be more likely to feel good about themselves, have good self-esteem, and believe they have worth in this world. According to this study females tend to socialize more, sharing feelings and thoughts, working to express them in healthier ways. Males have a harder time accepting advice,

sharing thoughts, and choosing to express feelings in positive ways. Unlike social wellness, emotional wellness between gender seemed to be more significant than between grade.

The reported physical wellness of students participating in the study is perhaps a very close indicator of how healthy current teens are. Interesting results in this area included at least two thirds of students exercise three or more times per week and virtually all students protect themselves from sexually transmitted diseases. Almost all students in each grade choose to be tobacco free, and the majority of each grade get the recommended hours of sleep each night. The majority of both grades answered sometimes, frequently, or always to eating food high in nutritional value. The numbers that make parents and teachers scratch their heads include the 40% of teenage males and females who do not eat breakfast. Ninth graders were more likely to skip breakfast than juniors were. Another interesting result was the preference of alcohol over tobacco. Females responded that they were more likely to stay tobacco and alcohol free compared to males, but the number of overall students choosing to be tobacco free was lower than those for choosing to be alcohol free. According to the results, a student would prefer alcohol over tobacco.

Juniors seemed to be more likely to avoid injury and accidents and to ride with sober drivers than their younger classmates. Furthermore, teenage males were more likely than females to invite injury and accidents by choosing risky behavior such as not choosing to ride with sober drivers and not wearing a seatbelt in a car. Males may take more risks than females and may have difficulty making positive and healthy choices all of the time. This may be due to peer influences, socialization, support networks, or maturity.

This area of wellness did not attempt to discover if students were sexually active, only that they protected themselves from STDs. Only three students responded “does not apply” to the

statement. Students may have interpreted the question as “should I choose to participate in sexual activity I would always protect myself from STDs,” or may have thought that STDs can travel through the blood stream and should they come into contact with blood or bodily fluids for some reason, they would protect themselves with gloves or other barriers. Others may have interpreted the statement as “being sexually active” and “do they protect themselves?” This statement may have been construed in different ways, and may not be a true measure of students who are currently sexually active and honestly protecting themselves.

Overall, freshman and junior students are relatively healthy in the physical wellness area. The majority of both grades and genders understand the concepts of being healthy, but may make poor decisions in choosing not to eat healthy, exercise, drink, smoke, or wear a seatbelt when in a car.

The career wellness of high school students seems to be consistent between grades and between genders. A minority of both juniors and freshmen replied that their school work is never or rarely important to them. Males tended to care less about their school work than females did. The statement “I read often and enjoy it” was statistically significant between grades as freshmen seemed to not enjoy reading while juniors appeared to read often and enjoy it. This may be a sign of maturity throughout the high school years, possibly contributing to ideas of post-secondary education.

Students in both grades reported having a good mental attitude, and scores between males and females were quite similar. The overall scores in career wellness were lower than the other areas of wellness, but they were consistent among and between grades and genders. This may be evidence of the need for an increased concentration on the career aspect of wellness in health classes and guidance time, among other areas of curriculum.

According to the results, juniors seemed to be more intellectually well than freshman. The majority of juniors responded positively to reading material that makes them think, listening to ideas different than their own, and questioning bias. Many freshmen also answered favorably to these questions, but the juniors outnumbered them on the “always/frequently” side of the scale. This may be a result of maturity, openness to diversity, insightfulness, or appreciation of education.

Females were the dominant gender in reading material that challenges their thinking, viewing mistakes as learning points, and viewing learning as a lifelong process. This could also indicate the maturity and developmental difference between teenage girls and boys.

Environmental wellness joined career wellness as a low scorer on the high end of the scale. Most participants recognized their impact on the environment and understood the differences between needs and wants. Juniors tended to choose silent sports, such as walking, hiking, biking, and swimming over noisier, team sports. This question may have been misunderstood among the freshmen students as they have not had an opportunity to experience silent sports within their physical education curriculum. Juniors, however, have had numerous occasions on which they participated in individual activities like rollerblading, yoga, Pilates, and biking. These individual sports are not introduced to students in physical education classes until their junior year.

Students answered “sometimes” to most of the environmental statements. There was consistency between gender and grade within this wellness category. Since “sometimes” was the most frequent answer, many teens, male and female, don’t consider the environmental impact their purchases have. They sometimes realize there is no “away” when throwing things in the garbage, and they sometimes choose to ride in a car when walking or biking is available. One

positive point in this area is recycling. Freshmen are less likely to recycle than juniors, but still had a majority of students that frequently or always recycled.

The statistically significant result in environmental wellness was that of planting a tree rather than cutting one down. The majority of females preferred to plant a tree, while an equal number of males, 50%, preferred to cut one down and the other half preferred to plant a tree. Males may view this activity as a chore for firewood or clear cutting, as opposed to cutting one down just for fun. Typically, females may not choose to cut trees down and would see the activity as a “man’s” job. Females may have more awareness of the environment and the impact of cutting a tree down versus planting a tree.

The Spiritual wellness of subjects taking the survey was quite mixed. The majority of males and females alike acknowledged a sense of purpose and meaning in their lives. Both genders were also positive with individual feelings of peace and wholeness, which might allow consistency between their values and behaviors. Moreover, almost all participants always or frequently “value and appreciate life.”

Students in both grades, however, contradicted themselves by answering never, rarely, and sometimes to “I am free of self-destructive behaviors.” Should students feel that they have “worth” and a “sense of meaning and purpose in life,” along with feeling “peace and wholeness,” and “valuing and appreciating life,” why would they even consider self-destructive behaviors? Around 30% of each grade reported not being free of self-destructive behaviors. Additionally, females (32%) were more likely than males (24%) to harm themselves. This contradiction may be an indicator of misunderstanding the question or reading it wrong. Nonetheless, it is alarming that almost one out of every three teens in grades nine and eleven would “sometimes” practice self-injurious behavior.

Since spirituality in the schools is a very sensitive topic, questions about religion and faith were avoided. Statements regarding morals and values were developed instead.

The bonus questions allowed students to add points to their total score if they “Always” practiced the statement. One-third of the students in each grade knew how to perform CPR and around 75% of students had fewer than four cans of pop in the last seven days. There were similar results between gender for the CPR and pop statements. The last two bonus questions gave evidence that males and females, aside from grade, practiced risky behavior the majority of the time. 70% of the freshmen, and just over half of the juniors did not always wear a lifejacket in a boat. Males were more likely to not wear their lifejacket than females. An even higher percentage of freshmen did not wear a helmet when biking, rollerblading, or riding a motorcycle. Almost 90% of freshmen do not always wear helmets compared to around 75% of juniors. Again, males were more likely than females to not wear a helmet when needed.

As a young adult there may be a perception that “nothing can happen to me” and that “accidents happen to other people.” Along with statements such as “I wear my seatbelt when in a car” and “I chose to ride with sober drivers,” the results of the bonus questions are indications of risky behavior on the part of current teenagers. Students at this age may appear to be invincible, making poor decisions and behaving out of character.

Chapter V: Summary, Conclusion, and Recommendations

Summary

The purpose of this study was to compare healthy lifestyle habits of freshmen to the healthy lifestyle habits of juniors. Data was collected through a wellness survey distributed to high school physical education students in grades nine and eleven during term four of the 2007 school year. A total of 96 high school students answered the survey statements, 56 of which were females, and 40 were males. Of the same 96 participants, 50 were freshmen and 46 were juniors in high school. Students were asked to complete survey consisting of the seven different dimensions of wellness. Data was analyzed using frequency counts, percentages, and T-Tests. Crosstabulations between grade and gender were also utilized.

The research questions and the developed survey attempted to compare healthy lifestyle habits between high school freshmen and high school juniors, the difference in perception between the two grades, including gender, and to seek evidence of teens exhibiting behaviors that were considered risky. The overall results verified a slight difference in perception of wellness between grades and gender. Juniors had healthier scores, 19 of which were statistically significant between grades, indicating possible growth in each of the dimensions of wellness over time. Likewise, there were 7 statistically significant results between genders with females communicating their feelings, reading for enjoyment, challenging their mind, viewing learning as a lifelong process, and not drinking alcohol.

Limitations

Limitations to this study include, but are not restricted to, students misreading or misunderstanding the statements or words associated with the survey. Answering the statements according to how the researcher would have expected them to answer is an additional limitation.

Selecting students in required physical education class instead of a random draw from the whole student population may have prevented special education students from being selected.

Furthermore, the study was done at the end of the school year, limiting the true perception of wellness that freshmen would have had during their first weeks in high school. Finally, this study is limited by the participants living in a rural, Midwest small city with little ethnic or socioeconomic variation among the subjects. Therefore the results of the study are limited in their generalizability.

Conclusion

On the whole, females had a healthier report card in the Seven Dimensions of Wellness Survey, revealing superior scores in the areas of social, environmental, and emotional wellness. The areas of physical wellness showed that females tended to exercise more regularly than males and are more aware of eating nutritious food than boys are, but each gender were equal in total scores.

Including all subjects, career and spiritual wellness dimensions scored lower than any other dimension. This may be evidence of the need for an increased concentration on the career, environmental, and spiritual aspect of wellness in health classes or guidance time, among other areas of curriculum.

According to the results of the bonus questions and questions within the survey, participants in both grades have a high percentage of risky behavior, including not wearing a helmet when needed, not wearing a lifejacket on a boat, and not wearing a seatbelt in a car. Moreover, some students chose to ride with drivers who had been drinking and one male reported never protecting himself from STDs. Males were more likely than females to participate in these behaviors.

Results of this study supported the current research and developmental norms. Examples include males participating more often in risky behavior (example of invincibility) than females and they are more likely to be aggressive and display violent behavior than females are. Results of “drinking alcohol” were lower than the national average of 45%. This percentage was higher among the juniors, but still lower than expected. Similarly, nearly 22% of teenagers had smoked more than one cigarette per day according to the national average, which was again higher than that of students participating in this survey. When comparing the smoking and drinking statement however, participant scores were lower in the smoking area than the drinking area.

The research on physical wellness in this nation was relatively similar to the statistics of this survey. Nearly one-third of all subjects did not participate regularly in physical activity, nor did they eat nutritiously all the time, which were similar to national findings. Questions on sexual activity and bringing weapons to school, among others, were not surveyed, and therefore results were unable to be compared to the current literature.

This study yielded many interesting differences between grades and genders in comparing overall student wellness. Complete results revealed a greater difference in wellness between grade levels than between genders. Although numbers and percentages were similar to freshmen, juniors held the upper edge in most of the areas, indicating possible growth throughout their high school career in all dimensions of the wellness wheel.

By and large, students reported that they were reasonably healthy, although there were items that clearly displayed evidence of invincibility, lack of maturity, sex-role stereotypes, and possible confusion about specific items on the survey. Teenage females in this study had an edge on males in expressing emotions in positive ways, sharing them with others, and asking for help when needed, indicating healthier emotional wellness.

Recommendations

Recommendations for this particular study include clarifying statements on the survey, making the survey shorter and more specific. Answer options for each statement could include three or four choices instead of six. An urban setting, with a larger population would be ideal for gathering a sample with more diversity. Furthermore, the study should start at the beginning of the participants' freshmen year, and end with the same subjects before graduation of their senior year. This will give a true sense of development, over time, in each of the wellness areas. In an attempt to understand the entire development and wellness of teens, further research is recommended in each of the wellness areas, along with a study that is spread out over the subject's high school career.

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Appendix A: Parent Consent Form

Consent to Participate in a UW-Stout Approved Research Project

Dear Students, Parent(s) and/or Guardian(s),

You have an opportunity to be involved in a research project regarding healthy living habits. In addition to being your physical education teacher or working with you in the physical education department, I am also a graduate student at UW-Stout. The intent of my research study is to compare healthy lifestyle habits of freshman to the healthy lifestyle habits of juniors. Before participating, it is necessary for both you and your parent(s) or guardian(s) to consent to your participation, which is voluntary. Please read and sign this form, indicating that you have read and understand the information.

There is little to no risk to you as you participate in this study. Your responses are anonymous and confidential, and you will not be required to put your name on any part of the survey. You will be asked your age, whether you are male or female, and proceed to take a personal assessment that is divided into the seven different parts of wellness. The dimensions consist of Social, Emotional, Physical, Career, Intellectual, Environmental, and Spiritual. Your answers will be based on a Likert Scale that ranks from 5 for Always, to 1 for Never, or Does Not Apply. This assessment may help make you aware of lifestyle choices you have made, in hopes that you will maintain and/or improve your level(s) of wellness in the future. The entire survey will take approximately 15 minutes.

Please sign the attached form indicating whether or not you have agreed to participate, and return it to my office. Approval from Mr. Corning, Associate Principal, has been given to conduct this study.

Sincerely,

Kimberly Musser
HS Physical Education

Leslie Koepke, Research Advisor
Family Studies and Human Development
koepkel@uwstout.edu

I understand that by returning this survey, I am giving my informed consent as a participating volunteer in this study. I understand the basic nature of the study and I am aware that any potential risks are minimal. I also understand the potential benefits that might be realized from the successful completion of this study. I am aware that the information is being sought in a specific manner so that only minimal identifiers are necessary and so that confidentiality is guaranteed. I realize that I have the right to refuse to participate and that my right to withdraw from participation at any time during the study will be respected with no coercion or prejudice. Note: If you have any question or concerns about the research study please feel free to contact the researcher, Kimberly Musser, at (715) 232-2606 x449 or Kimberly_musser@msd.k12.wi.us or the research advisor, Dr. Leslie Koepke, at (715)232-2237. Questions about the rights of the research subjects can be addressed to Sue Foxwell, Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 152 Voc. Rehab., Menomonie, WI 54751, phone (715)232-2477.

Signature of minor participant: _____ Date: _____

Signature of Parent/Guardian: _____ Date: _____

Appendix B: Survey Instrument: Seven Dimensions of Wellness

SEVEN DIMENSIONS OF WELLNESS

Please circle your gender and grade in the upper right. This is a personal assessment for you to use that may help make you aware of lifestyle choices you have made in hopes that you will maintain and/or improve your level(s) of wellness in the future. Read each statement and circle the answer that best describes you. (5 - ALWAYS...1 - NEVER).

I. SOCIAL: the process of creating and maintaining healthy relationships through the choices we make.

	ALWAYS				NEVER	DOES NOT APPLY
1. I have many positive and healthy relationships.	5	4	3	2	1	
2. I resolve conflict in healthy and positive ways.	5	4	3	2	1	
3. I consider the consequences of my behaviors on those around me.	5	4	3	2	1	
4. I try to communicate directly using "I" messages.	5	4	3	2	1	
5. I work to decrease violence at all levels.	5	4	3	2	1	
6. I recognize that I can be part of a group and I don't always need to be the center of it.	5	4	3	2	1	

YOUR SCORE: _____ (30 possible)

II. EMOTIONAL: the process of accepting our worth, creating, recognizing, and expressing our feeling, and talking to ourselves in healthy ways. Creating and maintaining a positive realistic self-concept is also part of this process.

	ALWAYS				NEVER	DOES NOT APPLY
1. I have worth.	5	4	3	2	1	
2. I recognize that I have feelings.	5	4	3	2	1	
3. I share my feelings with others.	5	4	3	2	1	
4. I take action to control my stress	5	4	3	2	1	
5. I can and do express anger in healthy ways.	5	4	3	2	1	
6. I listen to my inner self.	5	4	3	2	1	
7. It is easy for me to laugh at my mistakes.	5	4	3	2	1	
8. I am able to give honest compliments.	5	4	3	2	1	
9. I listen to and accept good advice.	5	4	3	2	1	
10. I seek help if I have a problem.	5	4	3	2	1	

YOUR SCORE: _____ (50 possible)

III. PHYSICAL Wellness: the process of making choices to create flexible, cardio-vascular fitness, energetic and strong bodies. The choices we make are related to exercise, nutrition, rest and sleep, stress management, management of injury and illness, and the uses of drugs.

	ALWAYS				NEVER	DOES NOT APPLY
1. I exercise aerobically at least three times a week.	5	4	3	2	1	
2. I eat a nutritious breakfast every morning.	5	4	3	2	1	
3. I eat foods high in nutrition and low in fat and calories.	5	4	3	2	1	
4. I choose to be tobacco free.	5	4	3	2	1	
5. I choose to be alcohol free.	5	4	3	2	1	
6. I get 7-8 hours of sleep per night.	5	4	3	2	1	
7. I avoid injury and accidents.	5	4	3	2	1	
8. I choose to ride with sober drivers.	5	4	3	2	1	
9. I avoid riding when I can walk.	5	4	3	2	1	
10. I protect myself from sexually transmitted diseases (STDs)	5	4	3	2	1	
11. I wear my seat belt in a car.	5	4	3	2	1	

YOUR SCORE: _____ (55 possible)

IV. CAREER Wellness: the process of making and maintaining choices related to work include working in a job for which we are well suited and from which we gain satisfaction. If you are a student attending school, you may consider this your career.

	ALWAYS				NEVER	DOES NOT APPLY
1. I learn/work in a school/career I enjoy.	5	4	3	2	1	
2. My schoolwork/work is meaningful.	5	4	3	2	1	
3. I work in a healthy and safe environment.	5	4	3	2	1	
4. I receive personal growth with my work.	5	4	3	2	1	
5. I balance work with rest and play in my life.	5	4	3	2	1	
6. My work contributes to the well-being of others.	5	4	3	2	1	
7. I stay current in local and world issues.	5	4	3	2	1	
8. I read often and enjoy it.	5	4	3	2	1	
9. I continue to do the best I can when I work.	5	4	3	2	1	
10. I have a good mental attitude.	5	4	3	2	1	

YOUR SCORE: _____ (50 possible)

V. INTELLECTUAL Wellness: the process of using our minds to create a greater understanding and appreciation of the universe and ourselves.

	ALWAYS				NEVER	DOES NOT APPLY
1. I read material, which makes me think.	5	4	3	2	1	
2. I listen to ideas different than mine.	5	4	3	2	1	
3. I question myself.	5	4	3	2	1	
4. I question biases.	5	4	3	2	1	
5. I read the newspaper.	5	4	3	2	1	
6. I appreciate and participate in fine arts. (music/art)	5	4	3	2	1	
7. I watch TV deliberately not habitually.	5	4	3	2	1	
8. I am computer literate.	5	4	3	2	1	
9. I challenge myself and view learning as a lifelong process.	5	4	3	2	1	
10. I view mistakes as learning points.	5	4	3	2	1	
11. I get along well in school.	5	4	3	2	1	

YOUR SCORE: _____ (55 possible)

VI. ENVIRONMENTAL WELLNESS: the process of making choices which will contribute to sustaining or improving the quality of life in the universe, including air, water, and land quality.

	ALWAYS				NEVER	DOES NOT APPLY
1. I recognize my impact on the environment.	5	4	3	2	1	
2. I choose silent vs. noisy sports often.	5	4	3	2	1	
3. I limit my purchases to what I need vs. what I want.	5	4	3	2	1	
4. I consider the environmental impact my purchases may have.	5	4	3	2	1	
5. I minimize the use of a car when I can bike or walk.	5	4	3	2	1	
6. I realize that there is no "away" when I throw things in the garbage.	5	4	3	2	1	
7. I try to recycle newsprint, glass, cans, and plastic.	5	4	3	2	1	
8. I try to reuse products instead of buying and throwing.	5	4	3	2	1	
9. I would prefer to plant a tree than to cut one down.	5	4	3	2	1	

YOUR SCORE: _____ (45 possible)

VII. SPIRITUAL Wellness: the process of discovering meaning and purpose in life and demonstrating values through behaviors.

	ALWAYS				NEVER	DOES NOT APPLY
1. I have a sense of meaning and purpose in life.	5	4	3	2	1	
2. I have a feeling of peace and wholeness.	5	4	3	2	1	
3. I meditate or pray regularly.	5	4	3	2	1	
4. There is consistency between my values and behaviors.	5	4	3	2	1	
5. I am free of self-destructive behaviors.	5	4	3	2	1	
6. I contribute to the well-being of others.	5	4	3	2	1	
7. I accept beauty.	5	4	3	2	1	
8. I accept my mortality.	5	4	3	2	1	
9. I value and appreciate life.	5	4	3	2	1	

YOUR SCORE: _____ (45 possible)

WELLNESS ASSESSMENT:

Your score:

1. Social Wellness _____ (30)
 2. Emotional Wellness _____ (50)
 3. Physical Wellness _____ (55)
 4. Career Wellness _____ (50)
 5. Intellectual Wellness _____ (55)
 6. Environmental Wellness _____ (45)
 7. Spiritual Wellness _____ (45)
- TOTAL: _____ (330)

BONUS: add to your TOTAL

1. Add 5 points if you know how to perform CPR: _____
2. Add 5 points if you had fewer than 4 cans of dark colored pop in the last 7 days. _____
3. Add 5 points if you ALWAYS wear a life jacket when you are in a boat. _____
4. Add 5 points if you ALWAYS wear a helmet when you bike, rollerblade, or ride a motorcycle. _____

GRAND TOTAL : _____ (350)

350-315 WOW! You are making excellent lifestyle choices!

314-280 GREAT! You are doing a good job.

279-245 AVERAGE! You can choose to make better choices.

244-210 OOPS! Take charge of your life today and make a few lifestyle changes...for the health of it!!!

Adapted with permission from, Tackmann, D. (2005). "Outrageous Teaching Techniques in Health Education."

Appendix C
Independent Groups T-Test Using Grade

Independent Samples Tests: T-Test for Equality of Means (Between Grades)

Question	Equal Variance	t	df	Sig (2-tailed)
<i>Social 1: I have many positive and healthy relationships</i>	Assumed	-3.135	94	.002
	Not Assumed	-3.169	91.299	.002
<i>Social 2: I resolve conflict in healthy and positive ways</i>	Assumed	-2.031	94	.045
	Not Assumed	-2.055	90.059	.043
<i>Social 3: I consider consequences of my behaviors and those around me</i>	Assumed	-2.772	94	.007
	Not Assumed	-2.790	93.574	.006
<i>Social 5: I work to decrease violence at all levels</i>	Assumed	-2.812	94	.006
	Not Assumed	-2.829	92.997	.006
<i>Social 6: I recognize that I can be part of a group and I don't always need to be the center of it</i>	Assumed	-2.256	94	.026
	Not Assumed	-2.286	89.341	.025
<i>Emotional 6: I listen to my inner self</i>	Assumed	-2.546	94	.013
	Not Assumed	-2.576	90.324	.012
<i>Emotional 10: I seek help if I have a problem</i>	Assumed	-2.301	94	.024
	Not Assumed	-2.232	92.084	.022
<i>Physical 11: I wear my seat belt in a car</i>	Assumed	-2.081	94	.040
	Not Assumed	-2.116	85.340	.037
<i>Career 8: I read often and enjoy it</i>	Assumed	-2.570	94	.012
	Not Assumed	-2.583	93.853	.011

Question	Equal Variance	t	df	Sig (2-tailed)
<i>Intellectual 1: I read material which makes me think</i>	Assumed	-2.274	94	.025
	Not Assumed	-2.302	90.103	.024
<i>Intellectual 4: I question biases</i>	Assumed	-2.700	94	.008
	Not Assumed	-2.742	87.001	.007
<i>Intellectual 5: I read the newspaper</i>	Assumed	-2.376	94	.020
	Not Assumed	-2.376	93.284	.020
<i>Intellectual 9: I challenge myself and view learning as a lifelong process</i>	Assumed	-2.253	94	.027
	Not Assumed	-2.275	91.935	.025
<i>Environmental 2: I choose silent vs. noisy sports often</i>	Assumed	-2.761	94	.007
	Not Assumed	-2.770	93.995	.007
<i>Environmental 9: I would prefer to plant a tree than to cut one down</i>	Assumed	-2.159	94	.033
	Not Assumed	-2.193	86.733	.031
<i>Spiritual 8: I accept my mortality</i>	Assumed	-2.081	94	.040
	Not Assumed	-2.116	85.340	.037
<i>Social Total Score</i>	Assumed	-3.527	94	.001
	Not Assumed	-3.508	89.935	.001
<i>Intellectual Total Score</i>	Assumed	-2.464	94	.177
	Not Assumed	-2.362	89.467	.079
<i>Grand Total: Seven Dimensions of Wellness</i>	Assumed	-2.381	94	.019
	Not Assumed	-2.387	93.942	.019

Appendix D
Independent Groups T-Test Using Gender

Independent Samples Tests: T-Test for Equality of Means (Between Genders)

Question	Equal Variance	T	df	Sig (2-tailed)
<i>Social 4 I try to communicate directly using "I" messages</i>	Assumed	-2.009	94	.039
	Not Assumed	-1.999	68.345	.050
<i>Emotional 3 I share my feelings with others</i>	Assumed	-2.117	94	.037
	Not Assumed	-2.044	72.753	.045
<i>Physical 5 I choose to be alcohol free</i>	Assumed	-2.330	94	.022
	Not Assumed	-2.174	61.851	.034
<i>Career 8 I read often and enjoy it</i>	Assumed	-2.412	94	.018
	Not Assumed	-2.400	82.615	.019
<i>Intellectual 1 I read material, which makes me think</i>	Assumed	-2.781	94	.007
	Not Assumed	-2.581	60.341	.012
<i>Intellectual 9 I challenge myself and view learning as a lifelong process</i>	Assumed	-2.560	94	.012
	Not Assumed	-2.328	54.574	.024
<i>Environmental 9 I Would prefer to plant a tree than to cut one down</i>	Assumed	-2.594	94	.011
	Not Assumed	-2.449	65.515	.017