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# What Do Adolescents Know About Health?

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## Abstract

The purpose of this study was to investigate what adolescents know about topics commonly covered in Health classes (eating disorders, exercise, nutrition, caffeine, and sleep) and whether students know as much as they think they do about these topics. We found that 9% of the students correctly answered all of the exercise questions, 2% nutrition, 2% sleep, 3% caffeine, and 5% eating disorders. Participants did believe they knew more about their health than they actually did. Results suggest that knowledge can clearly be improved.

## Introduction

Throughout the United States adolescents are facing health risks, such as obesity, type II diabetes, and coronary heart disease that previously only affected adults (Schnirring, 2005); but these health problems can be avoided if adolescents are properly informed. Health educators and other knowledgeable adults need to keep adolescents informed of what is healthy for them and what is not. If adolescents do not make healthy choices, their lifespan is drastically reduced.

The primary step in helping adolescents make healthy choices is to teach them how to be healthy. In order to accomplish this goal, health educators need to know what adolescents know about their own health. A study conducted by Price, Higgins, and Nicholson (1991) found that college students are not knowledgeable about their overall health. While the Price et al. study would seem to imply that students are not learning enough about health in high school, to our knowledge no studies have examined what high school students actually know about the health topics commonly covered in Health classes and those that tend to have a significant impact on the health of adolescents. Thus, the current study sought to examine what high school students know about eating disorders, nutrition, physical fitness, sleep, and caffeine and whether they know as much as they think they do about these issues.

The George Mason University Counseling Center reported in 2005 that before the age of fourteen, more than 50% of adolescents had dieted. Dae et al. (2002) found that only 40% of adolescent females and 75% of adolescent males had not previously dieted. Dieting at such a young age can have drastic effects on adolescent health (Chapman & Toma, 1997; Straub, 2002). In addition, continually trying new diets is the best predictor for the development of an eating disorder (Martinez-Gonzalez et al., 2003; White, 2000).

The decline in physical activity among high school students is astounding. It is recommended that adolescents exercise at least three times a week, but less than one third of high school students comply with this recommendation (Robbins, Pis, Pender, & Kazani, 2004). Allison et al. (2005) note that as adolescents grow older, their level of physical activity decreases. Thus, it is not surprising that adolescents are now facing health issues such as obesity and type II diabetes (Allison et al., 2005; Dae et al., 2002; Schnirring, 2005). In fact, there are three times as many obese adolescents in the United States as there were in 1980 (Schnirring, 2005). In 1990, about 300,000 people died from overeating and lack of exercise (Gibbs, 1996). The prevalence of

overweight and obese adolescents is rising (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Crespo & Arbesman, 2003). Basiotis, Carlson, Gerrior, Juan, and Lino (2002) found that 90% of Americans do not have a good diet, with those consuming fast-foods on a regular basis increasing the risk of becoming obese by 86% (Bowman et al., 2004). Unfortunately Chapman and Toma (1997) found that most adolescents do not receive nutrition education in school. Hering-Hanit and Gadoth (2003) found that adolescents who consumed excessive amounts of caffeine, usually in the form of soda pop beverages, commonly developed severe headaches and migraines. In addition, Pollak and Bright (2003) discovered that the more caffeine adolescents consume, the less sleep they get.

When sleep is impaired, it impacts the ability to make good decisions, slows motor and cognitive responses (Fredriksen, Rhodes, Reddy, & Way, 2004; Millman, 2005; Mitru, Millrood, & Mateika, 2002), lowers the immune system (Straub, 2002), and increases negative moods including depression (Durand & Barlow, 2003; Fredriksen et al., 2004; Millman, 2005). Adolescents who do not receive enough quality sleep are more likely to be late for school, to fall asleep during class, to receive lower grades, to be unable to focus on and remember what class was about, they experience more negative emotions and behaviors such as anger, aggression, irritability, less tolerance, and the individual is more likely to become more impulsive which may lead to risky behaviors (Millman, 2005; Mitru, Millrood, & Mateika, 2002). In addition, Fredriksen et al. (2004) found that students who receive less sleep are more likely to show signs of depression and have lower self-esteem than students who receive more sleep, which can negatively impact school work, as well as physical and mental well-being.

### **Current Study**

Previous studies have established how many high school students suffer from eating disorders, do not exercise, have a poor diet, or what the negative effects of caffeine or lack of sleep are. However, no research studies have examined what high school students know about these issues. This study is designed to reveal the amount of accurate information high school students have about eating disorders, exercise, nutrition, caffeine, and sleep. It is important to know what high school students know about these topics because without this information, health educators will not know where to focus their attention in their classes. We hypothesize that 1) students knowledge will be low to moderate, 2) students will believe they know more than they actually do, and 3) adolescent girls will know more than adolescent boys will about eating disorders and nutrition, as these issues affect them more.

### **Method**

#### *Participants*

Participants included 140 females and 96 males enrolled in rural public high schools. 83% of participants were Caucasian, 1% were African American, 6% were Latino, 2% were Native American, and 5% were 'Other'. 25% of participants were freshmen, 26% were sophomores, 28% were juniors, and 19% were seniors.

#### *Materials*

The authors composed a seven-section survey based on common myths about various health topics. The first section included four demographic questions (grade, GPA, gender, and ethnicity). This was followed by five health knowledge questions covering what the student believed they knew about the five health topics listed below (e.g., I know a lot about eating disorders). Health knowledge questions were rated on a four-point agreement scale (strongly disagree, disagree, agree, strongly agree). These two sections were followed by five health beliefs sections containing ten true/false statements about exercise (e.g., "Your muscles will turn to fat if you stop exercising."), ten about nutrition (e.g., "Eating late at night will cause you to gain weight."), ten about sleep (e.g., "The quality of sleep is more important than the amount."), eight about caffeine (e.g., "There is no such thing as too much caffeine."), and twelve about eating

disorders (e.g., "Only skinny people have eating disorders."). Subscale scores were then tabulated for each of the five sections.

### *Procedure*

The survey was distributed by high school administrators. The participants were tested in large groups in a classroom setting. The participants were given 15-20 min to complete the survey. First, the participants answered demographic questions and then they moved on to rate their believed health knowledge and then to questions covering exercise, nutrition, sleep, caffeine, and eating disorders. After school hours, the surveys were collected from the school administration.

## **Results**

### *Gender Differences in Knowledge*

An independent t-test was run to determine whether there was a significant difference between adolescent boys and girls in their knowledge about eating disorders and nutrition. As predicted, adolescent girls knew more about eating disorders ( $M = 9.47$ ,  $SD = 1.961$ ) than did adolescent boys ( $M = 8.77$ ,  $SD = 1.92$ ), with a  $t$  value (234) of  $-3.04$ , and a  $p$  value of less than  $.05$ . Adolescent girls also knew more about nutrition ( $M = 7.68$ ,  $SD = 1.05$ ) than did adolescent boys ( $M = 7.38$ ,  $SD = 1.25$ ), with a  $t$  value (234) of  $-1.99$ , and a  $p$  value of less than  $.05$ . There was also a significant difference between adolescent boys and girls in their believed knowledge of eating disorders and nutrition. It was found that more adolescent girls reported that they knew more about eating disorders ( $M = 1.97$ ,  $SD = .05$ ) than did adolescent boys ( $M = 1.65$ ,  $SD = .66$ ), with a  $t$  value (233) of  $-3.75$ , and a  $p$  value of less than  $.05$ . It was also found that more adolescent girls reported that they knew more about nutrition ( $M = 1.92$ ,  $SD = .59$ ) than did adolescent boys ( $M = 1.61$ ,  $SD = .72$ ), with a  $t$  value (234) of  $-3.60$ , and a  $p$  value of less than  $.05$ .

### *Believed Knowledge Versus Actual Knowledge*

People who thought they knew a lot about nutrition actually did, with a Pearson's  $r$  (242) correlation of  $.21$ , and a  $p$  value of less than  $.001$ . People who thought they knew a lot about eating disorders actually did, with a Pearson's  $r$  (240) correlation of  $.26$ , and a  $p$  value of less than  $.001$ . As expected, there were no other significant relationships between believed knowledge and actual knowledge. People who thought they knew a lot about exercise actually did not, with a Pearson's  $r$  (241) correlation of  $.12$ . People who thought they knew a lot about sleep actually did not, with a Pearson's  $r$  (240) correlation of  $.01$ . People who thought they knew a lot about caffeine actually did not, with a Pearson's  $r$  (242) correlation of  $.02$ .

## **Discussion**

Previous research has examined the percentage of high school students who have an eating disorder, do not exercise, and/or have poor nutrition, as well as the negative effects of consuming too much caffeine or not getting enough sleep on adolescent health. The purpose of this study was to find out what high school students know about the topics commonly covered in Health classes and that are of concern to adolescents: eating disorders, exercise, nutrition, caffeine, and sleep.

Thirty percent of the students correctly answered ten of the twelve eating disorder questions. Only 5% correctly answered all twelve questions. Students who believed they knew a lot about eating disorders did correctly answer more eating disorder questions. The role of the media may explain why more adolescents accurately answered the eating disorder questions. With this type of coverage, it is difficult not to learn about eating disorders. This study revealed that there was a significant difference between what adolescent girls and boys knew about eating disorders. One reason adolescent girls may know more about eating disorders is that they are more likely to diet than adolescent boys are (Dae et al., 2002).

Twenty-five percent of the students correctly answered eight of the ten exercise questions. Only 9% correctly answered all ten questions. Students who believed they knew a lot about exercise actually did not. Today approximately one-third of adolescents are overweight (Caprio & Genel, 2005), this may be partially explained by the lack of physical exercise. Thirty-two percent of the students correctly answered eight of the ten nutrition questions. Only 2% correctly answered all ten questions. This is not surprising given that only 10% of Americans have a good diet (Basiotis et al., 2002).

It appears this may be because students do not know what constitutes a good diet, especially given that most adolescents do not receive nutrition education in school (Chapman & Toma, 1997). Students who believed they knew more about nutrition did correctly answer more nutrition questions. There was a significant difference between what adolescent girls and boys knew about nutrition. Again this may be explained by the fact that adolescent girls are more concerned with losing weight than adolescent boys are and therefore it makes sense that adolescent girls would know more about nutrition.

Thirty-one percent of the students correctly answered four of the eight caffeine questions. No one correctly answered all eight questions. Students who believed they knew more about caffeine did not correctly answer more caffeine questions. Although there is no difference between the gender in regards to caffeine knowledge, health educators should be aware that there is a difference between the gender in regards to caffeine consumption (Pollak & Bright, 2003). If educators could inform students of how excessive caffeine harms their academic learning, it may result in improved school performance and decrease classroom disruptions.

Twenty-eight percent of the students correctly answered seven of the ten sleep questions. Only 2% correctly answered all ten questions. Students who believed they knew more about sleep did not correctly answer more sleep questions. Health promoters need to inform adolescents of the factors that effect sleep, and explain why sleep is important. Mitru et al. (2002) explain that adolescents need to be educated about sleep hygiene in order to decrease sleep deprivation among adolescents and to improve learning and behavior. When a child is sleep deprived, they tend to become moodier, more aggressive, and do poorly in school (Fredriksen et al., 2004; Millman, 2005; Mitru et al., 2002). Educating students on the importance of sleep would not only improve the mood and grades of the individual, but it would also decrease classroom disruptions because the aggression level would decrease as sleep quality improved.

### **Limitations**

One limitation to this study is the small sample size. A second limitation is that the questions cover such a large amount of information that it is difficult to pinpoint what exact area participants are informed about. Future studies could focus on one health issue so that the students' knowledge on the topic can be thoroughly explored. It would also be helpful to know where participants get their information and then compare their information source to how accurate their responses are. It would also be beneficial to get equal input from a variety of ethnic groups, this would allow the experimenter to accurately compare what the different ethnic groups know about eating disorders, exercise, nutrition, caffeine, and sleep. Finally, this study consisted of rural high school students. It would be beneficial for future studies to examine the differences between rural and urban high school health knowledge.

## Conclusion

It is clear that high school students need to be more informed of health issues that affect them now and later in life. This study has revealed that adolescent girls tend to know more about nutrition and eating disorders than adolescent boys, which may be explained by the fact that more girls diet than boys do. This study has also shown that adolescents lack knowledge in exercise, caffeine, and sleep. Health providers can now take this information and improve health programs by targeting health areas that adolescents lack knowledge in.

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