

Adolescent Health Needs Assessment

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Literature Review

Adolescent health is an important component of public health for a variety of reasons. Not only can focusing on this age range help identify and alleviate immediate health problems, it can also be a key target audience to focus preventive programs and care. In fact, current research stresses this as a crucial age because teen health behaviors can often have long-term implications on their health and wellbeing. For example, 80 percent of those who were overweight between the ages of 10 and 15 were obese at the age of 25 (Frieden, et al, 2010). Some estimates indicate that the current adolescent obesity problem can lead to substantial economic and health burdens in the future, and current treatments may not remedy the problem (Lightwood, et al, 2009).

Long-term health implications are not just relevant to obesity and chronic disease. It is often found that risky behaviors, such as drug and alcohol use, often originate during the adolescent years. This is often because some health behaviors co-occur with others, ranging from mental health to substance use to sexual health. These types of behaviors can often lead to unintentional and even intentional injury (Crosby, Santelli & DiClemente, 2009; Mulye, et al, 2009). Studying adolescent health is also essential because, at least in the United States, health risks that teenagers face generally originate from social and behavioral circumstances (Crosby, Santelli & DiClemente, 2009). By getting a picture of what the current social and behavioral circumstances are, areas of prevention can be more easily identified in the adolescent age groups.

According to MacKay & Duran (2007), the term 'adolescent' can vary in scope and age. Generally, though, it captures the range from puberty to adulthood, often ages 10 to 21. The age group of 11 to 21 will be the main focus of this needs assessment.

Areas of Adolescent Health

To best explore adolescent health needs and issues, *Healthy People* developed six primary objective areas where efforts are generally focused and studied (Mulye, et al, 2009):

1. Mortality
2. Unintentional injury
3. Violence
4. Substance use and mental health
5. Reproductive health
6. Overweight, exercise and diet

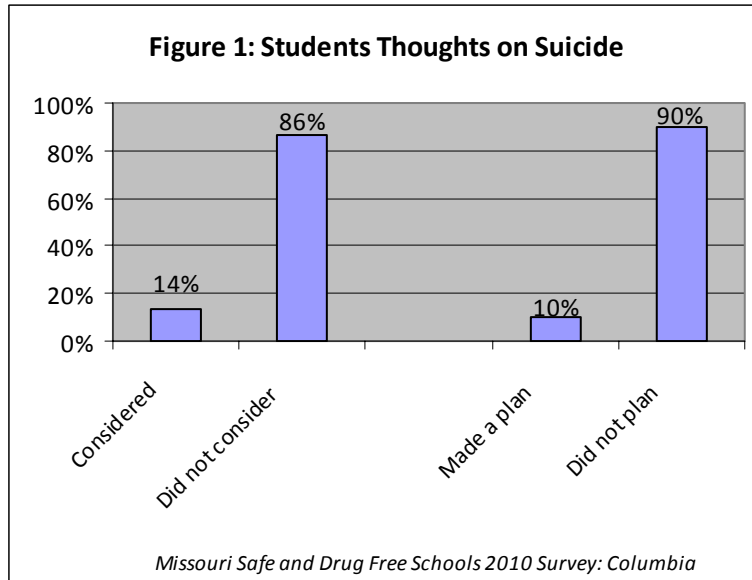
These six key areas serve as the basis for understanding current adolescent health trends in the United States, Missouri, and more specifically, Boone County and Columbia. They also provide a framework to explore what services and efforts are needed to promote and address adolescent health effectively.

Mortality

According to the 2007 Youth Risk Behavior Surveillance System (YRBSS) data, there were four leading causes of death among people ages 10 to 24: motor-vehicle crashes, unintentional injuries, homicide and suicide (Eaton, et al, 2008). While it has been reported that the prevalence of many of these health-risk behaviors has decreased nationwide, there is concern because many students will continue to engage in behaviors that put them at risk for these leading causes of mortality. Motor-vehicle accidents are more often discussed with unintentional injury, but one cause of death that is unique for mortality is suicide. Suicide is seen as one of the leading causes, of death among adolescents. According to the Academy of Child and Adolescent Psychiatry (2008), for the age range of 15 to 24, suicide is the third leading cause of death. Although the

number of suicides started to decrease in the 1990s, there was a fairly substantial increase from 2003 to 2004 (Lubell, et al, 2007).

Locally, the Missouri Safe and Drug Free Schools 2010 Survey shows that in Columbia nearly 14 percent (13.55%) of student responders reported that they considered suicide (see Figure 1). Nearly 10 percent of students reported that they had made a plan to commit suicide, indicating that there is a cause for concern.



Overall, mortality is a public health concern, particularly when it comes to adolescents. As stated, much of the causes are addressed through other categories of adolescent health. Even suicide is often discussed in greater depth as a mental health factor.

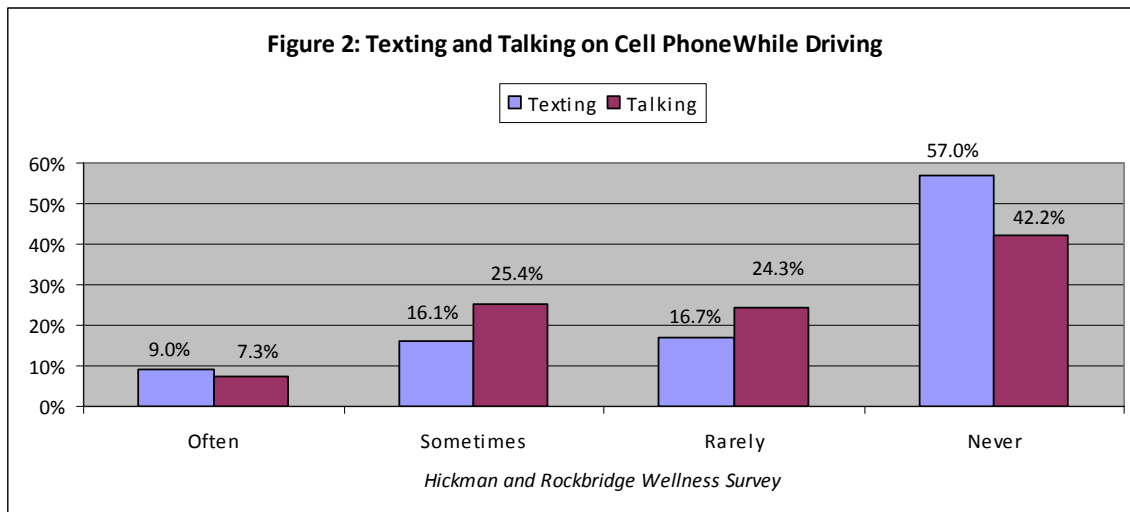
Unintentional Injury

What can often make unintentional injury difficult to prevent is that it is often natural given the environments in which adolescents play, live and work. As a result, it becomes essential to arm adolescents with the skills to discern safe and unsafe risks (Sleet, et al, 2010). This may be particularly true for Missouri, which was ranked as the 14th highest state for death among adolescents because of unintentional injuries, with 28.6 deaths per 100,000 among those between the ages of 10 and 19 (Sleet, et al, 2010).

One of the most common unintentional injuries, as with morbidity, is car accidents (Sleet & Ballesteros, 2009). Drowning, fires, poisoning and suffocation also tend to be leading causes of unintentional injury, although not to the same degree as car accidents. Due to the high amount of concern with car accidents and fatalities, teen drivers are often a focus of public health efforts. As noted by Sleet and Ballesteros (2009), although teens drive less than most other drivers, they are generally involved in a much higher number of crashes in comparison to other age groups.

Some laws and licensing restrictions attempt to address this particular safety concern. In Missouri, for example, a graduated license system is in place. With this structure, drivers between the ages of 15 and 18 must complete a period of time driving with a licensed driver and then complete a period of restricted driving before they receive a full driver's license (DOR, n.dat). Research has shown that comprehensive and strict graduated driver licensing can reduce fatal crashes as much as 38 percent for 16 year olds (Baker, Chen & Li, 2007).

There has also been a shift in recent years to ban cell phone use while driving, particularly when it comes to texting. This is in part due to the increased risk that operating technology while driving can cause (Lee, 2007). According to data collected through a wellness survey conducted in 2009 at Hickman High School and Rockbridge High School in Columbia, over half of students report never texting while driving (see Figure 2). Only 42 percent (42.2%) report to never talking, however. Approximately 9 percent of high school students in Columbia reported texting often. Results indicate that teens are more likely to talk than text while driving.



The current shift and environmental change is to introduce legislation aiming at decreasing or eliminating the number of people who talk or text while driving. The results of such policy changes are still being studied to determine their impact in reducing car accidents among all age groups.

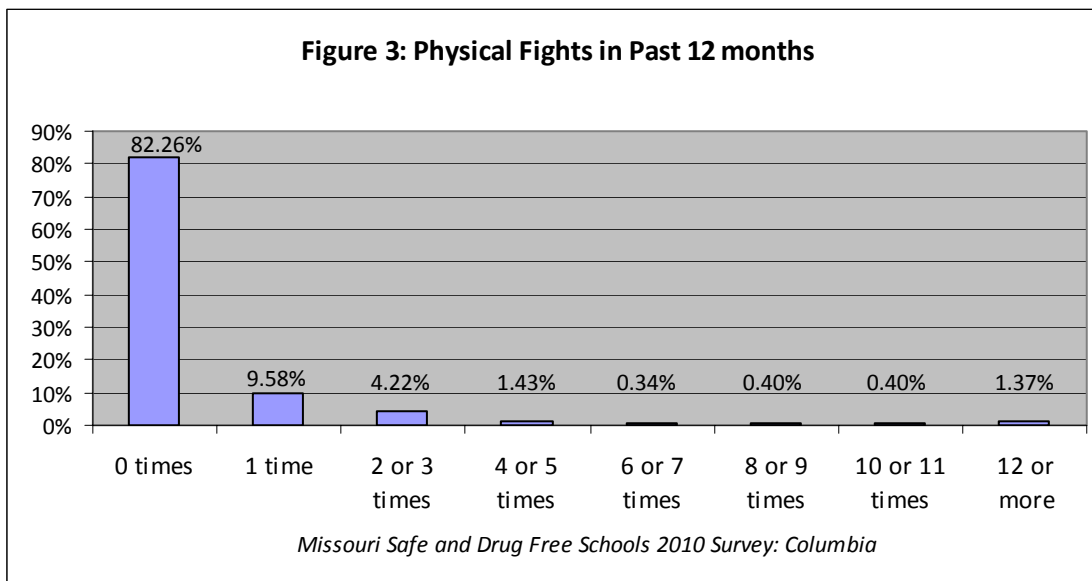
Violence

Physical assault is one of the leading causes of injury in the United States to adolescents age 10 to 19 (Smith-Khuri, et al, 2004). A report from the CDC (2004) showed that while violence-related behaviors did decrease over time from 1991 to 2003, students were increasingly likely to miss school as a result of feeling unsafe. The same report also noted that roughly one in 10 high school students reported being injured or threatened with a weapon while on school property (CDC, 2004).

Based on data from the Missouri Safe and Drug Free Schools survey, Columbia is comparable with those national statistics. Approximately 90 percent of students reported not being threatened or injured with a weapon on school property in the last year. Safety issues such as these are now being addressed through *Healthy People 2020*. One objective aims to decrease the amount of students who didn't go to school at least once in a month because of safety concerns (Healthy People, 2009). Another objective is to decrease the percent of public schools – middle and high – with violent incidences.

Results from the Missouri Safe and Drug Free Schools Columbia 2010 Survey show that nearly 18 percent of students reported being in a physical fight within the past 12 months. This is lower than the national average, where the 2009 Youth Behavioral Risk Survey found that 31.5 percent of students had been in a fight at least once in the past 12 months (Eaton, et al, 2010). Out of the 1,760 students surveyed in Columbia, 24 reported being in a physical fight 12 or more times in the past 12 months (see Figure 3). This is an area of concern because of potential injuries and also because these behaviors often co-occur with drinking and other substance use (Botvin, et al, 2006). A study found further that having been bullied is also a strong indicator of violence or aggression (Smith-Khuri, et al, 2004). While not a large concern, according to the Missouri Safe

and Drug Free Schools Survey from 2010, nearly 20 percent of the students in Columbia schools reported to being bullied on school property in the past 12 months.

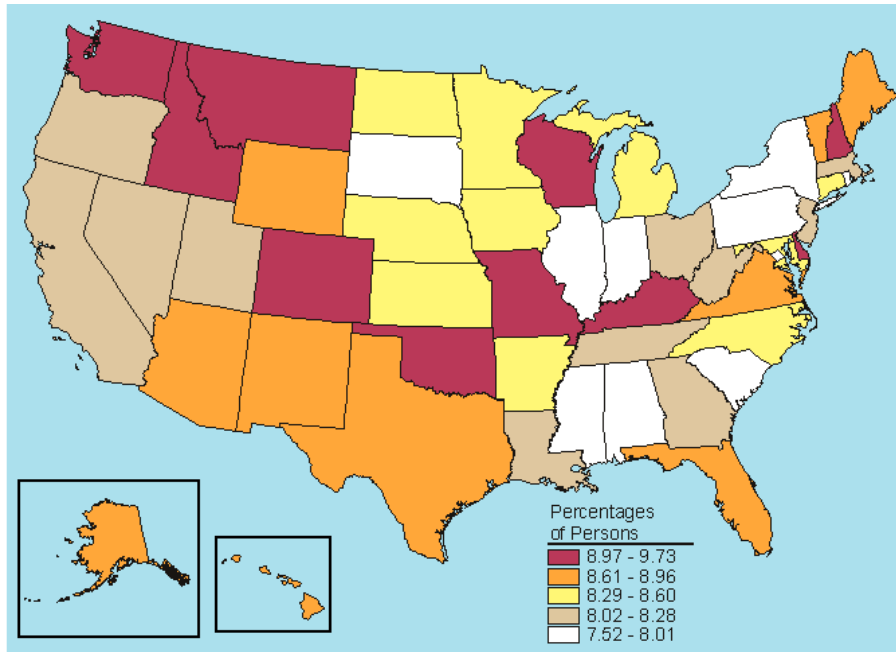


Substance Use and Mental Health

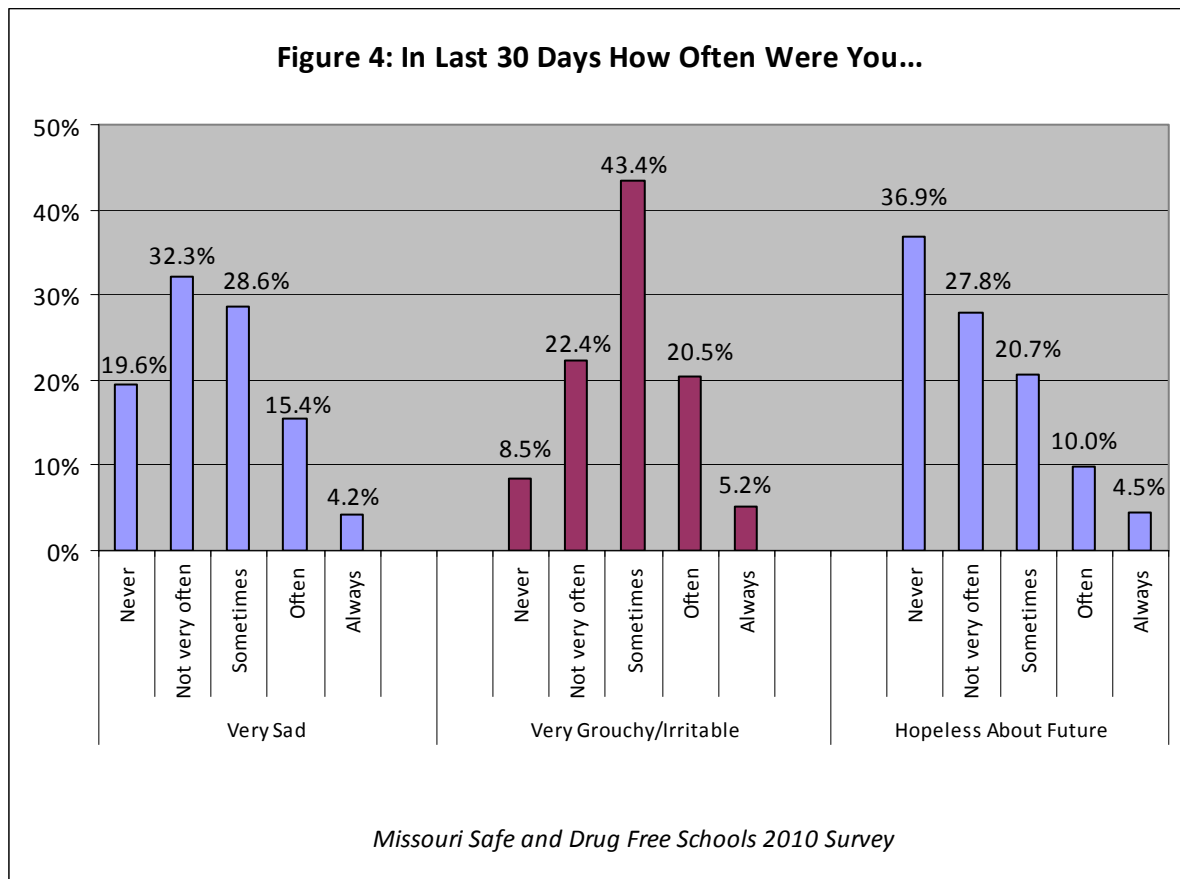
Mental health can refer to a range of conditions. The World Health Organization (2010) defines mental health as an individual who is able to cope with normal stresses in life, realizes his or her individual abilities, has the ability to work productive and has the ability to contribute to his or her community. Further definitions also specify that mental health is not just the absence of a mental disorder or disability, but rather a state of “complete physical, mental and social well-being” (WHO, 2010). Yet another definition includes mental imbalances that affect their overall psychological well-being (Whitlock & Schantz, 2008). With a range of definitions, it is often hard to ensure what “good” mental health is for adolescents, who are generally going through a range of emotional and psychological changes as their bodies change.

According to research, adolescence is a key time to identify and improve mental health (Mulye, et al, 2009; Keenan Miller, et al, 2007; Patel, et al, 2007). Part of its importance stems from the connection mental health has with other risky behaviors, including substance use and abuse, reproductive and sexual health, academic achievement and violence (Patel, et al, 2007; Schwartz, 2007). It is also important because it can go undiagnosed or untreated, which can often lead to problems in adulthood. Up to 25 percent of adults with mood disorders such as depression began during adolescence (Schwarz, 2009). Often this is because of how the brain is developing and the body is changing, making it a difficult time for adolescent.

Mental health problems can be more common among adolescents than expected. Schwartz (2007) reported that up to 20 percent of adolescents have some type of mental health disorder. SAMHSA (2007) reported that in 2005, 8.8 percent of adolescents between the ages of 12 and 17 experienced at least one major depressive episode within the past year, with a major episode being defined as a period of 2 or more weeks where there is a loss of interest or depressed mood paired with four other symptoms, such as problems with energy, eating, sleeping or concentration. Based on findings from the National Survey on Drug Use and Health from 2005 and 2006, Missouri stands out for its high percentage of youth aged 12 to 17 who reported having at least one major depressive episode in the past year (see map pg. 6, SAMHSA, 2008).

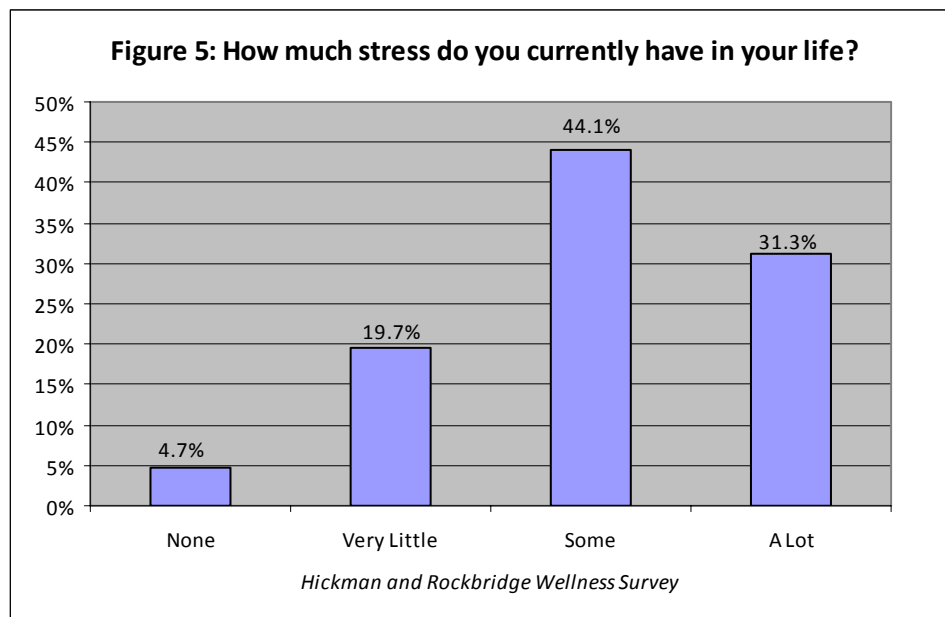


Specifically in Columbia, data from the Missouri Safe and Drug Free Schools 2010 survey shows that about 4 percent of the reported “always” feeling very sad, feeling grouchy or feeling helpless about the future in the past 30 days (Figure 4). The responses vary for the never category. Only 8.5 percent reported they never felt very grouchy or irritable, but nearly 37 percent reported that they never felt hopeless about the future.



Stress during adolescence can also play a role in mental health. That stress is generally a result of environmental factors, which can be caused by a specific event, such as a death or overwhelming situation, or by a more chronic condition, such as poverty (Grant, et al, 2009). Particularly if left untreated or unrecognized, continual stressors can lead to other behavioral and emotional health problems for adolescents, including but not limited to depression. What becomes more challenging about mental health problems is that only half of adolescents in the United States who have mental disorders receive professional services or help (NIH, 2009). The National Institutes of Health study (2009) found that about 55 percent of adolescents with a disorder (general anxiety disorder, depression, panic disorder, conduct disorder, attention deficit hyperactivity disorder and eating disorder) sought treatment with a mental health professional. Only 32 percent of adolescents with anxiety disorder sought treatment (NIH, 2009). As with other studies, this research does indicate that minority youth are often less likely to seek or retrieve treatment in comparison to white youth.

Data from the 2009 Hickman and Rockbridge High School Wellness Survey indicate that nearly one-third of high school students in Columbia are feeling “a lot” of stress (see Figure 5). Almost half (44.1%) feel at least some stress, and about 4.7% feel no stress at all.



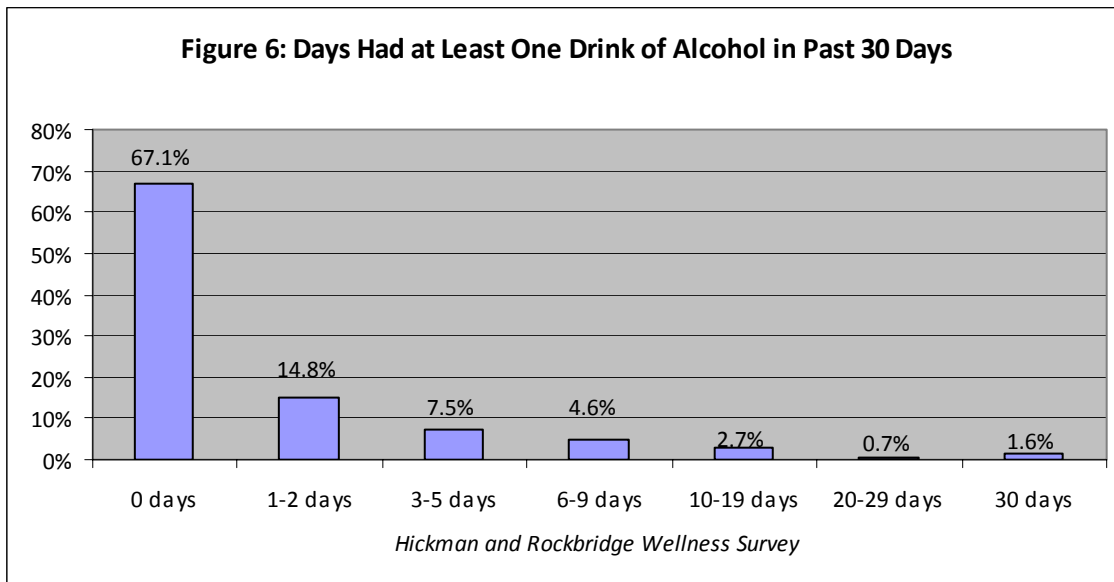
The same data helps provide context for what type of stress students are experiencing. Out of a list of 8 stressors, the top cause of stress among high school students is school and academics, with roughly three-fourths (75.1%) of them listing it as one of their top three causes of stress (see Table 1). The second highest stressor is thinking about the future (47.3%) followed by family stress (40.8%). Only 8 percent of high school students reported not currently feeling stressed.

Table 1: Top Causes of Stress (select top three main causes)	
	<i>Hickman & Rockbridge High School Wellness Survey</i>
School/academics	75.1%
Thinking about the future	47.3%
Family	40.8%
Time management	37.9%

Dating/relationships	32.0%
Friends	21.9%
Financial concerns	18.9%
Job	16.3%
Currently I am not stressed	8.1%

Also connected to mental health, although not in all cases, is substance abuse. Substance abuse can refer to alcohol, drug or tobacco use – all of which are important concerns in adolescent health. It continues to be a national priority through *Healthy People*, and a good portion of the data collected in Missouri and even Boone County specifically looks at substance use – ranging from prescription drugs to tobacco to alcohol. Perhaps the substance of most concern is alcohol. According to the U.S. Department of Health and Human Services, alcohol is used more than illicit drugs or tobacco among young people. The 2009 national Youth Risk Behavior Surveillance found that 72.5 percent of students have had at least one drink of alcohol at least one day during their life (Eaton, et al, 2010). Looking at just the past 30 days, nearly 42 percent (41.8%) reported to having at least one drink on at least one day.

According to the Missouri Safe and Drug Free Schools 2010 Survey, just over three-fourths (77%) of students had not had alcohol at least once in the past 30 days, making it higher than the national average of 72.5 percent. About 5 percent of respondents in the Hickman and Rockbridge Wellness Survey reported to having had at least one drink in 10 or more of the past 30 days (see Figure 6).



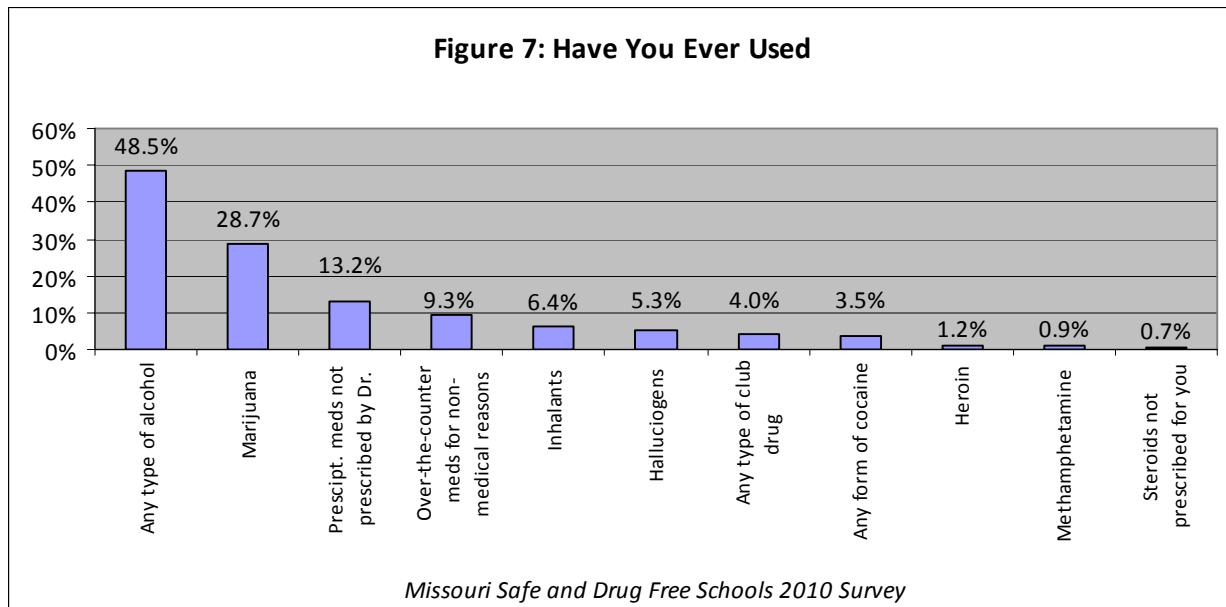
Nationally, nearly one-fourth of students (24.2%) have participated in binge drinking at least once, which is classified as having more than five drinks in one sitting (Eaton, et al, 2010). Columbia data shows that binge drinking rates are below national average, with an average of 20.2% of high school students in Columbia reporting the consumption of five or more drinks of alcohol in a row at least one day in the past 30 days. The Missouri Safe and Drug Free Schools 2010 data shows that of those who reported drinking in the past 30 days, 13.1 percent of them reported having five or more drinks within a couple hours at least one day in the past 30 days.

While tobacco and drugs are not used to the extent alcohol is with adolescents, they are still public health concerns. As with binge drinking, Columbia falls below the national statistics across the board when it comes

to drug use (see Table 1). Of all the drugs surveyed, marijuana is the one most commonly used, with nearly 29 percent (28.7%) reporting the use of marijuana at least once in their life.

Drug	National Statistics <i>2009 Youth Risk Behavioral Survey</i>	Columbia Statistics <i>Missouri Safe and Drug Free Schools 2010 Survey: Columbia</i>
Marijuana	36.8%	28.7%
Cocaine	6.4%	3.5%
Inhalants	11.7%	6.4%
Ecstasy	6.7%	N/A
Heroin	2.5%	1.2%
Methamphetamines	4.1%	.9%
Steroids (without doctor's prescription)	3.3%	.7%
Hallucinogens	8.0%	5.3%
Prescription Drugs (without doctor's prescription)	20.2%	13.2%

Additionally, the Missouri Safe and Drug Free Schools 2010 Survey shows that 9.3 percent of respondents used over the counter medications for non-medical reasons. It reflects the fourth most popular substance used among Columbia high school students, right behind prescription medications not recommended by a doctor (see Figure 7). The use of prescription drugs has become a rising problem in more recent years across the nation, potentially because it can be easier for teenagers to obtain than other 'street' drugs (Friedman, 2006). Less commonly used among teens are heroin (1.2%), methamphetamine (0.9%) and steroids not prescribed (0.65%).



As of 2008, the six objectives of *Healthy People 2010* related to this health category (mental health and substance abuse) had trends with modest to no improvement (Park, et al, 2008).

Reproductive Health

According to a CDC report, sexual health can impact people as young as ten years old. Data from 2002 was used to estimate sexual activity among adolescents:

- 30% of females between the ages of 15 and 17 reported ever having had sex
- 31.7% of males between the ages of 15 and 17 reported ever having had sex
- 70.6% of females between the ages of 18 and 19 reported ever having had sex
- 64.7% of males between the ages of 18 and 19 reported ever having had sex

Data from the 2009 Youth Behavioral Risk Survey shows that nationwide, 46 percent of students reported ever having had sex, with 5.9 percent having sexual intercourse before the age of 13. Approximately 34 percent (34.2%) are currently sexually active, and among those students, 61% report that they or their partner used a condom during their last sexual intercourse (Eaton, et al, 2010). This may not account for other methods of birth control, however.

A majority of teens between the ages of 15 and 19 report receiving some formal instruction before turning 18 on how to say no to sex (Gavin, et al, 2009). A smaller majority (69.9% females, 66.2% males) reported to having received instruction on birth control methods. Despite this education, there is still a relatively high incidence in sexually transmitted diseases among this age group. According to a surveillance summary, 25% of females aged 15--19 years and 45% of those aged 20--24 years had evidence of infection with human papillomavirus during 2003--2004.

The United States did see a decrease in pregnancy and child birth rates among adolescents. In 2008, there were 41.5 births per 1,000 females ages 15-19. The 2008 teen birth rate is 37 percent lower than the peak rate in 1990 of 61.8 births per 1,000 females ages 15-19 so we are improving on that front. This was attributed primarily to contraceptive use and sexual activity, including both abstinence and delayed initiation of sexual activity (Santelli, 2007). While particular sexual health behaviors and outcomes were decreasing, some are on the rise again. Additionally, in the past 10 years the annual rate of reported AIDS diagnoses doubled for males.

To our knowledge, data is not collected at the local or county level pertaining to sexual and reproductive health in adolescents. According to the Missouri High School Youth Risk Behavior Survey, which captures state data for students in grades nine through twelve, nearly half (48.7%) of adolescents have had sexual intercourse. Additionally, among those who are sexually active, 40% did not use a condom during last sexual intercourse. This is similar to the national data where 61 percent of those who are sexually active reported using a condom during their last sexual intercourse. Again, this may not account for other methods of birth control being used.

Overweight, Exercise and Diet

Childhood and adolescent obesity is a growing concern in the United States. Since the 1970s, the prevalence of overweight among adolescents (ages 6 to 19) has tripled (Bibbins-Domingo, et al, 2007). In fact, in a report from the Center for Disease Control, obesity is found to account for a "rapidly growing" health issue in adolescents (MacKay & Duran, 2007). Consequently, efforts must focus on prevention and in assisting adolescents in developing healthy eating and exercise habits, as obesity among adolescents is likely to continue into adulthood (Barlow, 2007).

There are a range of causes for obesity, making it difficult to address. Rising obesity rates can be attributed to problems such as lower levels of physical activity, increased time watching television or playing video games, and even unhealthy attempts at dieting (Haines & Neumark-Sztainer, 2006). As noted by Wang, et al, 2006, only one in four children aged 2 to 19 reaches 30 minutes of moderate physical activity at least five days a week. Other behavioral factors affecting obesity rates include fast food and sugary drink consumption. With

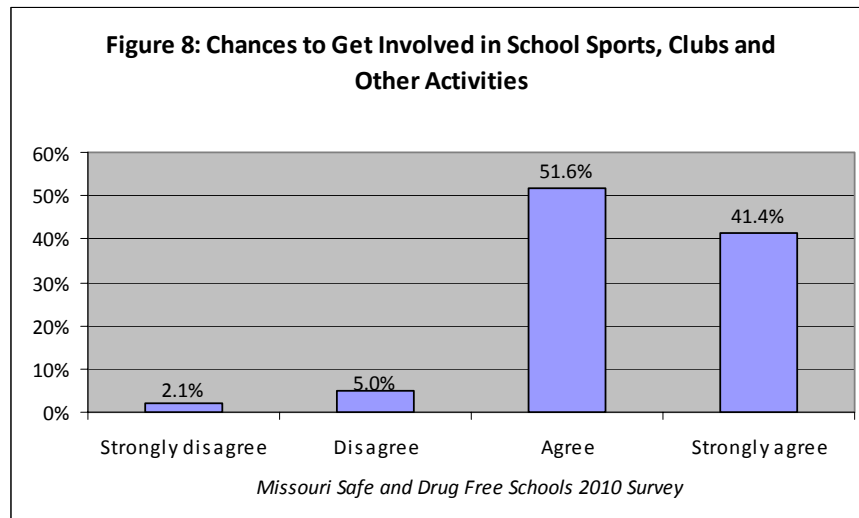
the two combined, U.S. children may have what is termed the “energy gap,” where they consume more calories than they need to support their physical activity and normal growth (Wang, et al, 2006). The results from the 2009 High School Youth Risk Behavior Survey are quite telling. In Missouri, over half (51.7%) of respondents were physically active for at least 60 minutes per day on less than five days (see Table 2). The survey also found that nearly 15 percent (14.7) of adolescents were not physically active for at least 60 minutes on any day.

Table 3: National and Missouri Comparison of Physical Activity		
<i>2009 High School Risk Behavior Survey</i>	<i>National Rate</i>	<i>Missouri Rate</i>
Physically active at least 60 minutes a day, less than 5 days a week	63.0% *	51.7%
Physically active at least 60 minutes a day, less than 7 days a week	81.6% *	73.3%
Did not participate in at least 60 minutes of physical activity on any day	23.1% *	14.7%
Did not attend physical education classes in an average week	43.6%	55.6% *
Watched television 3 or more hours per day	32.8%	32.4%
Used computers 3 or more hours per day	24.9%	22.9%
<i>* Indicates rate is higher; there is a statistically significant difference</i>		

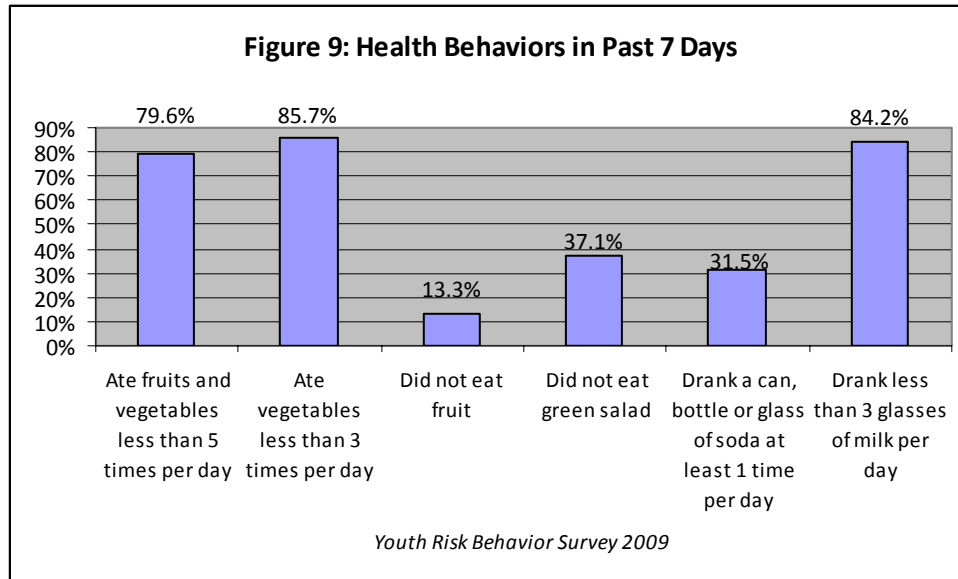
A higher proportion of adolescents in the United States are not engaging in physical activity as compared to Missouri adolescents. The results from the survey indicate that there is not a significant difference in the amount of time adolescents spend watching television or on a computer. The one area where Missouri was higher than the national average is with physical education. While Missouri statistics are better than the United States in terms of physical activity, there is still a cause for concern given that 14.4 percent of students are considered obese in Missouri while in the nation that percentage is 12.

Further research does show that involvement in extra-curricular and school-based activities that focus on physical fitness – such as physical education courses – can reduce the risk of obesity in young adulthood (Menschik, et al, 2008). According to the High School Youth Risk Behavior Survey, there is a significant difference in the amount of physical activity between students in Missouri and across the nation. Over half (55.6%) of Missouri students reported not attending physical education classes in an average week while 43.6% of students across the nation did. In looking specifically at Columbia, between the two high schools it is found that about 40 percent (40.7%) of students participate in school-sponsored athletics.

Additionally, the Missouri Safe and Drug Free Schools 2010 Survey found that a vast majority of students agreed or strongly agreed that there are a lot of chances at school to get involved in sports, clubs, and other school activities outside of class (see Figure 8).



Related to obesity and physical activity is nutrition. On nearly all counts, Missouri is comparable to national statistics. Over three-fourths (79.6%) of survey respondents are not getting in the daily recommended amount of fruits and vegetables (see Figure 9). Just over 13 percent of respondents did not eat fruit at all in the seven days prior to the survey.



Instead of eating fruits, vegetables and whole grains, the trend among adolescents is to consume more fast food and sugary drinks (Kohn, 2007; Wang, et al, 2006). This is part of the reason the nation is seeing an increase in obesity rates, although it is certainly not the sole contributing cause. Other risks are present during adolescence, too. Often teens lack the financial resources or access to nutritional foods, missed meals – particularly breakfast – is common, and even peer pressure can lead to teens overeating or having restrictive patterns and purging (Kohn, 2007).

Related to peer pressure, adolescence is often a time where teens also become more self-conscious. The Youth Risk Behavior Survey indicates that in the 30 days prior to the survey, 10 percent of adolescents went without eating for 24 hours or more in order to lose weight or to keep from gaining weight. Also 30 days prior to the survey, data shows that 5 percent of teens took diet pills, liquids or powders in order to lose weight or to keep from gaining weight without the advice of a doctor. A smaller percent (3.6%) of Missouri respondents vomited or took laxatives in order to lose weight or to keep from gaining weight.

Other Adolescent Health Issues

Diabetes

While most children who have diabetes have type 1, also called juvenile-onset diabetes, an increasing number of children and adolescents have reported having type 2 diabetes, which was formally known as adult-onset diabetes as it is generally diagnosed in adults aged 40 or older (CDC, 2010). Part of the reason for this trend could be the increase consumption of an unhealthy diet and lower levels of physical activity in adolescents and children. The CDC listed diabetes as one of the most common chronic disease for adolescents and children, with roughly 186,300 people under age 20 having diabetes in 2007 (CDC, 2008). With the growing number of adolescents developing diabetes much earlier in years past, overweight and obesity prevention has become even more of a national priority.

Asthma

While a lack of data can make it difficult to assess the true incidence of asthma, it is seen as a health concern for adolescents. In fact, the CDC notes it as one of the leading chronic illnesses among youth and children (CDC, 2009). It is estimated that one in 10 children (age 5 to 17) are likely to have asthma. Further, the American Lung Association (2010) found that children ages 5 to 17 have the highest prevalence rate since 1999, making it a heightened area of concern for adolescents. According to the Youth Risk Behavior Survey, Missouri's rate is comparable to the United States with no statistically significant difference. In 2009 roughly 20.6% of adolescents in Missouri reported being told by a doctor or nurse that they have asthma. While interventions and the causes of asthma attacks have been developed over the years, adolescents with asthma may still struggle with attacks and adverse outcomes (Akinbami, 2009).

Barriers to Care

As with adults, adolescents also face barriers in accessing care. There are slight differences, however. Two of the primary concerns with adolescents getting health care deals with confidentiality and service environment – particularly when it comes to reproductive and sexual health (Fox, et al, 2010; Hock-Long, et al, 2003). Privacy is often cited as a primary reason adolescents forgo or delay health care. In fact, one study found that 59 percent of female adolescents would discontinue a particular sexual health care service, delay HIV testing or treatment, or would stop using sexual health services in general if their parents were told that they were seeking prescribed contraceptives (NIHCM, 2009).

The second component, service environment, may capture a range of factors, including uncertainty about which facilities provide what services, age-appropriate health information and materials and even having a more inviting atmosphere to avoid feeling intimidated (Fox, et al, 2010; Hock-Long, et al, 2003). It can also be related to the connection or relationship they have with their medical provider. While one study found that adolescents first listed health care providers as someone to discuss health risks and risky behavior with, only a small percent reported having conversations with their doctors about issues like sexually transmitted diseases (NIHCM, 2009). In part to address this barrier to health care, it is a national objective to help more adolescents have a medical home (Healthy People, 2020).

Health Communication and Promotion

Teens are using a variety of methods to get information and discuss their health. In a teen marketing publication created by the U.S. Department of Health and Human Services and Centers for Disease Control and Prevention, it is estimated that nearly 31 percent of teens use the internet to gather health information (CDC, 2009). Most tend to be searching for general health information, dieting or physical fitness information (CDC, 2009; Lenhart, 2010). Also, nearly 17 percent of teens use the internet as a way to get information on topics that are harder to talk about, such as sexual health, drug use and depression (Lenhart, 2010). The study also found that that older teens (ages 14-17) are more likely to use the internet for health information than younger teens (12-13).

Part of the reason teens may seek information online is that it ensures privacy and confidentiality, as seen as an issue in barriers to care. This appears to be particularly true when it comes to sexual health. Studies find that teens are more comfortable going to doctors and communicating with them if it was confidential and parental notification was not mandatory (Nelson & Neinstein, 2007). When they can not get the more sensitive health information from their providers, friends, parents or schools, it is not uncommon for adolescents to seek it online and also through multiple sources or mediums.

One key insight about communicating with teens about health information is that showing appealing imagery and positive social models is generally more effective than having negative messages, such as 'don't do this behavior' (NIHCM, 2009). This primarily relates to the typical adolescent tendency to want to establish their

independence and control. Using this approach to health promotion can also complement positive youth development, which also assists in helping teens make healthy decisions. Positive youth development often focuses on the concepts of empowering youth, connecting them with positive role models, emphasizing their strengths and promoting positive relationships with their peers (Weldon, 2009).

Teens are not just using the Internet and social media as a way to receive health information. Some also receive messages by phone. Often people use phone or handheld computing device applications to access social networking websites, giving health professionals a chance to access adolescents through multiple channels (NIHCM, 2009). A study by Levine et al (2008) found that text messaging may prove to be an effective and “culturally acceptable” opportunity to give at-risk youth information on sexual health as well as referral to sexual health services. One such program, called The Birds and the Bees, set up a system where teens could text their sexual health questions and receive “non-judgmental” responses within 24 hours (Weldon, 2009). Within the first three months, the text line received roughly 700 questions.

The extent to which texting helps with health education is still being researched, but it does provide another avenue to reach adolescents with relevant health information.

Research Methods

Focus Groups

Five focus groups were conducted to gain perspectives on health issues faced by adolescents in Boone County. One focus group consisted of a range of health professionals, including school nurses, counselors, teachers and practitioners. Questions for this target audience were aimed at determining the primary concerns adults in Columbia/Boone County have with regard to adolescent health, where they see gaps and whether they think Columbia is a healthy place for youth to grow up (see Appendix A). The ultimate goal was to create an open dialogue among professionals familiar with adolescent health issues to see if there was agreement or disagreement about areas of concern. The focus group also provided an opportunity to discuss what limitations exist in providing services for adolescents.

The four remaining focus groups were held with adolescents. One group consisted of junior high students (ages 13 to 14) and three focus groups were held with high school students. Of those three, two focus groups were made up with youth from Columbia and the other focus group had adolescents from Centralia. Questions for the youth were geared toward pulling out what they see as key health concerns or issues for themselves and peers (see Appendix B). It was also a chance to determine where there might be gaps, gaining perspective on where adolescents perceive a need that’s not being met.

School Personnel & Youth Advocates Survey

An online survey was developed in Survey Monkey and sent out to school personnel and youth advocates in Boone County as a complement to the focus groups. Youth advocates included personnel in youth agencies, ranging from health to youth development and other services. Questions for this target audience were meant to help prioritize the concerns and barriers related to adolescent health (see Appendix C). The survey was confidential, with no answers being linked to the respondent. The link was sent out with a two-week opening during which the survey could be taken.

The purpose of the survey was to determine if the primary areas of concern matched topics and themes in the literature and also the five focus groups. It also provided an opportunity to see what concerns are most prominent in Columbia/Boone County and also determine what barriers and current policies exist to make a difference. It was also an opportunity to get a comparative look at health issues and changes, to see where one particular health issue ranked in relation to the other six areas of adolescent health.

Findings

Focus Groups

Upon review of transcripts and notes from the focus groups, it became evident that mental health is one of the top concerns in adolescent health. It was brought up as stress related to school, grades, parents, and lack of time and access to be healthy and became a main topic of discussion in nearly all of the focus groups. Another key area of concern is nutrition and physical activity, primarily given the lack of time and money adolescents have. While issues about sex and drugs were initially brought up, there was no further discussion about the extent of the program or whether they saw it as a real concern. Risky behavior in general was discussed to some degree, primarily as an escape or coping mechanism. Overall points of the focus groups are found in Appendix D, but the mental health and nutrition/physical activity were the primary areas of concern for adolescents in Boone County.

Mental Health. Mental health was brought up in all five focus groups, almost always right at the beginning of the focus group. The agency personnel mentioned that it is a huge need because there is an apparent lack of services to address such problems. Issues with mental health can lead to an array of other health problems, with three of the five groups mentioning that stress can impact the way an adolescent eats, sleeps and copes with stress. Many students mentioned they do not feel as though they have someone they can turn to who would not judge them or keep their information private.

The primary source of stress seems to come from school. Many students mentioned they only get 4-6 hours of sleep often because of their homework load and other responsibilities. They felt pressure (both from parents and teachers, and also self-imposed) to do well in school to prepare for college and real life, requiring them to stay up late in order to get all their homework done. As one student noted, "if I get all my homework done I'll get about 4 (hours of sleep). When I choose to sleep instead, I'll get 8 hours, but then the next day I'll have to deal with the stress of not having everything done and my teachers being mad at me."

For some, the pressure and homework load can built up so much that they will come to school even when they are sick. One adolescent said he was back at school the day after neck surgery because he did not want to get behind in homework. Others have come to school while taking pain medications, such as Vicodin, because class material often builds on what was taught the previous day or week. "If you miss a day, you won't understand what's going on."

In nearly all focus groups with adolescents, the discussion about homework stress often led to a conversation about their frustration with busywork. Some adolescents expressed an interest in restructuring homework so that if they understood the concept taught, they would not have to do the homework. One student mentioned a few of her classes offer optional homework, which gives her more flexibility and time to focus on her Advanced Placement (AP) classes and other courses where she might not understand the concept. "At least I know I'm not getting discredited for it. I know that (having) that option is kind of helpful. I'm not saying that every kid can handle it, but them giving us that option is really helpful, because I know that I either need to do the homework to learn the concept, or I have the concept down and don't need to do the homework."

Stress with homework can be heightened when students are having difficulty understanding concepts in a class but cannot easily access the teacher, tutor or someone else who can help them. This makes many students feel as though they are just "data points" for the school and like some teachers aren't as invested in seeing individuals personally succeed. Many students mentioned a lack of personal connection between students and teachers, or other adults within the school.

Nutrition & Physical Activity. In addition to mental health and stress, many adolescents discussed the difficulty in eating right and getting in physical activity. For some, the difficulty springs from not having

enough time. A few students noted that unless physical activity is through classes or a program that they are paying for, there is no guarantee that they will exercise. There was also discussion about how they wished their schools required more health and physical education classes. Current requirements discussed in the groups included one general health class and two physical education classes over the course of three or four years. If students want to take more, they have to make up other required credits during summer school.

There is also difficulty, students said, because of the cost. When P.E. classes aren't an option, many mentioned that Columbia/Boone County does offer services like a community recreation center, but adolescents may not have the financial means to gain membership. There may also be interest in classes like taekwondo, but cost was once again a factor. One suggestion from two students in a focus group was to have a free or donation-only facility for physical activity, but understood the difficulty in making that a reality.

Another aspect of nutrition that dominated in the focus group discussions was school lunches. Nearly all students agreed that they would like to see changes, particularly by bringing in healthier or even homegrown options from local farmers or community/school garden. Students expressed that because they did not like the options at lunch, they often go out to purchase meals. With limited time, they often end up eating fast food, primarily because that's what's located nearest to their schools. There are also limitations for those on free and reduced lunch. With a cap on what they can spend, one student stated it's "really difficult to get your essential nutrients on just \$2.43 a day."

Communication. How to reach teens with health information is harder to ascertain, and even adolescents in the focus groups offered mixed opinions. Some teens thought groups and events on Facebook would be a good way to connect to teens and promote health messages in Boone County. They also mentioned that using humor is a way to best reach adolescents with messages, making them more likely to tune into the message – whether it's a presentation, lecture, text or Facebook message. Videos were also mentioned as a way to reach teens, but it had to be something that caught their attention.

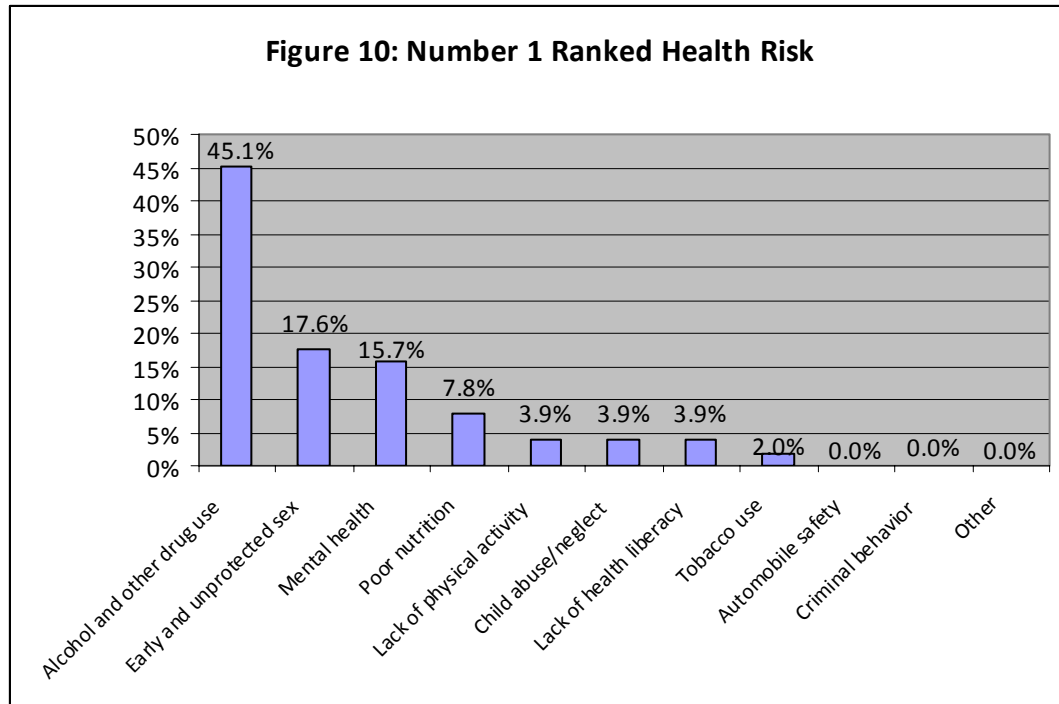
One thing that was apparent, though, is that teens do not want to be talked down to or lectured. They want to be able to have genuine, open dialogue with people about things that directly impact them and that they are able to relate to. As one adolescent noted, "You can't just give us a video that's...some guy saying 'These are oranges and we need to eat oranges and other fruit.' We don't want to hear that. We want to see it as the things we're going through. A video has to be with issues that we go through and find interesting. It just has to be an issue that we see. We're very social, we're into technology, so that's another good way to reach out to us."

When they discussed how they best learn and understand messages about risky health behaviors, many adolescents said they wanted to hear from people who had experienced such problems and could speak directly to teens about that experience. Particularly in the junior high group, books like *Go Ask Alice* were mentioned, giving them a first-hand look about what substance use and its consequence are like. Many adolescents in all four focus groups also mentioned their desire to get more information through health classes, stating that one semester was not enough time to really teach them how to be healthy. They did stress, though, that they wanted to learn more about how to lead healthy lifestyles instead of memorizing terms and body organs.

School Personnel & Youth Advocates Survey

The online survey was sent to 108 school personnel and youth advocates, to which we received 54 responses. Out of those respondents, 38 were school personnel and 16 were youth advocates. Both groups were able to highlight and categorize health concerns and barriers adolescents may face in accessing health or developing healthy lifestyles. They were also able to comment on barriers that agencies face in trying to address adolescent health.

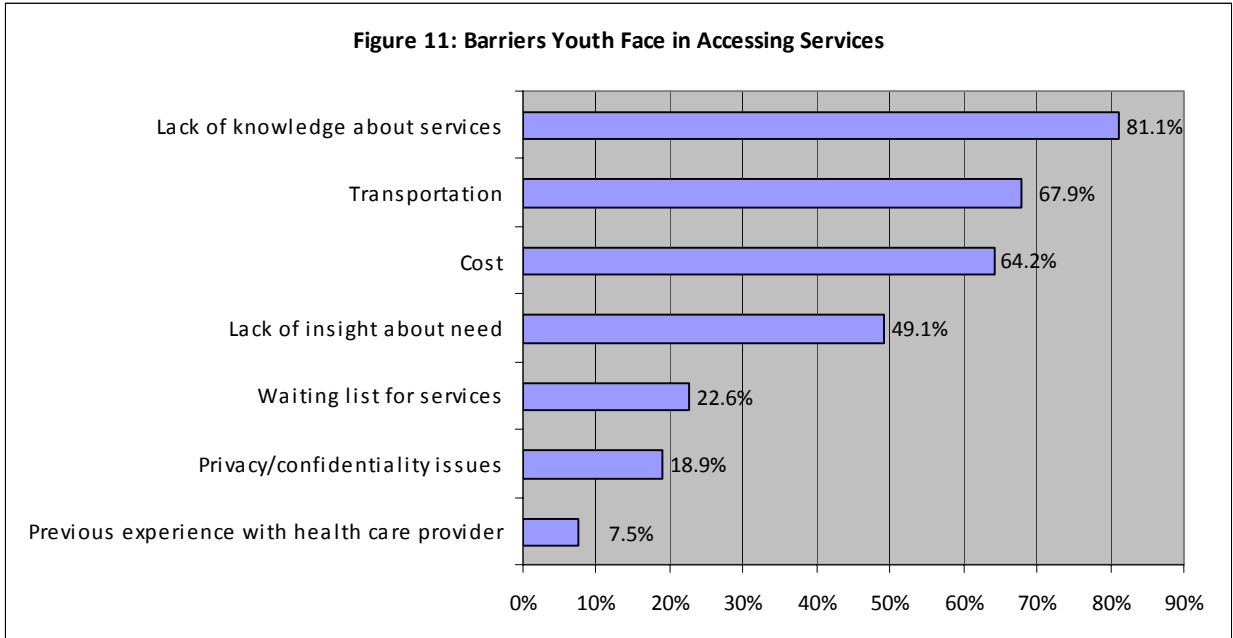
When looking at the top health concern, alcohol and drug use appear to be the dominant health risk (see Figure 10). Out of the 10 health risk options, 45.1% (23) listed alcohol and drug use as the number one priority, while 17.6% (9) felt early and unprotected sex with the number one health concern. Mental health came in with a close third with 15.7% of respondents. Automobile safety and criminal behavior was not selected by any of the respondents as being the number one health concern in Columbia/Boone County.



Additionally, findings from the survey show that respondents overwhelmingly think that adolescents are getting health information from their peers, with 87% (47) of the respondents listing peers as one of the top two primary information sources. The second highest selection was the internet, with 35.2% (19). Less commonly do adults feel like teens get information from health care providers. Only three of the 54 respondents believed adolescents access health information through providers.

With a range of adolescent health concerns and barriers, on the whole survey respondents felt Columbia/Boone County Health Department and/or other organizations in the community could be doing more to address adolescent health. No one thought Columbia should be doing less, and about 16 percent of respondents felt that current efforts could be continued as they were.

Although 5 skipped the question, 28.6% (14) of respondents reported that they didn't know what was being done. This seems to also be reflected as a barrier in teens being able to access health and human services in Boone County. In gauging what barriers teens face, the top problem listed by respondents for adolescents was a lack of knowledge about the services, with 81.1% of respondents listing that as one of their top three perceived barriers (see Figure 11). Transportation (67.9%) and cost (64.2%) were the next two highest barriers perceived by those working directly with youth.



When it comes to addressing adolescent health issues in Columbia/Boone County, respondents believed health classes in schools could make the biggest impact, with 60.4% of respondents selecting it as one of the top three organizations. The next two highest selected options were community recreation centers (47.2%) and community-based or school-sponsored sports (45.3%). The respondents to the survey were less likely to believe that after school clubs (10 respondents), churches (14 respondents) and general practitioners or family doctors (15 respondents) could have a strong impact on adolescent health.

Implications

The main themes and concerns brought up in the five focus groups as well as the school personnel survey proved to be fairly similar to national findings. A national study polling high school students was done in an attempt to see what adolescents perceived to be their top health concerns. This study, done by the CDC (2009), found that mental health and healthy lifestyle choices were top concerns among teens across the nation:

Table 4: Top Areas of Health Concerns Among Teens	
<i>Health Concerns</i>	<i>Amount of Concern</i>
Handling stress	51%
Exercising	46%
Staying healthy as I get older	43%
The best foods to eat	42%
Handling depression/anxiety	38%
Dieting	32%
Sexuality	29%
Taking vitamins or supplements	29%
When to visit the doctor	28%
What to look for on food nutrition labels	28%

As with the focus groups, sexuality was mentioned, but the main concerns seem to center around mental health and stress management, and also nutrition and physical activity. Adolescents seem to have a need for getting information about how to develop and lead healthy lifestyles. As a few students mentioned in the focus groups, instead of having busywork and memorizing what different parts of the body do, it was important to receive information about how to take care of themselves.

Many students also mentioned that there was a lack of individual support in the school, which is also a finding nation wide. Through a national survey of 127 schools, it was found that students who felt connected to the school and cared for by people within the schools were less likely to engage in violence, initiate sex at an earlier age and use substance abuse (McNeely, et al, 2002). Findings from the survey also highlighted that students who felt connected in school had higher levels of emotional well-being, getting at the mental health component many of the adolescents in the focus group mentioned. The national study findings did, however, note that it is difficult to determine what types of evidence-based programs could address the main issues facing teens in schools in an effective way.

More generally, though, there may be a lack of services with this particular area. According to the school personnel and youth advocate survey, 73.6% of respondents felt there was a gap in mental health services for youth and 49.1% (26) believed there was a gap in stress management. The third highest gap among respondents was services or assistance for substance abuse, although one respondent stated that this often stems from mental health issues. Fewer people saw gaps in physical activity programming and reproductive health. Particularly with physical activity programming, there could be less need for such services because students pointed out through the wellness survey that there are many opportunities to get involved in school and club-sponsored sports and activities.

Another issue that is evident with both literature and also the survey is how and where teens are getting information on such topics. The survey, and also research, suggests that most teens are getting their health information through peers and the internet. Focus groups with adolescents revealed that students are looking for more genuine health messages that impact them and that they are able to relate to. School health classes also provide a primary means through which teens are getting information, but some suggest that the one course is not enough.

Recommendations & Best Practices

Current Programs

Before assessing areas where Columbia/Boone County can provide more services, it was essential to look at what is currently available to adolescents (see Appendix E). While services are available, the school personnel and youth advocate survey respondents suggested that adolescents may not be aware of these programs and health opportunities. It could also be, as focus group participants suggested, that adolescents do not have time to take advantage of them.

Even through focus groups, it was discussed that while Columbia and Boone County offer services, particularly with things like a community recreation center, often they have a financial component that can prevent students from accessing the services. It can also be a lack of time that prevents adolescents from using such services.

Recommendations

A variety of organizations, people and entities are involved in trying to improve various aspects of adolescent health, and even through the school personnel and youth advocate survey there were a range of ideas as to

who could make a difference in Columbia/Boone County. Several themes emerged through the focus groups, survey and literature, so recommendations are meant to fill the gap or concerns in those particular areas.

Teen Communication. As seen in literature, in more recent years there has been a push to use online media and cell phones as a way to reach teens about health issues. Many students are using social websites such as Facebook and consuming a substantial amount of media, with the average teen using it 44 hours a week (Weldon, 2009). As seen with literature and also in focus groups, privacy and having non-judgmental sources to get help are extremely important to adolescents. Technology offers a way to do just that, with most teens going online to access their health information (CDC, 2009; Ypulse, 2008).

Having a strong online presence ensures that teens have access to the type of accurate health information they need in one place. Media research also shows that teens are willing to collaborate with organizations and agencies to help develop such messages when they feel like there will be an immediate benefit. When it comes to communication, teens want to feel like their opinions and viewpoints are valid, and in allowing for that, more effective communication is developed. Adolescents perceive messages and brands more favorably when they find it to be personally relevant or involved services they might use (Bothun, 2010).

The Massachusetts Department of Health used this knowledge to collaborate with the state Department of Elementary and Secondary Education to launch a teen-friendly website in May 2007. After a series of focus groups and other research, they determined they needed to work with teens to craft the design and feel of the website. The website gets roughly 25 visitors a day, providing adolescents with information on acne, body image, condom availability, hepatitis, HIV testing, pregnancy and substance abuse (MDPH, 2008).

Columbia Public Schools are starting to explore this idea with a 2BYoo website. While it has not been launched yet, this online tool will allow for students to register and log into a portal that will give them reliable information on a range of health topics. Though it will not have an anonymous question and answer feature, it will allow kids to take quizzes and learn what others their ages are doing and thinking around certain health topics. It is scheduled to be up and running second semester and health teachers, nurses and counselors are being trained on how to help adolescents register and use it.

There are also opportunities with texting. Research shows that more adolescents use their cell phones as a way to communicate and connect with others. Some organizations have started utilizing texting services to pass on health information, particularly when it comes to sexual health (Weldon, 2009). This includes letting adolescents know what free health resources are available to them, and other programs provide weekly health communication and tips.

Mental Health. All of the focus groups and also the respondents from the survey indicated that mental health is a primary issue among adolescents. Teens often felt as though they did not have a “non-judgmental” person who would respect their privacy. As seen through the four adolescent focus groups, and also found in literature, often adolescents turn to their friends and peers when coping with stressful circumstances or emotional problems (Stanton-Salazar & Spina, 2005). Finding programs and opportunities that enrich and encourage peer relationships and networks can often help buffer adolescents from environmental stresses, including school stress or family issues (Stanton-Salazar & Spina, 2005). Generally after-school programs and extracurricular activities provide an institutional context through which teens can start fostering relationships and earning trust among their peers.

Some research suggests that schools offer a strong opportunity to address this health issue, depending on the type of intervention or information needed. One suggestion is to offer programs on conflict resolution or stress reduction (Taylor & Adelman, 1996). Schools can also work toward promoting mental health in schools, focusing on developing students’ decision-making skills and self-awareness (National Academies, 2009). This

again relates to positive youth development (NIHCM, 2009). One best practice program, the Teen Outreach Program, has been used at the Columbia Boys and Girls Club and the Columbia Housing Authority and now is being piloted at Hickman High school. TOP was one of 28 programs that meet funding criteria for the FY2010 Teen Pregnancy Prevention Initiative. This program has also been shown to prevent adolescent problem behaviors by helping adolescents develop a positive self image, effective life management skills and achievable goals. It can be integrated into the curriculum of schools and is also implemented as an out-of-school program, which should be further explored.

The American Academy of Pediatrics Task Force on Mental Health found through an extensive review of literature that screenings can be a valid tool in identifying adolescents with mental health problems, both in a primary care setting and also a school setting. Most screenings occur in school settings, but more primary care providers are taking on the role (Richardson, 2009). Schools are increasingly becoming a key target to address mental health prevention and treatment among adolescents. Research done within the community of Washington, D.C. found that school-connected programs for mental health may be essential in order to adequately address mental health and also academic success among its adolescent population (Price & Lear, 2008). After discovering nearly 7 percent of its adolescent population had a severe mental health condition but only 1 percent were being served, a grant helped Washington, D.C. create a School Mental Health Program.

The School Mental Health Program in Washington D.C. aims to maximize the opportunities for students to become successful in the classroom, offering support to not only the students, but also their families. The program employs mental health specialists, psychologists and license or license-eligible social workers that, among other services, offer prevention services to entire studies bodies, school staff and parents/guardians. This is done through education workshops for teachers and parents, professional development and either school-based or classroom-based prevention programs (Price & Lear, 2008). The ultimate goal is to provide a healthy school culture and environment through universal screenings and school-wide trainings in prevention programs.

Working with health care providers can also offer a way to reach out to adolescents on mental health issues. One program, called The Health Teens intervention, uses a three-step process to ensure adolescents are getting the information they need from health care providers, who they generally trust most for information (Olson, et al, 2008). When adolescents visit the clinic, they first complete a health and behavior risk comprehensive screening using a low-cost personal digital assistant. Clinicians, who are trained in motivational-interviewing techniques, discuss the screening information and ways the teen can improve his or her health. Information is also passed on to the adolescent referring to available services and resources in the community. Through this process, research found that teens were more likely to leave the visit wanting to address obesity-related health behaviors and to create action plans to address specific health behaviors pointed out through the comprehensive screening (Olson, et al, 2008).

Changes in School. Throughout the focus group, and also through the survey responses, there is a sense that schools are the best way to reach and impact adolescents with health information. Most of the adolescents in the focus groups mentioned a desire to add an additional health and/or physical education course. In some ways Columbia has started addressing that need. Columbia Public Schools started to expand their curriculum, instituting an additional health class for 6th graders this year. Next year it will include 7th graders, and the following year it will be available to 8th graders.

Perhaps a more difficult change to make is with the school lunch program. It was brought up in all three of the Columbia adolescent focus groups as an area of concern. While a complete overhaul of the lunch program may not be feasible, it may be beneficial to look at incorporating more local or fresh foods so adolescents feel as though they have more opportunities to be healthy. Other suggestions from focus group

participants included having a school or community garden and also working with home economics or cooking classes in the schools to serve a wider variety of health foods. This also helps teach students to prepare their own healthy foods and meals. In recent years grants were made available for schools to implement school gardens or have farm-to-school programs in an effort to promote healthier eating (Ozer, 2007). This is being done in a variety of communities, although there has not been extensive research about the sustainability of such programs (Ozer, 2007).

Given the amount of school stress adolescents reported feeling in all four focus groups, it may also be pertinent to look at tutoring or mentoring programs. Many adolescents expressed frustration in needing help with classes but not always having the resources or time to understand concepts from their courses. A few focus group participants mentioned having optional homework in some of their classes where they were not penalized for not turning in homework on concepts they felt they understood. More recommendations and best practices may come in future years, as a new *Healthy People 2020* objective focuses on increasing the number of students who feel their homework is meaningful (Healthy People, 2010).

There may also be opportunities to reach students in schools with the Affordable Health Care for America Act. Through this, grants are awarded to schools to establish school-based health centers. This notion originally started in the early 1970s with the hope of improving care for school children (Brodeurk, 1999). With a convenient location, it was thought that students could better access the health services they need, ranging from mental health to sexual health. In the agency focus group, some did mention that having a school health clinics would be helpful, although the logistics would be difficult to make it a reality. With the new health care bill, however, there may be funding opportunities to implement a clinic in one or more schools in Columbia/Boone County that could include a mental health component.

Conclusion

Through a review of literature, focus group summaries and the online survey, it became apparent that mental health is a growing concern among adolescents and often linked to other health behaviors, particularly alcohol and drug use. It is one area in adolescent health where providers and other youth advocates feel there is a service gap in Columbia/Boone County. Identifying and addressing problems early on is important. There also seems to be a particular problem with stress. Working with schools and other key stakeholders to explore ways to provide adolescents opportunities to address emotional problems they may face is essential. The Affordable Health Care for America Act may provide funding opportunities for Columbia/Boone County to do just that.

There is also a need in understanding how to best target and communicate with adolescents. With more teens being digital, reaching them through social media and texting may be more effective. It is also important to tailor the message so that it is something that appeals to them and they are able to relate to it, as found through the focus groups. Using multiple mediums, ranging from Facebook to texting to television, increases the chances of reaching adolescents with the health messages they need to receive. Many adolescents in the focus groups revealed that they do want more information on how to lead healthy lifestyles and prepare for “real life.” It provides a great opportunity to capitalize on that interest and also let them know what resources and services are available to them.

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Appendix A

Agency Focus Group Questions

1. What do you view as the main health issues and concerns for youth in Boone County and/or Columbia?
 - a. Mental health? Drug and alcohol? Reproductive health? Other?
2. What do you think are some of the barriers that youth might face in accessing services in Boone County?
 - a. What changes could be made
3. Where do you feel there are gaps in health services for youth? Is adolescent health a priority? Should it be?
 - a. Community and/or schools
4. What are you seeing in schools that raises concern about adolescent health?
 - a. What policies/programs are currently in place to help teens develop and maintain good health?
 - b. What policies/programs need to be in place?
5. What can health professionals do to reach teens with messages about health? How do we best accomplish this?
6. Do you or others in your field face any challenges on reaching youth? Are there certain health topics that are more difficult to address.
7. What is not helping you do your job?

If there is time

8. Is Columbia a healthy place for youth? Why or Why not?

Appendix B

Adolescent Focus Group Questions

1. What do you consider to be the most important health issues for teens today? This is where we will try to see what teens think are the most important – violence, reproductive health, unintentional injury, substance abuse, mental health, obesity, diet and exercise.
2. Where do you feel there are gaps in health services for youth? Explore what is available in school or in the community.
3. What barriers or challenges do you or your friends face that keep you from being healthy? Peer pressure? Cost of healthy options? Do they have a doctor or provider? Do they have insurance? Is cost a factor?
4. What healthy decisions have you made for yourself and your future and how are you staying committed to them? What were the deciding factors for your personal healthy decisions? Who do you get most of your health information from?
5. What can health professionals do to reach teens with messages about health? What strategies should we be using (like YouTube or texting) or other ideas? Are their health decisions influenced by the media?

If there is time this could be asked

6. Is Columbia a healthy place for youth? Why or Why not? What opportunities make it healthy and what things going on in Columbia might make it unhealthy? What things do adults not understand about being a teenager? What has changed since adults were teens?

Appendix C

School Personnel & Youth Advocates Survey

Thank you for taking the time to answer this short 10 question survey about adolescent health. Please read carefully each question. Some will allow for your top 2 or 3 choices, one question includes ranking your top 5 choices, and some ask you to check all that apply. Your answers will be anonymous.

1. What do you think are some of the barriers that youth might face in accessing health & human services in Boone County? (Choose your top 3)

- Lack of knowledge about services
- Transportation
- Waiting list for services
- Previous experience with health care provider
- Cost
- Privacy/confidentiality issues
- Lack of insight about need
- Other (please specify)

2. Below are 10 risk areas which might affect youth you serve. Rank what you believe to be the top 5 health risks to adolescents with 1 being the greatest health risk. (You will only choose what you believe to be the top 5 adolescent health concerns).

- Tobacco use
- Alcohol & other drug use
- Early & unprotected sex
- Mental health
- Poor nutrition
- Lack of physical activity
- Child abuse/neglect
- Automobile Safety
- Criminal behavior
- Lack of health literacy
- Other

3. Where do you feel there are gaps in health services for the youth you serve? (Choose your top 3)

- Dental health
- Mental health (Depression/Anxiety/etc.)
- Substance abuse
- Reproductive health
- Education and access to healthy eating
- Physical activity programming
- Stress management
- Other (please specify)

4. Who do you think could make an impact on adolescent health? (choose your top 3)

- Health department
- General Practitioner/Family doctor
- School Health classes
- School Nurses

- Community recreation centers
- Community-based or school-sponsored sports
- After school clubs
- Churches
- Non-profit community organizations
- Other (please specify)

5. Where do you believe teens get most of their health information?(Choose your top 2)

- Health Classes
- Peers
- Parents
- Health care provider
- Internet
- Other media (magazines, TV, etc.)
- Other (please specify)

6. What policies/programs are currently in place at your site to help teens develop and maintain good health? (Check all that apply)

- Smoke free environment
- Vending machine policy
- Sugar Sweetened beverage policy
- Daily P.E. Classes
- School lunch policy to serve healthy foods
- Health class to graduate
- Other (please specify)

7. What are the P.E. requirements at schools in your area? (Check all that apply)

- Daily P.E.
- 2-3 days a week P.E.
- 4-5 days a week P.E.
- One semester per year requirement
- Two semester per year requirement
- Other (please specify)

8. In addressing adolescent health should Columbia/Boone County Health Department (or other organizations in the community) be:

- doing more.
- doing less.
- continuing with the same.
- don't know what is being done.
- Other (list specific programs policies, etc)

9. What screenings do schools in your area provide? (Check all that apply)

- Vision screenings
- Dental Screenings
- Hearing Screenings
- BMI's
- Depression or other Mental Health screenings
- I do not know
- Other (please specify)

10. What are the greatest barriers in providing health education/services to the youth you serve (Chose your top 2)

- Time constraints
- Lack of interest or poor health literacy from adolescent
- Lack of interest or poor health literacy from parent
- Schools don't have a comprehensive Health Education program
- Not seen as a priority
- Lack of professional development
- Other (please specify)

Appendix D

Focus Group Summaries

Agency Group

- Mental health was the first issue brought up.
 - Acknowledgement that mental health can be a side effect of other health issues, and vice versa.
 - “Huge need” for psychiatric care, in part because there don’t seem to be enough services for mental health.
- Adolescents are lacking nutrition sense and sleep.
 - Some of the nutrition issues spring from school lunches.
 - Students are choosing to sleep in rather than eat breakfast.
- Both of these health issues (mental health and nutrition/sleep) can prevent success from happening in the classroom.
 - Some adolescents aren’t having their basic needs met. Part of this is because they aren’t getting the support and guidance they need from parents.
- Notion that Columbia’s services and resources haven’t grown with it’s population in the past decade or so. Adolescent health should be seen as a priority but in reality it isn’t.
- Adolescents are growing up too quickly.
 - “I think the ball gets dropped with adolescents because they’re seen as being able to take care of themselves.”
 - “I feel like adolescents want to be adults and adults want them to be adults.”
- There’s a concern about not being able to reach as many teens as they would like – school nurses/counselors are only seeing a handful of students at offices and teachers can only really impact 1-4 kids in a given class.
- There seems to be a lack of education at many levels – parents, schools, doctors and adolescents. Not everyone is recognizing what’s going on or knowing how to help when there is a problem.
 - Kids will get excited about a program or service, but parents won’t follow through.
 - Schools can only do so much - needs to be a community effort.
- They would love to see an accessible health clinic or mental health clinic.
 - It would be great to potentially have a clinic in schools like other communities and cities are able to do, but just having school or parental support would be helpful.

Junior High Group

- Drugs. Sex. Obesity. Drinking. No physical activity. All of these were listed initially, but it didn’t develop into a real discussion.
- Currently learning in health classes isn’t effective or interesting for students.
 - They suggested bringing in outside speakers (particular someone who it’s happened to or has experience) and also having longer class periods. There isn’t enough time to learn and digest all the material in a 25 minute class.
 - Also mentioned some topics aren’t taken seriously, like sexual harassment.
- Students are drinking coffee and energy drinks.
- Homework doesn’t seem relevant/necessary – instead it seems like busy work. It also takes away time to exercise or just hang out with friends
- Pressure, or even no expectations, from parents is causing stress. Kid’s also expressed that their parents need more information. “They’re pretty clueless.”

- Students are starting to understand the connection between stress and health. “Whenever school really pressures me, I don’t eat right, I don’t sleep right.”
- Kids also mentioned that there are barriers and challenges to eating healthy, including a lack of options and costs. They also noted that there is emotional eating – one student confessed eating a tub of icing/frosting when stressed.
- If used correctly, teens thought facebook would be a good way to get health information to them. They thought it would be weird to have a doctor or professional right on their wall, but facebook groups and events would be helpful
 - Also suggested reaching out to them in schools: “Talk to us in class because that’s where we are.”

Centralia High School Group

- Alcohol and chew are big among their peers. They carry it in school or will go out to their cars to chews, and no one stops them or enforces the rules.
- Most of them are friends with a lot of older kids.
 - They’ve thought about the implication that has, particularly with things like alcohol
 - Peer pressure can be an issues – friends are more influential because that’s who they’re spending most of their time with now
- Suggested more PE classes or making it so everyone can and wants to participate in the activities going on in PE
 - More variety in types of classes and activities (dance, new games)
 - More opportunities for bigger kids to play and not feel uncomfortable, or for “cheerleaders who won’t do anything when the class is playing kickball.”
- Some teens don’t necessarily want to grow up faster – they want to be with where their friends are (college) or they’re forced to grow up because of the economy and have to help out around the house.
- Students don’t trust the counselors in school – they talk to the teachers and then the whole school knows. Nothing stays confidential or quiet.
- There’s restricted opportunities to get help because students have other activities and responsibilities.
 - “I hate the whole ‘come before school or after school’ thing because I can’t get there. I’m here now, so why don’t you help me now [in class].”
 - Potential need for tutoring – parents/siblings can’t always help with homework, so just completing assignments can be a struggle
- Students want face-to-face communication and to be talked to like an adult.
 - “It really ticks me off when they talk to you like a child. Even with teachers, there are some where if you just don’t understand something, they’ll talk to you like a baby or like you’re dumb. But you’re supposed to be here for us.”
- On the whole, students don’t feel like they can miss school even when they’re sick because there’s so much work and everything builds off what was taught the previous day
 - One student came to school on vicodin, another just a day or two after having surgery
 - Athletes are an exception to the rule – it’s perceived they get special treatment with homework and also in not having drug/alcohol policies enforced.

High School Group 1

- School foods/lunches make it hard for students to eat healthy.
 - They also said they feel rushed during their lunch hour. They often have to go with what’s close (usually fast food) when they leave school for lunch because there isn’t enough time.

- One kid has herpes – mentioned it would be good to have more information or knowledge about that among their peers.
- Overall agreement among the group that people who are sick should stay home from school. When students and teachers come to school sick, then everyone gets sick.
- Students said it would be helpful to add another health class requirement.
 - For health classes, though, they said they wanted it to focus on how to be healthy, not just what body parts do. They also would like less busy work.
- There's a lack of mental and emotional support.
 - Counselors don't really seem to help students, and you can't always get in to see them when you need them
 - Students feel like their counselors primarily want to talk about graduate requirements/future plans. One student said it feels more like an interrogation than getting help.
 - Students want someone, not necessarily a counselor, to open up to who won't judge them and will keep things confidential – peer counselors?
- There's a lot of pressure (both self-imposed and from parents) to do well in school and keep up with what they think they need to be doing to get into college and succeed there.
- "If you're stressed, you'll eat differently, you'll act differently, you'll feel motivated differently, so it's all affected"
- Students aren't getting enough sleep, primarily because they feel there's too much homework. This goes back to the pressure they're feeling to do well in school.
- Student recognized that they weren't getting enough physical activity. Many agreed that they needed exercise programs through the school or an actual program through a gym or organization, or they won't go. It gets put on the backburner.
 - Columbia offers opportunities, but they don't have the time or money to join or partake in them
 - Many mentioned they like the PE offering at school, but you can't take more than the graduation requirements or you'll miss out on other graduation requirements.

High School Group 2

- STDs and obesity mentioned first, but it didn't develop into a conversation.
- It's hard to be healthy when you're involved with school. "School kind of makes it hard. I've taken PE and it's great, but last year I didn't take it and it's really hard to be in challenging classes and being involved and staying healthy."
- In part because of our society, health isn't a priority.
 - "Everything else seems to come first before our health. At least that's the way I think teenagers think. Unless you're involved in sports where they want or make you stay in shape, health is always put on the back burner."
 - "I think the two things that go into kid's heads are price and taste, and I don't think healthy comes into your mind as much because that's more of a long-term and not a short-term thing."
- School meals are a problem kids have in being healthy.
 - A good portion of students are on free and reduced lunch. "The government gives you \$2.43 a day, and it's really difficult to get your essential nutrients on just \$2.43 a day."
- Students don't feel like individuals in schools, but instead feel like data points in terms of standardized tests.
 - The only time the school seems to promote daily health is during test time, reminding students to get enough sleep and eat a good breakfast.

- They do understand the connection between food/health and school performance.
- Students wanted more flexibility with homework. It's difficult when they have busy work to do when they already understand the concepts. One student said some of her classes have option homework, where if you understand the concept, you don't have to do the homework. They then have time to focus on classes they aren't doing as well in.
- Fast food chains seems to be predatory. They're all around the schools, which makes it hard to avoid.
 - There was a debate about whether to ban them or somehow make it easier for people to get healthy foods.
 - One suggestion was to get actual cooks in the schools, particularly if they were able to have gardens and foods grown by students and local growers. Might be an opportunity to partner with the farmer's market.
- It doesn't seem like schools are focusing on the well-being of students.
 - "It's frustrating to me that high school is supposed to be preparing us for life, but in preparing us for life they leave out the most important thing, which is health. Because if you're not healthy, it's very hard to be successful in work or be as happy. You lose years of your life because they want to pump us in and pump us out. They teach us about presidents and how $x+y=17$, but they don't teach us how to care for ourselves and how to maintain a balance."
- When it comes to communicating with teens on health issues, students said they don't just want the facts. They want people to find ways to connect health messages to what they're going through and what they see in their lives.
 - They want messages to be fun and relevant, something that captures their attention.
 - They did stress that they don't want those messages to be patronizing, otherwise they lose respect for the message itself. They want to be treated like "independent, decision-making individuals" since they are maturing and have buying power (particularly with fast food choices).
 - There was also a suggestion for people to provide more opportunities for teens to practice what they're being taught, such as learning how to cook or grow natural foods.

Key Health Issues/Problems

- Lack of sleep
- School stress – can't even miss school when they're sick because work piles up
 - Stress from the homework. It's both self-imposed and from their parents.
- School food makes it hard to eat healthy
- Lack of time leaves little room for physical activity

Other Observations

- Sex was brought up explicitly in three of the five focus groups but never developed into a conversation
 - One group mentioned getting condoms/alcohol; another group mentioned herpes
- Want class and learning to be more time efficient and effective.
 - Don't like busywork. Want to be helped while they're actually in class and have it be more interactive learning.
- Underlying question of whether adolescents are growing up too fast
 - They're facing a different world and society than in years or decades past, which makes it hard to relate and give them the resources/help/education they need
- Teens want to be treated as individuals

- Not everyone learns the same; don't want to be talked down to because that makes them stop listening
- Teens live in a different time and world.
 - Their parents, and even those who are slightly older, didn't face the same challenges they are facing now. This includes online technology (posting videos from parties, sexting, etc) and education ("my mom never had geometry or pre-calculus, so it's hard to get homework help from her").

Appendix E

Real Teen Resources (Sponsored by the Teen Pregnancy Prevention Coalition and the Health Department)

CRISIS LINE: 1-800-395-2132

ALCOHOL/DRUGS

Ala-Teen/ Ala-non: 443-3059

- Support for teen or families affected by alcohol

Alcoholic's Anonymous (AA): 442-4424 or www.aa.columbia.missouri.org.

- Meeting info and support for those having problems with alcohol.

Crossroads Group: 256-8020

- 12 Step Drug/Alcohol treatment and after-care

Narcotic's Anonymous(NA): 1-800-945-4673

- 24 hour line for help with drugs

Pathways: 449-4770 or 573-442-6410

- both outpatient and residential substance abuse counseling and treatment for teens.
- family therapy and education groups to enhance the treatment for the teen.

YC2-: 443-2556 ext. 1284

- Empowering youth to make healthy choices about drugs and alcohol

ASTHMA

CHILD ABUSE

Abuse & Neglect Hotline: 1-800-392-3738

Rainbow House – 474-6600

- Emergency shelter for children

COUNSELING AND MENTAL HEALTH

Burrall Behavioral Health: 777-8300

Family Counseling Services: 449-2581

- Counseling (Rape, Relationships, etc.) Sliding scale fees

Missouri Psychiatric Center: 884-1255

Pathways- see above

DIABETES

EATING DISORDERS

Adolescent Medicine Clinic - 882-6921

- Melissa Lawson, M.D. University Physicians Medical Building

www.youngwomenshealth.org

DENTAL HEALTH

EDUCATION/TUTORING

Adult Learning Center: 214-3690

- GED preparation, English as a Second Language, Workplace Skills, Basic Life Skills, Volunteer Tutor

Columbia Public School: 214-3400 or www.columbia.k12.mo.us

Centro Latino: 449-9442 - Tutoring for Latino children

C.A.R.E: 874-6300

- Mon.-Thurs, 3-6 pm. for 14-17 year olds. Call to make appt. Also offers summer employment for ages 14-17.

Missouri Option Program at each high school. Call 214-3000 or 214-3100

- For students at least 1 yr. behind graduating class who wants to get high school diploma

Columbia After School Programs

- **Armory: 874-6379**
- **Intersection: 819-0089**
- **CHA Moving Ahead: 875-4306**
- **Columbia Boys and Girls Club: 874-1697**

FOOD OR HOUSING

Loaves and Fishes: 875-0826

- Free evening meals 7 days a week (12 and under must be accompanied by an adult)

Lois Bryant House (Females): 875-7874

- Emergency homeless shelter

Rainbow House – 474-6600

- Emergency shelter for children

Salvation Army- 442-1984

- Emergency housing, clothing and food (must be 18 and over or be accompanied by parent)

Sol House (homeless teens) – 449-0182

St. Francis House (Males): 875-4913

- Emergency homeless shelter

GAY/LESBIAN/BI/TRANS RESOURCES

Columbia PRISM: email: columbiaprism@yahoo.com or web page: <http://columbiaprism.missouri.org>

- Community gay-straight alliance for teens

MU LGBT Resource Center: 884-7740

- Education/info and a supportive space.

The Center Project -907 E. Ash, 449-1188

- Support for area for the LGBTQQA populations in an 8 county area. Meet 3rd Thurs. of every mo.7-9 pm.

- Can help with most emergencies and referrals.
- Youth Enrichment Fund – can help pay some cost of Sports, Arts, and Education fees.

HEALTH

Columbia/Boone County Health Dept: 874-7355

- Free or low cost confidential exams and birth control, pregnancy and STD testing by appointment. Walk-in STD clinic Tuesday 5:00-7:00 p.m.

Family Health Center: 214-2314

- Accessible, Affordable, Exceptional - offering primary care to all people

Planned Parenthood: 443-0427

- Low cost physical exams and medicine, pregnancy testing, birth control, STD treatment, HIV tests and abortion referrals (By Appointment)

STD (ASHA) Hotline and web site: 1-919-361-8488 or www.ashastd.org

HIV/AIDS

Columbia/Boone County Health Dept: 874-7355

- **FREE** HIV Testing. Prevention planning and education for the North Central Missouri Region

Planned Parenthood: 443-0427

- Low Cost HIV Testing

RAIN: 875-8687

- HIV Care and Prevention resource; confidential oral HIV testing; Support for HIV positive persons; Hepatitis C testing and info

LEGAL INFO

Mid Missouri Legal Services: 442-0116

- Legal aid for those low income over 18.
- Assistance and referral for under 18.

MENTORING PROGRAMS

Big Bros./Big Sisters – 874-3677

- Individual, Group and Site Based mentoring for teens 14 and under

Missouri Mentoring Partnership's

Teen Work/Teen Partners Program: 573-256-1896 (Currently a part of Youth Empowerment Zone)

- Teen Work: Free job training and placement.
- Teen Partners: Life skills help and mentoring.

Resource Parents: 815-9955

- Mentoring program for pregnant and parenting teens.

MISCELLANEOUS

Volunteer Action Center: 874-2273

NUTRITIONAL COUNSELING

PREGNANCY/PARENTING INFO AND SUPPORT

Birthright: 442-8844

Catholic Charities: 1-888-626-4245

- Pregnancy and adoption information.

Columbia/Boone Co. Health Dept: 874-7355

- Free or low cost confidential pregnancy testing condoms, morning after pill, case management and referral.

Love Basket: 1-888-LOV-BSKT or 573-424-5323

- Pregnancy and adoption information.

Lutheran Family and Children Services: 815-9955

- Counseling for teens experiencing an unplanned pregnancy.
- Resource Parents: Mentoring program for pregnancy and parenting teens.

Morning After pill: 1-888-NOT-2-LATE

- Emergency contraception for unplanned pregnancy.

My Life Clinic: 874-3561

- Free sonograms, maternity and baby clothing, classes

Parents as Teachers: 214-3955

- Free parenting info/support in your home.

Planned Parenthood: 443-0427- Options Counseling

RAPE, ASSAULT, DATING OR FAMILY VIOLENCE

Rainbow House – 474-6600

- Advocacy and counseling Center for victims of abuse.

Women's Shelter: 875-1369

- Support and emergency housing.

UMC Rape Education office or Women's Center -882-6621- Open to anyone

TOBACCO/SMOKING CESSATION

Missouri Tobacco Quit Line: 1-800-QUIT-NOW or 1-800-784-8669

- Can send Quit Kit material and referral resource.

Tobacco Education- Prevention Resource Ctr. – 442-2591

Websites:

www.advocatesforyouth.org
www.thecoolspot.org
www.abouthealth.com
www.iwannaknow.org
www.kidshealth.org
www.youngwomenshealth.org
www.stayteen.org
www.ashastd.org