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# 2014 Missouri School Health Profiles and Teacher Professional Development

*Kim Kato and Regan Dodd*

Influencing knowledge to establish healthy habits and behaviors in our youth is the cornerstone to the necessity of health education as a skill set. Research has shown that adequate K-12 health education can reduce risk behaviors in adolescents (Freudenberg & Ruglis, 2007). Health teachers desire specific training in particular health education domains and professional development improves teaching knowledge and skills (Summerfield, 2001).

The *School Health Profiles* is a collection of bi-annual surveys measuring school health policies and practices in state and educational systems. The profiles collect data on the status of the school's health education requirements and content; school health coordination; school health policies (HIV/AIDs, tobacco, nutrition, etc.); asthma management policies; physical education and physical activity; and family and community participation in school health programs. State survey sample was from randomly selected secondary schools (grades 6 – 12) within a school district, territory, or tribal government. Health profile data were retrieved from self-administered questionnaires of principals and lead health education teachers (CDC DASH 2012).

In 2014, the *Missouri School Health Profile* response rate was 75% for principals and 76% for lead health education teachers. The profile revealed that 88.4% of Missouri secondary schools reported offering their health education with health education goals, objectives, and expected outcomes, which is a decline from 2008 (94.1%). A downward trend of health topics being taught in the Missouri secondary schools was also reported in the 2014 profile. Health topics such as emotional and mental health, human sexuality, human immunodeficiency virus (HIV) prevention, nutrition and dietary behavior, physical activity and fitness, pregnancy prevention and sexually transmitted disease (STD) prevention exhibited a statistically significant instructional decline from 2008. In fact, 11 of the 15 health topics declined in time of instruction in Missouri secondary schools resulting in less health education information disseminated to the students (see Table 1; MO DESE, 2014).

A downward trend for health education professional development training received and desired by Grades 6-12 lead health education

teachers was also reported in the *Missouri School Health Profiles*. From 2008 to 2014, a significant decline in received training was experienced in health topics such as HIV prevention, human sexuality, nutrition and dietary behaviors, physical activity and fitness, pregnancy prevention, STD prevention and tobacco-use prevention. Additionally, lead health education teachers who would like training also significantly declined in these specified health topics (MO DESE, 2014).

The health concerns that plague our youth are those that come to the forefront in the health education secondary classroom. Unlike other school subject matters, health education is not only instituted to encourage specific advanced knowledge while preparing a student for personal application, it is a moving target of evidence integrated into the complexity of human behavior (Jourdan, 2011). The decline of health education subject content delivered to our Missouri students and educators should be of grave concern. The obesity rate for Missouri high school students is 14.9%, which ranks 8<sup>th</sup> in the nation (Trust of America's Health & Robert Wood Johnson Foundation, 2013). According to Missouri Institute of Health (2013), suicide was the 2<sup>nd</sup> leading cause of death in Missouri's youth (15 – 24 years), which ranks 18<sup>th</sup> in the nation. Underage drinking in Missouri cost taxpayers \$1.3 billion dollars in 2013 (PIRE, 2011).

To be effective, health education should take place before risk behavior participation in an organized, structured curriculum from a trained professional (WHO, 2013). Providing health awareness through a comprehensive health education program for the youth of Missouri is the investment we must be willing to make.

### **Review of the Literature**

Most Health Education curricula are district-wide, and their content is created and influenced by the National Health Education Standards (NHES), Youth Risk Behaviors Surveillance System (YRBSS), the Health Education Curriculum Analysis Tool (HECAT) and any state specific guidelines. Scientific evidence, best practices, state laws and policy (CDC SHPPS, 2012), time constraints due to standardized tests (Wechsler, McKenna, Lee, & Dietz, 2004), and the 15 content areas are also integral parts of health education curricula across the United States (CDC SHPPS, 2012). Over two-thirds of the 15 health content areas recommended for implementation of a successful health education curriculum fall under the three broad areas of Emotional and Mental Health, Physical Health and Sexual Health. These three subtopics also have encompassed a large number of reported health risk behaviors by Missouri middle and high school students (MO HRBS, 2013) and, therefore, will be the focus of this analysis.

**Table 1**  
**Health Topics Taught in Missouri Secondary Schools**

Percentage of schools teaching health topic:	2008	2010	2012	2014
Emotional and mental health	95.2	94.1	94.7	87.8*
Human immunodeficiency virus (HIV) prevention	93.1	93.4	92.7	86.5*
Human sexuality	82.8	84.6	79.8	71.3*
Nutrition and dietary behavior	99.7	99.0	98.3	95.3*
Physical Activity and fitness	100.0	100.0	99.3	96.1*
Pregnancy prevention	83.0	86.6	83.1	76.3*
Sexually transmitted disease (STD) prevention	91.7	91.9	92.2	85.5*
Suicide prevention	80.3	79.2	78.6	78.9
Violence prevention (e.g., bullying, fighting, or dating violence prevention)	92.1	91.4	93.1	90.2

*Note:* \* Statistically significant (MO DESE, 2014)

### Emotional and Mental Health

The lack of any positive change over the past ten years in Missouri high school students who have experienced depression or attempted suicide should suggest the importance of educating Missouri adolescents about their emotional and mental wellness (MO HRBS, 2013). Almost one-third (27.3%) of high school students in Missouri reported feeling sad or hopeless almost every day for two weeks during the past year, and this number was even higher for female adolescents (38.2%). Furthermore, a total of 14.2% of Missouri adolescents reported considering suicide (MO HRBS, 2013). While the number of suicide attempts resulting in injury was very low at 1.9% (MO HRBS, 2013), suicide still remains the second leading cause of death for Missouri Youth (15 – 24 yrs; Missouri Institute of Mental Health, 2015).

Bullying negatively impacts adolescents' mental health (NIH NICHD, 2014; Nixon, 2014). Over half of all Missouri middle school students and one-quarter of Missouri high school students were bullied on school property in the past 12 months (MO HRBS, 2013). While the reported negative consequences for bullying victims may not be shocking, similar

or other negative consequences also have occurred for adolescents who either bullied others or were bystanders when the bullying occurred (NIH, NICHD 2014; Rivers, Poteat, Noret, & Ashurst, 2009). Due to the use of electronic technology and social media, school property is not the only place where bullying takes place. The Internet has expanded opportunities for bullying outside the traditional school environment with over 25.4% of Missouri middle school students reported being victims of cyberbullying (MO HRBS, 2013). Cyberbullying according to Nixon (2014) also has been found to pose a major threat to adolescents' health and well-being with cyberbullying victims reporting increased depressive affect, anxiety, loneliness, suicidal behavior and somatic symptoms (i.e., headaches, stomach aches, poor appetite and sleep disturbances).

A large number of Missouri adolescents have reported struggling with mental health issues such as depression, suicide, and bullying (MO HRBS, 2013). A significant decline between 2008 and 2014 occurred in the percentage of secondary schools that taught health topics related to emotional and mental health as well as the percentage of Missouri teachers who received any professional development about them (MO DESE, 2014). One potential reason for the decrease in classroom instruction is explained by the sensitivity of the issue and the lack of knowledge and understanding by teachers on how to approach complex topics while developing and implementing successful lesson plans. This issue, however, cannot be corrected when the number of lead health educators who received training on emotional and mental health has decreased by 11% between 2008 and 2014 (MO DESE, 2014). With zero improvements occurring in the reported number of Missouri secondary students experiencing depression, suicide, and bullying, it appears the lack of professional development opportunities for teachers should become a greater priority in Missouri school districts.

### **Physical Health**

Regular physical activity and quality dietary habits promote positive physical health in people of all ages. Cultivating healthy physical habits in our youth is of vital importance as it is a time of growth and development. The rise in childhood obesity is related to faulty energy balance from an increased sedentary lifestyle and overconsumption of dietary nutrients.

When a child's weight is over 10% of recommended weight (specific to age, height, and body type), the child is then considered obese. Obesity most commonly develops between five and six years or during the adolescent years of growth (AACAP, 2011). In 2012, nearly 12.7 million (17%), 2 – 19-yr-olds were considered obese in the United States (Ogden, Carroll, Kit, & Flegal, 2014). Evidence also links childhood obesity to adult obesity. Obese 10 to 13-yr-olds have an 80% chance of becoming obese adults (AACAP, 2011).

The financial burden of obesity through accrued medical costs is another consequence that our young people face. Annually, the U.S.'s childhood obesity direct costs are estimated to be 14.3 billion. Obese

individuals also pay 42% more for medical costs as compared to those of healthy weight individuals (CDC DNPAO, 2010; Hammond & Levine, 2010). In 2011, 13.5% of Missouri's youth (ages 10 – 17) were considered obese, which ranked 36<sup>th</sup> in the U.S. and is a clear indicator that Missouri's youth struggle with physical health indicators (Trust of America's Health & Robert Wood Johnson Foundation, 2013).

Key findings in the *Missouri School Health Profile* (2014) physical activity & fitness revealed the percentage of secondary schools that offered intramural sports, or physical activity clubs declined from 58.8% (2008) to 52.2% (2014); and interscholastic sports offerings declined from 90.0% (2012) to 79.7% (2014). Secondary schools where their Physical Education (PE) teachers received professional development in physical education or activity in the past two years also declined from 90.1% (2008) to 77.5% (2014).

The Physical Activity Guidelines for Americans recommends that youth between the ages of 6 and 17 yrs receive 60 min (1 hr) or more of physical activity each day (US DHHS, 2008). Missouri secondary schools that offer physical activity breaks in the classroom, outside of PE class, are 42.6% (MO DESE, 2014). With the decline of physical activity opportunities and instructional emphasis in our schools, the state of Missouri should consider efforts to refocus curriculum and training to include an emphasis on active lifestyles and promote life skills for positive physical health.

Nutrition and dietary intake curricular content in health education are of utmost importance as many of our dietary habits are formed during our childhood years. Health instruction on food and nutrition is recommended in Missouri K-12 classrooms as described in the *Missouri's Learning Standards for Health Education* (MO DESE, 2007).

Based on knowledge gained in the *Missouri School Health Profiles* (2014), there was a significant decline in the percentage of secondary schools teaching nutrition and dietary behaviors from 2008 (99.7%) to 2014 (95.3%). Of Missouri health education teachers, 30% reported receiving professional training in nutrition and dietary behavior in 2014, which is significantly down from 46.9% receiving training in 2008.

Missouri schools who sell foods and beverages of low nutrient quality are decreasing in number. In 2004, 61.8% of Missouri secondary schools sold chocolate candy compared to 30.8% in 2014. Schools selling soda pop has also declined sharply. In 2006, 74.2% of Missouri secondary schools sold soda pop compared to 36.2% in 2014 (MO DESE, 2014). Please see Table 2 for additional food and beverage sales.

**Table 2**  
**Food and Beverages Sold in Missouri Secondary Schools**

Percentage that sold:	2004	2006	2008	2010	2012	2014
Chocolate candy	61.8	50.8	31.3	33.2	38.3	30.8*
Salty snacks (high fat)	68.8	60.9	38.9	38.7	41.4	36.8*
Soda pop	-	74.2	54.9	43.8	46.0	36.2*
Sports drinks	-	76.2	75.6	63.9	65.8	56.0*

Note: \* Statistically significant  
(MO DESE, 2014)

**Table 3**  
**Lead Health Teacher Received Training and Preference for Training**

Health Topic	Received training		Would like training	
	2008	2014	2008	2014
Emotional and mental health	44.5	33.2	66.9	63.6
HIV prevention	35.6	16.8 *	66.2	50.1*
Human sexuality	29.1	13.9*	60.7	49.4*
Nutrition and dietary behavior	46.9	30.0*	71.3	61.4*
Physical activity & fitness	60.4	38.8*	69.0	61.6
Pregnancy prevention	29.1	12.9*	62.3	49.8*
STD prevention	32.5	17.2*	68.9	53.5*
Suicide prevention	33.1	29.4	74.2	65.8*
Violence prevention (bullying, fighting)	66.6	54.9	77.0	69.6

Note. \*Statistically significant  
(MO DESE, 2014)

## Sexual Health

Many adolescents engage in risky sexual behaviors that can result in unintended health outcomes (CDC DASH 2015). According to CDC's Division of Adolescent & School Health (2015), examples of sexual risk behaviors include: ever having sexual intercourse; having had sexual intercourse during the previous three months without the use of a condom; having sex with four or more people during their life; or never having been tested for HIV. In the state of Missouri, over 43% of teens reported having engaged in sexual intercourse at some point in his or her life. While this percentage has lowered by 9% since 2003, almost 1/3 of Missouri high school students (32%) admitted to having sexual intercourse with at least one person during the past three months, and over 16% of Missouri teens did not use any method of birth control at last intercourse. The overall use of condoms by Missouri teens decreased from 67.3% in 2003 to 58.1% in 2013 with an astonishing 42% of Missouri adolescents reporting a lack of condom use during last intercourse (MO HRBS, 2013).

Poor health outcomes from engaging in risky sexual behaviors such as teenage pregnancy and infection from HIV and STDs have been reported by Missouri teens (CDC DSTDP 2014; CDC NCHHSTP, 2015; US DHHS, 2011). In the state of Missouri, the teen pregnancy rate in 2011 was 34.5 per 1,000 teenage girls aged 15-19, which was slightly higher than the national teen pregnancy rate of 31.3 per 1,000 teenage girls (US DHHS, 2011). Besides unintended pregnancies, adolescents also are at risk for infection from STDs and HIV. According to the CDC's Division of STD Prevention, (2014), young people aged 15-24 acquired half of all new STDs cases and one in four sexually active adolescent females have had an STD such as chlamydia or human papillomavirus (HPV). In the state of Missouri, almost 7,000 females aged 15-19 were diagnosed with Chlamydia according to the 2015 Missouri State Health Profile (CDC NCHHSTP, 2015). The transmission of HIV can also occur from unprotected sexual activity and in the state of Missouri, an estimated 482 adults and adolescents were diagnosed with HIV in 2013 (CDC NCHHSTP, 2015).

In reality, many Missouri teens seem to be putting their health at risk by engaging in risky sexual behaviors (MO HRBS, 2013). Even when teens used contraceptives, they reported not using them consistently or effectively according to Scott, Wildsmith, Welti, Schelar and Steward-Strength (2011). A suggested method to combat these issues would be to make sure the topics of human sexuality, Human Immunodeficiency Virus (HIV) prevention, pregnancy prevention and Sexually Transmitted Disease (STD) prevention remain part of the health education curricula in secondary schools. However, the *Missouri School Health Profile* (2015) reported the opposite to have occurred. Between 2008 and 2014, the percentage of Missouri secondary schools who have prepared and implemented lessons on the topics of human sexuality, Human Immunodeficiency Virus (HIV) prevention, pregnancy prevention, and Sexually Transmitted Disease (STD) prevention has significantly declined (11.5 %, 6.6%, 6.7% and 6.2%,

respectively; MO DESE, 2014).

One potential reason for this decrease could be due to the statically significant downward trend in professional development received by Missouri teachers in the content areas of sexual health (Table 3). For example, the percentage of Missouri teachers who received training in HIV prevention in 2014 was 16.8% and that was a statistically significant change from the 35.6% who received training in 2008. The decreased percentage of teachers receiving training in sexual health topics in the state of Missouri could be a factor in why fewer Missouri teachers have reported teaching the sexual health topics and why Missouri adolescents report continued participation in health risk behaviors despite the long-term health consequences (MO HRBS, 2013).

### **Health Education Professional Development**

One criterion noted for the delivery of a successful health education curriculum by the World Health Organization (2013) was having it taught by a trained health professional. Health educators are charged with helping to reduce the negative impact of major health problems such as heart disease, cancer, mental illness, and obesity. In the state of Missouri, secondary health teachers face elevated pressures due to: Missouri's obesity rate (ranked 8<sup>th</sup>; Trust of America's Health & Robert Wood Johnson Foundation, 2013); suicide remains the second leading cause of death for adolescents age 15-24 (Missouri Institute of Mental Health, 2013); and rates of teenage pregnancy remain high (MO HRBS, 2013). Missouri health teachers reported receiving significantly less training than in years past for many of these health issues (MO DESE, 2014).

Missouri health teachers have been asked to do the impossible. Health teachers are charged with educating students in a personal evolving discipline that has 15 content areas where immediate outcomes cannot be measured. With minimal amounts of professional development received, most health teachers struggle with staying current in the science, learning new content, and creating innovative lesson plans. These challenges are even greater for those teachers assigned to teach multiple grades and multiple subjects.

One perplexing finding in the *Missouri School Health Profile* (2014) was the decreased number of teachers who reported an interest in receiving training and professional development in health content areas. These findings failed to report why teachers desired less training. The financial strain on public education in the state of Missouri might suggest that districts are not funding it and teachers would have to pay out of pocket to attend training or would prefer to use professional development funds to attend different pieces of training. Some Missouri health teachers may not want to sign up for professional development training if they have to give up weekends or remain at school after hours. The lack of interest in professional development may also suggest that the health topics are not being taught by teachers whether it be due to time constraints,

uncomfortable nature of health topics or undue pressures from parents on material that is covered.

With the present state of health for youth in the state of Missouri, decreasing health education would not benefit health outcomes and could likely be detrimental by leading to increased health risk behavior participation. However, the health teachers in Missouri reported receiving less professional development on health topics versus years past. So the question remains as to whether the decrease in training received by lead health teachers in the state of Missouri could have contributed to the downward trend of health topics being taught in Missouri schools (see Table 1). The findings from this analysis suggest a need to continue to track professional development and education received by Missouri secondary health teachers in relationship to health programs taught by teachers and the health education received by secondary students in the state of Missouri.

**Table 4**  
**Lead Health Teachers' Training Experiences**

	<b>Receiving training</b>	<b>Would like training</b>
<b>Instructional Strategies</b>	<b>2014</b>	<b>2014</b>
Teaching students with disabilities	49.7	59.4
Teaching students with various cultural backgrounds	39.5	43.6
Teaching students with limited English proficiency	20.3	39.3
Teaching students of different sexual orientations or gender identities	11.2	42.3
Encouraging family or community involvement	35.3	60.5
Using interactive teaching methods	53.0	57.1
Teaching skills for behavior change	42.7	61.0
Classroom management techniques	65.7	59.2
Assessing or evaluating students in health education	27.3	62.5

(MO DESE, 2014)

## Recommendations

The connection between health and education provides the integral link for youth and disease prevention. Encouraging and providing educational tools promoting good health is important for children physically as well as cognitively. "Today, we are faced with a host of health problems that require individual action. . . . Bringing about that action requires education" (Allegrante, Sleet, & McGinnis, 2004, p. 371).

The Joint Committee on National Health Education Standards (2007) advises school districts to provide health education instruction to students a minimum of 40 hrs for Pre-K to grade 2 and 80 hrs for grades 3 to 12 each academic year. The World Health Organization's research review on school health education programs reported three key findings influencing program quality: health education programs that focused on skill development and communicated knowledge and attitudes were more likely to positively impact student's health behaviors; healthy skill development has the most potential when tied to a specific health behavior and/or decision; and participatory experiences and actively involving students in skill development are more effective than passive health education endeavors (WHO, 2003).

The reported declines in professional development opportunities and instructional practices of the Missouri school health educators is concerning. From 2008 to 2014, significant declines in health topics taught in Missouri schools was reported for emotional and mental health, sexual health, nutrition and diet behaviors, and physical activity and fitness. All of these topics and behaviors are specific areas of concern for our Missouri students so the decline in instructional engagement may pose a negative impact on Missouri's state of health. Health education teachers who received training also declined significantly from 2008 to 2014 for topics in sexual health, nutrition and diet behaviors, physical activity and fitness. Without current and effective training, the dissemination of quality education is limited. The suggestion that Missouri health education teachers have not been teaching specific health topics due to a lack of training is concerning. Without specific health education training, many Missouri health education teachers may not have the time to learn the content and develop innovative strategies and formative assessments to accompany health education lessons.

Appropriate tools and time need to be dedicated to properly train our health educators so Missouri students can learn to choose healthy lifestyles, reduce risk-taking behaviors, prevent diseases, and develop life skills. The significant declines in the curricular emphasis of health education in our Missouri schools, as described in the *Missouri School Health Profiles* (2014), is a concern we cannot afford to ignore. Investing in education that can improve health risks of our Missouri youth is a cost-effective approach to ensuring a healthy Missouri.

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