Increasing Awareness of Substance Abuse and Addictions: Does Early Childhood Drug Education Provide Diversion from Using Drugs and/or Alcohol?

Megan Bailey, Shelby Wasson, Brilynn Roberts
Faculty Mentors: Dr. Deborah Judge and Toni Morris, School of Nursing,
Indiana University—Purdue University Columbus

ABSTRACT

According to the National Institute on Drug Abuse, 70 percent of adolescents have experimented with alcohol, while 20 percent have experimented with prescription drugs before their senior year in high school. Alcohol and drug abuse has become a nationwide problem. A small rural community in southern Indiana reports that almost 12 percent of its population uses drugs daily. The authors hypothesize that current school-based alcohol and drug curriculums are not robust enough to divert risky behavior during adolescence. Surveys were administered to residents living in two separate transitional homes for people with addiction. The surveys consisted of questions regarding drug and alcohol abuse related to childhood education. The process was completed using a descriptive study. Participants in the study (n = 17) revealed valuable information confirming their rationales for substance abuse. Overwhelmingly, all participants agreed that drug education needs to be available in early childhood education. As substance abuse escalates, so must our efforts to research and understand the problem. The examination of current adolescent drug and alcohol prevention programs is essential to help promote program evaluation and in identifying potential education needs for our youth.

KEYWORDS: addiction, drug abuse, illicit substance, alcohol, adolescent drug education

INTRODUCTION

Nationally, drug use and related overdoses have steadily increased by at least 6% to 14% each year, according to the Centers for Disease Control and Prevention (CDC) (Rudd, Aleshire, Zibbell, & Gladden, 2016). Alcohol and drug use is an escalating problem and is often associated with a variety of medical conditions, increased emergency department (ED) visits, and poor outcomes. Many substance abuse patients frequent the ED and are admitted for inpatient care. These patients commonly leave against medical advice, thus producing higher healthcare costs (Pecoraro et al., 2012).

The authors hypothesize that drug use and related issues could be reduced with standardized substance abuse education offered throughout childhood and adolescence. While some prevention programs exist, the educational content varies widely and many of the programs fall below the recommended CDC guidelines (Zimlich, 2016). The authors suggest implementing a standardized program, such as the Health Education Curriculum Analysis Tool (HECAT), which can be customized to fit local needs and could provide consistent messaging needed to mitigate risky behavior in childhood and adolescence (Centers for Disease Control and Prevention [CDC], 2017). While a standardized curriculum is a step in the right direction, successful implementation requires community buy-in, school corporation support, and funding.

According to Little, Pokhrel, Sussman, and Rohrbach (2015), factors influencing successful adoption of prevention programs include establishing an accepting attitude toward the program's potential success and securing the necessary funding. Adoption of such programs occurs when community and organizational relationships are directly linked. When prevention programs were implemented, negative health outcomes among adolescents decreased (2015). It is extremely important for one to understand that if the community and organization do not work together, adoption of the prevention program is unlikely.

The program administrator's beliefs and values on implementing childhood drug and alcohol education may play a role in the process of adopting substance abuse programs (Little et al., 2015). There are other factors to consider in adoption of a program including the size of the organization and the fund appropriation. It is thought that the larger the organization, the more external support they may receive for prevention education and that funding plays a major role in whether prevention education is implemented. Public funds are critical to make these programs available to adolescents. When discussing funds, it is important to note that personal opinions of the effectiveness of such programs can often play a role in whether funds are made available (2015).

To integrate prevention programs successfully into the school's curriculum, the program must be appealing to administrators and school staff. One way to accomplish this is to bring awareness to the negative outcomes associated with substance abuse. Increasing educational awareness may have the ability to lower health risks and improve academic outcomes. Current limitations include program funding and geographical cultural beliefs and values (Little et al., 2015). The purpose of this article is threefold: 1) to increase awareness of a spiraling community problem related to substance abuse and addiction, 2) to share findings from a small sample research study related to early education, drug, and alcohol use, and 3) to gain an understanding of the potential effect of early childhood education related to the use of drugs and alcohol.

LITERATURE REVIEW

The authors performed a systematic review of relevant literature to identify studies relating to substance abuse and adolescent drug education. The following databases were used to gather potential research articles: Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE via EBSCOhost, and Google Scholar. Keywords to narrow the search were addiction, drug abuse, illicit substance, alcohol, and adolescent drug education. Inclusion articles were limited to the English language and were published within the last five years. Among the articles reviewed, national education programs were compared to global research to help identify possible solutions.

National Programs

Common themes at the national level include the presence of variations in current curriculum format, the need for standardization of said formats, and the recommendation to include peer support (Bruckner et al., 2014, Freeman, 2014, & Wade-Mdivanian, Anderson-Butcher, and Ruderman, 2016). According to Bruckner et al. (2014), 75% of public schools in the United States offered some sort of program to discourage substance abuse. However, they found substantial variation among grade level standards, as well as differences between content and coverage standards. For example, content areas considered evidenced-based are not present in two-thirds of the state's curriculum guidelines. Consequently, the curricula for these programs in most states falls below recommended guidelines. A harmonized dataset is recommended by researchers to establish relationship between standards, instruction, and use. Bruckner et al. (2014) suggested enforcing the same standards across the board to ensure proper instruction. Although this topic should be researched and studied further, state instructional standards are proposed as a framework to guide substance abuse prevention programs.

Freeman (2014) discussed a successful education program aimed at gaining the attention and trust of youth that may lead to positive outcomes. Characteristics of the program include a standardized education process and providing an educator that is approachable, personable, and has the ability to connect with the students. These attributes may have the ability to expose adolescents to complications and negative outcomes associated with alcohol and drug abuse in a safe environment. Topics included in the education comprise of what alcohol is, how it affects the body, and the neuroscience and side effects of alcohol use on bodily functions, such as the liver. Pictures tend to be an effective learning tool since students may not understand medical terms. Therefore, a standardized education format may be helpful. Each drug needs to be broken down in the same steps: exploring what each drug is, how it works on the body, and the harmful consequences of using the drug. Delivering standardized information in a factual and up-front manner is the most effective way to educate youth and provide needed resources and knowledge to deter adolescents from drug and alcohol use (2014).

Illegal drug use has continued to rise over recent years and is a major concern. The second leading cause of accidental death among youth in the U.S. is substance abuse (Wade-Mdivanian et al., 2016). Prescription painkillers are abused daily by nearly 2,200 youth between the ages of twelve and seventeen. Previous studies have confirmed that nonmedical use of prescription drugs is associated with suicide (Guo et. al, 2016).

Positive youth development programs (PYD) may facilitate decreased rates of dropout and substance abuse among high school students (Wade-Mdivanian et al., 2016). Positive youth development fosters empowerment by instilling a belief that adolescents are in control of life events and outcomes. Youth to Youth International, an example of a PYD, is a community-based alcohol, tobacco, and drug prevention program that has been found to be successful. The goal of this program is to increase peer support systems by increasing self-worth and completeness in the absence of substance abuse. Dynamics inherent to the peer support group allow for individuals to stand together and feel confident in turning down opportunities to experiment with drugs and alcohol, thereby lowering incidence rates (2016).

Global Programs

Analysis of global studies revealed peer influence and modified perceptions as potential key factors to include in standardized education programs. Limitations include short program duration and small sample size (Giannotta, Vigna-Taglianti, Galanti, Scatigna, & Faggiano, 2014, Sanchez et al., 2016 & MacArthur et al., 2015). Giannotta et al. (2014) found that substance abuse among adolescents is modified more effectively when perceived norms are changed. This specific study, known as Unplugged, exposed adolescents to 12 one-hour sessions, and was conducted in seven European countries and proved successful in some respects. Overall, Unplugged was able to reduce cigarette smoking, alcohol consumption, and marijuana use with modified perceptions in the participants. These perceptions included intentions, refusal and resistance skills, risk-related attitudes and behaviors, positive and negative beliefs about consequences, reasons to use, and perceived peer or friend use (2014). Limitations noted were the size of participant groups, fear of repercussion, and refusal to participate. Prior to the Unplugged study, very few studies had investigated these concepts, and most were conducted in the United States.

When the Unplugged study was replicated with a group of Brazilian adolescents, Sanchez et al. (2016) reported no effect on 11- to 12-year-old adolescents, however, the program seemed to stimulate a decrease in marijuana use in older adolescents. These results supported the efficacy of prevention programs in place around the world and could suggest possible changes needed to make the programs more effective in preventing negative effects caused by substance abuse. For example, the Unplugged program is not continuous. The program consists of 12 weekly courses with each course lasting one hour. The study showed no marginal evidence of change, suggesting that more course time is needed.

Educational drug and alcohol programs led by peer-level mentors conducted in a normal setting may allow for better outcomes in terms of abstinence (MacArthur, Harrison, Caldwell, Hickman, & Campbell, 2015). Normal settings may include public places such as the streets, parks, bars, and schools. It is thought that peer-led education can decrease risky behavior and increase the individual's knowledge about consequences of drug and alcohol abuse. An eight-week meta-analysis study performed in the United Kingdom involved students ages eleven to twenty-one and focused on the extent of drug abuse and alcohol consumption. Students were divided into either a peer-led intervention program or a control program. The data suggested that youth in the peer-led education program had lower tobacco use, alcohol use, and substance abuse at the end of the eight weeks. The study revealed that peer-led education about alcohol and substance abuse can be effective in student engagement and educating about harmful consequences of using these substances (2015).

Similarities throughout articles from the national and global arena suggest curriculum standardization is the gold standard for effective adolescent drug education programs. Findings from this literature review support the integration of the CDC's curriculum tool, HECAT, as a benchmark for program redesign to ensure standardization. Health Education Curriculum Analysis Tool is a customizable tool that highlights differences in individual and social contexts to shape values, beliefs, and attitudes (CDC, 2017). According to the CDC, these are essential elements to include in an effective adolescent drug education program.

BACKGROUND

According to the Tobacco Prevention and Cessation Commission Report, people with mental illness or substance use disorders make up 25 percent of the adult population in the United States (2017). On a national level, the CDC reports that drug use and related overdoses have steadily increased each year (Rudd et al., 2016). This

increase appears related to the greater access of illegal substances and inappropriate or lack of connections with treatment facilities. In 2014, more people died of drug overdoses than any other year on record. Overdoses of individual's ages 25-34 years of age revealed a ten percent increase from 2013 to 2014 with the majority of overdoses occurring in the southernmost region of the U.S. (2016). The legalization of marijuana for both recreational and medical use has significantly changed perceptions about the accessibility and acceptability of the drug. Additionally, Narcan administration is now a first line intervention for overdoses in both public and hospital settings. These recent changes warrant the need for improved drug and treatment education.

The current state of the opioid epidemic in Indiana and across the U.S. is affecting more than just the abusers themselves: the greater population is at risk (Rudowitz, 2017). One in five Americans receive healthcare services through Medicaid. The recent debate concerning Medicaid expansion puts many substance abusers at risk for losing their healthcare coverage, such as mental health and addiction services, gained under the Affordable Care Act (2017). Medicaid plays a vital role in addressing this epidemic, specifically in southern Indiana.

The population of a small rural community in southern Indiana is a mere 4,200 residents with approximately four to five hundred people, or 10 percent to 12 percent of the population, reporting daily drug use (Kenning, 2015). In July of 2015, 142 confirmed cases of human immunodeficiency virus (HIV) were identified in the community. This particular community implemented a needle exchange program in response to these confirmed cases (2015). Still, opioid addictions continue to grow rapidly. The Indiana State Department of Health (ISDH) released a report showing from 2010 to 2015 drug overdose deaths jumped from 283 to 529 with 2,322 total opioid related deaths (2017). Success rates show those who avoid smoking cigarettes are less likely to engage in illicit drug use and are less likely to experience premature death (Tobacco Prevention and Cessation Commission, 2017).

The trend is clear. Substance abuse among adolescents is on the rise and interventions are needed to stem that growth. The purpose of this study was to increase awareness of a community problem related to substance abuse and addiction and to gain an understanding of the potential effect of early childhood education related to the use of drugs and alcohol.

PURPOSE

The purpose of this article is threefold: to increase awareness of a spiraling community problem related to substance abuse and addiction, to share findings from a small sample research study related to early education, drug, and alcohol use, and to gain an understanding of the potential effect of early childhood education related to the use of drugs and alcohol. The authors hypothesize drug use and related issues could be reduced with standardized substance abuse education offered throughout childhood and adolescence. The following question was developed to test this hypothesis: in childhood and adolescence, would a standardized alcohol and drug education program, in comparison to the current curriculum, alter the participant's decisions to use alcohol and/or drugs?

METHODS

This study used a descriptive methods approach combining quantitative and qualitative data to examine the correlation between drug and alcohol use and early childhood education. A convenience sample of adults (N = 17) was recruited from two transitional homes within one community. One home was designated for females and the other for males; both homes provided full time living quarters and a program focused on assisting those with addictions to transition back into the community after recovery. Eligibility for participation in the study was determined by the following criteria: (a) male and female adults over the age of 18 who were currently living in transitional homes for men/women with addictions, (b) had a history of alcohol and/or illegal drug use, and (c) possessed the ability to read and write in the English language.

Thoughts and beliefs regarding the quality of adolescent drug education received by the sample population were elicited via an informational survey created by the novice researchers (see Appendix). The survey was administered to all willing participants and consisted of questions regarding drug/alcohol use and early childhood education. Upon completion of the anonymous survey, residents placed them in a sealed envelope. The study was submitted to the University Internal Review Board (IRB) and received exempt status. Permission to conduct the study was also granted by the Board of Directors at both transitional homes utilized in the study.

RESULTS

Descriptive statistics of the study include participant gender and age ranges: males (N=10) and females (N=7) between the ages of 18-20 (N=1), 21-26 (N=4), and 33+ (N=12) (Figure 1). When asked how many times the participants have used alcohol in excess in their lifetime, the results were overwhelming as 15 participants reported greater than 50 times while two answered 10-20 times (Figure 2).

The next question followed a similar theme, asking how many times the participants used illegal drugs. Again, the results were staggering; all participants (N=17) revealed greater than 50 times.

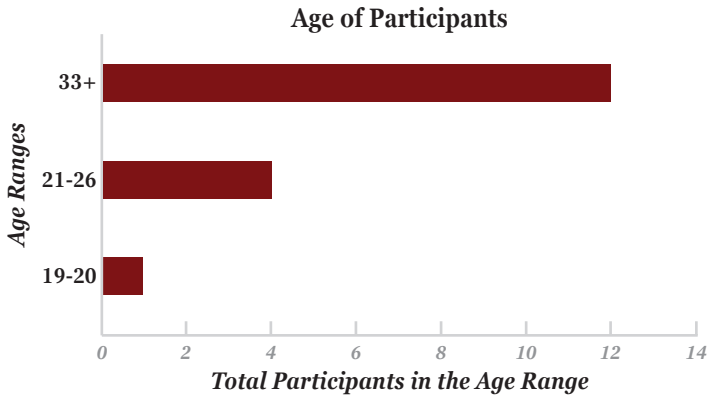

Figure 1.

Age of participants. *This figure illustrates the age range of participants.*

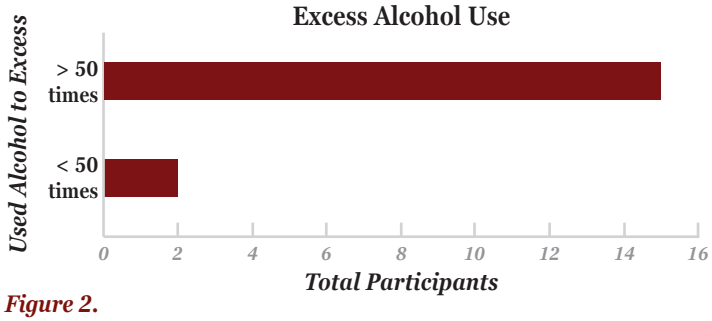

Figure 2.

Excess alcohol use. *This figure illustrates how many times the participant has used alcohol in excess.*

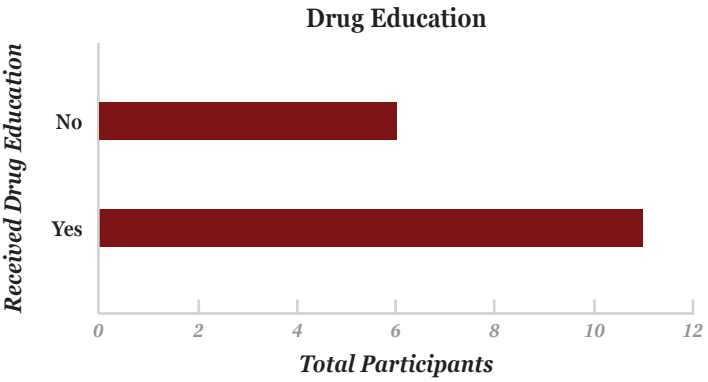

Figure 3.

Drug education. *This figure illustrates how many participants received drug education from schools, communities, and/or family during adolescence.*

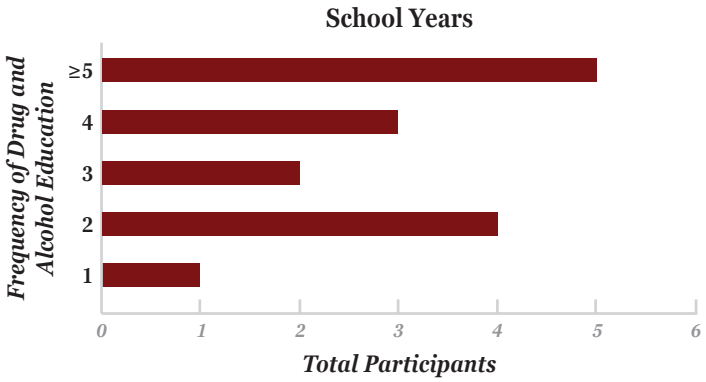

Figure 4.

School years. *This figure illustrates how many times participants received drug education throughout their school years.*

When asked if the participants have ever been diagnosed with a disease such as HIV, Hepatitis C, or Endocarditis, five participants responded they had been diagnosed with Hepatitis C.

The next five questions relate to drug and alcohol education. Questions included, "throughout your adolescence, did you receive drug education from schools, communities, and/or family resources?" Six participants answered "No," while eleven responded "Yes" (Figure 3).

"Throughout your school years, how many times did you receive drug and alcohol education?" The responses varied from one (N=1), two (N=4), three (N=2), four (N=3), and greater than five (N=5) (Figure 4). The sample mean is 3.5 times with a range of four. The median is four times, and the mode is greater than five times.

When asked "Do you believe there should be more drug education for school age students," overwhelmingly all participants responded "Yes" (N=17). When asked "Do you believe that if YOU had received more education about drug and alcohol side effects, you would have been less likely to use?", the question resulted in split answers where eight participants responded "yes" and nine answered "no."

The final question asked the participants to list two reasons as to "why you think you use or did use drugs/alcohol". A wide variety of responses included: "group of friends," "to cover up my feelings," "messed up home life," "step-parent introduced me to weed and I saw him using meth," "for attention," "to be in the 'in' crowd," "a need for something more," "bad childhood," "social acceptance," "low self-esteem," "to fit in," "I am a believer that I was born an addict," "to escape reality," "resolve my problems or at least numb my pain," "cope with loss," "stress," "being around it," "not being around my father," "brother committed suicide," or "family problems" (Table 1).

Table 1.

"Why you think you use or used to use drugs/alcohol:"

Type of Response	Actual Response
Social*	"group of friends," "for attention," "to be in the 'in' crowd," "social acceptance," "to fit in," "being around it"
Family*	"messed up home life," "stepparent introduced me to weed and I saw him using meth", "bad childhood," "being around it," "not being around my father," "brother committed suicide," "family problems"
Emotional	"to cover up my feelings," "a need for something more," "low self-esteem," "to escape reality," "resolve my problems or at least numb my pain," "cope with loss," "stress," "I am a believer that I was born an addict"

Notes: N = 17 (total number of adults)

Participants were asked to list two open-ended responses; however, some participants submitted more than one response.

**One response, "being around it", is classified as being both Social and Family.*

DISCUSSION

The study revealed that participants strongly believed an increase in preventive drug education could lead to a decrease in experimentation with illegal substances. However, uncontrollable precursors, such as childhood family problems and negative peer influences, have the potential to interfere with the power of education. Recommendations from a recent study that implemented prevention programs in high drug abuse areas suggest the education should be aimed at early adolescents and should focus on improving perceived behavioral control (Huang et al., 2015). Programs, such as Youth to Youth International, include a strong focus on peer-to-peer support systems, thus decreasing the likelihood of risky behaviors in adolescents (Wade-Mdivanian et al., 2016). As this study suggests, peer-to-peer support could be a crucial element in ensuring diversion from drugs and/or alcohol.

There were several limitations to this study. The study was conducted in a small rural community located in southern Indiana thereby limiting the ability to generalize findings to other geographical areas. The transitional homes where the study was conducted were limited in space and number of residents. The novice researchers conducting the study did not use a valid survey, therefore survey construction was not always conducive for the participants to answer the questions to their fullest potential. When critically examining survey data, this deficit was evident in question six. Finally, the term drink was not quantified, as participants' perceptions varied with respect to quality and quantity.

AUTHOR INFORMATION

All correspondence should be sent to the first author:
linnea2014@hotmail.com

REFERENCES

Bruckner, T., Domina, T., Hwang, J., Gerlinger, J., Carpenter, C., & Wakefield, S. (2014). State-level education standards for substance use prevention programs in schools: A systematic content analysis. *Journal of Adolescent Health*, 54(4), 467–473. doi:10.1016/j.jadohealth.2013.07.020.

Centers for Disease Control and Prevention. (2017). Adolescent and school health: Health education curriculum analysis tool (HECAT). Retrieved from https://www.cdc.gov/healthyyouth/hecat

Freeman, J. (2014). Motivational curriculum development for youth at risk: Health care provider alcohol and drug guided education in inner city public high schools. *Journal of Alcohol and Drug Education*, 58(1), 7–16.

Giannotta, F., Vigna-Taglianti, F., Galanti, M., Scatigna, M., & Faggiano, F. (2014). Short-term mediating factors of a school-based intervention to prevent youth substance use in Europe. *Journal of Adolescent Health*, 54(5), 565–573. doi:org/10.1016/j.jadohealth.2013.10.009

Grabus, S. (2016). Sensation seeking promotes initiation, impulsivity promotes escalation of substance use. *Advancing Addiction Science: National Institute on Drug Abuse*. Retrieved from https://www.drugabuse.gov/news-events/nida-notes/2016/05/sensation-seeking-promotes-initiation-impulsivity-promotes-escalation-substance-use

Guo, L., Xu, Y., Deng, J., Huang, J., Huang, G., Gao, X., ... Lu, C. (2016). Association between nonmedical use of prescription drugs and suicidal behavior among adolescents, *JAMA Pediatrics*, 170(10), 971–978. doi:10.1001/jamapediatrics.2016.1802

Huang, Y., Ho, C., Lee, S., Gee, M., Lan, S., & Hsieh, Y. (2015). Intent to abuse addictive substances in regions with serious drug abuse among early adolescents. *Journal of Substance Use,* 20(6), 417–423. doi:10.3109/14659891.2014.942399

Indiana State Department of Health. (2017). Opioid overdose deaths [Excel spreadsheet]. Retrieved from http://www.in.gov/isdh/files/Table%203%20Drug%20overdose% 20deaths% 20involving%20any%20opioid%20by%20year%202010-2015.xlsx

Kenning, C. (2015). In HIV-riddled town, addiction 'the lifestyle'. *Courier Journal*. Retrieved from http://www.courier-journal.com/story/news/local/2015/04/27/hiv-riddled-town addiction-lifestyle/26482399/

Little, M., Pokhrel, P., Sussman, S., & Rohrbach, L. (2015). The process of adoption of evidence-based tobacco use prevention programs in California schools. *Prevention Science: The Official Journal of the Society for Prevention Research*, 16(1), 80–89. doi:.org/10.1007/s11121-013-0457-8

MacArthur, G., Harrison, S., Caldwell, D., Hickman, M., & Campbell, R. (2015). Peer ledinterventions to prevent tobacco, alcohol and/or drugs use among young people aged 11-21 years' a systematic review and meta- analysis. *Society for the Study of Addiction*, 111, 391–407. doi:10.1111/add.13224

National Institute on Drug Abuse. (2014). Principles of adolescents substance use disorder treatment: A research based guide. Retrieved from https://www.drugabuse.gov/publications/principles-adolescent-substance-use-disorder-treatment-research-based-guide/introduction

Pecoraro, A., Horton, T., Ewen, E., Becher, J., Wright, P. A., Silverman, B., ...Woody, G. E. (2012). Early data from Project Engage: A program to identify and transition medically hospitalized patients into addictions treatment. *Addiction Science & Clinical Practice*, 720. doi:10.1186/1940-0640-7-20

Rudd, R., Aleshire, N., Zibbell, J., & Gladden, M. (2016). Increases in drug and opioid overdose deaths-United States, 2000–2014. *Centers for Disease Control and Prevention*, 64(50) 1378–1382. Retrieved from https://www.cdc.gov/mmwr/preview/mmwrhtml/ mm6450a3.htm

Rudowitz, R. (2017). Medicaid: What we learned from the recent debate and what to watch for in September 2017. Kaiser Family Foundation. Retrieved from https://www.kff.org/medicaid/issue-brief/medicaid-what-we-learned-from-the-recent-debate-and-what-to-watch-for-in-september-2017/

Sanchez, Z., Sanudo, A., Andreoni, S., Schneider, D., Pereira, A., & Faggiano, F. (2016). Efficacy evaluation of the school program Unplugged for drug use prevention among Brazilian adolescents. *BMC Public Health*, 16(1206), 1–9. doi:10.1186/s12889-016-3877-

Tobacco Prevention and Cessation Commission. (2017). Tobacco, substance use, and behavioral health disorders. Retrieved from https://www.in.gov/isdh/tpc/files/Substance%20Use%20and%20BH%20Disorders_04%2004%202017.pdf

Wade-Mdivanian, R., Anderson-Butcher, D., Newman, T., & Ruderman, D. (2016). Exploring the long-term impact of a positive youth developmental-based alcohol, tobacco and other drug prevention program. *Journal of Alcohol and Drug Education*, 60(3), 67–90.

Zimlich, R. (2016). How to fill gaps in sexual health education. Contemporary OB/GYN, 61(5), 35–37.

APPENDIX

Survey

Please complete the survey questions below in their entirety. Remember, this survey is voluntary and you may choose to leave the study at any time.

1. What age group do you fall into?
   - 18-20
   - 21-26
   - 27-32
   - 33+
2. What sex do you classify yourself as?
   - Male
   - Female
   - Other
3. How many times have you used alcohol to excess in your lifetime?
   - 1-10 times
   - 10-20 times
   - 20-40 times
   - 50 times
   - more than 50 times
4. How many times have you used illegal drugs?
   - 1-10 times
   - 10-20 times
   - 20-40 times
   - 50 times
   - more than 50 times
5. Have you been diagnosed with a disease such as HIV, Hepatitis C, or Endocarditis?
   - Yes
   - No
6. If yes, do you mind to tell us which?
   _____
7. Throughout your adolescence, did you receive drug education from schools/communities/family resources?
   - Yes
   - No
8. Throughout school years, how many times did you receive drug and alcohol education?
   - 1 time
   - 2 times
   - 3 times
   - 4 times
   - 5 or more times
9. Do you believe there should be more education for school age kids?
   - Yes
   - No
10. Do you believe that if YOU had received more education about drug and alcohol side effects, you would have been less likely to use?
    - Yes
    - No
11. Please list two reasons as to why you think you use or did use drugs/alcohol?
    1. _____
    2. _____