

Master of Public Health
Integrative Learning Experience Report

SUBSTANCE USE PREVENTION IN MANHATTAN, KANSAS

by

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submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

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Summary

The Manhattan Area Risk Prevention Coalition (MARPC) is funded by a Drug Free Communities federal grant to prevent adolescents from using substances such as marijuana, prescription pills, tobacco, and alcohol. The primary focus of this project was substance use prevention in Manhattan, Kansas. The objectives of this applied practice experience were to become a contributing member of MARPC, to enhance the goals and vision of the group, to learn about risk prevention and research current scientific literature, to analyze the Kansas Communities That Care (KCTC) survey data, and to develop a sustainable film festival to raise awareness about the risks involved in youth substance use. The primary goals were to make sure that the film festival encouraged filmmakers to use reputable sources to support any quantifiable assertions and that all MARPC members had the opportunity to provide input and direction in the planning of the competition.

Subject Keywords: youth substance use, MARPC, vaping, marijuana, alcohol, risk prevention

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Chapter 1 - Literature Review

The Federal Drug Administration (FDA) recently reprimanded a number of electronic cigarette companies for advertising their products on social media without cautioning that their products contain nicotine (1). It is against the law to advertise products containing nicotine if it is not indicated that the products contain nicotine, an addicting substance. The Centers for Disease Control and Prevention (CDC) describes e-cigarettes as electronic devices that produce aerosols from heating liquids. The act of vaping is inhaling the aerosols that these devices produce. The aerosol from e-cigarettes can include nicotine, fine particles, food flavorings, and heavy metals. Aerosol content can vary by the product. Associated harms connected to vaping include stunted neurocognitive development in adolescents, nicotine addiction, and bronchiolitis obliterans otherwise known as “popcorn lung”. The CDC notes that more studies are necessary for a more informed understanding of the lasting consequences of using electronic cigarettes (2). The lack of sufficient data combined with disingenuous advertising can create uncertainty which makes public health education campaigns about vaping quite challenging.

A study by Pepper et al. shed light on how adults view uncertainty in regard to vaping. Researchers found that subjects viewed vaping as less risky when given current scientific conclusions about vaping risks in conjunction with statements noting the constraints on vaping risk conclusions formed by current scientific research (3). Subjects only given current scientific conclusions about vaping risks did not associate the activity with less risk afterwards. This study also examined the intention of subjects to vape in the future after being given the above types of statements. The intention to vape in both groups of subjects was not affected by the experiment. The researchers noted that there were several reasons as to why this occurred. A change in behavior likely requires more than one instance of exposure to information and the presence of

the more prevalent and known harms related to smoking cigarettes can make the known harms of vaping appear to be small and inconsequential (2). The study revealed that public health officials should carefully consider the messages they construct for public consumption. Messages that are not carefully constructed may have unintended outcomes. In a study of social media marketing, Tatiana et al. took a sample of a million tweets related to vaping and then examined which of those tweets also included healthy food terms such as “organic” and “vitamin”. These researchers found a small but notable number of 1,205 tweets that associated vaping with healthy food terms (4). Of these 1,205 tweets, 54 percent were composed by twitter users that were clearly identified as marketers. The researchers were able to confirm the existence of vaping companies working to associate their products with positive health outcomes. It was also determined that more research is necessary to determine the extent to which vaping companies work to accomplish this goal and then use this research to possibly determine if regulations should be put into place to prevent marketers from doing this in the future.

Proponents of e-cigarettes argue that vaping is an effective way of helping current smokers quit. A number of e-cigarette users vape with the intention of slowly lowering the amount of nicotine they are compelled to consume. Dawkins et al. discussed whether e-cigarette users using lower nicotine concentrations readjusted their smoking habits in order to ingest the same amounts of nicotine ingested as when they used higher nicotine concentrations (5). This study examined whether e-cigarettes were a viable option for helping smokers curb nicotine addiction. It found that vaping to curb nicotine consumption is not a viable option. While users would lower the nicotine concentration in the e-liquid, they would readjust their habits by vaping more in terms of frequency and amount of inhaled aerosol. This coincided with a greater exposure to formaldehyde. The study was limited in that participants were aware that the

nicotine e-liquid concentrations were lowered. This limitation does, however, accurately reflect real world circumstances where users would be fully aware that lower nicotine concentrations were in the e-liquids being used (5).

Marijuana is another substance that requires a measured approach when running public health education campaigns. According to a 2017 *National Academy of Science* review, conclusive evidence regarding the harms and benefits of marijuana substance use is mostly not available due to a number of factors including the fact that cannabis is a Class 1 substance and requires special permission from the United States government in order to be utilized for studies. The review noted that conclusive evidence exists for harms and benefits, though the ultimate conclusion was that the scientific community will need to refine its methodology while enhancing and increasing research efforts (6). A study that aims to improve the situation regarding cannabis research is known as the Adolescent Brain Cognitive Development (ABCD) study. This study measures the long-term and short-term effects of a wide variety of substances including marijuana, alcohol, inhalants, nicotine, and prescription tranquilizers (7). It is a nationwide longitudinal study that is following a group of approximately ten thousand individuals from the ages of nine and ten for ten years and aims to investigate the determinants of substance use outcomes (7). This study hopes to establish a clearer picture of the risks involved with adolescent substance use regarding the wide variety of substances it is examining.

There are a number of harms associated with cannabis use. Per a systematic review article by Volkow et al., cannabis use is associated with addiction, altered brain development, poor education outcomes, cognitive impairment, diminished life satisfaction, and increased risk of chronic psychosis disorder in persons with a predisposition to such disorders (8). A recent study by Min and Min states that marijuana use is also associated with sensitization to specific

allergens, including molds, dust mites, plants, and cat dander (9). There is evidence of benefits associated with the use of cannabis, including improving chronic pain symptoms in adults, reducing chemotherapy-induced nausea, and reducing the severity of multiple sclerosis spasticity symptoms (5).

Alcohol is a substance that produces negative health outcomes. According to the CDC, short term use in excess quantities is strongly associated with alcohol poisoning and bodily harm caused by inebriation. Excess quantities are defined as binge drinking, heavy drinking, pregnant drinking, and drinking under the age of 21 (10). A drink is any beverage with 0.6 ounces of pure alcohol. Binge drinking is defined as 4 or more drinks for women and 5 or more drinks for men in a singular drinking session (10). Heavy drinking is when women consume 8 or more drinks and when men consume 15 or more drinks in a single week (10). Long-term use in excess quantities is strongly associated with high blood pressure, heart disease, stroke, liver disease, cancer, reduced neurocognitive functioning, mental health problems, and dependence (10). A systematic review of longitudinal studies since 2008, on the subject of alcohol marketing and youth alcohol consumption, determined that the more frequently adolescents are shown alcohol advertising the greater the likelihood that they will consume alcoholic beverages. Jernigan et al. examined the National Heart, Lung and Blood Institute's Quality Assessment Tool for Observation Cohort and Cross-Sectional Studies and of the twelve studies that were examined, all twelve supported the conclusion of the systematic review. Studies were excluded if the content included was not directly from alcohol company marketers. Two public health professionals rated the studies and inter-rater reliability was at a 0.845 and considered reliable (11).

The objectives of this applied practice experience were to become a contributing member of MARPC, to enhance the goals and vision of the group, to learn about risk prevention, to analyze the Kansas Communities That Care (KCTC) data, and to develop an effective and sustainable program to raise awareness about the risks involved in youth substance abuse. The KCTC survey is a yearly survey aimed at learning about adolescent usage rates and perceptions surrounding substances and community factors most associated with health risks (12). The KCTC survey reports itself to be a valid and reliable survey. The survey was designed by scientists from the University of Washington and has been statistically proven to be valid in terms of the appropriateness of its questions. The reliability of the survey has been proven over the years by comparing similar Kansas surveys and trends seen in similar national surveys (12). After discussing with MARPC members, it was decided that a film festival highlighting common misconceptions and falsehoods surrounding risks involved with the use of alcohol, marijuana, and e-cigarette products should be undertaken. The literature reviewed helped guide the decision making process for how the film festival would be designed and implemented. It was helpful for MARPC members to be made aware of the harms and benefits of the three types of substances, current marketing practices designed to spread misinformation about the substances and those practices' effects on substance use, and how the public responds to uncertainty in public health education campaigns. This helped members decide that an advertisement campaign aiming to dispel misconceptions was a reasonable end goal. The film festival was entitled "Fighting Misconceptions" in an effort to have local adolescents make Public Service Announcements that relied upon solid scientific evidence to prove common misconceptions false in a relatable and genuine way to their peers.

Chapter 2 - Learning Objectives and Project Description

Learning Objectives

- 1) Gain knowledge in the area of risk prevention, specifically substance use in youth.
- 2) Learn, research and apply best practices with risk prevention.
- 3) Enhance awareness in the community regarding youth substance use and abuse, mental health issues and underage drinking/risky drinking.
- 4) Reduce numbers of students engaging in risky behaviors and reduce the number of students who perceive marijuana use as "safe".
- 5) Develop a sustainable program to raise awareness and decrease risky behaviors.

I was a member of MARPC for my applied practice experience. The mission of MARPC is “to reduce risky behaviors through prevention education, community collaboration and other Drug-Free Community or similarly evidence-based strategies”. MARPC intends to serve as a central focal point for agencies in the area of Manhattan, Kansas working to educate in prevention of alcohol, tobacco, other drug use and other risky behaviors by underage youth and to educate their parents/guardians and the community at large on the prevalence, symptoms and dangers of risky behaviors. MARPC has done a “sticker shock” campaign in the past aimed to raise awareness about the cost of not adhering to underage drinking laws. MARPC is funded by a Drug-Free Community federal grant and its principle location is the UFM Community Learning Center building adjacent to the Kansas State University main campus in Manhattan, Kansas. This location is defined as a creative educational program sponsored by Kansas State University. A number of local organizations provide credit and non-credit classes for Kansas State University students and Manhattan, Kansas residents in association with the UFM Community Learning

Center. My preceptor was Julie Gibbs, MPH. She is the Director of Health Promotion at Kansas State Lafene Health Center. She received her Master's in Public Health with a focus in Nutrition and Kinesiology from Kansas State University in 2006. She is the current acting President of MARPC and attends all monthly meetings. She is also a certified personal trainer.

This applied practice experience began in October 2018. After communicating with Scott Morrill and Julie Gibbs via e-mail, I attended a MARPC meeting and introduced myself to the group. There I was introduced to Scott's idea of conducting a film festival and the use of KCTC results to help guide the group in what substances should be targeted and used as topics for the film festival. The ultimate goal of the film festival was to have adolescents produce quality public service announcements that MARPC could air via Cox Communications donated advertisement space. MARPC wanted to learn what substances were being used in the Manhattan, KS area and the attitudes of local adolescents surrounding those substances. I examined the qualitative KCTC survey data and summarized my findings via e-mail and in-person at the December 2018 MARPC meeting.

The next step involved a meeting in December for MARPC members in the film festival planning committee. At this meeting, MARPC members designed questions for a focus group to be conducted by Scott and Melissa Morrill in early January. This focus group was designed to answer specific questions that the KCTC survey data did not cover and that MARPC members wanted answered. I only provided my KCTC survey analysis to aide MARPC members in the planning of this activity and I was not involved in the planning or implementation of this activity. The focus group was held by Scott and Melissa Morrill in early January, and Scott reported attendees' answers to the film festival planning committee during another meeting held two weeks later. During this meeting, the MARPC Film Festival planning committee decided

upon the topic and rules for the film festival. Participants were instructed to use reputable sources. The theme of the festival would be “Fighting Misconceptions”, and video submissions would be between 30 and 180 seconds in length.

I designed a website for the festival, including a submission guideline page, a rules page, and pages dedicated to sources and common misconceptions about the topic substance types to make it easier for filmmakers. Film-makers were not required to use the given misconceptions and sources. The rationale for this was that it would lessen the workload for the younger filmmakers and place the majority of their work towards producing PSA’s and not researching. I included sources from non-for-profit and government organizations that were designed to be easily understood by adolescents. I also included recent scientific studies from peer reviewed journals to show new findings and indicate to filmmakers that research is dynamic and ongoing. I presented the website at a meeting with planning committee and listened to any concerns or suggestions that were brought up. The committee decided some minor changes and next part of the project was outlined. I was assigned to find donations for prizes as a way to entice local adolescents to participate in the film festival.

In March and April of 2019, I wrote a donation letter to give to local businesses. Julie Gibbs helped me edit this letter. I proceeded to either hand the letter in-person or via e-mail to any organization that I thought might be able to donate. The letter was given to MARPC members with the intention of having them also search out for potential donors. I was able to find donations from a number of local businesses. I waited until the end of May and then officially ended the donation search. At this point in time, a flyer was made to advertise to potential film festival participants. A due date for submissions was set to July 30th, and I contacted local youth organizations about the film festival by telephone and e-mail. I contacted

the local middle and high schools, the Boy Scouts and Girl Scouts, non-denominational and denominational local churches with contact information on their websites, and the Boys and Girls Club.

Chapter 3 - Results

The KCTC survey data provided a quantitative set of information of which I qualitatively analyzed to inform the beginning stages of the film festival decision-making process (Table 1). This survey allowed us to examine Riley County results and compare those results with the rest of the counties in the state of Kansas. For the years 2016 to 2019, an average of 6.0825 percent of Riley County respondents answered that they had used marijuana during the past 30 days compared to the average of 6.55 percent for the statewide response (12). Another question asked, “how wrong would most adults in your neighborhood think it is for kids your age to use marijuana?”. Nine percent (9.47%) of respondents said that adults would likely believe that marijuana use was not wrong at all or only a little wrong. Seventeen percent (17.21%) of respondents believed it was wrong or only a little wrong for someone their age to smoke marijuana. Thirty percent (34.85%) of respondents believed that there was some to a very good chance that their peers would believe they were cool if they smoked marijuana. Eleven percent plan to smoke marijuana as adults (12). The question “my family has clear rules about alcohol and drug use” found that 14.07 percent of Riley County respondents have families that don’t have well defined rules about alcohol and drug use (12). There was an increase of 5.11 percent in respondents that said they had tried vaping between 2018 and 2019. Ten percent (10.20%) of Riley County respondents saw no risk with using electronic cigarettes (12).

The Riley County answers to alcohol consumption were similar to the statewide answers in that 59.27 percent of Riley county and 62.83 percent of statewide respondents thought that it was very wrong to drink alcohol regularly. Sixty-five percent (65.35%) of Riley County respondents believe that they would not be caught by police if they drank alcohol (12). Thirty-four percent (34.45%) of Riley County respondents believed that there was little to no chance

that a commitment to staying drug free would make them look cool to their peers. Ten percent (10.50%) of Riley County respondents believed that there was no risk involved with taking one or two drinks of an alcoholic beverage nearly every day.

Table 3.1 KCTC Notable Results

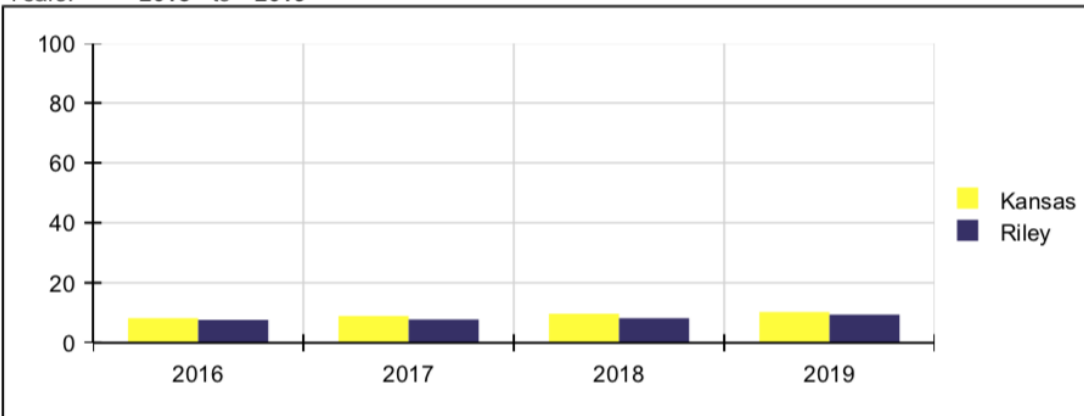
Riley County

Indicator: **What are the chances you would be seen as cool if you: smoked marijuana?**

Response: **SOME CHANCE**

Grade: **0**

Years: **2015 to 2019**



Year	Kansas	Riley
2016	8.22	7.63
2017	8.94	7.78
2018	9.69	8.20
2019	10.27	9.39

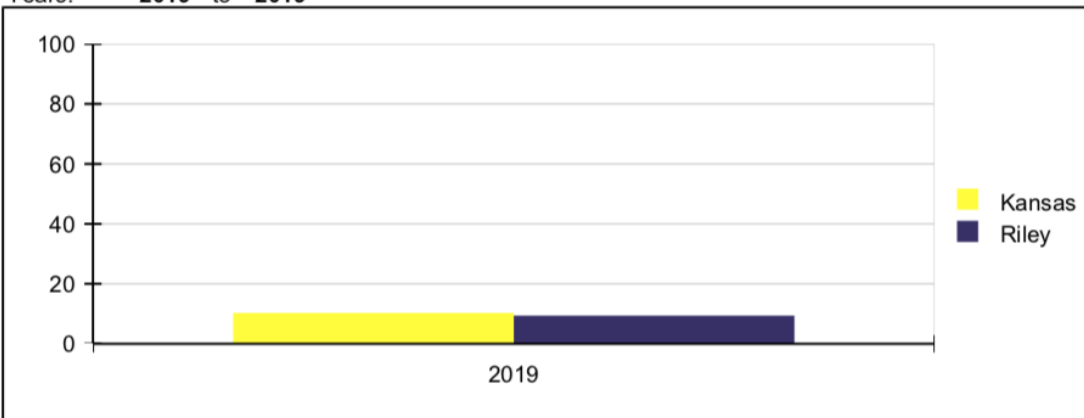
Riley County

Indicator: **What are the chances you would be seen as cool if you: smoked marijuana?**

Response: **SOME CHANCE**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	10.27	9.39

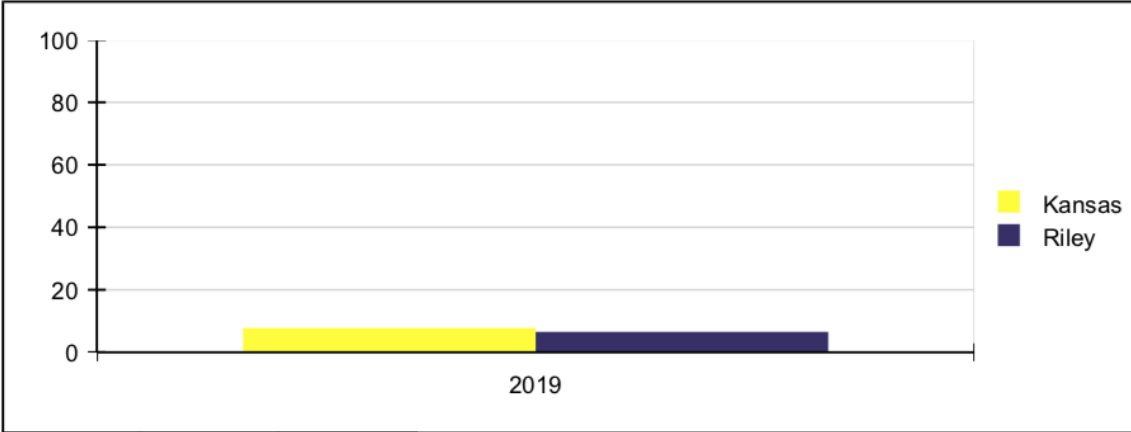
Riley County

Indicator: **What are the chances you would be seen as cool if you: smoked marijuana?**

Response: **PRETTY GOOD CHANCE**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	7.77	6.54

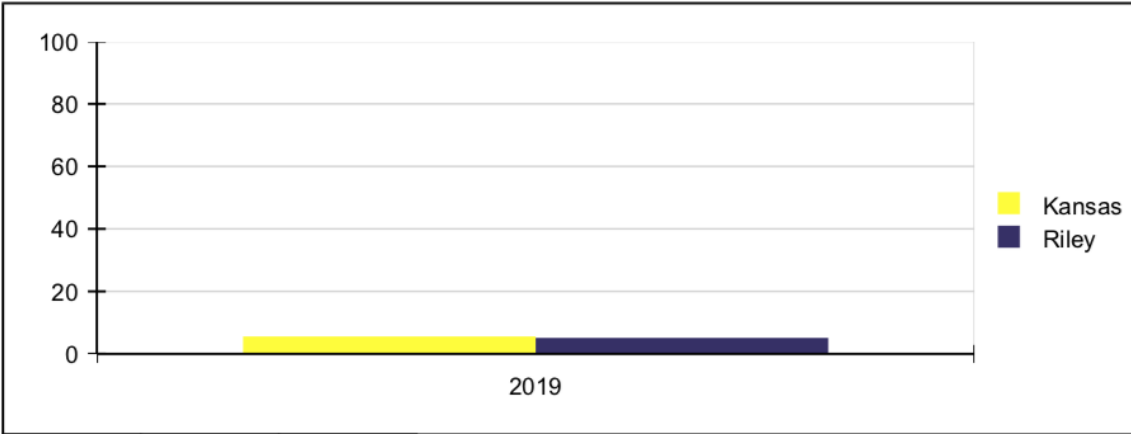
Riley County

Indicator: **What are the chances you would be seen as cool if you: smoked marijuana?**

Response: **VERY GOOD CHANCE**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	5.58	5.12

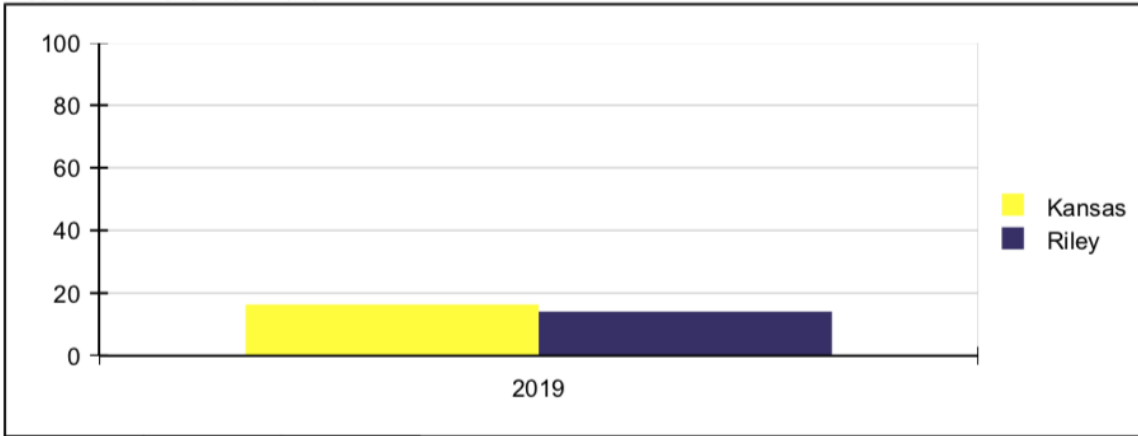
Riley County

Indicator: **My family has clear rules about alcohol and drug use.**

Response: **No**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	16.34	14.07

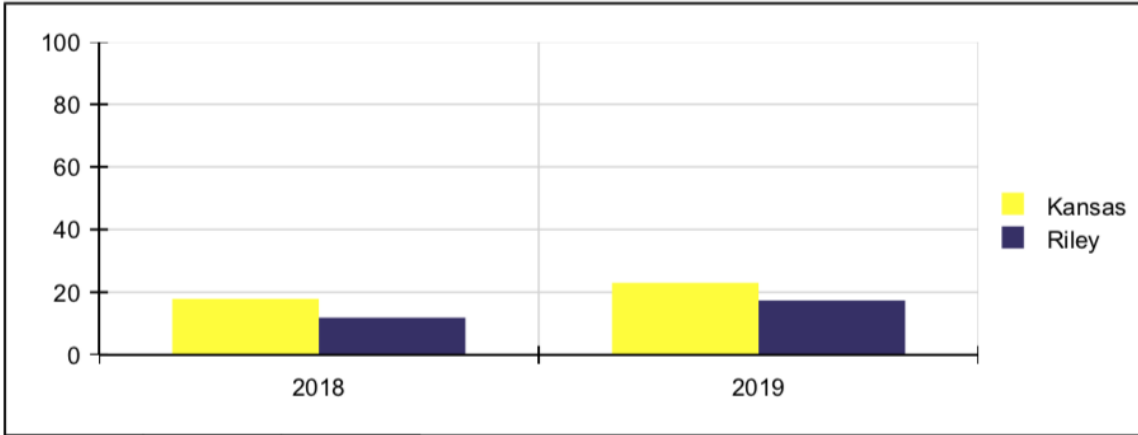
Riley County

Indicator: **Have you ever tried electronic cigarettes, e-cigarettes, vape pens, or e-hookahs?**

Response: **Yes**

Grade: **0**

Years: **2018 to 2019**



Year	Kansas	Riley
2018	17.87	11.87
2019	22.98	17.35

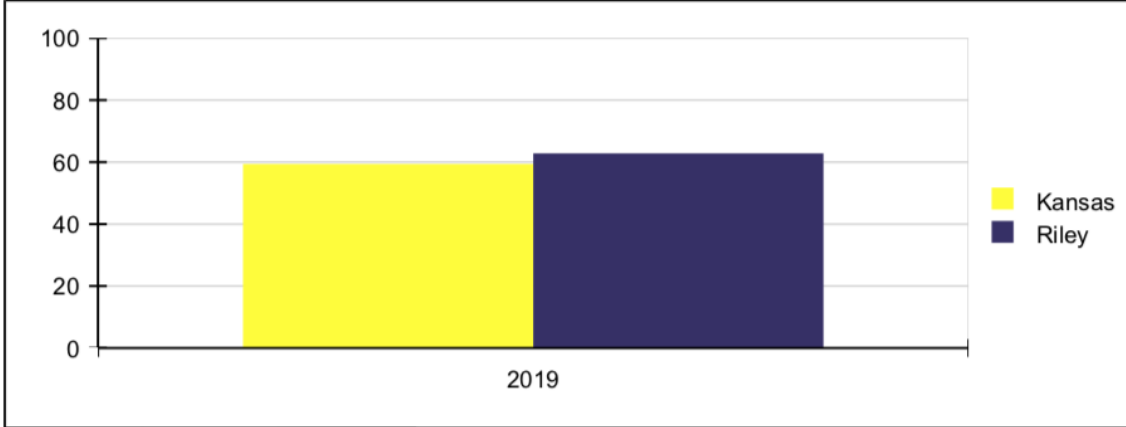
Riley County

Indicator: **How wrong do you think it is for someone your age to: drink beer, wine, or hard liquor (for example, vodka, whiskey, or gin) regularly?**

Response: **Very Wrong**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	59.37	62.83

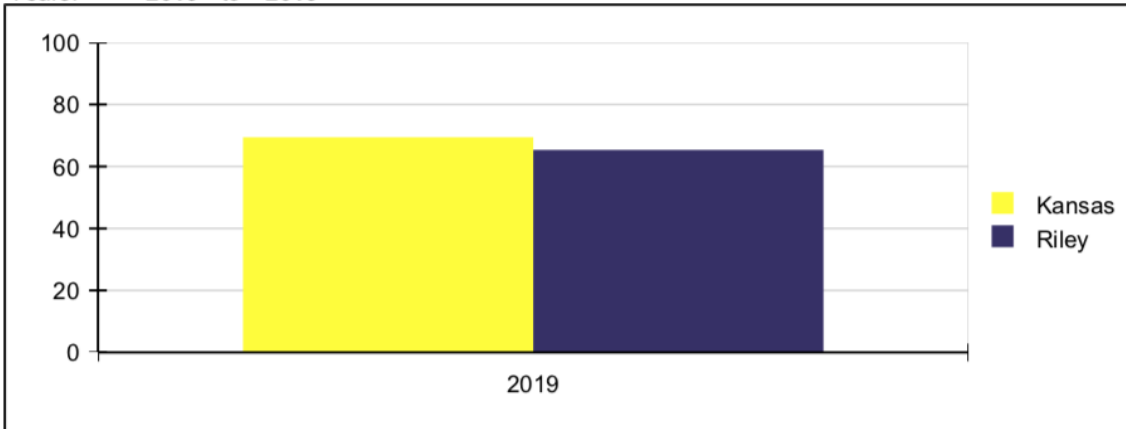
Riley County

Indicator: **If a kid drank some beer, wine, or hard liquor (for example, vodka, whiskey, or gin) in your neighborhood, or the area around which you live, would he or she be caught by the police?**

Response: **No**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	69.41	65.35

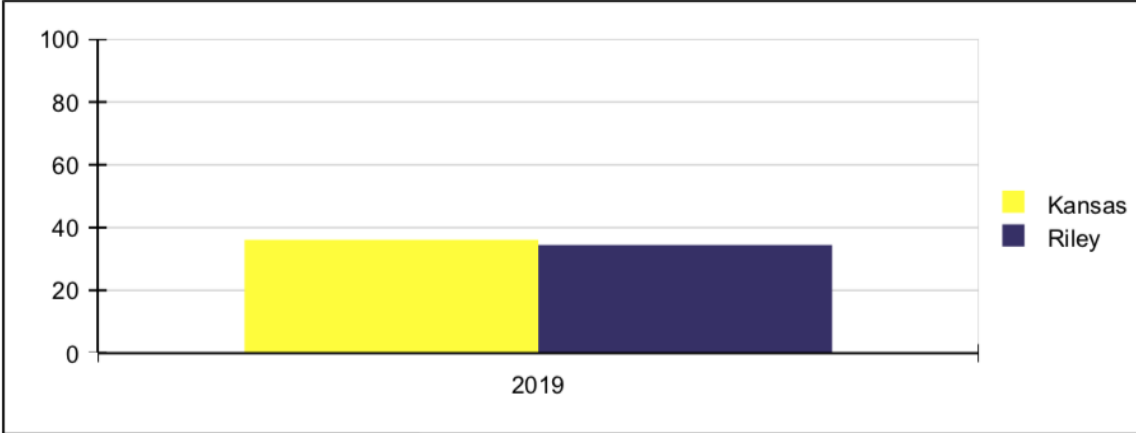
Riley County

Indicator: **What are the chances you would be seen as cool if you: made a commitment to stay drug free?**

Response: **no or very little chance**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	36.10	34.45

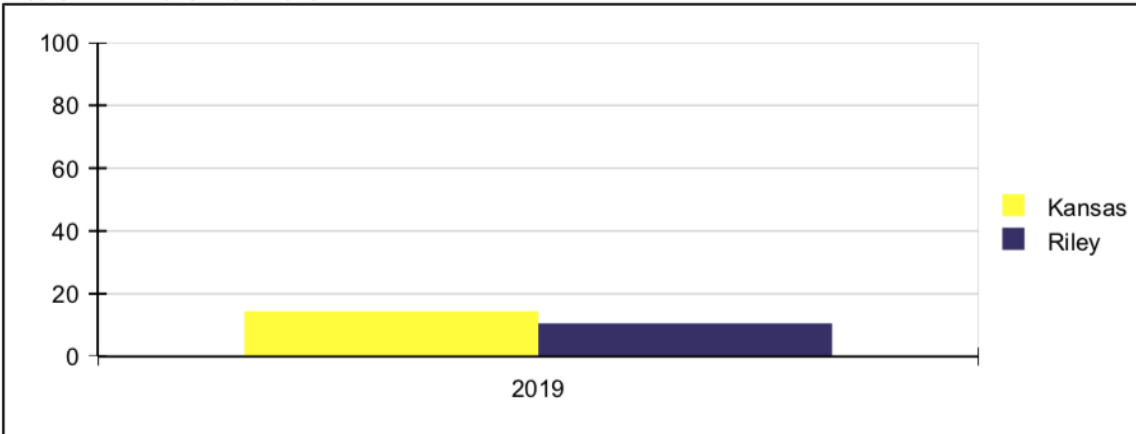
Riley County

Indicator: **How much do you think people risk harming themselves (physically or in other ways) if they: take one or two drinks of an alcoholic beverage (beer, wine, liquor) nearly every day?**

Response: **No Risk**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	14.41	10.57

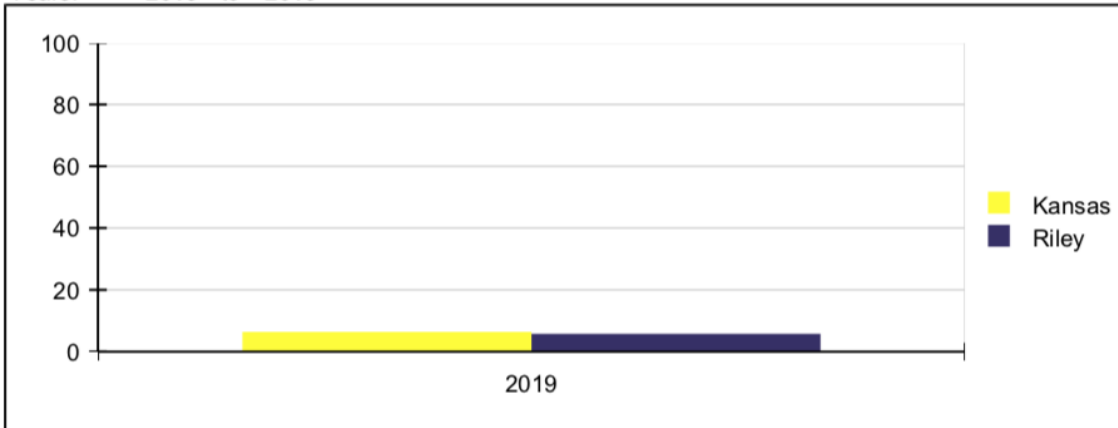
Riley County

Indicator: **How often do you feel that the school work you are assigned is meaningful and important?**

Response: **Never**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	6.38	5.76

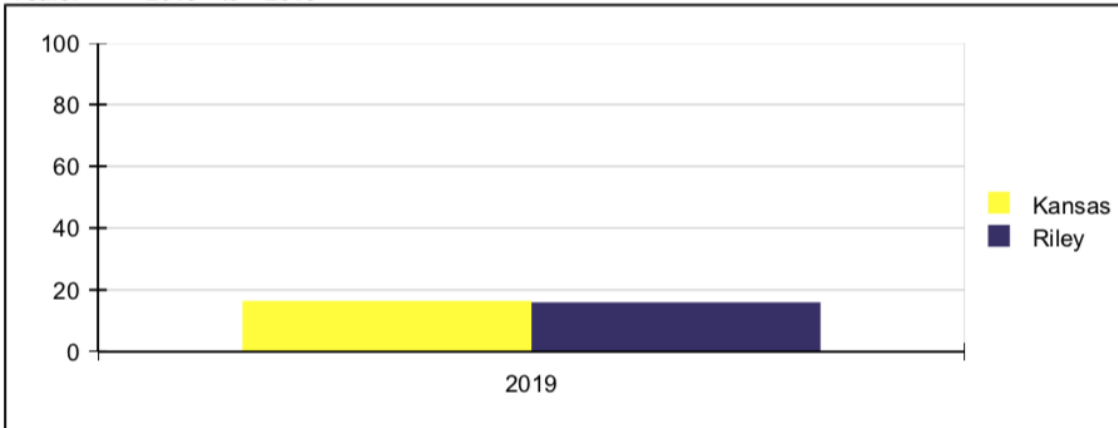
Riley County

Indicator: **How often do you feel that the school work you are assigned is meaningful and important?**

Response: **Seldom**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	16.43	15.98

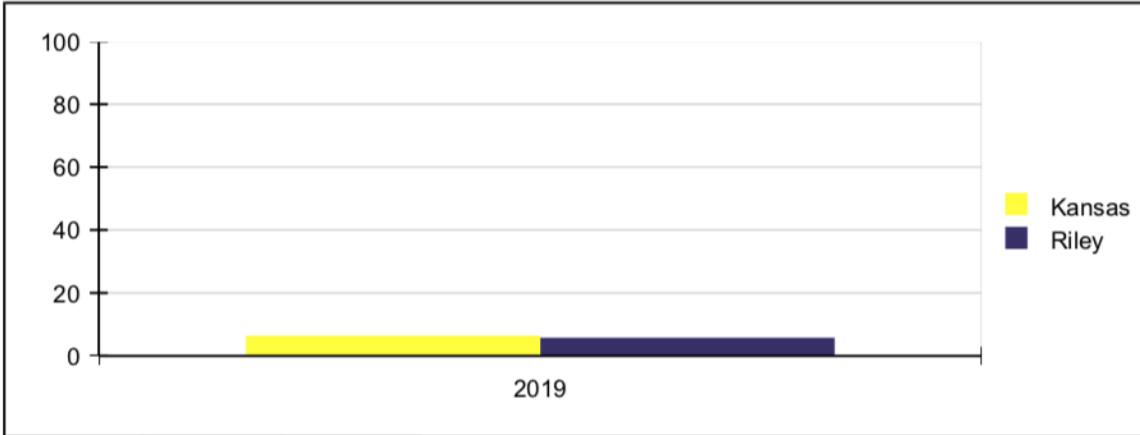
Riley County

Indicator: **How often do you feel that the school work you are assigned is meaningful and important?**

Response: **Never**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	6.38	5.76

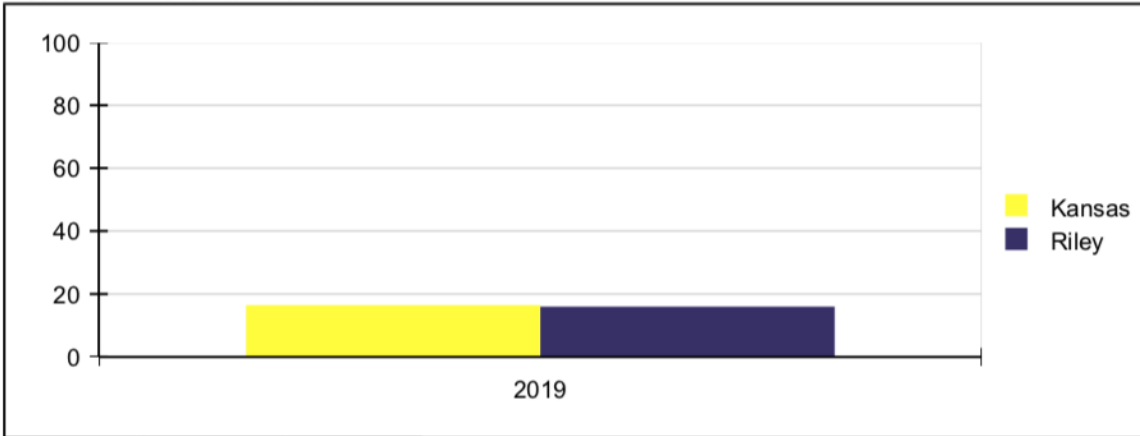
Riley County

Indicator: **How often do you feel that the school work you are assigned is meaningful and important?**

Response: **Seldom**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	16.43	15.98

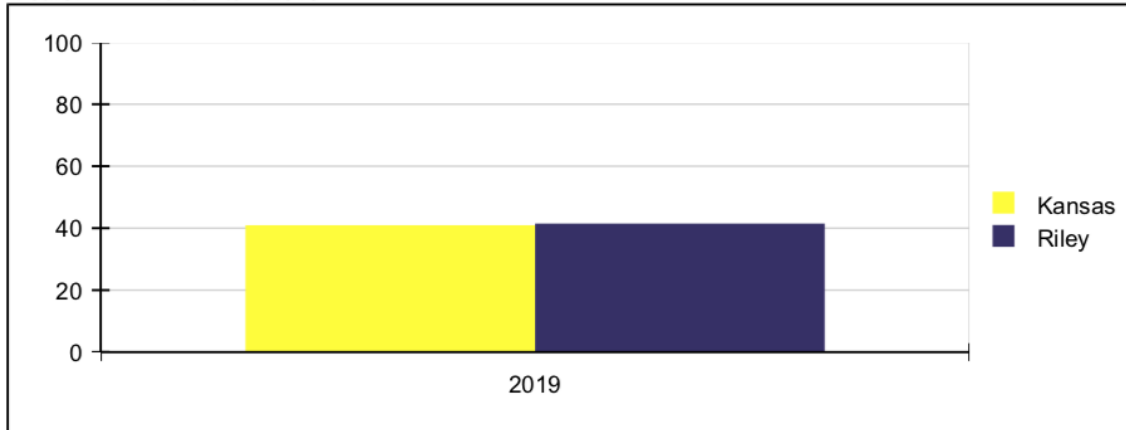
Riley County

Indicator: **How often do you feel that the school work you are assigned is meaningful and important?**

Response: **Sometimes**

Grade: **0**

Years: **2019 to 2019**



Year	Kansas	Riley
2019	40.95	41.48

A question showed that 78.41 of Riley County students feel that they are not well rewarded by their community for efforts to make it a better place. This result encouraged us to include prizes for the highest quality film festival submissions. Another result of note was that 63.22 percent of Riley County students answered that they feel their schoolwork is never, seldom, or sometimes meaningful and important. This result stood out to us because it showed that MARPC could partner with the local school district in the future in an effort to provide students with a meaningful and important assignment in substance use prevention.

The website for the competition was developed (see Appendix 1) with separate pages for the provided sources and common misconceptions. The donation letter was provided to local businesses and MARPC successfully secured 5 pledges (see Appendix 2).

During the advertising phase for the film festival, I made a flyer (see Appendix 3) and emailed it to a number of youth organizations. The organizations that were contacted included the Boys and Girls club, the Boy Scouts of America, Girl Scouts of America, and local churches with youth groups. When I called these organizations for follow up, a number of them expressed

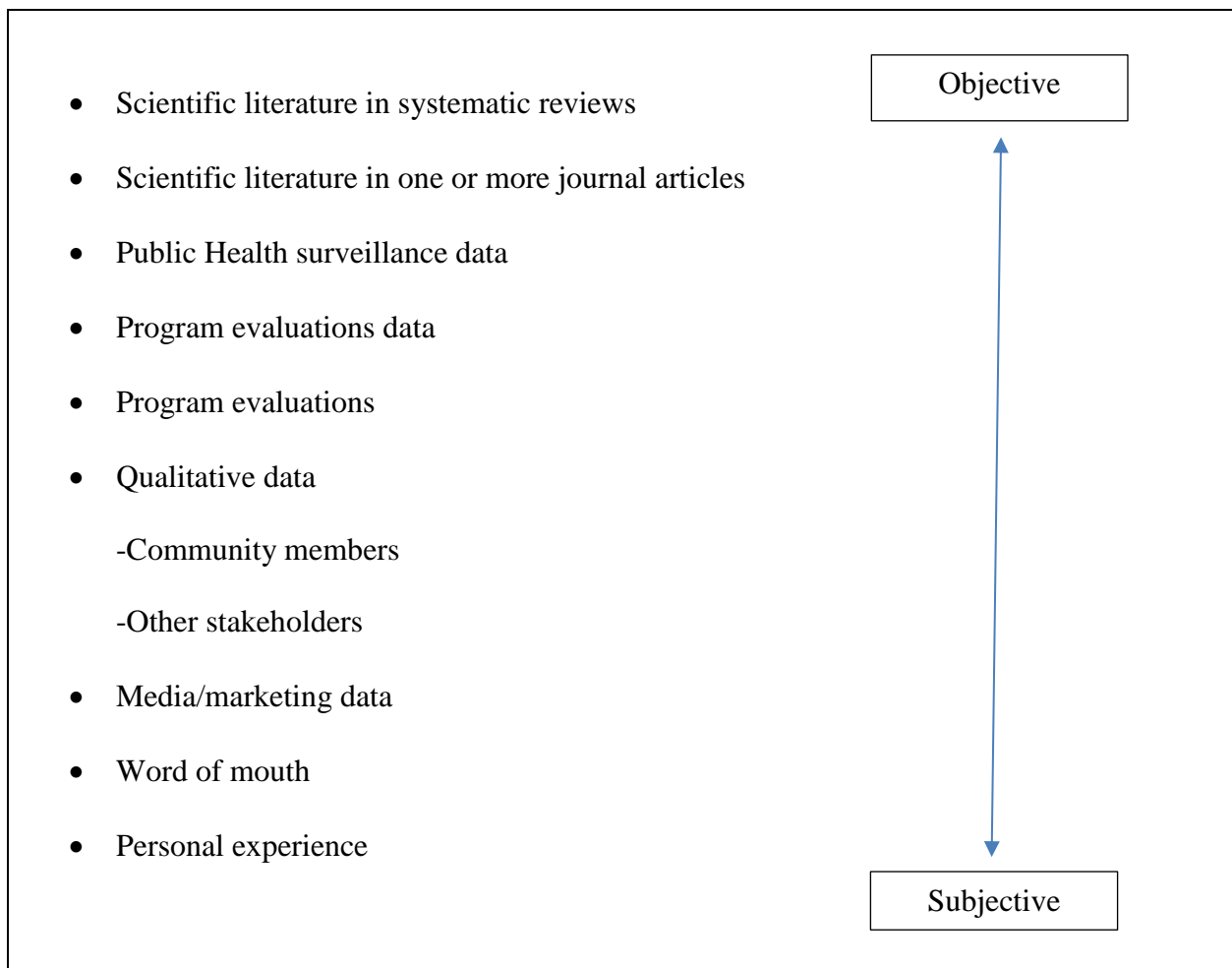
interest but told me it was relatively short notice for them to be able to put significant resources towards participation. The two Lutheran churches in town stated that they would not be able to participate as they were in staff transitions. At the time of my project completion, the results of the competition are yet to be determined. However, a framework for the next attempt at a film festival has been accomplished.

Chapter 4 - Discussion

Evidence-based public health is the use of reputable scientific evidence to guide public health decisions and it is a highly valued modern public health concept (13). Those involved in public health endeavors are encouraged to use evidence of the highest possible quality that is heavily evaluated and peer reviewed (13). In Figure 1, varying types of evidence are shown on a continuum going from subjective to objective (13). There is rarely a situation where evidence perfectly fits a situation and evidence-based public health focuses on choosing the best evidence available and moving forward with a goal in mind. Most evidence is not easily generalized to large populations and public health officials should work to make it relevant to whatever specific population is being targeted for a public health intervention (13). During my applied practice experience with MARPC, I endeavored to put evidence-based public health into practice. The interprofessional nature of MARPC meant that a number of MARPC members had different levels of a scientific background. This fact had to be accounted for when examining evidence as a group. Different members had different definitions of what was considered to be reputable evidence.

Evidence-based public health is not limited to the effects of substance use. Evidence-based resources exist that portray findings related to public health in all possible aspects including proven substance use prevention strategies. The Substance Abuse and Mental Health Services Administration (SAMHSA) utilizes a “Evidence-Based Practices Resource Center” database that provides community organizations with scientifically-proven strategies to help improve their programs. A resource titled “Focus On Prevention” is included in this database and it directly relates to my applied practice experience with MARPC (14).

Figure 1- Subjective versus Objective Evidence Continuum



This resource outlines foundations necessary for effective substance use prevention efforts. I worked to follow this evidence-based advice as I designed the film festival and future iterations of the film festival can work to integrate more of this resource's ideas into film festival efforts. According to this resource, prevention effort messaging is most successful when it is captivating, reasonable, straightforward, specific, and uplifting (14). This resource emphasized designing efforts around the target audience and in this case MARPC's film festival had two target audiences, film festival participants and Manhattan area adolescents that would view the

eventual ads that were based off of film festival participant submissions. MARPC can provide more prevention effort messaging advice from this resource and other resources to potential film festival participants in future film festival iterations to aid them in their attempt to create effective public service announcements. MARPC can also narrow down the scope of the film festival themes and film festival participant audience age range in an effort to have an even more specific and cohesive prevention message.

Research has been undertaken to examine effective leadership traits of public health leaders. Carlton et al. interviewed subordinates of public health department leaders to identify characteristics deemed paramount for effective leaders in public health departments (15). The researchers asked respondents questions that related to the full-range leadership model and its three main types of leadership, transactional, transformational, and avoidant. Transactional leadership is a managerial type of leadership that is focused on requiring subordinates to obey clear instructions and if those instructions are not followed, then the leader will reprimand and provide further guidance (16). Transformational leadership is working alongside subordinates and co-workers in a way that inspires motivation, creativity, and improved performance (16). Respondents felt that effective public health leaders are able to situationally use both transformational and transactional leadership styles depending on what is necessary to accomplish a goal (15). Avoidant leadership is avoiding the activity of leading a group of people. Participants valued leaders that use both transactional and transformational styles interchangeably, with more value put toward transformational leadership with the understanding that transactional is sometimes necessary when clear objectives requiring straightforward tasks with time restrictions exist (15).

I believe that I exhibited both transformational and transactional leadership during this applied practice experience. In planning for film festival committee meetings, I used transactional leadership to set clear goals and objectives. During these meetings, I worked to get the group back on task whenever it would veer into subjects that were not focused on the task at hand. These meetings were usually only scheduled to take place for an hour at a time and most of the attendees needed to leave promptly at the scheduled end time. I also exhibited transformational leadership during these meetings. I came prepared and did my best to lead by example. I reported on my accomplishments and asked thought-provoking open-ended questions of MARPC members meant to spur creativity and improve problem solving capabilities. I did my best to make sure that members were engaged in the planning process. My goal was to create an environment that promoted critical thinking and a feeling of self-efficacy within the group members. I wanted to make sure that group members felt their opinions were valuable and deserved to be heard. I did not want members to become disengaged in these meetings believing that their ideas did not matter to the group. I also made it a goal to teach and be taught by other members when it came to the introduction of new concepts. During beginning stages of the project, I had many conversations with members where I learned about the nature of film festivals. I did not have any prior film festival experience before this project and instead of pretending like I had authority in this matter I presented the knowledge I had, and I believe this gave volunteer members a feeling of self-efficacy and improved their willingness to participate in this project. I hope I gave them the feeling that they were needed and necessary for the success of the project because they were needed and necessary for the success of the project.

Working in a team requires patience and persistence. During this applied practice experience, there were a number of challenges related to teamwork that had to be overcome. The

challenges observed centered around the concepts of conformity and social loafing. In social facilitation, group work is more difficult to accomplish when it comes to solving complex problems and easier when it comes simpler problems (17). During meetings, if a decision was considered to be simple by members, the decision was typically made in a short amount of time and if a decision was considered more complex, it would take more time to ultimately answer and be mutually agreed upon by all members. This proved to ultimately increase the amount of time and effort needed to complete the project as several decisions considered simple and straightforward turned out to not be as straightforward as upon first appearance. The decision for the competition to allow participants between the ages of 12 to 20 proved to have a bigger impact on the project than initially anticipated. More thought and discussion should have been put into this decision as it required the creation of a competition that catered to participants with a large disparity in ability levels in terms of experience in film making and understanding of science due to varying years of schooling and age. The lack of film festival planning experience among all MARPC members is the major factor for why this occurred. If MARPC holds another film festival, members will hopefully be able to learn from past mistakes and add more gravitas to decisions such as this one.

Social loafing occurs in group work when assumptions are made that other members will do the majority of the work required to reach a stated goal. Lam conducted a study to identify ways to lessen the occurrence of social loafing. This study found that communication quality is a significant indicator of the degree of social loafing that can occur. Groups that communicated more effectively experienced social loafing to a significantly less degree (18). I observed this during my applied practice experience. The MARPC members that communicated with me to the greatest extent were the members that participated the most in the project. Communication

proved to be a major obstacle to overcome in this project. I did my best to communicate my needs to the group, but it was made difficult in that members varied in how to best be reached. Some were more easily contacted through e-mail and others were more easily contacted through texting. This was an obstacle to success as some conversations were held through e-mail when there were more effective ways of communication available. E-mail can be an effective form of communication in some instances, but for group discussions the constant forwarding and following of e-mails can be an unnecessarily tedious task. It can be easy to have member's comments overlooked if e-mails are not forwarded properly. If e-mails were not organized properly, members would have to re-read entire message threads just to get to the new member comments. In retrospect, film festival planning efforts could have been communicated more effectively and used means more suited for discussions. Given what needed to be accomplished and the small nature of the group, it would have been best to make film festival planning a group-wide endeavor instead of having a committee for it. The fundraising and advertising stages of the project required whole group participation for success. Monthly MARPC meetings should have been held with the sole purpose of planning the project. Film festival planning was conducted in a manner that gave other members the impression that they were not needed when they actually were needed.

Adolescent substance use prevention is a worthwhile endeavor. Current scientific evidence as shown through the scientific literature review conducted during this applied practice experience indicates that harms are associated with the use of many substances. While some of the evidence is only correlational, this does not lessen the need for concerted efforts to curb substance use. The analyzed KCTC survey data supports this assertion by showing that there is room for improvement when it comes to changing adolescent perceptions and actual usage rates

of substances associated with negative health outcomes. Adolescents and the public at large should be aware of the risks involved with using substances associated with negative health outcomes.

While the first iteration of the MARPC film festival will have a limited number of participants, MARPC is in a good position to learn from the failures and successes of this first event. With improved communication and the experience of attempting to plan and implement a film festival, MARPC is in a good position to increase the number of film festival participants and ultimately run a successful public health education substance use prevention campaign based on future film festival submissions. MARPC will be more able to focus on the planning details that have the most consequential impacts on the success or failure of its next film festival.

Chapter 5 - Competencies

Student Attainment of MPH Foundational Competencies

Table 5.1 Summary of MPH Foundational Competencies

Competency	Description
7. Assess population needs, assets and capacities that affect communities' health.	I analyzed KCTC data along with current scientific research to understand the prevalence and perceptions of local adolescents regarding electronic cigarettes, alcohol, and marijuana.
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes.	During my time with MARPC, I worked to build coalitions with local businesses and youth organizations that could support MARPC film festivals through donations and sponsorships.
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making.	I worked in cooperation with MARPC members to design and implement a film festival. I synergized my own ideas with other member's ideas and worked to create a competition that all members could get behind and support.
18. Select communication strategies for different audiences and sectors.	During the construction of the film festival website, I included information targeted at younger and older potential participants.
17. Apply negotiation and mediation skills to address organizational or community challenges.	I melded competing ideas into a single plan that all agreed upon when it came to how the film festival would be designed.
21. Perform effectively on interprofessional teams.	I worked with a variety of professionals. MARPC members ranged from public health promotion directors, media specialist, mental health therapist, medical doctors, and the executive director of UFM.

I was able to implement a number of MPH Foundational Competencies during my Applied Practice Experience. I will focus on six that applied most directly to what I accomplished and those were 7, 13, 16, 17, 18, and 21.

MPH foundational competency #7 is “assess population needs, assets and capacities that affect communities’ health”. By analyzing KCTC data specific to Riley County, I was able to determine that there was room for improvement when it came to how adolescents in Riley County view potentially harmful ingestible or inhalable substances. There were a number of response categories that could be improved, especially when all MARPC had to do was raise respondents’ opinions from believing certain substances were only slightly harmful to harmful or very harmful. I advocated for MARPC to build partnerships with local businesses and youth groups. MARPC already had a partnership with the Boys and Girls Club and it also had a member that was affiliated with the local school district. I proposed that MARPC should work with local businesses in order to acquire donations for prizes for film festival participants. I also proposed that MARPC should partner with local youth organizations such as the Boy Scouts, the Girl Scouts, and local church youth groups in order to increase participation in the film festival. My thought was that local youth organization leaders could encourage adolescent members to participate by either providing incentives on their own or planning group activities where the objective would be to create a public service announcement for the film festival.

MPH foundation competency #16 is “apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making”. I accomplished this by leading film festival committee meetings and ensuring that all ideas and concerns were heard in a space that encouraged open collaboration. I worked to get meetings back on track when they veered into matters that were not related to the

task at hand. Most meetings were only scheduled for an hour and we could not afford to get too sidetracked or we risked not accomplishing our goals and having to push back important decisions.

I selected communication strategies for different audiences and sectors in fulfilling MPH foundation competency #18. MARPC is an interprofessional group and I had to avoid terminology that would be difficult to understand for professionals that did not have a scientific background when explaining the findings of scientific literature. I explained the basics behind evaluating scientific literature such as putting precedence on peer review and appropriate statistical values showing the results of studies to be due to more than just chance. I also discussed the importance of understanding that correlation does not always imply causation. I spoke at length with one of the MARPC members who had a number of preconceived ideas about the harms of marijuana use. While some of his stances were based on reasonable logic, a few of his other stances which were stated to be showing conclusive evidence, were based on research that was questionable and only showing correlation not causation. I worked to explain the ongoing nature of science and the idea that certain types of studies are designed to just show possible association or correlation and cannot show causation. Most scientific studies typically call for more research into whatever the subject matter was to confirm the findings and learn more about the subject matter. I did my best to impress upon him the unclear nature of marijuana given the limited number of studies done on the subject. It is fine to say marijuana is associated with certain harms, but to say anything more than that is just based on speculation without the appropriate scientific evidence to back up the assertion. This was especially important given MARPC's duty to educate the public and prevent substance use. MARPC's credibility with the

community would be lost if it were to promote unfounded claims, so MARPC should carefully construct statements about the risks involving substance use.

MPH foundational competency #17 is to apply negotiation and mediation skills to address organization or community challenges. There were multiple instances during MARPC film festival committee planning meetings where I had to find a way to overcome objections or competing ideas. At the start of the film festival, two members disagreed on what the phases of the film festival should entail. One member wanted to have an entire stage devoted to storyboards, while another member felt that those willing to make storyboards would likely want to go ahead and make an accompanying video. I personally agreed with the latter idea. In order to address this challenge, I took an objective approach where I veered the group into examining what MARPC's time and resources would allow for and if it would allow for multiple phases. This approach allowed all sides to come to an agreement based on facts instead of opinions. In another situation, the concern was raised that not all adolescents would immediately know what a film festival was and that the name should be changed. My personal opinion along with others was that a film festival was a well-known term, however, I could not determine how to appropriately prove this false and I did not want to alienate this member. We could have held a vote, but I saw that the simple solution was to refer to the competition as both a video competition and a film festival. The main flyers and donation letters would refer it as a film festival in larger font and in the description, it would be referred to as a video competition for any potential participant that was not familiar with the term. This avoided frustrating any members and causing them to not further help plan and implement the competition. MARPC is a small organization and could not afford to lose potential help, and as long as the main goal of

substance use prevention happened a small detail such as this was not a huge issue and not worth the potential fallout.

MPH foundational competency #21 is to perform effectively on interprofessional teams. As stated previously, MARPC is an interprofessional group with teachers, police officers, mental health therapists, business leaders, doctors, and media specialists among other professionals. I was able to include all willing members in the decision-making process for the planning and implementation of the film festival. I was able to include the priorities of all members and address all ideas. During MARPC meetings, I shared the results of my ongoing literature review in a way that any lay person could easily understand. I only went into the details of my findings if members were confused or wanted to know more. I also did this when I summarized my KCTC data findings to the group. Summarizing the KCTC data findings was relevant as I made sure to summarize all of my findings and not just the findings related to alcohol, marijuana, and tobacco. I included findings that would be of interest to specific MARPC members such as the questions that examined if adolescents felt they would be caught by police using certain substances and if adolescents felt that the work assigned to them in school is purposeful and meaningful. I am pleased to say that I was able to teach fellow MARPC members about new findings regarding substance use and that I was able to learn from them as well. Many members shared their views on adolescent substance use in the community with me. The police officers were noticeably concerned with public safety and total abstinence from certain substances as the law requires. The teachers were more concerned with how substances were affecting students' ability to learn. The mental health therapists were concerned about the effect of substances on the overall well-being of their patients as well as substances ability to cause or exacerbate mental health problems. My most substantial take away was that the "One Health" approach to

healthcare is a logical way to approach health. If you were to include all these professionals' concerns into a single action plan, then you would be able to improve a number of public health related outcomes.

Table 5.2 MPH Foundational Competencies and Course Taught In

22 Public Health Foundational Competencies Course Mapping	MP H 701	MPH 720	MP H 754	MP H 802	MP H 818
Planning and Management to Promote Health					
7. Assess population needs, assets and capacities that affect communities' health		x		x	
Policy in Public Health					
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes		x		x	
Leadership					
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making		x			x
17. Apply negotiation and mediation skills to address organizational or community challenges		x			
Communication					
18. Select communication strategies for different audiences and sectors	DMP 815, FNDH 880 or KIN 796				
Interprofessional Practice					
21. Perform effectively on interprofessional teams		x			x

Student Attainment of MPH Emphasis Area Competencies

Table 5.3 Summary of MPH Emphasis Area Competencies

MPH Emphasis Area:		
Number and Competency		Description
1	<i>Pathogens/pathogenic mechanisms</i>	Evaluate modes of disease causation of infectious agents.
2	<i>Host response to pathogens/immunology</i>	Investigate the host immune response to infection.
3	<i>Environmental/ecological influences</i>	Examine the influence of environmental and ecological forces on infectious diseases.
4	<i>Disease surveillance</i>	Analyze disease risk factors and select appropriate surveillance.
5	<i>Disease vectors</i>	Investigate the role of vectors, toxic plants and other toxins in infectious diseases.

The coursework and applied practice experience I completed as a Master of Public Health Student has allowed me to attain the five MPH Infectious Diseases and Zoonoses competencies.

The first competency is the task of evaluating modes of disease causation of infectious agents. I learned about this in a number of classes including Pathogenic Microbiology (BIOL 530) and Environmental Health (MPH 802), Immunology (BIOL 670). Diseases are caused by infectious agents in a number of varying ways. A few commonly seen modes involve the use of pili, fimbriae, lipopolysaccharide, toxins, capsules, biofilms, and flagella. These modes are used by organisms to enter, survive and evade the immune system, and proliferate within host organisms. In Pathogenic Microbiology, I learned how knowledge of these modes can be used to identify pathogenic microorganisms in samples from patients. For example, there is a test known as the motility test that specifically determines if a microorganism is able to move on its own via

flagella. In this test, a sample will start at a certain point and move and grow along a gradient seen with the naked eye (19).

The second competency is to investigate the host immune response to infection. I was able to thoroughly learn about the human immune system in Immunology (BIOL 670). In this class, I learned about the innate and adaptive arms of immunity. Adaptive Immunity is highly specific and elicits a memory response to specific pathogens and Innate Immunity is generalized and defends against broad types of pathogens and does not provide memory of previous encounters. Innate and Adaptive can activate each other and synergize to provide a more effective response. The immune system also does what it can to produce tolerance in order to prevent autoimmune responses. I wrote a report on a 2019 article in the Journal of Immunology. This allowed me to get a glimpse into ongoing immunology research efforts. The paper I looked at involved implanting a human immune system into immunocompromised mice. During my applied practice experience, I examined the effect of marijuana on the immune system and found scientific literature noting that it is associated with the sensitization to a number of allergens.

The third competency is to examine the influence of environmental and ecology forces on infectious diseases. In Microbial Ecology (BIOL 687), it was revealed that scientists are researching ways to infect the mosquito *Aedes aegypti* with the symbiotic bacteria *Wolbachia*. *Wolbachia* is antagonistic to viral replication and can potentially prevent mosquitoes from transmitting viral infectious diseases such as Malaria and Dengue Fever to humans. In Environmental Health (MPH 802) and Microbial Ecology (BIOL 687), we examined that natural selection caused by environmental factors, such as an increase in antibiotic use and the introduction of mutagens, can drive pathogens to evolve and become even more virulent and infectious, and therefore potentially more harmful to human populations. During my applied

practice experience, I saw that the social media environment can be used to promote the spread of false ideas that can serve to change perception and cause people to put themselves at risk for developing diseases if they choose to believe those ideas.

The fourth competency is to learn about concepts related to analyzing disease risk factors and selecting appropriate surveillance. During my applied practice experience, I analyzed the association between disease and adolescent substance use. I conducted a scientific literature review and found that marijuana, electronic cigarettes, and alcohol are all associated with increasing the risk for adolescents to develop a number of diseases such as chronic obstructive pulmonary disorder, cancer, pancreatitis, and osteoporosis . After this occurred, I selected the KCTC survey as a surveillance method for analyzing substance use levels and substance use perception. My reasoning was that perception and usage would both be valuable in terms of getting a generalized idea of the substance use occurring in Riley County and therefore a generalized view of the risk that adolescents in Riley County were adding to their chances of developing the diseases associated with the use of the three targeted types of substances. Classes that that taught these concepts included Introduction to Epidemiology (MPH 754), Immunology (BIOL 670), Pathogenic Microbiology (BIOL 530), and Introduction to One Health (DMP 710), Administration of Healthcare Organizations (MPH 720), and Social and Behavioral Bases of Public Health (MPH 818). Risk factors related to infectious diseases include age, gender, race, education, and immune system status. Any characteristic that increases or decrease risk for infectious disease mortality or morbidity can be a risk factor. Education is an important risk factor as it can indicate not only health knowledge but overall socioeconomic status and both can increase risk for negative health outcomes related to infectious diseases. Health knowledge is important when it comes to knowing how to prevent the spread of disease and how to keep

oneself healthy and not immunocompromised. Socioeconomic status is indicative of the type of healthcare a person can receive. Low quality healthcare can negatively affect a person's ability to survive an infectious disease. Surveillance can be passive or active. Surveillance is used to determine the extent to which a pathogen has spread in an environment or has the potential to spread. In Microbial Ecology (BIOL 530), we examined the usefulness of metagenomic surveys. These surveys allow scientists to determine the genetic characteristics of microorganisms in an environment. Certain genetic characteristics indicate the presence or potential presence of pathogenic features in organisms. This can indicate the propensity for certain types of microorganisms to evolve and become pathogenic as well as indicating the presence of microorganisms that already have features that are pathogenic and harmful to populations. This is especially important in microorganism populations that are difficult to classify based on general characteristics.

The fifth competency is to investigate the role of vectors, toxic plants, and other toxins in infectious diseases. In Pathogenic Microbiology, I wrote a report in an effort to identify pathogenic microorganisms in a blood sample. The sample was shown through testing to harbor *Escherichia coli*. This microorganism can mutate and produce heat stable toxins that can destroy the microvilli in the intestinal lining and cause gastrointestinal symptoms such as vomiting and nausea (20). In Immunology (BIOL 687), I learned about delayed type hypersensitivities. After exposure to poison ivy, a person can develop contact dermatitis and this inflamed skin area can rupture and become exposed to infectious agents. In my applied practice experience, I saw that ideas can serve as infectious agents and turn non-infectious diseases into infectious ones. If the idea that vaping is healthy spreads through the social media environment, then this can promote the use of electronic cigarettes and therefore lead to the disease outcomes associated with vaping.

It is important for public health officials to realize that ideas can be vectors for disease if allowed to spread without a measured response to show they are false.

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Appendix 1

MARPC Film Festival

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Fighting Misconceptions

The Manhattan Area Risk Prevention Coalition invites those ages 12-20 to create a public service announcement!

This is a video competition!

These videos will need to fight misconceptions about **vaping (e-cigarettes), marijuana, or alcohol use.**

There will be several categories and winning PSA's will be used by MARPC on local Cable TV ad spots and social media.



Prizes will be provided by Best Buy, Smoothie King, Firehouse Subs, Papa Murphy's Pizza, and the Pathfinder store! More sponsors to be announced!



Please see the Rules page for more information!



Contact Information



Please email melissa@tryufm.org for any questions or concerns you might have!

Educate Your Community!

Common Enemy - 2018 Super Bowl PSA  [Actions](#) | [View video](#)
 "Common Enemy" is NCADA's fourth annual Super Bowl PSA. We know that addiction can happen to anyone. But we also know that when parents talk with their ...

Alcohol Awareness Campaign PSA: Sleepover  [Actions](#) | [View video](#)
 One of three public service announcements launched as part of a campaign launched by the Sacramento County Coalition for Youth (SCCY), in partnership with ...

PSA. "Don't Do Drugs Kids".  [Actions](#) | [View video](#)
 This video is about PSA Mr. Stewart P.6.

Mr T - Drugs PSA  [Actions](#) | [View video](#)
 Taped during the "just say no" decade of the 1980s at the height of Mr. T's popularity on "The A-Team".

Last update: **May 7 at 12:06pm** | [Report inappropriate content](#) Page views: **316** [Atom](#) | [RSS](#) | [OPML](#)

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MARPC Film Festival

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Film Festival Guidelines

Videos will need to be **15 to 180 seconds** long.

All videos will need to be submitted by July 30th!

Videos will need to take a common misconception about vaping/marijuana/alcohol substance use and prove that it is false.

The goal is to educate your peers about these substances! Our organization wants to prevent substance abuse in adolescents.

The highest quality videos will receive the largest prizes!

You don't have to use sources but we highly recommend you do! You can focus on social perceptions i.e. "vaping doesn't make you look cool".

MARPC will provide examples of common misconceptions in the "**Misconceptions**" page but feel free to use a misconception you come up with on your own (pre-approval from MARPC is a good idea in order to stay eligible for prizes or you risk having to re-do your entire submission).

Any Scientific literature used should be cited (at the end of the PSA or during it) and from reputable resources. Include authors and organizations involved, a specific type of sourcing is not required. We just want you to give credit where it is due! If you need help, ask us or your teachers or other knowledgeable adults!

See the "**Sources**" page for a **listing of provided resources. Relevant results have been summarized and cited on this page.** The information on this page can serve as a starting point for finding information that dispels common misconceptions about alcohol/e-cigarette/marijuana use. Scientific research on the affects of marijuana/alcohol/vaping are ongoing. The scientific community is only just beginning to identify the harms of these substances.

You can use information that isn't provided but **please email MARPC to make sure your sources are reputable** if you're unsure and still wish to qualify for prizes.

Videos will need to keep profanity, violence, nudity, sexual references, gore, and other potentially disturbing themes to a minimum. If you have any questions, just ask!

Videos will also need to not discriminate on the basis of race, color, ethnic or national origin, sex, sexual orientation, gender identity, religion, age, ancestry, disability, military or veteran status.

MARPC will review all applicant videos and give applicants a chance to make adjustments if material is found to be inappropriate or sources are not reputable.

We are going for "**Family**" appropriate videos that can be run as ads on local channels.

Original concepts are highly encouraged.

All visuals and audio will **need to not violate copyright laws.**

All of those involved will need to **sign forms** provided on the "**Forms**" page of this site.

MARPC Film Festival

Home Rules **Misconceptions** Sources Forms How to Submit

Vaping

Options ▾

- It is easy to quit if you become addicted to it.
- The cloud isn't as thick so it's not as bad for your health.
- JUUL's don't have nicotine in them.
- Nicotine by itself won't harm me.
- It won't hurt my immune system in the short term.
- It can help me quit smoking actual cigarettes.
- The liquid is safe and my brothers or sisters won't get poisoned from it.
- Popcorn lung rarely develops in people that vape.
- Nicotine by itself won't stunt brain development.
- Since I have asthma, ecigs are better for me.
- It doesn't cause cancer or hurt my developing lungs.
- Ultrafine particles aren't bad for my lungs.
- It's not a pulmonary irritant.

Alcohol

Options ▾

- It's an essential part of the "party experience".
- It won't affect the brain development of minors.
- Future employers/Colleges don't care if I get an MIP.
- MIP's are relatively cheap and easy for my parents to pay for.
- It can help fight depression.
- Alcohol makes me look cool.
- If you can't taste the alcohol in a drink, that means it has a lower alcohol content level.
- It hasn't been proven to cause cancer and shorten life span.
- It hasn't been proven to irreversibly damage the liver and kidneys.
- It's not toxicologically classified as a form of poison.

✚️ Add other sections to your site such as a calendar, message board, and more

Marijuana

Options ▾

- It won't affect my growth and development.
- It's easy to tell if I'm able to safely drive after I smoke.
- It's easy to tell if I'm impaired or not after I've smoked.
- Smoking can improve academic performance.
- All drug dealers are trustworthy and will give me "safe product".
- Marijuana can be helpful for those with specific health conditions so that means it's safe for me to use.
- The scientific community definitively knows that marijuana use is safe to use.
- It can help me quit smoking cigarettes.
- There is no ongoing research regarding marijuana use and I'm not using a substance that science knows relatively little about.
- Science has proven that it won't cause me to develop schizophrenia.
- It is never laced with other harmful unknown substances.
- It's legal in other states so cops in the Riley County area are more lenient if they catch me with it.
- It's a cheap and easy way to deal with depression and anxiety and it won't worsen my symptoms.

✚️ Add other sections to your site such as a calendar, message board, and more

MARPC Film Festival

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Alcohol

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National Institute on Drug Abuse for Teens

<https://teens.drugabuse.gov/drug-facts/alcohol>

Underage Drinking Facts- National Institute of Health

<https://pubs.niaaa.nih.gov/publications/UnderageDrinking/UnderageFact.htm>

RIA Reaching Others: The Facts on Teen Drinking-- University of Buffalo

http://www.buffalo.edu/cria/news_events/es/es14.html

Underage Drinking Myths Vs Facts-- Substance Abuse and Mental Health Services Administration

https://www.prevention.org/Resources/D0EFD83F-26CC-4AF3-8E2F-5CCCEA1890B5/UnderageDrinking_MythsVsFacts.pdf

Alcohol is a *carcinogen* (something that can cause cancer) and can contribute to the development of cancers of the female breast, liver, colon, rectum, mouth, pharynx, larynx, and esophagus.

Cancer Prevention and Control. (2018, July 12). Retrieved from https://www.cdc.gov/cancer/dpcp/prevention/policies_practices/alcohol/index.htm

No "safe" amount of alcohol consumption has been found for cancer; even consumption of two drinks per day causes a significant increase in risk.

Baan R, Straif K, Grosse Y, Secretan B, el Ghissassi F, Bouvard V, et al. Carcinogenicity of alcoholic beverages. *Lancet Oncol.* 2007;8:292–293. [PubMed]

Underage alcohol use is associated with brain damage and neurocognitive deficits, with implications for learning and intellectual development. Impaired intellectual development may continue to affect individuals into adulthood.

Zeigler, Wang, Yoast, Dickinson, Mccaffree, Robinowitz, and Sterling. "The Neurocognitive Effects of Alcohol on Adolescents and College Students." *Preventive Medicine* 40.1 (2005): 23-32. Web. <https://www.ncbi.nlm.nih.gov/pubmed/15530577>

No one under the age of 21 may purchase, attempt to purchase, consume, or possess alcoholic beverages.

A conviction is punishable by a **fine between \$200 and \$500**, up to one month in jail, \$149 in court costs, and a driver's license suspension for a minimum of 30 days upon first conviction. Must appear citation.

<http://www.rileycountypolice.org/faq/minor-in-possessionconsumption-of-alcoholic-beverages>

Alcohol affects the chemistry of the brain, increasing the risk of depression.

Hangovers can create a cycle of waking up feeling ill, anxious, jittery and guilty. As well as:

- psychosis - hearing voices when there is nobody there
- dementia - memory loss, rather like Alzheimer's dementia
- physical - damage organs, such as the liver or brain.

<https://www.rcpsych.ac.uk/mental-health/problems-disorders/alcohol-and-depression>

Vaping

Options ▾

How does the state define an e-cigarette?

Electronic cigarette "means a battery-powered device, whether or not such device is shaped like a cigarette, that can provide inhaled doses of nicotine by delivering a vaporized solution by means of cartridges or other chemical delivery systems."

Kan. Stat. Ann. § 79-3301(m) (2018)

Consumable material "means any liquid solution or other material that is depleted as an electronic cigarette is used."

Kan. Stat. Ann. § 79-3399(b) (2018)

Restrictions are in place for retail or youth access?

Sale/distribution of electronic cigarettes to persons under age 18 prohibited.

Kan. Stat. Ann. § 79-3321(l) (2018)

Purchase/possession of electronic cigarettes by person under age 18 prohibited.

Kan. Stat. Ann. § 79-3321(m), (n) (2018)

<https://publichealthlawcenter.org/resources/us-e-cigarette-regulations-50-state-review/ks>

Quick Facts on the Risks of E-cigarettes for Kids, Teens, and Young Adults--- United States Center for Disease Control

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html

Teens and E-Cigarettes---National Institute on Drug Abuse

<https://www.drugabuse.gov/related-topics/trends-statistics/infographics/teens-e-cigarettes>

Teens and Vaping- United States Drug Enforcement Agency

<https://www.getsmartaboutdrugs.gov/content/teens-and-vaping>

Use of **e-cigarettes** is common in university students and appears to be **associated with a variety of mental health and drug use problems**. Clinicians should be aware that certain mental health conditions are more common in e-cigarette users. This study indicates the **need for longitudinal research into the effects of chronic nicotine consumption on brain function and mental health**, especially in young people, since such effects would be common to conventional tobacco smoking and vaping.

Grant, Jon E, et al. "E-Cigarette Use (Vaping) Is Associated with Illicit Drug Use, Mental Health Problems, and Impulsivity in University Students." *Annals of Clinical Psychiatry.*, vol. 31, no. 1, pp. 27–35.

A medical examiner says a North Texas man was killed when an e-cigarette exploded in his face.

<https://www.nytimes.com/aponline/2019/02/04/us/ap-us-e-cigarette-death.html>

Vaping companies go out of their way to convince consumers that their products are safe. They are using social media in an effort to spread falsehoods about their products.

Basáñez, Tatiana, et al. "Vaping Associated with Healthy Food Words: A Content Analysis of Twitter." *Addictive Behaviors Reports.*, vol. 8, 2018, pp. 147–153.

Researchers have found that the **"addition of pyrazines to ECIGs should be regulated, because they act synergistically with nicotine to increase product appeal, ease smoking initiation, and discourage cessation"**. In other words, researchers have found that vaping companies go out of their way to make their products addictive to consumers.

El-Hage R, El-Hellani A, Salman R, Talih S, Shihadeh A, Saliba NA. Fate of pyrazines in the flavored liquids of e-cigarettes. *Aerosol Sci Technol.* 2018;52(4):377-384.

Use of a **lower nicotine concentration e-liquid may be associated with** compensatory behavior (e.g. higher number and duration of puffs) and **increases in negative affect, urge to vape and formaldehyde exposure**.

Dawkins, Lynne, et al. "'Real-World' Compensatory Behaviour with Low Nicotine Concentration e-Liquid: Subjective Effects and Nicotine, Acrolein and Formaldehyde Exposure." *Addiction.*, vol. 113, no. 10, 2018, pp. 1874–1882.

Researchers investigated the effects of e-cigs on the inflammatory response and viability of COPD bronchial epithelial cells (BECs). E-cigs caused toxicity and reduced the antiviral response to poly I:C. This raises concerns over the safety of e-cig use as it reduces the immune system's ability to fight disease in those with COPD.

Higham, Andrew, et al. "The Effect of Electronic Cigarette and Tobacco Smoke Exposure on COPD Bronchial Epithelial Cell Inflammatory Responses." *International Journal of Chronic Obstructive Pulmonary Disease.*, vol. 13, 2018, pp. 989–1000.

Knowledge of the long-term toxicological and immunological effects of e-cigarette (e-cig) aerosols remains elusive due to the relatively short existence of vaping. Electronic nicotine delivery systems (or e-cigs) are an alternative to traditional cigarettes for the delivery of nicotine and are typically filled with glycerol or propylene glycol-based solutions known as e-liquids. Though present in lower quantities, e-cig aerosols are known to contain many of the harmful chemicals found in tobacco smoke. However, due to the paucity of experimental data and contradictory evidence, it is difficult to draw conclusive outcomes regarding toxicological, immunological and clinical impacts of e-cig aerosols. Excessive vaping has been reported to induce inflammatory responses including mitogen-activated protein kinase, Janus tyrosine kinase/signal transducer and activator of transcription and nuclear factor- κ B signalling, similar to that induced by tobacco smoke. Based on recent evidence, **prolonged exposure to some constituents of e-cig aerosols might result in respiratory complications such as asthma, chronic obstructive pulmonary disease and inflammation.** Future studies are warranted that focus on establishing correlations between e-cig types, generations and e-liquid flavours and immunological and toxicological profiles to broaden our understanding about the effects of vaping.

Kaur, Gagandeep, et al. "Immunological and Toxicological Risk Assessment of e-Cigarettes." *European Respiratory Review : an Official Journal of the European Respiratory Society.*, vol. 27, no. 147, pp. European respiratory review : an official journal of the European Respiratory Society. , 2018, Vol.27(147).

This study reveals that the **major solvents used in e-cigarettes** propylene glycol and glycerol, not nicotine or flavors, **have unsuspected effects on gene expression of the molecular clock that are to be taken seriously**, especially considering the fundamental role of the circadian rhythm in health and disease.

Lechasseur, Ariane, et al. "Exposure to Electronic Cigarette Vapors Affects Pulmonary and Systemic Expression of Circadian Molecular Clock Genes." *Physiological Reports.*, vol. 5, no. 19, 2017, pp. Physiological reports. , 2017, Vol.5(19).

Findings suggest there may be little benefit in reducing nicotine e-liquid concentration since this appears to result in higher e-liquid consumption which may incur both a financial and health cost. Gaining an understanding of underlying reasons for lowering e-liquid concentration would be a useful line of empirical enquiry.

Soar, Kimber, McRobbie, and Dawkins. "Nicotine Absorption from E-cigarettes over 12months." *Addictive Behaviors* 91 (2019): 102-05.<https://doi.org/10.1016/j.addbeh.2018.07.019>

Nicotine withdrawal is challenging.

<https://smokefree.gov/challenges-when-quitting/withdrawal/managing-withdrawal>

Inhalation of **nicotine** from smoking tobacco, or pharmacological doses, **increases heart rate, elevates blood pressure, and constricts blood vessels within the skin.**⁴ Nicotine is primarily responsible for many of the acute psychological and physiological effects of smoking or chewing tobacco.⁶ In terms of acute toxicity risk, e-liquids are far more dangerous than tobacco, because liquid nicotine is absorbed more quickly, even in diluted concentrations. Overexposure to nicotine, "nicotinism", is characterized by stimulation and subsequent depression or even paralysis of the central and autonomic nervous systems.³ Symptoms of overexposure may include nausea, salivation, abdominal pain, vomiting, diarrhea, headache, dizziness, auditory and visual disturbances, confusion, weakness, incoordination, paroxysmal atrial fibrillation, convulsion, and dyspnea. Death may result from paralysis of the respiratory muscles. **Nicotine may promote tumor growth by inhibiting the body's abilities to rid itself of tumors.** The accelerated heart rate and increased blood pressure caused by nicotine places an increased burden on the heart, which may play a role in the onset of myocardial ischemia.⁸

Luttrell, and Vogel. "Nicotine." *Journal of Chemical Health & Safety* 21.4 (2014): 39-41. Web. https://ac.els-cdn.com/S1871553214000577/1-s2.0-S1871553214000577-main.pdf?_tid=bfe4e732-35c0-4671-9c64-8972ebf8ead7&acdnat=1549484702_abb6de186be5cb44b14dd57d9b1a65c1

Investigators estimated exposures that might result from daily use of each e-liquid sample and concluded that **health-based limits recommended by the Agency for Toxic Substances Disease Registry and the U.S. Environmental Protection Agency could be exceeded in many cases for nickel, chromium, manganese, and lead.** Additional research is needed to better understand the metal compounds in e-cigarette emissions, their absorption through the respiratory tract, and the potential health effects of e-cigarette metal related exposures.

Arnold, Carrie. "Between the Tank and the Coil: Assessing How Metals End Up in E-Cigarette Liquid and Vapor." *Environmental Health Perspectives* 126.6 (2018): 064002. Web.

Heavy metal toxicity can lower energy levels and damage the functioning of the brain, lungs, kidney, liver, blood composition and other important organs. Long-term exposure can lead to gradually progressing physical, muscular, and neurological degenerative processes that imitate diseases such as multiple sclerosis, Parkinson's disease, Alzheimer's disease and muscular dystrophy.

Järup L. Hazards of heavy metal contamination. *Br Med Bull.* 2003;68(1):167-182. [PubMed]

Marijuana

Options -

Drug Facts: Marijuana -National Institute on Drug Abuse (NIDA)

<https://www.drugabuse.gov/publications/drugfacts/marijuana>

Marijuana impairs judgment and many other skills needed for safe driving: alertness, concentration, coordination, and reaction time. Marijuana use makes it difficult to judge distances and react to signals and sounds on the road. **Marijuana is the most commonly identified illegal drug in deadly crashes, sometimes in combination with alcohol or other drugs.** By itself, marijuana is thought to roughly double a driver's chances of being in a crash, and the combination of marijuana and even small amounts of alcohol is even more dangerous 4,5

4 Biecheler M-B, Peytavin J-F, Sam Group, Facy F, Martineau H. SAM survey on "drugs and fatal accidents": search of substances consumed and comparison between drivers involved under the influence of alcohol or cannabis. *Traffic Inj Prev.* 2008;9(1):11-21. doi:10.1080/15389580701737561. 5 DRUID Final Report: Work Performed, Main Results and Recommendations. EU DRUID Programme; 2012. <http://www.roadssafetyobservatory.com/Evidence/Details/10940>.

Effects of long-term or heavy use

Addiction (in about 9% of users overall, 17% of those who begin use in adolescence, and 25 to 50% of those who are daily users)*

Altered brain development *

Poor educational outcome, with increased likelihood of dropping out of school*

Cognitive impairment, with lower IQ among those who were frequent users during adolescence *

Diminished life satisfaction and achievement (determined on the basis of subjective and objective measures as compared with such ratings in the general population)*

Symptoms of chronic bronchitis

Increased risk of chronic psychosis disorders (including schizophrenia) in persons with a predisposition to such disorders

Longo, Volkow, Baler, Compton, and Weiss. "Adverse Health Effects of Marijuana Use." *The New England Journal of Medicine* 370.23 (2014): 2219-227. Web.

An overview of the health effects and harms associated with marijuana use

- No evidence of harm
 - Overall health effects: arteritis
 - Cancer: lung, head and neck cancers
- Inconclusive
 - Overall health effects: all-cause mortality, atrial fibrillation and bone loss
 - Mental health: psychosis in high-risk individuals, worsening psychotic symptoms, suicide, depression and anxiety
 - Cancer: bladder, prostate, penile, cervical and childhood cancers
 - Brain changes: white matter and blood flow changes
- Evidence of harm
 - Overall health effects: driving, stroke, pulmonary function, cross-interaction with drugs and vision
 - Mental health: psychosis, mania, neurologic soft signs, relapse in patients with psychosis or schizophrenia, and dependence on cannabis
 - Cancer: testicular cancer
 - Social effects: impaired driving
 - Brain changes: decreased glutamate, changes in dopamine, decreased hippocampal volume and poorer global functioning
 - Neurocognitive changes: reduced memory, anhedonia and decreased efficiency

Memedovich KA, Dowsett LE, Spackman E, Noseworthy T, Clement F. The adverse health effects and harms related to marijuana use: an overview review. *CMAJ Open.* 2018;6(3):E339-E346. Published 2018 Aug 14. doi:10.9778/cmajo.20180023

Adolescent Exposure

Concerns about the risks of adolescent cannabis use, especially regular or heavy use, **focus on the developing adolescent brain** (Batalia *et al.*, 2013; Volkow *et al.*, 2014; Zalesky *et al.*, 2012), **poor educational outcome** (Fergusson *et al.*, 2015), **school dropout, cognitive impairment and lower IQ** (Meier *et al.*, 2012), lower life satisfaction and achievement (Fergusson and Boden, 2008), and addiction (Agrawal *et al.*, 2004; Chen *et al.*, 2009). However, studies of these problems, particularly those related to cognitive functioning, are not considered conclusive (National Academies of Sciences, 2017) because shared risk factors could be responsible for both the early cannabis use and the impairments shown later (Volkow *et al.*, 2014). Furthermore, cognitive impairment could predate the earliest cannabis use. **For this reason, the large-scale Adolescent Brain Cognitive Development (ABCD) Study (National Institutes of Health, 2015) has been launched. The ABCD study aims to conduct extensive neurocognitive and brain imaging studies on children before the earliest age at onset of cannabis use, and then to repeatedly assess children who do and do not use cannabis over 10 years to determine their neurocognitive and other outcomes.**

Hasin DS. US Epidemiology of Cannabis Use and Associated Problems. *Neuropsychopharmacology*. 2017;43(1):195-212.

Orbitofrontal connectivity is associated with depression and anxiety in marijuana-using adolescents.

Background: Prevalence of marijuana (MJ) use among adolescents has been on the rise. MJ use has been reported to impact several brain regions, including frontal regions such as the orbitofrontal cortex (OFC). **The OFC is involved in emotion regulation and processing and has been associated with symptoms of depression and anxiety.** Therefore, we hypothesized that adolescent MJ users would show disruptions in OFC connectivity compared with healthy adolescents (HC) which would be associated with symptoms of mood and anxiety. **Methods:** 43 MJ-using and 31 HC adolescents completed clinical measures including the Hamilton Anxiety Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D). Resting-state functional magnetic resonance imaging data was also acquired for all participants.

Results: In marijuana users, increased depressive symptoms were associated with increased connectivity between the left OFC and left parietal regions. In contrast, lower ratings of anxiety were associated with increased connectivity between right and left OFC and right occipital and temporal regions. These findings indicate significant differences in OFC connectivity in MJ-using adolescents, which correlated with mood/anxiety.

Discussion: The current study demonstrated alterations in OFC connectivity in adolescent MJ users, which correlated with symptoms of depression and anxiety. Furthermore, it is important to note that our findings showed that OFC connectivity was differentially associated with anxiety and depression. **This finding could indicate that MJ-using adolescents recruit different regions compared to healthy controls due to a compensatory mechanism process needed to regulate emotional behavior. Alterations in resting-state connectivity associated with compensatory strategies have previously been reported in individuals with PTSD (Sadeh *et al.*, 2015), mild cognitive impairment (Liang *et al.*, 2011) and social anxiety disorder (Etkin *et al.*, 2009).**

Subramaniam, Rogowska, Dimuzio, Lopez-Larson, Mcglade, and Yurgelun-Todd. "Orbitofrontal Connectivity Is Associated with Depression and Anxiety in Marijuana-using Adolescents." *Journal of Affective Disorders* 239 (2018): 234-41. <https://www.ncbi.nlm.nih.gov/pubmed/30025312>

The impact of the legalization of recreational marijuana on college students

In January of 2014 the Regulate Marijuana like Alcohol Act or, Amendment 64, went into effect in Colorado. Even though it was the first state to enact recreational legalization, attitudes towards marijuana use have been changing for decades. Prompted by medical marijuana legalization, studies have found mixed results in regards to the impact that legalization has on frequency of use and abuse. With college students having the highest rates of use in the United States (U.S.), whether legal or not, it was important to explore the impact that legalization has on this population. In the current study, rates of marijuana and alcohol use in college students before and after recreational legalization were explored. Data was collected in four waves from October 2013 to March 2015, to be able to determine the trends in marijuana and alcohol use, and relationship between the substances. **In addition, grade point average was measured as a possible consequence of marijuana use.** We found the frequency of marijuana use in Colorado college students is much higher than the national average $t(94445) = 24.424, p < 0.001$, especially the percentage of daily or almost daily users, $t(2191) = 10.373, p < 0.001$. There were significant differences between the marijuana non-users and the once a week or more often but not daily marijuana users in grade point average, $F(6, 227) = 2.935, p < 0.001$. In addition, it seems that the relationship between alcohol and marijuana use in general is decreasing since the passing of Amendment 64, but not among the binge drinkers.

In March 2015 grade point average (G.P.A.) was included as a variable in the study. Significant differences were found between the no use or never tried it group and the once a week or more often but not daily group in G.P.A., specifically the no use or never tried it groups G.P.A. (3.44) was 0.429 points higher than the once a week or more often but not daily group's G.P.A. (3.01), $F(6, 227) = 2.935, p < 0.05$.

Jones, J., K. Nicole Jones, and Peil. "The Impact of the Legalization of Recreational Marijuana on College Students." *Addictive Behaviors* 77 (2018): 255-59. Web.

Depression and marijuana use disorder symptoms among current marijuana users.

Background: Depression is one of the most consistent risk factors implicated in both the course of escalating substance use behaviors and in the development of substance dependence symptoms, including those associated with marijuana use. In the present study, **we evaluate if depression is associated with marijuana use disorder symptoms** across the continuum of marijuana use frequency.

Methods: Data were drawn from six annual surveys of the National Survey of Drug Use and Health to include adults who reported using marijuana at least once in the past 30 days ($N = 28,557$).

Results: After statistical control for sociodemographic characteristics and substance use behaviors including marijuana use, alcohol use, smoking, and use of illicit substances other than marijuana, **depression was positively and significantly associated with each of the marijuana use disorder symptoms as well as the symptom total score. Adult marijuana users with depression were consistently more likely to experience marijuana use disorder symptoms and a larger number of symptoms**, with the magnitude and direction of the relationship generally consistent across all levels of marijuana use frequency from 1 day used in the past month to daily marijuana use.

Conclusions: **Depression is a consistent risk factor for marijuana use disorder symptoms over and above exposure to marijuana** suggesting that depressed individuals may represent an important subgroup in need of targeted substance use intervention.

Dierker, Selya, Lanza, Li, and Rose. "Depression and Marijuana Use Disorder Symptoms among Current Marijuana Users." *Addictive Behaviors* 76 (2018): 161-68. Web.

Associations between marijuana use and anxious mood lability during adolescence

Study results show an association between difficulties with anxious mood and marijuana use for adolescent boys and girls, indicating that attention to both anxiety and marijuana use is needed, as well as further investigations regarding predictors and moderators of these associations. **Efforts are needed to identify whether anxiety leads to adolescent marijuana use (self-medication as an effort to relieve anxious feelings), marijuana use leads to greater feelings of anxiety, or a dynamic process takes place.** A dynamic process in which marijuana provides temporary relief from anxiety, leading to an escalation of marijuana use and dependence on marijuana to achieve that temporary relief is plausible.

Rusby, Westling, Crowley, Mills, and Light. "Associations between Marijuana Use and Anxious Mood Lability during Adolescence." *Addictive Behaviors* 92 (2018): 89-94. Web.

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MARPC Film Festival

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Files

- Actor Release Form.docx
- Accident_Waiver_and_Release_of_L...
- CREATIVE WORKS RELEASE.docx
- flyer.docx





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Submit Via Our Google Drive!

Click on the link below

https://drive.google.com/drive/folders/15kaGiuEbr_W_aClFtKEa0yFLZ2ihQwyt

1. Click on the "New" button that has the rainbow colored plus sign
2. Then click upload file.

Video producer last names will need to be the name of the file with an "_video" for the video file. **Ex: "miller_video"**

Signed forms will also need to be submitted. Please include an email or a phone number so we may contact you and get your prizes to you!

Actors will need to sign the actor release/waiver forms. Film producers will need to sign the waiver and creative release forms.

Signed forms need to be scanned or photographed.

Next the file or files will need to be named with "producer last name or names _forms". **ex "miller_forms"**



Appendix 2

March 10, 2019

Hello!

I'm excited to let you know that MARPC will be holding its first film festival in the coming months!



I am reaching out to see if you might be interested in donating to this cause! The theme of this film festival is "Fighting Misconceptions". We will be challenging local Manhattan Area adolescents ages 12-20 to come up with a public service announcement that will take a common misconception about Vaping/Alcohol/Marijuana substance use and prove that misconception wrong! In today's current social media environment, many falsehoods about these substances are spread by companies that sell these products. Companies will also conveniently omit important truths about possible harms. Many people are not aware of the possible harms associated with the use of these substances due to this. This is especially dangerous when it comes to more easily persuaded younger generations.

The best PSA's will be combined and/or edited to make suitable for actual advertisement use by our organization. This will include cable tv ads and social media ads.

Our goal is to teach participants and those we teach with the final product ads about the dangers of substance abuse in regard to Vaping/Marijuana/Alcohol substance abuse. We feel that the PSA's made by our participants will be more effective in teaching their peers about misconceptions than if we were to make them ourselves, especially with the ever-changing culture associated with teens (memes, Fortnite, anyone?).

We need your support in order to provide participants with prizes that will reward them for their participation and give them extra reason to make their PSA's with the highest quality possible.

Ideally, we would like to give participation prizes as well as grand prizes that reward the three highest quality PSA's submitted.

All sponsors will be mentioned in the TV ads that Cox has donated to us!

Our website for this can be found at marpcfilmfest.shutterfly.com.

Our organization website is marpc.org.

Thank you so much for your time and consideration!

Jason Messner, Master of Public Health

Manhattan Area Risk Prevention Coalition

jmessner@ksu.edu/9136269073

Appendix 3

Fighting Misconceptions



2019 Video Competition



Ages 12-20

Create a short Public Service Announcement to inform your peers about a marijuana/alcohol/vaping falsehood!

Submissions due July 30th

Prizes provided by Smoothie King, Pathfinder, Best Buy, Papa Murphy's, Rockwood Comics, and Firehouse Subs!

Please see our website at marpcfilmfest.shutterfly.com for more information!