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Effective Preventative Interventions of Substance Use

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Effective Preventative Interventions of Substance Use

by

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MSW Clinical Research Paper

Presented to the Faculty of the
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This Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in ST. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present their findings. This project is neither a Master's thesis nor a dissertation.

Abstract

Substance use among adolescents remains a serious problem in most rural communities in part due to the well-documented failure of most prevention programs. Despite these challenges some prevention programs have been deemed both reliable and valid. Three such programs include the: *Adolescent Transitions Program*, *Strengthening Families Program: For Parents and Youth 10-14*, and *Guiding Good Choices*. This paper provides a systemic review of these three programs and offers suggestions to community leaders for successful program implementation.

Keywords: adolescent, substance use, rural

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Effective Preventative Interventions of Substance Use

The subject of addiction is very dear to my heart. I live in what several national surveys have called the “drunkest city in America”. Per capita, Fargo residents consume more alcohol than any other city, and the highest rate of binge drinking belongs to the state of North Dakota. Although many organizations try to combat this overindulgence with various educational seminars and implementation of new policies, alcohol continues to be in attendance at most community function, sporting event, family gathering, and celebration.

Personally, my own addiction with alcohol started before I reached the legal drinking age and ended before my 30th birthday. My journey through sobriety started in May of 2008 with high hopes and a new grasp on life. I quickly realized the complexity of addiction and realized the weight of committing my life to never again taking another sip of alcohol, my longtime friend. Through relapses, suicide attempts, interventions, loss, and awakening, I conquered the drug that was slowly killing me. The date August 15, 2010 is an anniversary that will never be forgotten and always celebrated because it is the day that I started living.

Not only my personal struggle with addiction, but also my yearning to find effective substance abuse programs, spurred my decision to conduct my research in substance use among adolescents. I have always heard conversations about the ineffectiveness of D.A.R.E. and wondered why school districts continue to use it. This question again crossed my mind, when, during research in my graduate level Methods course, I came across numerous journal articles that criticized D.A.R.E. for its ineffectiveness. For this research paper, I wanted to uncover programs that are more

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effective than D.A.R.E., and find out why these programs are more effective than
D.A.R.E.

Introduction

Since the Nixon years of the 1970's, an array of studies, interscholastic programs, and generic slogans has been employed to address adolescent substance use. Whether it be as casual as having a drink at a party or as serious as experimenting with methamphetamines for the first time, effective prevention methods seem to be as elusive as they come, if not non-existent. A report piloted by The Office of Applied Studies through Substance Abuse and Mental Health Services Administration (SAMHSA) in (2009), illustrates substance use among Minnesota adolescents. The number of adolescents, adolescents being 12-17 years of age, who used alcohol and illicit drugs was 80,000 (18.1%) and 47,000 (10.6%) respectively (Substance Abuse and Mental Health Services Administration, 2009). Adolescence being an especially vulnerable and vacillating time in one's life, it isn't surprising that this age group is especially susceptible to influence and experimentation. "Adolescents are sometimes morbidly, often curiously, preoccupied with what they appear to be in the eyes of others as compared with what they feel they are, and with the question of how to connect the earlier cultivated roles and skills with the ideal prototypes of the day" (Erikson, 1980, p. 94). While many anti-substance programs have tried and failed to provide a high rate of success in deterring and alleviating this issue, recent evidenced based research has given us considerable cause for optimism (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003). The far-reaching and pervasive social and economic ramifications of adolescent substance use, have spurred debate, conversation, and over-all awareness of

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the issues in view, especially discussing the effectiveness of substance prevention programs.

Since the 1980's, various drug prevention programs have been offered to students across the nation. Three of these programs, Drug Abuse Resistance Education (D.A.R.E.), random drug testing, and zero tolerance were designed to reduce adolescent substance use by teaching students about the dangers and consequences of drug use, building community relationships, increasing students' self-esteem, and teaching students how to resist peer pressure. Though validity in these programs is minimal to none, D.A.R.E. continues to be one of the most used prevention program used today (O'Neil and West, 2004).

Historically, former first lady Nancy Reagan's *Just Say No* campaign, part of former President Nixon's *War on Drugs* initiative, did little to diminish our nation's drug problem. These campaigns came about through the Comprehensive Drug Abuse Prevention and Control Act of 1970. A model of prevention that teaches abstinence only has shown be an ineffective approach. Teaching adolescents a combination of moderation and abstinence may be a more logical approach (Davis and van Wormer, 2003).

Adolescents who experiment with substances are not a new phenomenon and not a problem that will improve overnight. Substance Abuse and Mental Health Services Administration (SAMHSA), is an agency within the US Department of Health and Human Services that dedicates their efforts towards reducing substance abuse and mental illness across the nation. Most recently SAMHSA released the Center for Behavior Health Statistics and Quality (CBHCQ) report which collected data from an estimated 25.1 million 12-17 year old adolescents from the 2010 and 2011 National Surveys on

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Drug Use and Health (NSDUHs). According to those surveys, in the past year, an estimated 7 million adolescents drank alcohol and an estimated 5 million used an illicit drug (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013).

The reality is adolescents are experimenting with drugs and alcohol. A multifaceted approach may be necessary to address the question, what are effective preventative interventions for reducing substance use among adolescents? This approach may need to focus on more than just the individual, but also the community and family in which the individual is involved. The following literature review will examine the significance of one's culture and individual development through adolescence identity. Three prevention programs (zero tolerance, D.A.R.E., and random drug testing) that are implemented today will be examined on their effectiveness for reducing substance use among adolescents.

Literature Review

Culture

Substance use among adolescents in rural communities has not been effectively addressed. Rural communities tend to have higher acceptance for substance use among adolescents considering it *normal* behavior (An, Easton, Godley, Hall, Jang, Smith, and Williams, 2008, p. 110 and Geenburg, Mulholland, Salm, and Sevigny, 2011).

Adolescents that are involved in substance use have fewer risks or consequences to their using due to the culture of what happens in the home stays in the home mentality. When a problem arises in a rural community it is remedied with community resources, not outside ones. However, due to rural proximity, resources are limited or nonexistent resulting in little to no available treatment (An et al., 2008).

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Even if community members are aware of high substance use in the community, due to rural culture the problem is less likely to be, discussed in a public manner. Teachers have even reported saying that even if they know their students are using substances they will not say anything if they are attending class (Geenburg et al. 2011). There are greater issues, such as, students getting their basic needs, and teachers make meeting basic needs a priority before substance use. “Kids are coping with parents fighting or not having enough food” (Geenburg et al. 2011, p. 80). The mentality that all kids experiment with alcohol is more accepted in rural culture however, adolescents using drugs would be seen as problematic and worrisome.

Additionally, American adolescents differ from their European counterparts in how they are initiated into drinking. American adolescents are experimenting in dark basements or the back woods of friends’ houses where their act is hidden from parents and society. When compared to Italian youth, American adolescent drinking initiation appears to be an act of social rebellion versus an acceptable component of cultural expression. For example, Italian adolescents may sit around the dinner table with family complimenting their dinner with a glass of wine. However, American adolescents learn at an early age to disrespect the law by keeping their drinking hidden (Scherer, 2013). They don’t drink to socialize with family or friends; instead they drink to get drunk (Davis and van Wormer, 2003). According to Fisanick (2009), they drink to reach oblivion.

American adolescents believe they are invincible and nothing will hurt or stop them from doing what they want (Gaughen, 2002). Americans strive to be better, faster, richer, and stronger than everyone around them. This mentality carries over to the way in which Americans view alcohol. Advertisers send mixed messages to America’s young

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people through their \$1 billion industry on alcohol advertisements. On the one hand you have parents teaching their children the dangers of drugs and alcohol but on the other hand the media portrays alcohol as alluring and exciting (Gaughen, 2002). No wonder it is difficult for adolescents to make the “right” decision when pressured into experimenting with substances. Furthermore, take into account the fact that adolescents’ brains are not fully developed to make sound decisions.

Adolescent Development

Adolescence is a time in everyone’s life when one’s identity starts to take shape. It is the “passage between childhood and adulthood” (National Association of Social Workers, 2003). In this stage adolescents begin to explore their identity, independence, and learn to start thinking critically about self and the world around them (National Association of Social Workers, 2003). Role confusion and how to integrate one’s roles becomes complicated in this phase of life. Adolescents are figuring out what it means to be son, daughter, student, friend, sister, and brother, altogether maintaining these relationships (Kirst-Ashman and Zastrow, 2001).

Adolescents need to feel safe and supported in order to generate healthy development. Adolescents who experience alienation, discrimination, or who are disenfranchised may turn to substances to find comfort. If this occurs, then this stage of adolescent development is prolonged until the substance use is stopped (National Association of Social Workers, 2003).

Erik Erikson further explains development in his theory of psychological development. A person’s social environment plays an important role in development. In Erikson’s theory the “focus on how personalities evolve throughout life as a result of the

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interaction between biologically based maturation and the demands of society” (Kirst-Ashman and Zastrow, 2001, p. 277). “This is hard on many young Americans because their whole upbringing, and therefore the development of a healthy personality, depends on a certain degree of *choice*, a certain hope for an individual *chance*, and a certain conviction in freedom of *self-determination*” (Erikson, 1980, p. 99).

The age of adolescence according to Erikson’s theory falls in stage 5, Identity vs. Role Confusion. Experimentation is conducted in this stage in terms of job, love, drugs/alcohol, religion, organizations, sports, and interests/hobbies. During this stage individuals are exploring who they are in order to create their own identity. The most important factor in creating one’s identity in this stage of development is peer relationships. Being unique or different is deemed undesirable creating identity confusion in adolescence (Kirst-Ashman and Zastrow, 2001). American adolescents are intolerable of difference and they will over identify with crowds and cliques to not be labeled different from peers (Erikson, 1980, 1950). Identity confusion may delay adulthood, create poorly, thought-out courses of action, and the adolescent may regress back into childhood (Kirst-Ashman and Zastrow, 2001). “It is important to understand such intolerance as the necessary *defense against a sense of identity confusion*, which is unavoidable at a time of life when the body changes its proportions radically” (Erikson, 1980, p. 97-98). All crises need to be managed in order to advance to the next stage of development (Kirst-Ashman and Zastrow, 2001). “A sense of identity is achieved only after a period of questioning, reevaluation, and experimentation” (Kirst-Ashman and Zastrow, 2001, p. 280). “But it is increasingly important to understand this also in order

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to treat the intolerances of our adolescents at home with understanding and guidance rather than with verbal stereotypes or prohibitions” (Erikson, 1980, p. 98).

Zero Tolerance

“Zero Intelligence” or “Zero Evidence” are the nicknames critics have given to the government’s War on Drugs campaign. War on Drugs debuted in the 1980’s with the belief that in order to reduce substance use among adolescents, America needed to crack down on illegal drug use by having a zero tolerance approach to the use or distribution of such drugs (Teske, 2001). “Mischievous is a foreseeable deviate of adolescence” (Teske, 2001, p. 88). The effect of withholding alcohol from teens may have a counterintuitive effect. Rather than protecting them from abusing alcohol, it may put adolescents into greater risk of abuse due to the enticing lure of a forbidden substance (Scherer, 2013).

The zero tolerance is an approach that is antithetical to the developmental stage of adolescence. Dr. Deborah Yurgelun-Todd, a researcher at Harvard Medical School, explains that biologically a youths’ brain is wired to participate in risk taking behaviors, impulsive decision making, and have poor judgment. Until the age of 21, the prefrontal cortex, which filters emotional response, is undeveloped, leaving them susceptible to peer pressure. “One of the things that teenagers seem to do is to respond more strongly with gut response than they do with evaluating the consequences of what they are doing” (Teske, 2001, p. 91). Zero tolerance in light of adolescent brain development is an ineffective method in preventing use and abuse.

Erikson (1950, 1980) gives further explanation that “delinquent and outright psychotic incidents are NOT uncommon” (p. 262, 97). Youth act out due to intolerable differences. They run away, leave school, leave jobs, stay out all hours of the night, and

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retreat into bizarre moods (Erikson, 1980). “If diagnosed and treated correctly, these incidents do not have the same fatal significance which they have at other ages” (Erikson, 1950, p. 262).

Zero tolerance is used in the school system as a punitive approach to minor offenses such as truancy and substance use related instances. The adaptation of zero tolerance has resulted in more out of school suspensions and expulsions. “This is evident in the near doubling of students suspended annually from 1.7 million in 1974 to 3.1 million in 2001” (Teske, 2001, p.89). The implementation of zero tolerance in the school system doesn’t work. Suspending a student who doesn’t want to be in school in the first place doesn’t make sense. These policies actually increase risk to schools and community safety by removing the student from school (Teske, 2001). This approach is not only ineffective in the school system it is ineffective in the government’s War on Drugs.

Ever since President Nixon coined the term “War on Drugs” in the 1980’s, the American government has spent billions of dollars in their fight to eliminate illegal drugs from the country. Manufacturing and distributing illegal drugs is a global market which is hard to contain. Eliminating all illegal drugs is a time sensitive and costly operation that is unattainable. The Drug Enforcement Administration (DEA) will never seize all drugs or dismantle all trafficking organizations. When an organization is targeted and drugs are seized, more than likely the infrastructure is never impacted, only the couriers and drivers are penalized. Drug trafficking organizations have gotten wiser in attempts to elude the DEA by moving operations to other countries, having smaller memberships, and moving poly-drug supplies. Drug prices are rising, resulting in addicts increasing their efforts of

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obtaining resources in order to fuel their sickness; this is called the Balloon Effect (White, 2002).

Zero tolerance is an ineffective approach to substance use among adolescents. The zero tolerance approach does not prevent adolescents from using substances. Adolescents are in the stage of their lives when experimentation is at its highest. If zero tolerance is the method used to deter substance use, adolescents will go to any lengths to experiment which, may result in more harm to the individual. Another example of America's ineffective approach to adolescent substance use is D.A.R.E.

D.A.R.E.

Although D.A.R.E. has zero validity of effectiveness, it is one of the most widely used and most heavily funded substance abuse prevention programs in the nation. D.A.R.E. receives the most federal dollars in the government's War on Drugs campaign (O'Neil and West, 2004). D.A.R.E. was developed in 1983 by educators for the Unified School District in Los Angeles in collaboration with the Los Angeles Police Department. From the start, the main goal has always been offering prevention to students at a young age before curiosity causes them to experiment with drugs and alcohol (Thompson and Zagumny, 2001). However, a study conducted by Dr. Bruce Gay, an assistant professor of criminal justice at University of Houston-Downtown, revealed that 5th graders are experimenting with substances before they receive D.A.R.E. intervention. Out of 1,771 5th graders involved in the study, pre-test results reported that 15% of students had already experimented with drugs and 32% had already tried alcohol. It has been suggested that D.A.R.E. implement its program before students enter 5th grade, before their curiosity about drugs and alcohol take affect (Gay, 1999).

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D.A.R.E. consists of school-aged students, typically grades 5 or 6, meeting with law enforcement (D.A.R.E.) officer one day a week for 1 hour for 17 weeks. Curriculum consists of “types of peer pressure commonly experienced by adolescents and ways to resist that pressure, eight ways to say ‘no’, approaches to developing positive self-esteem, and ways to deal with stress” (Thompson and Zagumny 2001, p. 35). Critics of D.A.R.E. question how a 17 week program can keep adolescents drug free for life. Prevention programs need to give school-aged students a consistent message year after year in order for interventions to be effective (Gaughen, 2002). D.A.R.E. alone is not an effective intervention to prevent adolescents from using substances. Either D.A.R.E. needs to be coupled with other interventions throughout a student’s scholastic career or other programs that are evidenced based need to be utilized in school districts.

One study conducted by researchers at the University of Minnesota followed 6,237 7th graders from 24 middle schools from 1999-2001. Among these students, 7 middle schools used D.A.R.E. only intervention, 7 middle schools used D.A.R.E. Plus intervention, and the remaining “control” group did not use an intervention program. The D.A.R.E. only intervention group showed no significant difference in substance use compared to the control group (The Brown Child and Adolescent University Behavior Letter, 2003).

A longitudinal evaluation of D.A.R.E. by Thompson and Zagumny (2001), gathered data from a rural Tennessee school in 1991 when no formal substance abuse intervention had yet to be implemented compared to 1996 when D.A.R.E. had been implemented. Data was gathered through voluntary student self-reports. Two hundred and fifty three students participated in the 1991 survey sample while 142 students

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participated in the 1996 survey. Results indicated no significant difference in students' attitudes about drugs and alcohol among D.A.R.E. and non-D.A.R.E. students. Thompson and Zagumny (2001), concluded that widespread substance use education may be the cause for the reduction in substance use among students in this particular rural Tennessee high school, not D.A.R.E.

Another longitudinal evaluation by Wyson, Aniskiewicz, and Wright was conducted in 1994. "The authors found no significant difference between D.A.R.E. participants measured in the 12th grade and the nonequivalent seniors on self-esteem, coping skills, and drug attitudes" (Thompson and Zagumny, 2001, p. 34). Yet another study in New Jersey found similar results in 1995. The only significant data shown was on reported criminal offenses. Out of 12 reported offenses, 11 were committed by D.A.R.E. students and 1 by a non-D.A.R.E. student (Thompson and Zagumny, 2001).

Some professionals and researchers argue that D.A.R.E. is effective in increasing adolescents' self-esteem, building relationships with law enforcement, and decreases future substance use. The study by Bruce Gay found conflicting results. He found that after Houston students graduated from D.A.R.E. they reported more negative qualities about law enforcement than before D.A.R.E. Students rating law enforcement as mean are the same students rating gang involvement as good. Implementation of D.A.R.E. also had no significance in reducing adolescent substance use. In this study, participants reported an increase in substance use (Gay, 1999).

There are very few positives to the D.A.R.E. program. In the same study by Bruce Gay, he found that students did learn 6-9 ways to say "no" to drugs when pressured by a peer (Gay, 1999). This is beneficial considering it's a critical time in one's life when

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identities are being formed and peer group influences are strongest in comparison to parent or other adult relationships (Davis and van Wormer, 2003).

There is very little expectation for the overall effectiveness of the D.A.R.E. program. A program that was intended to prevent substance use has fallen short of that goal. Despite numerous studies that illustrate its ineffectiveness, D.A.R.E. continues to be endorsed today by many school districts and law enforcement agencies nationwide, including the U.S. Department of Justice (Ringwalt and Vincus, 2010). Similarly, random drug testing is a prevention program being implemented in some high schools across the nation.

Random Drug Testing

Random drug testing (RDT) is an approach “that had grown into popularity after two Supreme Court rulings (Vernonia School District 47j v Acton, 1995; Board of Education of Independent School District of Pottawatomie County et al. v Earls et al., 2002) upheld the constitutionality of randomly drug testing student athletes and participants in extracurricular activities” (Campbell, Campbell, DuPont, DuPont, and Shea, 2013, p.105). These rulings gave schools the authority to test students as a drug prevention strategy (Fisanick, 2009). Random drug testing is used as a form of substance use intervention by approximately 25% of high schools across the nation despite inconsistent studies of the program’s ineffectiveness. Nevertheless, the U.S. government continues to fund RDT despite the programs controversial aspects. The Bush administration allotted \$15 million in the budget to fund RDT in schools (Fisanick, 2009).

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One of the most controversial features of random drug testing is inaccurate testing results. False negative results can be altered by traces of poppy seeds in an individual's system or by drinking large amounts of water to dilute the results (Bowling, Ennet, Hanley, Ringwalt, Rohrbach, Vincus, and Yacoubian, 2009). False positives can be skewed by legitimate use of over the counter medications. A study published in the *Journal of Pediatrics* illustrates this concern. Researchers at the Children's Hospital in Boston examined 710 urine drug tests from 110 patients. Of these tests 40 negative results were found to be too diluted to get an accurate recording and 45 positive results were found to be culprit to the patient's legal over the counter medication use. Due to this sensitivity of RDT, trained professionals are hired to obtain accurate results ensuing more cost to the program (The Brown Child and Adolescent University Behavior Letter, 2007). These inaccuracies corrode perceptions of RDT's usefulness (Evans, Liss, Reader, Roy, and Wiens, 2006).

Violation of civil rights and loss of individual freedom is another controversial feature of RDT (Elliot, Goldberg, Kuehl, Lockwood, MacKinnon, Moe, and Nohre, 2003). School districts that are testing students are releasing the results illegally. "The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records" (US Department of Education, 2013, p.1). Substance Abuse and confidentiality 42 CFR part 2 governs the confidentiality of an individual's substance abuse records (Bowling et al., 2009). This can increase poor attitudes of students towards administrations, coaches, and teachers resulting in loss of relationships and student involvement (Elliot et al., 2003 and Bowling et al., 2009).

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A protective factor that can decrease substance use among adolescents is involvement in extracurricular activities. Random drug testing does not deter drug use instead it deters students from participating in extracurricular activities for fear of being randomly drug tested. Some skeptics believe that students who are already using drugs and alcohol are not going to participate in extracurricular activities (Fisanick, 2009). Does random drug testing decrease substance use or sow the seeds of increasing longer term use (Evans et al., 2006)?

RDT's ethical standards are a point of question. A study conducted by Evans and associates (2006), examined 1,011 high school students' perception of the fairness and effectiveness of RDT. They found that, although the perception of students is that RDT would reduce substance use, data was split on program fairness and whether it was a "good idea" (Evans et al., 2006). The university that produces the annual student drug use survey, Monitoring the Future, also conducted two major studies on RDT. Yamaguchi, Johnston, and O'Malley studied 76,000 8th, 10th, and 12th grade students between 1998 and 2001. The study compared drug use at schools that had drug testing to schools that did not. They found that drug testing was ineffective and "no statistically significant difference in the number of users at a school that tested for drugs and a similar school that didn't" (Fisanick, 2009, p.103). Due to criticism by the U.S. government, Yamaguchi, Johnston, and O'Malley conducted their study again, this time adding data for 2002. This study encompassed 94,000 middle and high schools students and received the same results as the previous study's findings (Fisanick, 2009). RDT continues to be used, despite its inefficacy.

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By using random drug testing, school administrations are taking emphasis away from prevention and treatment and putting it towards a more punitive approach (The Brown Child and Adolescent University Behavior Letter, 2007). Instead of being proactive in adolescent substance use, RDT is reactive. “Critics cite concerns about potential for civil rights violations, unclear or unsupported criteria for determining which student populations are at high risk of using drugs, test accuracy, cost (\$15-\$100 per test), and the effectiveness and relative efficiency of RDT programs as compared to other prevention efforts” (Evans et al., 2006, p.452).

Substance use among adolescents continues to be a nationwide problem that is not being addressed with best practice strategies. Although, zero tolerance, D.A.R.E., and random drug testing have been shown to have little to no effectiveness, there are evidenced based programs that are deemed successful in preventing substance use among adolescents. This research will illustrate three programs, Adolescent Transitions Program, Strengthening Families Program, and Preparing for the Drug Free Years, currently being implemented in various states across the nation that have been shown to be effective strategies in preventing substance use among adolescents.

Methods

This research is a systemic review of three successful adolescent drug prevention programs. “Systemic review is a comprehensive, unbiased, and reproducible review of prior studies that follows a detailed protocol (plan). This involves a clearly formulated research question, explicit inclusion and exclusion criteria, systemic methods to comprehensively identify relevant studies, critical appraisal of the quality of evidence, and analysis and synthesis of data collected from studies” (Corcoran, Littell, & Pillai,

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2008, p. 178). This method was used to answer the question, “What are effective preventative interventions for reducing substance use among adolescents?” This type of method is useful for the accumulation of three studies into a single, easy to access, formal document that can be used as a resource to make generalizations about the overall effectiveness of preventative substance use strategies for communities.

Having a consolidated rendition of this information, allows communities to know and understand the effective strategies available to them for implementation in schools. Being able to access such a viable and pragmatic wellspring of information, is beneficial in helping communities discern which program will become most effective in decreasing substance use among adolescents.

Selection Criteria

The reason for selecting Preparing for the Drug Free Years (now known as Guiding Good Choices), the Strengthening Families Program (now known as the Strengthening Families Program: For Parents and Youth 10-14), and the Adolescent Transitions Program was during prior research this past summer on a similar topic. I discovered what preventative substance use interventions are effective among adolescents compared to D.A.R.E., in an article by Angela W. Keyes and Laura V. Scaramella called *The Social Contextual Approach and Rural Adolescent Substance Use: Implications for Prevention in Rural Settings*. These programs were further deemed valid in another source provided by the U.S. Department of Health and Human Services, National Institute on Drug Abuse’s guide called, *Preventing drug use among children and adolescents: A research-based guide for parents, educators, and community leaders*.

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The purpose of using a systemic review was to “comprehensively locate and synthesize research that bears on a particular question, using organized, transparent, and replicable procedures at each step in the process” (Corcoran et al., 2008, p. 1). Upon analyzing the data trends, themes and codes were developed to organize the data.

One of the ways in which I gathered information on substance use, and specifically adolescent substance use, was through books found at the Fargo Public Library (downtown location) and Lost and Found Ministries, which is a free public library for those struggling with addiction. Books were chosen based on publication date and significance to the topic. Publications older than 2000 were not selected and books not focused specifically on adolescent substance use, were not chosen.

I selected and searched several arbitrary electronic data bases (Academic Search Premier, Ebscohost, JSTOR, SocINDEX with Full Text, Social Services Abstracts, and Social Work Abstracts) using the terms, *rural adolescent substance use, adolescent substance use, adolescent transitions program, strengthening families program, and preparing for the drug free years*. I concentrated my search to these terms to stay within my research topic of effective preventative interventions for reducing substance use among adolescents.

I included imbedded studies I found while reviewing other studies and websites that included research previously conducted. I limited my search to five studies per prevention program being discussed. This was an arbitrary number used with no research significance.

Studies conducted among adolescents across the nation were randomly selected for the systemic review in order to eliminate bias. At first, I only consider studies

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conducted in rural communities across America. This proved difficult because little research has been conducted in rural schools and communities due to the continued stigma of substance use. My search was expanded to include both urban and rural schools to obtain more studies on the topic being researched. I excluded studies that focused on a particular student body according to race, gender, economic status, and ethnicity. I wanted to obtain general information on substance use among adolescents, not on a specific population.

Data Collection/Data Analysis

Extracting and coding data is an important step in meta-analysis research (Holly, Saimbert, & Salmond, 2012). “Data extraction refers to the process of pulling out relevant results from the original (primary) research studies to be included in the systemic review, and preparing (coding) these data inclusion in the meta-analysis” (Holly et al., 2012, p. 173). This data provides a link between the article and the systemic review. Data extraction form can be reviewed in Appendix A. “Coding refers to a method of ensuring that all extracted various are defined and described using the same terms or abbreviations” (Holly et al., 2012, p. 174).

For the purpose of this study, the themes that were developed are; underlining core issues, curriculum content, cost of implementation, and parent involvement. Data was extracted and coded into these four themes.

The findings that were found after extracting and coding all data is described in the next section of this paper.

Findings

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The researcher identified four themes: underlining core issues, curriculum content, cost of implementation, and parent involvement. Appendix A includes additional details, including sub themes and codes, which were identified.

Underlining Core Issues

The first theme, underlining core issues, includes five sub-themes seen in the figure below.

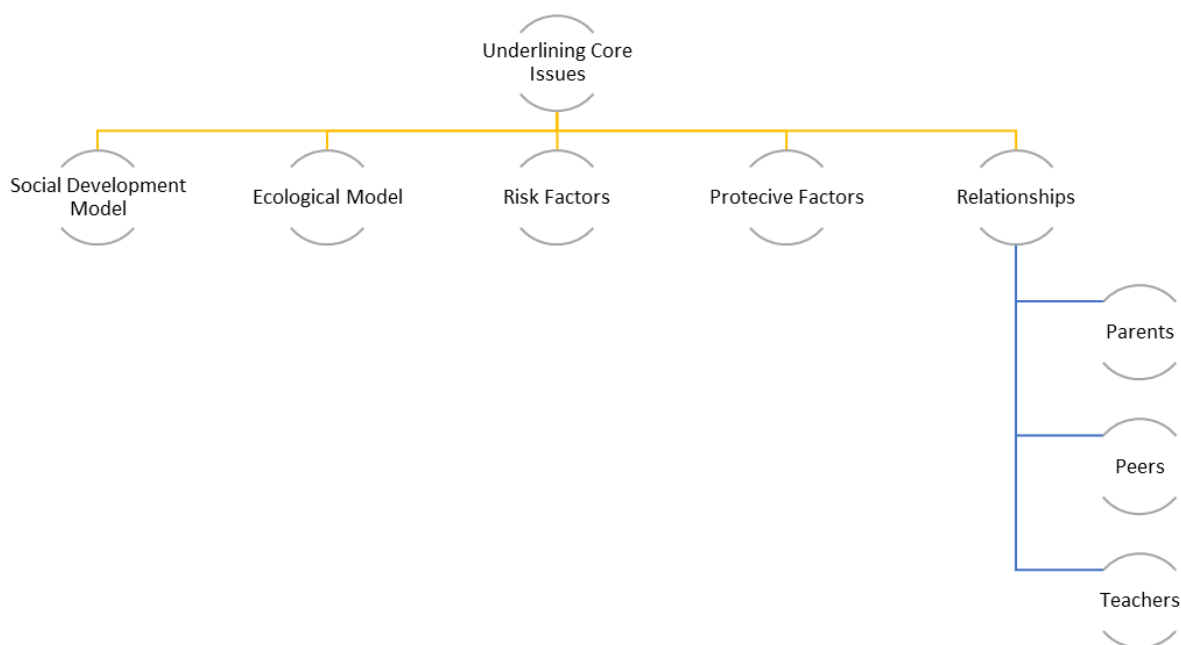


Figure 1. First theme, Underlining Core Issues.

The researcher learned that the foundation for effectiveness of the Adolescent Transition Program (ATP), Guiding Good Choices (GGC formerly known as Preparing for the Drug Free Years), and Strengthening Families Program: For Parents and Youth 10-14 (SFP 10-14), is to build relationships between the adolescent and the individuals in

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their lives, primarily their parents and peers. “Poor parenting practices and poor peer relations are the proximal contexts in which antisocial behavior are developed and maintained” (Andrews and Dishion, 1995, p. 2).

The first sub-theme, the social development model (SDM), adopts the theory that the more bonded children are with their families, the more likely they will inherit their parent’s beliefs, in this case, substance use (Duncan et al., 2000). Guiding Good Choices (GGC) bases its program and curriculum on the social development model. The mission of GGC “is to enhance protection in families and reduce family related risks for early alcohol and other drug use” (Duncan et al., 2000, p. 126). Guiding Good Choices hypothesizes that building strong prosocial bonds within the family unit will decrease the likelihood of problem behaviors (Haggerty et al., 2001).

The social development model considers the protective and risk factors in a child’s life regarding pro-social bonding to community, family, school, and peers (Duncan et al., 2000 and Haggerty, Hawkins, Kosterman, Redmond, and Spoth, 2001). “The theory hypothesizes that the more bonded children are to their parents, the more likely they are to adopt their parents’ norms and beliefs” (Duncan et al., 2000, p. 126). Children’s behaviors should reflect their parents. If the parents communicate with the child their negative views of substance use, the child will promote the same views (Duncan et al., 2000). The following article excerpts from Duncan et al. (2000) illustrate more on this theme, specifically SDM:

The SDM proposes that, with respect to the family domain, parents’ norms for appropriate behavior as well as their family management practices (such as child monitoring, family rules, and discipline) are fundamental to socialization

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processes, which include children's perceived opportunities for involvement in the family, their actual degree of involvement, and their perceived reward for involvement. (p. 126)

These processes determine the degree to which children become bonded to their parents; if children perceive opportunities for involvement in the family, become involved, and find this involvement rewarding, they are likely to care about and identify with their parents. (p. 126)

The second sub-theme is the ecological model. The Adolescent Transitions Program is grounded in the ecological model. This model focuses on the interaction of youth with peers and family. The greater monitoring by the parents, and little to no deviant peer influence, will control adolescent substance use and problem behaviors (Connell et al., 2006). Andrews and Dishion (2013) explain the ecological model in the below passage as:

The implication of an ecological perspective to educators and those concerned with the prevention is that interventions, to be effective, must address the individual social interaction skills of students while attending to the context in which these interactions and resulting problem behavior occurs. (p. 3)

This model is further explained by Dishion, Kaufman, Kavanagh, Nelson, and Schneiger (2002) to be the most ideal when:

Intervention strategies are those that (a) address the infrastructure of institutional practices within which maladaptation takes place; and (b) are embedded in contexts that serve a large proportion of the population, and therefore, are likely to have a large public health impact. (p. 192)

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A longitudinal study by Dishion et al., (2002), was conducted among a sample size of 672 middle school students and their families from three middle schools in a metropolitan community. Of the 672 participants, 49.3 percent were in the experimental group and received the Adolescent Transitions Program (ATP) intervention and 50.7 percent were a part of the control group. Data was collected from the study of youth grades 6-9th through self-reports and parent engagement with youth through 8th grade. Results indicate that youth exposed to the ATP intervention had a decrease in substance use. By the first year of high school youth exposed to ATP were associated with a significant reduction in substance use (National Institute of Justice, Office of Justice Programs, 2002, 2007). “Random assignment to the ATP school-based program was associated with a reduced incidence of substance use by the first year of high school, controlling for prior use of substances in middle school” (Dishion et al., 2002, p. 197).

The validation of this implementation is effective because of ATP’s underling core issue of the ecological model. “This data suggests that embedding family-centered services within a public school context, with a focus on family management and school partnerships, has a preventative effect on substance use by the 1st year of high school” (Dishion et al., 2002, p. 197).

The third and fourth sub-themes, risk and protective factors, are discussed in all three prevention interventions, The Adolescent Transitions Program, Guiding Good Choices, and Strengthening Families Program for Parents and Youth 10-14. The aim of all three programs is to reduce adolescent risk factors while building protective factors. According to Corcoran and Walsh (2013) substance use risk factors include, but are not limited to; hereditary, early onset of use, early externalizing problems, child abuse, child

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neglect, lack of parental monitoring, substance availability, severely strict parenting style, and lack of parenting. Protective factors against substance use include, but are not limited to; parental warning about drugs and alcohol, peers that abstain from substances, parenting styles that are both nurturing yet hold children accountable. (p.94)

The Strengthening Families Program: For Parents and Youth 10-14 (SFP 10-14), strives to reduce the risk factors of adolescents while increasing protective factors. As noted on the SFP 10-14 website, <http://www.extension.iastate.edu/sfp10-14/content/curriculum>, risk factors addressed include; aggressive or withdrawn behavior, negative peer influence, poor school performance, lack of pro-social goals, and poor relationship with parents. The protective factors include; positive future orientation, peer pressure resistance skills, pro-social peer relationships, positive management of emotions, and empathy with parents.

Of all the risk and protective factors associated with early substance use among adolescents, family structure is of the most importance. The Duncan, Duncan, Haggerty, Hawkins, Kosterman, Park, and Spoth's (2000) study found the following:

Research on risk and protective factors for adolescent alcohol problems suggest that promising preventive approaches include providing parents with skills to consistently communicate clear norms against substance use, to effectively and proactively manage their families in ways that involve adolescents in contributing roles in the family and maintain strong family bonds, and to reduce family conflict. (p. 126)

The fifth and final sub-theme is relationships. This sub-theme is broken down into three codes; parents, peers, and teachers. Prevalent throughout all the interventions is

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indication of positive prosocial relationships. The more connected adolescents are to their parents, peers that abstain from substances, and teachers, the less likely they are to use of substances. The study below demonstrates the relevance of parent and child relationships.

Andrews and Dishion's (1995) study examines the reasons why the Adolescent Transitions Program is an effective program through family interaction patterns, discussing and solving real family problems. "Negative engagement between mothers and children yielded a consistent pattern of reduction as a result of participating in the intervention. The youth's negative engagement reduced significantly when parents participated in the Parent Focus intervention, while control group youth increased in negative engagement" (Andrews and Dishion, 1995, p. 10). The control group did not receive the ATP intervention.

In the same study, family conflict was decreased as seen from the pre-to post testing. "There was a decrease in family negative events for families in the Parent Focus, while negative events increased for those in other conditions" (Andrews and Dishion, 1995, p. 11).

In the same study, antisocial behavior decreased in youth as seen in the post intervention assessment. "Students in the inactive intervention conditions were rated as more aggressive in the post intervention assessment, whereas those whose parents were involved in the Parent Focus reduced their rate of aggressive behavior" (Andrews and Dishion, 1995, p. 11).

These intervention programs and models identify the importance of building family relationships and resiliency, reducing risk factors, and increasing protective factors as key components to reducing substance use among adolescents

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(<http://www.strengtheningfamiliesprogram.org/about.html>). “From this perspective, effective interventions for any problem behavior (e.g., drug use, delinquency, risky sexual behavior) must identify and clearly target the underlying causes of problem behavior, rather than focusing on symptoms associated with the problem” (Andrews and Dishion, 2013, p. 2). “Thus, family-focused interventions that improve parenting and family interactions, and reduce teen alcohol use, may inhibit alcohol abuse among target participants as young adults” (Haggerty, Hawkins, Kosterman, Mason, Redmond, Shin, and Spoth, 2009, p. 2).

This theme developed an assortment of codes the researcher found. The initial codes were social development model, ecological model, risk factors of substance use among adolescents, protective factors of substance use among adolescents, and relationships and bonding with others. These sub-themes were all combined to be placed under the theme underlining core issues. These underlining core issues guided the development of the curriculum used to reduce substance use among adolescents.

Curriculum Content

The second theme, curriculum content, included two sub-themes and various codes as seen in the figure below.

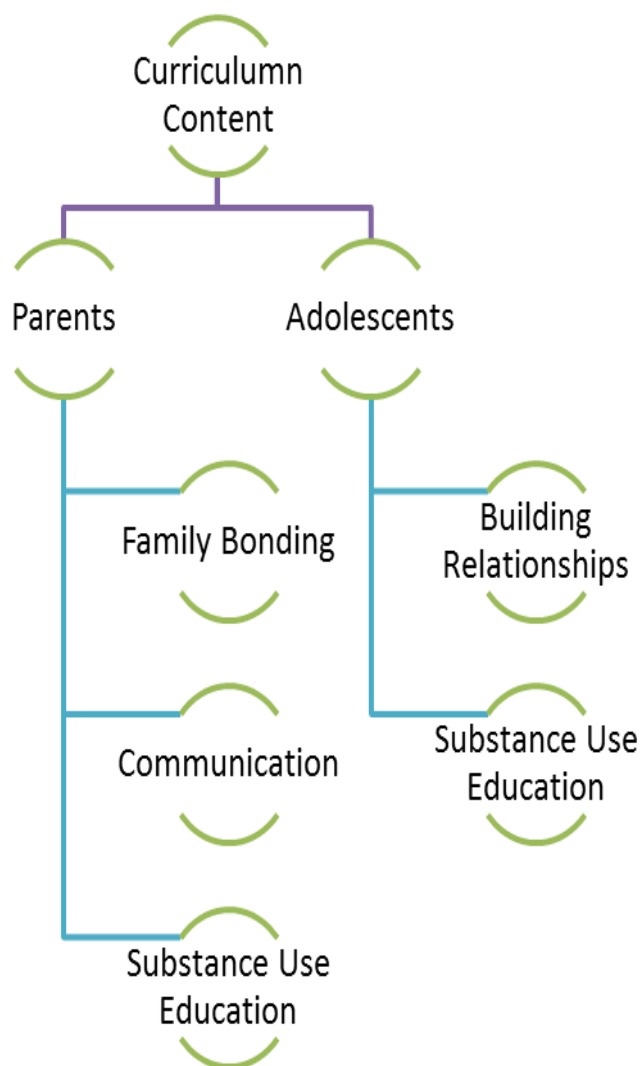


Figure 2. Second theme, Curriculum Content.

All three programs researched focused on improving the family system to prevent substance use among adolescents.

The first sub-theme, parents, included codes; family bonding, communication, and substance use education. All three interventions include parents in the treatment sessions; on the other hand, Guiding Good Choice’s curriculum only requires the parents to participate.

The below citation is from the Strengthening Families Program for Parents and Youth 10-14 (SFP 10-14) website <http://www.extension.iastate.edu/sfp/inside/research.php>:

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This scientifically tested curriculum:

- Helps parents/caregivers learn nurturing skills that support their children,
- Teaches parents/caregivers how to effectively discipline and guide their youth,
- Gives youth a healthy future orientation and an increased appreciation of their parents/caregivers, and
- Teaches youth skills for dealing with stress and peer pressure. (p. 1)

The below citation from Catalano and Hawkins (2002) makes clear the foundation for the Guiding Good Choice's (GGC formerly known as Preventing the Drug Free Years, PDFY) curriculum:

PDFY focus on strengthening family bonds and establishing clear standards for behavior, helping parents more appropriately manage their child's behavior while encouraging their development. PDFY reaches parents before their children being experimenting with drugs. Sessions focus on family relationships and communication, family management skills, and resolution of family conflict. (p. 1)

The second sub-theme, adolescents, included codes; building relationships and substance use education. All interventions focus on improving the family system. "Drug information alone, however, has not been found to be effective in deterring drug use" (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003, p. 22). The majority of the curriculum content used in all three interventions focuses on building the family unit, improving parenting skills, and adolescents building positive peer relationships.

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The below citation from the Dishion et al., (2002) study is acquired from the Adolescent Transitions Program's (ATP) curriculum:

ATP is a tiered, multilevel family intervention delivered within a middle school setting. The model comprehensively links the universal, selected, and indicated family interventions in a way that titrates the intervention intensity with the needs and motivation of the family. (p. 193)

Another excerpt of ATP's curriculum is referenced from the website

<http://www.childtrends.org/?programs=adolescent-transitions-program-comprehensive>

(2010) and states the following:

This three tiered curriculum program places families into categories depending on risk of substance use. The bottom level is The Universal Tier: The Family Resource Room. At this level school officials and families work together to decrease substance use among students by developing a “positive behavior support plan that bridges home and school, so that students experience similar rules and expectations in both contexts and so that parents and teachers are in communication with one another about how youth are conducting themselves in school. (p. 1)

The next two levels, Selective Tier: Family Check-Up and Indicated Tier: The Family Intervention Model, target students and families that are at a higher risk for substance use compared to their peers. At these levels direct professional support is given to the families with options of next step treatment which are identified in the Family Intervention Menu, “a brief face –to-face intervention (two or three sessions), school monitoring system for academic and social behavior, parent groups, behavior family

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therapy, case management, and referral services”

(<http://www.childtrends.org/?programs=adolescent-transitions-program-comprehensive>,

2010, p. 1).

Guiding Good Choices, Strengthening Families Program for Parents and Youth 10-14 (SFP 10-14), and Adolescent Transitions Program, have the parents and the adolescents participate in sessions separately and together for optimal effectiveness. All programs are facilitated by trained members of the community by the developer of the program and homework is a requirement for success (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003).

According to Haggerty et al. (2009) collectively these three substance use prevention programs strive to emphasize the following:

Parenting and parent-child interactional skills for: creating opportunities for involvement and interaction in the family (e.g., in family meetings); establishing clear family rules, monitoring the behavior of children, and disciplining children; teaching children skills to resist peer influences to use drugs; and expressing positive feelings and developing bonding while reducing anger and conflict. (p. 2)

This theme was identified by the researcher due the extensive reference of the specific curriculum used in each intervention. Sub-themes included in this theme are parents and adolescents. Codes were also identified under each sub-theme. They included family bonding, communication, and substance use education under the sub-theme parents and building relationships and substance use education under the sub-theme adolescents.

Cost of Implementation

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The third theme, cost of implementation, includes three sub-themes seen in the figure below.

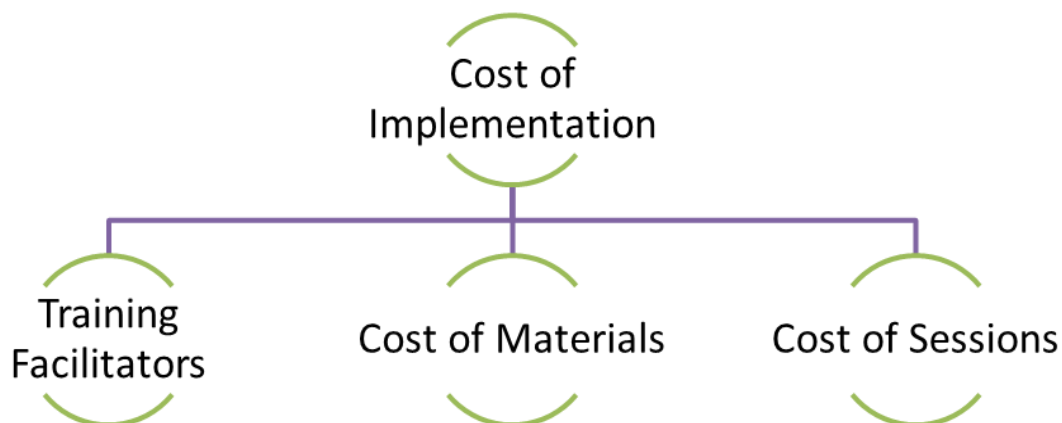


Figure 3. Third theme, Cost of Implementation.

To obtain quality and effective substance use prevention curriculum, an investment into the community, family, and adolescents are necessary. Costs vary, which include, training facilitators, travel expenses for developer to train facilitators, all materials and required kits, booster sessions, and consultations. Guiding Good Choices start-up costs for an agency are over \$4,200 to train up to 12 facilitators of the curriculum. “The basic cost to deliver the intervention to an initial group of 10 parents is estimated to be \$1,016.70. The cost of subsequent groups of 10 is \$135.70”

(<http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=302>).

Strengthening Families Program: For Parents and Youth 10-14, startup costs to train facilitators the curriculum costs an agency over \$6,000 for up to 30 facilitators and one set of program materials costs \$1,109. It is estimated that “the initial implementation

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cost per family is \$373-\$398”

(<http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=63>).

The Adolescent Transition Program (also known as Positive Family Support-Family Check-Up), startup costs are approximately \$23,600. This includes the full package with training by the developer, initial and on-going curriculum and materials, costs to create conducive setting for sessions, and consultations. Costs for a website subscription to curriculum and materials without the initial training is \$500. “The School-Based Positive Family Support three-tiered curriculum and materials including videotape examples for parents are included as part of the initial training costs. If purchased separately, the cost is \$325 and Everyday Parenting curriculum is \$18.95”

(<http://www.blueprintsprograms.com/programCosts.php?pid=b16a457a3302d7c1f4563df2ffc96dccb3779af7>). Curriculum from Guiding Good Choices and Adolescent Transitions Program can be purchased separately without training from the developer.

In 2003 the United States Department of Health and Human Services, National Institute on Drug Abuse collected data on a previous study conducted that stated:

In a recent study, Spoth and associates (2002) performed cost-effectiveness and benefit cost analyses on data from two long-term interventions already shown to be effective in preventing substance abuse: Iowa Strengthening Families Program (ISEP; now called The Strengthening Families Program: For Parents and Youth 10-14), and Preparing for the Drug-Free Years (PDFY; now called Guiding Good Choices). Both interventions were found to have net benefits by preventing adult cases of alcohol abuse treatment. (p. 25)

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Two of the interventions, The Strengthening Families Program: For Parents and Youth 10-14 (SFP 10-14) and Guiding Good Choices (GGC), both prevent adult substance use which saves families and communities future costs such as substance use treatment. The benefit to cost ratios for prevention is SFP 10-14, \$9.60 for each dollar invested, and GGC is \$5.85 for each dollar invested. Families benefited with SFP 10-14 of \$5,923 and GGC of \$2,697 (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003).

This theme was identified by the researcher due to the commonality of cost of all three substance abuse prevention programs being researched. Sub-themes included in this theme are training facilitators, curriculum materials, and cost of sessions.

Parent Involvement

The fourth and final theme is parent involvement. This theme had no sub themes or codes. Throughout all the interventions, parent involvement was found to be vital in reducing substance use among adolescents. The design of all three programs, Guiding Good Choices, Adolescent Transitions Program, and Strengthening Families Program for Parents and Youth 10-14, is to have the parents involved in the intervention sessions, at times individually, and also with the adolescents (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003).

The fact that parent involvement was such a common theme throughout the research was of value, because it related closely to the research question. What makes preventative interventions effective is the level of parent involvement in the intervention itself. The more invested the parents are in building a cohesive family structure, the less likely their adolescent children will use substances.

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For instance, Guiding Good Choices, is an intervention developed for parents of adolescents to participate in weekly sessions how to learn to “manage their child’s behavior while encouraging their development” (Catalano and Hawkins, 2002, p. 1). This is compared to the Strengthening Families Program and Adolescent Transitions Program which incorporates both the parents and adolescents in the intervention sessions (<http://www.strengtheningfamiliesprogram.org/> and Andrews and Dishion, 1995).

The Adolescent Transitions Program states in its program goals that “the programs immediate goal is to improve parents’ family management and communication skills” (National Institute of Justice, Office of Justice Programs, 2007, p. 1). The goal of the developers of Guiding Good Choices, Catalano and Hawkins (2002) strive for:

Parents learn about the nature of the drug problem as well as how to increase children’s opportunities for meaningful involvement in the family, teach behavioral, cognitive and social skills needed for meaningful involvement, provide reinforcement and appropriate consequences for behavior, use family meetings to enhance communication and strengthen family bonds, establish a family position on drugs, reinforce children’s refusal skills, express and manage anger constructively, increase children’s participation in the family, and create a parent support network. (p.1-2)

The transition from elementary school to middle school can be a problematic time for students. They become exposed to new environments, peers, and teachers. It’s a time in adolescents’ lives when peer influence starts to become more important than parents (Haggerty et al., 2001). One study result indicted that “this variable-centered analysis sheds important light on the effects of our family-centered intervention program on

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substance-use development and on the importance of family management” (Connell, Deater-Deckard, and Dishion, 2006, p. 442).

Another study in the article by Haggerty and associates 2009 sheds light on this further stating:

For example, in a study of children followed from age 10 to age 21, Guo et al. (2001) found that parental monitoring, clear family rules, and parental rewards for good behavior in adolescence predicted lower risk for alcohol abuse/dependence in early adulthood. Thus, family-focused interventions that improve parenting and family interactions, and reduce teen alcohol use, may inhibit alcohol abuse among target participants as young adults. (p. 2)

Duncan et al. (2000) explain parent involvement further by proposing:

“In addition, parents’ family management practices are expected to affect children’s skills for resisting social influence, for problem solving, and so on, which are also important components of the socialization process. (p. 126)

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), National Registry of Evidence-based Programs and Practices (2012, 2007) Guiding Good Choices is an effective intervention strategy to decrease substance use among adolescents. Evidence of this comes from a quality of research assessment comprised of review of studies conducted on the validity of the intervention. The first review was in 2007 and included 11 documents in the evaluation. The second review was in 2012 and included 2 documents in the evaluation.

The 2012 assessment confirmed validity in reducing substance use among adolescents with the quote, “Students in the intervention group were significantly less

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likely to have progressed to reporting any substance use by age 21” (Substance Abuse and Mental Health Services Administration, 2012, 2007, p. 4). The validity of effectiveness in this program is demonstrated due to the fact that GGC focuses its curriculum on building the family structure and relationships. This is shown in the 2007 quality of research assessment.

The 2007 assessment verified the importance of parenting behaviors and family interactions in collaboration to decrease substance use among adolescents. Mothers assigned to the GCC intervention showed less negative interaction and more proactive communication compared to the control group of mothers. Fathers assigned to the GCC intervention showed more proactive communication and better relationship quality in problem-solving compared to the control group of fathers (Substance Abuse and Mental Health Services Administration, 2012, 2007).

Other significant data collected from the Substance Abuse and Mental Health Services Administration assessment (2012, 2007) included the following quote:

Parents assigned to the intervention reported better intervention-specific parental behaviors compared with control group parents (e.g., communicating clear rules about substance use, explaining consequences and rewarding compliance with substance use rules, helping the child learn how to express and control anger, and finding ways to keep the child involved in family activities and decisions). (p. 7)

The main gap in D.A.R.E., zero tolerance, and random drug testing is that these interventions are individually focused without parent involvement. In these programs, it is the adolescent’s responsibility to participate in the intervention sessions, gain the necessary knowledge about the dangers of substance use, and then make the right choices

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to abstain from substances. The individual alone is not an effective approach to reducing substance use among adolescents. As laid out in this paper, a more comprehensive approach is shown to be more effective.

The theme of parent involvement was noted frequently throughout the research. It was a theme enmeshed in two other themes, underlying core issues and curriculum content, due to its significance of value.

Discussion

Limitations

There are a few limitations to this systemic review. First of all, there hasn't been a lot of research completed in rural America, concerning substance use among adolescents. The main focus of the systemic review was to gather data solely on rural adolescent substance use. However, when searching for research studies and data, the researcher found less than five research studies that were conducted rural communities. There may be a few reasons for these findings.

One reason for the lack of research studies may be because the researcher was searching the wrong databases. More appropriate search databases could be explored for my research question, which I was unaware of. Since the researcher was unable to locate more studies conducted in rural America and/or because few exist, the researcher had to expand her search to include both rural and urban communities.

Another reason for the lack of research may be due to the fact that few studies have been conducted in rural communities. Due to rural communities recently seeing the impact of substance use in their communities, reasons to cause alarm hasn't been prevalent until now. Due to rural culture, substance use has never been viewed as

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problematic. The culture and mentality of ‘what happens in the home, stays in the home’ continues to plague rural families limiting them from asking for help. With more adolescents using substances, production of substances in rural communities, substances becoming more readily available to rural adolescents, and the expansion of the transportation systems; rural communities are now a part of that equation.

Another limitation the researcher found was the lack of research studies conducted on the specific prevention interventions the researcher was exploring. Guiding Good Choices, The Adolescent Transitions Program, and the Strengthening Families Program for Parents and Youth 10-14 (SFP 10-14) each had fewer than four research studies completed to test validity of the intervention. Compared to D.A.R.E., which has been researched more heavily and extensively.

There may be a few reasons to why D.A.R.E. is more heavily researched. One reason is that D.A.R.E. has been in implementation for more than 20 years. It has been in use longer than the other three interventions being evaluated, resulting in more studies being completed. D.A.R.E. is an outdated program for use of preventing substance use among adolescents.

The second reason to why D.A.R.E. is more heavily researched may be because it is the most federally funded substance abuse prevention intervention used. Due to this fact, communities where D.A.R.E. is implemented conduct statistics and research to solidify these funds year after year.

A third reason may be because D.A.R.E. has many skeptics resulting in a lot of research being completed to show its ineffectiveness. Skeptics who want to show this may conduct more research to demonstrate their findings.

Implications

In combination with previous research, there is more research that can be done from this systemic review. One is to research all communities that continue to use D.A.R.E. as their only substance use prevention intervention and advocate replacing it with one of the effective interventions in this systemic review, such as Guiding Good Choices (GGC), Adolescent Transitions Program (ATP), and Strengthening Families Program for Parents and Youth 10-14 (SFP 10-14). As this systemic review reveals, these programs are effective and the reasons why they are effective compared to other interventions such as D.A.R.E., zero tolerance, and random drug testing, is because of the curriculum's core issues of building family relationships, family communication, family management skills, and resolving family conflict (Andrews and Dishion, 1995). Instead of solely educating adolescents and families on substance abuse education, these interventions address risk factors to substance use among adolescents and how to build more protective factors.

Also, knowing if these communities use D.A.R.E. because they receive more federal funding (as revealed in the literature review) compared to other interventions, would be beneficial to know. If they do receive large sums of federal funding this may be why communities continue to use this intervention compared to others. Especially in rural communities, where money is limited, this may be a significant deciding factor to why D.A.R.E. continues to be used over other more effective preventative interventions.

More substance use research among adolescents is needed in rural communities. More research could be conducted to in rural communities find the reasons why adolescents use substances, what substances are more heavily used compared, and what

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interventions work to decrease substance use. For years urban communities have been the main focus of prevention and intervention, however, newer research is showing that more rural communities are experiencing substance use among adolescents at the same or higher rate compared to their urban counterparts. The more professionals, community leaders, and parents know about substance use the more successful they will be in combating this epidemic in their communities.

From the issues identified, some implications can be made for policy. Mezzo and macro level policies could be set in place that regulate what substance use prevention interventions are used. State and federal governments could standardize what interventions are effective thus allowing communities to use only specific interventions. This could cut foolish government spending on non-effective substance use prevention allowing more money available for effective interventions that save families and tax payers money on adult substance use and treatment programs.

Conclusion

I live in a community that continues to use D.A.R.E. as its intervention strategy to curb substance use among its adolescents. It has been thoroughly presented in this systemic review that D.A.R.E. is not an effective intervention to battle substance use among adolescents. It would be beneficial and more cost effective if another intervention could replace this existing program.

A goal of mine is to create community change and implement one of the interventions I have described in this paper in the community in which I live. This change may take time and effort; however, it is not impossible.

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What I have learned is that the first step in providing a successful program is to consider the risk and protective factors within the community, before adapting a prevention strategy. Implementing a prevention intervention that is designed to reduce these risk factors and build protective factors should be the main focus. As laid out in this paper, the greater the risk factors an adolescent endures the greater the likelihood he/she will use substances. Implementing a program that decreases these risk factors and builds protective factors, will reduce substance use among adolescents. Protective factors that need to be present are parents' negative view on substance use, positive parenting skills, and prosocial peer relationships. Guiding Good Choices, Adolescent Transitions Program and Strengthening Families Program for Parents and Youth 10-14 provide curriculum that focuses on building these protective factors.

The barriers to implementation of these programs are securing funding, acquiring individuals committed to training and facilitating sessions, and family participation in the intervention. There are funding sources available with a well written grant application and a local mental health agency commitment. Extra effort to keep participants engaged would include incentives for participation, schedule flexibility, minimal time demands, free meals, transportation, baby-sitting, and local community leader support of the intervention. "Research also shows that combining two or more effective programs, such as family and school programs, can be even more effective than a single program alone. These are called multicomponent programs" (U.S. Department of Health and Human Services, National Institute on Drug Abuse, 2003, p. 22).

In summation, an effective intervention to preventing substance use among adolescents is one that is comprehensive. Interventions that focus on educating the

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adolescent on the dangers of substances fall short of preventing substance use. Effective intervention strategies need to include the parents of the adolescents for best results.

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Appendix A Thematic Analysis

Themes, Sub-Themes, and Codes

1. Underlining Core Issues
 - a. Social Development Model
 - b. Ecological Model
 - c. Risk Factors
 - d. Protective Factors
 - e. Relationships
 - i. Parents
 - ii. Peers
 - iii. Teachers
2. Curriculum Content
 - a. Parents
 - i. Family Bonding
 - ii. Communication
 - iii. Substance Use Education
 - b. Adolescents
 - i. Building Relationships
 - ii. Substance Use Education
3. Cost of Implementation
 - a. Training Facilitators
 - b. Curriculum Materials
 - c. Cost of Sessions
4. Parent Involvement

Final Themes

1. Underlining Core Issues
2. Curriculum Content
3. Cost of Implementation
4. Parent Involvement