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Most Effective Intervention for Adolescent Substance Use Disorder

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### Abstract

Substance use disorder affects numerous adolescents and researching the most effective intervention is crucial to the rehabilitation of these individuals. This purpose of this study is to offer information about the prevalence of substance use in adolescents as well as the interventions that are available to them and to outline the most effective methods of these interventions. This paper includes a review of evidence based interventions of multiple interventions that are currently used to treat adolescents with substance use disorder and a qualitative study of five individuals who work in social service agencies that offer treatment and interventions to adolescents who are suffering from substance use disorder. Numerous interventions are offered for adolescents suffering from substance use disorder but minimal research has been done on the effectiveness of these interventions.

*Keywords: intervention, substance use disorder, prevalence, adolescent, treatment*

## Most Effective Intervention for Adolescents Suffering with Substance Use Disorder

### **Introduction**

There are many terms used to define “substance use disorder” across numerous cultures. Substance abuse, misuse and dependence are all examples of some of these terms used to define a problem innumerable Americans are facing. The National Institute on Drug Abuse conducted a survey from 2012 to 2014 to follow the trends in prevalence of various drugs for individuals aged 12 and older. This survey shows a decline in drug use among adolescents over the past few years. Although numerous sources show a slight decline in the prevalence rate of substance use, the numbers are still reflecting drug use at a remarkably young age (National Institute of Drug Abuse).

To better understand this paper, the commonly used and referred to terms will need to be defined. “Adolescence” can be defined in many different ways. Some researchers say that an individual is an adolescent when they reach puberty; some will say that when you can vote and join the military you are considered an adult and others will conclude that you are an adolescent until your body biologically fully develops around the age of 25. For the purpose of this review, adolescence will be based on individuals between the ages of 12 and 25 as this includes all three definitions of adolescence (Stages of Adolescence, 2015).

When researching and analyzing information about substance use disorder, it is important to acknowledge that there is a large variety of substances. Many of the sources that report on substance use among the general population categorize substances into alcohol, marijuana, illicit drugs, prescription medication, over the counter medication and tobacco. For the purpose of this paper, substance refers to alcohol, illicit drugs and marijuana.

Substance use can also be defined in many different ways based on different perspectives. The National Institute on Drug Abuse characterizes drug use as a brain disease that can lead to compulsive behaviors in which the individual is constantly seeking drugs (National Institute on Drug Abuse, 2014c). Another definition was designed by The American Psychiatric Association, which released the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM – V) in 2013. The DSM – V combines the DSM IV’s substance abuse and substance dependence disorders. The DSM – V no longer uses the terms substance abuse and substance dependence and has since replaced these diagnoses and terms with the diagnosis and term of substance use disorders. Substance use disorders are on a continuum of mild, moderate and severe. The severity of the disorder is based on the number of criteria the individual fills. Similar to other disorders, substance use disorder requires that the individual meet the criteria that the substance use causes the individual to undergo substantial amounts of stress (Substance Abuse and Mental Health Services Administration, 2015).

The definition of substance use disorder is culturally sensitive. There are different interpretations of the meaning of substance use disorder such as an individual who drinks one alcoholic beverage a night, someone who drinks multiple beverages a night, or someone who cannot go throughout their day without drinking. Similar to many other disorders, substance use disorder could be misinterpreted or misunderstood in different cultures. For example, it may be a cultural norm for children to start drinking at a young age at home or for people to have a couple of drinks when they get home from work. For the purpose of this paper, substance use disorder will be the use of a substance that has caused significant impairment to an individual’s life (Substance Abuse and Mental Health Services Administration, 2015).

The National Institute on Drug Abuse, a department of the National Institute of Health, conducts a survey among 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> graders yearly regarding their drug use in their lifetime, the past year and the past month. In 2014 they conducted their Monitoring the Future survey, which had a sample size of 41,551 students from 377 different schools across the country. Based on this survey, 9 percent of 8<sup>th</sup> graders, 23.5 percent of 10<sup>th</sup> graders and 37.4 percent of 12<sup>th</sup> graders had drunk alcohol in the past month. Illicit drug use has declined in the past years, but in 2014 27.2 percent of 8<sup>th</sup> through 12<sup>th</sup> graders had used an illicit drug. 27.2 percent of the population of adolescents is still a large number considering the severities many of the drugs have on adolescents. Other drug use, such as heroin, methamphetamines and inhalants have percentages below 10 percent for 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> graders. Although these drugs have a lower percentage rate among adolescents aged 12-25, they have a serious effect on the body and mind of young adults. All of the drugs discussed so far have serious impacts on how they interact with the body (National Institute of Drug Abuse, 2014b).

According to the “National Survey on Drug Use and Health: Trends in Prevalence of Various Drugs” published in 2014, 29.6 percent of individuals aged 12 to 17 had used alcohol in their lifetime with 11.5 percent of individuals having used alcohol in the past month. To some, 11.5 percent of 12-17 year olds using alcohol in the last month may seem like a small number. When this number is thought of as 11.5 percent of the population of 12-17 year olds, this statistic becomes alarming. According to the same study in 2014, 23.3 percent of people between the ages of 12 and 17 had used illicit drugs in their lifetime with 9.4 percent using an illicit drug in the past month. This number increases to 57.9 percent using an illicit drug in their lifetime and 22 percent in the past month when looking at individuals between the ages of 18 and 25. While

these rates have gone down in the past two years, the prevalence of adolescents using substances is still evident (National Institute of Drug Abuse, 2014b).

Table 1a shows how marijuana use has remained steady over the last 23 years and Table 1b shows how an adolescent's idea of risks involved in marijuana use has shifted. Many adolescents do not think the risks associated with marijuana use are harmful (Substance Abuse and Mental Health Services Administration, 2015).

Table 1a: Percent of Students Reporting Use of Marijuana in Past Year

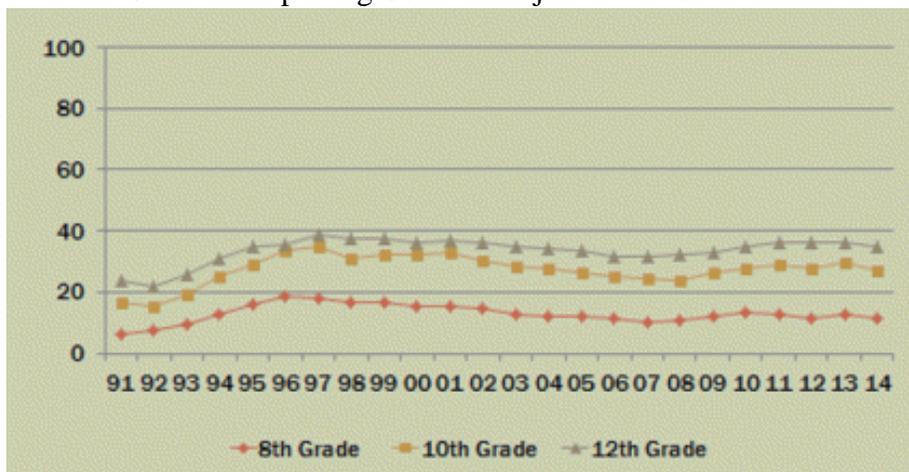
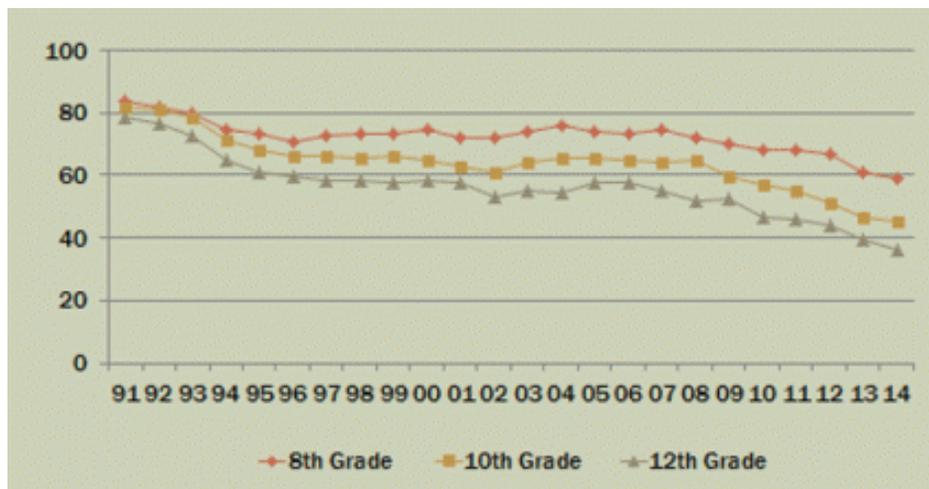


Table 1b: Percent Perceiving Great Risk of Smoking Marijuana Regularly



Source: University of Michigan, 2014 Monitoring the Future (National Institute of Drug Abuse, 2014 b)

Based on research, 73 percent of adolescents have used alcohol and 48 percent have used illicit drugs by their senior year in high school. This study has found that adolescents who drink heavily prove to have issues with memory, attention, information processing and executive functioning. It was found that individuals with a substance use problem remembered 10 percent less verbal and nonverbal information than healthy abstinent individuals. This information was also tested after the individuals were monitored for 3 weeks and were not allowed to drink. The heavy drinkers still showed the same signs of difficulty with memory, attention, information processing and executive functioning. Many of the studies done from observing these individuals proved to show biological changes in an adolescent's brain depending on whether the adolescent was a heavy drinker, a binge drinker or had one or two heavy episodic drinking experiences (Squeglia, Jacobus, & Tapert, 2009).

Because there are so many harms that could be caused to adolescents through drug and alcohol use, it is important to determine the most effective treatment among adolescents. Adolescents should not always receive the same treatment as adults because they are in different stages in their lives and because of the biological functions that may be impaired in the adolescent's brain due to early drug or alcohol use (Greene and Kropf, 2000). The consequences of adolescents using substances do not only impact the individual, but also affects the family and society they surround themselves with. The amount of money saved by treating adolescent's with substance use disorder as opposed to imprisoning them for drug related crimes is incredibly large. On average the United States spends nearly \$600 billion on substance use disorders and related crimes (National Institute on Drug Abuse, 2012).

Researching substance use among adolescents is not only significant because of the biological consequences of using substances but also because of the current opioid epidemic in

Massachusetts. In 2014, the opioid crisis in Massachusetts was declared a public health emergency (U.S Department of Public Health, 2016). In 2014, Massachusetts had a confirmed total of 1,099 deaths due to an unintentional opioid overdose. The number of deaths in 2014 indicates a 65 percent increase of unintentional overdose deaths from 2012. The number of unintentional opioid deaths in 2014 only includes the information collected until December 10, 2015 meaning that this number could increase as cases close and reasons for death are disclosed (Massachusetts Department of Public Health, 2016).

Numerous Massachusetts residents and adolescents are struggling with not only an opioid epidemic but also a substance use crisis currently. Between January and September of 2015 there is a total of 791 confirmed unintentional opioid deaths in Massachusetts. Although this opioid epidemic is not exclusively affecting adolescents there is evidence that in 2015 between January and September there were 81 confirmed unintentional opioid overdoses in the state of Massachusetts for individuals between 15 and 24 years old. Considering how there are 81, or 10 percent, confirmed overdose deaths among individuals between the ages of 15 and 24 there is an incredible need for effective substance use interventions for this population. With the death rates continuing to raise it is evident that there is a need for continued research into what the most effective intervention is for adolescent substance use (Massachusetts Department of Public Health, 2016).

The purpose of this study is to identify the most effective intervention for adolescent substance use disorder. This study will consist of a review of evidence based interventions used with adolescents based on peer-reviewed articles as well as a qualitative study based on agencies within Massachusetts to provide a better understanding of the most effective intervention for adolescent substance use.

## **Methods**

### **Methods for Evidence Based Interventions**

For the initial research, the focus was directed on understanding the prevalence of substance use among adolescents. The adolescent population at risk of using substances in particular is important because of the harmful effects that substances have on the human body. To start the research, Google was used to search through numerous government websites using the key terms “substance abuse among adolescents”, “adolescents and substance abuse” and “statistics of adolescent substance abusers”. The statistics found showed improvements in this population and continue to be important because there are still a large number of adolescents fighting this battle daily.

Once the information was collected regarding the prevalence and importance of researching adolescent substance use, it was important to start researching the most effective intervention for the adolescent population. Using Bridgewater State University’s online database, articles were found on Academic Search Premier, PsycInfo, Psycarticles, Psychology and Behavioral Sciences Collection, Social Work Abstracts and SocIndex with full text. In order to find the most recent and up to date information the search was narrowed to include only articles from 2005-2015. This search used terms including “substance abuse treatment for adolescents”, “most effective substance abuse treatment for adolescents”, “addiction treatment” and “young adults”. Using a variety of terms increased the chances of finding more relevant and culturally aware sources.

Below is a table outlining the sources used as well as the years in which they were published and what the numerous searches resulted in.

Table 3: Research Articles Evidence Based Interventions

<b>Search Engine:</b>	<b>Search Terms</b>	<b>Number of Sources found</b>	<b>Articles used for this project</b>
<ul style="list-style-type: none"> <li>• Academic Search Premier</li> <li>• Psycarticles</li> <li>• Psychology and Behavioral Sciences Collection,</li> <li>• Social Work Abstracts</li> <li>• SocIndex</li> </ul>	“substance abuse treatment for adolescents” “most effective substance abuse treatment for adolescents” “addiction treatment” “young adults” “addiction” “drug use” “teens”	10,000+	“The Influence of Substance Use on Adolescent Brain Development” “A Critical Review of Adolescent Substance Abuse Group Treatments” “Retention and ongoing participation in residential substance abuse treatment: perspectives from adolescents, parents and staff on the treatment process” “Adolescents' perspectives on strengths-based group work and group cohesion in residential treatment for substance abuse” “Family Treatment of Adolescents and Young Adults Recovering From Substance Abuse”

### Methods for Key Informant Interviews

For the purpose of this paper, a qualitative study was completed to compare how and if the information and research offered by evidence based interventions is implemented in local agencies. With the current opioid crisis it was crucial to gather information from local agencies to determine if the interventions they are implementing are successful and effective. These key informant interviews consisted of the interviewee’s perception on what the term adolescent means, what they considered to be the most effective intervention of adolescents suffering from

substance use disorder, what they thought were the strengths and limitations of the interventions they have used, what intervention they use when working with adolescents and if the method they use is successful.

Information was gathered from the Bureau of Substance Abuse Services about agencies located in Massachusetts that serve adolescents who suffer from substance use disorder. In the South East area of Massachusetts, the Bureau of Substance Abuse Services lists 34 agencies that serve the youth. Some of the agencies provided on this list were duplicates or recovery high schools. Some of these agencies were not relevant to the desired population because they were meant for people already in recovery. Other agencies were listed multiple times including High Point, Cushing House and Gosnold. After a careful screening, calls and emails were placed to 15 of these agencies that were appropriated to this study. Of these 15 agencies three individuals agreed to complete the interview. Knowing that more than three interviews were necessary, the search was expanded to include Boston area services. This expansion offered five additional agencies. Of those agencies two agreed to complete the interview. After months of calling and emailing agencies, five individuals (N=5) agreed to complete an interview. In the end, individuals from the Institute for Health and Recovery, Cushing House, Massachusetts General Hospital Addiction Recovery Management Service (ARMS), the Department of Children and Families, and Clean and Sober Teens Living Empowered (CASTLE) agreed to participate in the qualitative study.

All five of the interviews were conducted on the phone. These key informant interviews were between five and twenty minutes long depending on the interviewee's availability. The interviewee was provided the informed consent that was approved by the Institutional Review Board. These interviews were anonymous, and no personal identifying

information was asked. The interviews were not audio recorded. When the interviews were being conducted, notes were being written and then were transcribed into a word document immediately following the interview. The hand written notes were then shredded and discarded. The contents of these five key informant interviews were analyzed to compare the evidence-based interventions with the key informant interviews.

### **Results**

Many professionals including social workers, psychiatrists, psychologists, mental health workers and doctors are trying to identify the most effective intervention for adolescents who are living with substance use disorder. One of the major issues these professionals are facing is that only a small percentage of adolescents who need treatment are receiving care. According to Bretton Engle and Mark Macgowen, a national study found that 9 percent of people aged 12-17 met the requirements for receiving the diagnosis of substance use disorder or dependence. Of that 9 percent, the national study showed that only 1.4 percent of all people 12 and older had received treatment in the past year. According to these statistics, approximately 1 out of every 10 individuals between the ages of 12 and 17 meet the criteria for substance use disorder or dependence. With only 1.4 percent of the population of individuals aged 12 and older receiving treatment it is apparent that improved interventions are needed. (2009).

One issue with substance use interventions among adolescents is that they tend to leave or quit before it is officially over. There are numerous and significant negative outcomes from adolescents who leave treatment including difficulty in school and work, violence, unfulfilling relationships and premature death (Gogel, Cavaleri, Gardin, & Wisdom, 2011). It is crucial to find effective interventions that are able to keep clients enrolled and active in the program until it ends. If professionals are able to keep individuals in treatment for longer periods

of time it may prove to be beneficial to the success rates of most treatment options. This review includes multiple interventions for adolescents living with substance use disorder. The interventions include group treatment, family involvement in therapy, adolescent community reinforcement approach, motivational interviewing, residential facilities, and legal interventions (Gogel, Cavaleri, Gardin, & Wisdom, 2011).

### **Evidence Based Interventions Results**

When doing research on adolescents suffering from substance use disorder and the most effective intervention needed, a complete review of evidence based interventions which included the interventions gathered from the interviews with local agencies was included. These interventions include: Adolescent Community Reinforcement Approach, I-MAX Approach, Motivational Interviewing, Group Treatment and Family Treatment.

#### **Adolescent - community reinforcement approach (A-CRA)**

A-CRA is an intervention that is used in the Massachusetts General Hospital ARMS program as well as the Institute for Health and Recovery. This intervention has been used to treat adolescents with substance use disorders as well as psychiatric disorders. A-CRA is a combination of cognitive behavioral therapy and family work. Community Reinforcement Approach was originally used to treat adults and was adopted to create A-CRA, which is now used to treat adolescents (Godley, 2007).

One of the major aspects of A-CRA is that it includes the adolescent's caregivers if the caregivers are willing and able to participate in the treatment plan. A-CRA is designed to help adolescents develop a reward plan and skills to encourage non-substance-using behaviors. The goal of this reward system is to increase the likelihood of the adolescent participating in activities that do not involve the use of substances (Godley, 2007).

When A-CRA was first developed it was used for adolescents who used marijuana. The randomized control study that it was primarily analyzed in proved that A-CRA was a cost effective intervention, which showed significant pre and post treatment results. With the combination of A-CRA and assertive continuing care (ACC) it was proven that it improved retention and longer-term abstinence. A study of 2,000 adolescents concluded that the use of A-CRA across 33 different sites worked well across different ethnic and gender groups (Godley, 2007).

In another study of 1,467 adolescents that focused on active participation in A-CRA, adolescents who received A-CRA treatment saw a decrease in their substance use which also correlated to a decrease in illegal activities. With hundreds of clinicians and supervisors being trained in A-CRA related procedures such as medication monitoring, analysis of substance use behaviors, relapse prevention, increasing social activities, caregiver skills, adolescent-caregiver relationship skills, problem solving, goal based counseling, anger management and communication skills, the ability to help individuals suffering from substance use disorder is becoming more manageable (Godley, 2007).

### **IMAX approach**

The IMAX approach, created by Dr. Joseph Shrand, has very little research conducted on its effectiveness. One of the most crucial aspects to the IMAX approach is the idea of respecting people. In many of his presentations as well as his website he asks the question “when is the last time you got angry at a person who was treating you with respect?” (Imax Approach, Dr. Shrand). When an individual feels respected, they feel as though they matter or that they are worth something.

The IMAX approach combines the theory of mind with attachment theory to create a type of compassion and understanding that can be used to treat adolescents suffering from substance use disorder. The idea of attachment and theory of mind are incorporated in the four main domains of the IMAX approach which are biology, social, home, and the identified client domain. This approach says that there is a connection between these four domains and how they can be used to treat adolescents suffering from substance use disorder. It allows a clinician or a worker at a treatment center to understand the adolescent from four different perspectives as opposed to only looking at them through the lens of substance abuser or addict (Imax Approach, Dr. Shrand).

As said before, there is very little research to be found about the IMAX approach but it has been used in the CASTLE treatment program, High Point Treatment Center's adolescent program, therefore there are some successes to this approach. Seeing future research on this approach would be necessary because it is evident that respect and understanding are crucial when working with adolescents suffering from substance use disorder (Imax Approach – Dr. Shrand).

### **Motivational interviewing**

Motivational interviewing (MI) is another common intervention used for treating individuals with substance use disorders and has recently been adopted with promising results to be used with adolescents suffering from substance use disorder. Motivational interviewing is based on open ended questions, motivation and supporting individuals. Motivational interviewing is tied closely to the stages of change which includes pre-contemplation, contemplation, preparation, action, relapse, and maintenance (Flaherty, 2007).

One of the goals of MI is to reduce or eliminate the ambivalence individuals have in regard to staying sober. It is known that a strength of MI is that it is not a confrontational conversation between a worker and a client and instead more of a teamwork and supportive experience. Miller noticed that a lot of the resistance to staying sober was that the individual would resist the worker if they were being confrontational. Therefore while creating MI, Miller knew that this was something that needed to be changed about the current interventions (Flaherty, 2007). He noted that the reason he believes that MI works is because of the therapists' ability to be empathic and supportive as opposed to harsh and confrontational as well as the ability to provide techniques of offering resources and services to the adolescent when they need it. MI has been reviewed as being a very successful way for treating individuals with substance use disorder (Flaherty, 2007).

### **Group treatment**

The article *Adolescents' Perspectives on Strengths – Based Group Work and Group Cohesion in Residential Treatment for Substance Abuse* by Nicholas Harris, James Brazeau, Ashley Clarkson, Keith Brownlee and Edward Rawana shares insight of the effectiveness of group work among adolescent substance users. According to these authors, adolescent substance use is a problem that is associated with distress in psychological, emotional and psychosocial functions (Harris, 2012).

According to this article, group cohesion is when the individuals in a group feel a sense of belonging and acceptance amongst their peers (Harris, 2012). Similar to a therapeutic alliance in individual therapy, group cohesion helps with client satisfaction and success, which reduces the program dropout rates. Client age has an impact on the success of group work and is most successful among younger populations (Harris, 2012).

Strengths-based work has the fundamental assumption that all individuals have strengths. This article's application of strengths-based therapy uses the individual's strengths to help minimize problematic behaviors and improve general functioning. It is believed that through a strengths-based approach the individuals involved in group therapy will be able to experience group cohesion and successful treatment (Harris, 2012).

For this study, the facilitators developed a strengths-based program for adolescents with substance use disorder that is based on cognitive behavioral therapy. This version of group therapy included a sequential process that taught the adolescents about the importance of strengths. It had the adolescents identify their strengths, help others identify their strengths, work on developing their strengths, work as a group to understand how their strengths can be used in terms of their substance use disorder as well as work with the group to understand how their strengths can be used at home to cope with their substance use disorder (Harris, 2012).

In order to understand the adolescents' perspectives on how strengths-based techniques increase or decrease group cohesion, a qualitative analysis was completed. Group cohesion includes the relationships between members, members and therapists and members relationships with the group. Because there were three relationships that were included the facilitators strived to get the adolescents' perspective on all three (Harris, 2012).

This study, based in Canada, consists of adolescents who completed a 5-week residential program that had a strengths-based therapy approach and who were invited to complete a qualitative interview. There were a total of 40 adolescents who were invited to participate in this study and 36 of them agreed. The groups ranged in size from 6 to 8 and the study included 18 males and 18 females. The ages of these adolescents ranged from 15 to 18 years old. The individuals in this study used a variety of different drugs over 90 days before they

entered treatment. 63.8 percent or 23 of them used alcohol, 55.6 percent or 20 of them had used marijuana, 25 percent or 9 of them had used cocaine, 22.2 percent or 8 of them had used hallucinogens, 11.1 percent or 4 of them had used amphetamines, 8.3 percent or 3 of them had used benzodiazepines, 8.3 percent or 3 of them had used over the counter codeine preparations and 5.6 percent or 2 of them had used inhalants (Harris, 2012).

At the end of their stay at the residential strengths-based treatment program, the individuals participated in interviews that had numerous open-ended questions that were meant to evaluate the adolescent's perspective of the strengths-based approach and group cohesion. The interviews were conducted by caseworkers who had good relationships with the individuals to ensure that they felt comfortable. They used thematic analysis to interpret the results of the interviews (Harris, 2012).

The theme that was most discussed by the individuals was the interaction between themselves and the other members of the groups. Many of the members of the groups felt that helping each other identify their strengths allowed them to have positive and healthy relationships with other group members. Some of the individuals described that when their peers would tell them a strength that they thought they possess, it would make them feel better about themselves. This consideration would make that person want to tell their peer about a strength they thought their peer had as well. The second most talked about theme was their interaction between themselves and the group as a whole. Multiple people reported that by identifying each other's strengths a positive environment was created amongst the group. Many participants said they felt a sense of belonging when they were with the group. The least discussed theme was about their interactions between themselves and group facilitators. Since the facilitators

discussed the importance of strengths and positivity they were able to develop a therapeutic relationship with them (Harris, 2012).

The adolescents found that working in this group early in treatment was beneficial to their recovery because they were able to find similarities among themselves. Due to the positive and strength-based approach of this group, the adolescents found that they were more likely to participate. Some of the individuals who had debated leaving treatment early reported that they did not because of the relationships they formed with the members and counselors. Although there needs to be future work and research done to determine the overall effectiveness of this intervention it is important to acknowledge that these individuals found that a strengths-based approach to group therapy increased the group cohesion and the likelihood of them attending the group regularly (Harris, 2012).

### **Family treatment**

Research says that the inclusion of family members and family based therapy is an intervention that has been gaining more popularity over the years. Based on research, psychoeducation, cognitive behavioral therapy and group therapy have been the most popular ways to treat substance use. It has been found that the inclusion of family members in substance use treatment has increased the short-term and long-term outcomes for both individuals and their families (Matheson & Lukic, 2011).

Vanguard, an outpatient adolescent treatment program, is based on family systems theory, structural family therapy and psychoeducation. Each of the adolescents attends the individual therapy sessions as well as attending individual family therapy and group family therapy. This program serves individuals between the ages of 14 and 24. Normally there are anywhere between 10 to 12 active clients per group. When attendance increases the program will

break into separate groups based on their ages so the staff is able to offer developmentally appropriate groups. Most clients who join this program start with the intensive outpatient program which requires nine hours of treatment per week as well as at least one random drug test on site. The staff will meet weekly to discuss whether or not clients need to remain in the intensive outpatient program or if they can switch to the outpatient program. The outpatient program is designed to decrease the individual and family's dependence on the program. These clients will meet 3 to 6 hours a week instead of the intensive outpatient program's 9 hours a week. Clients often see the transition from intensive outpatient treatment to outpatient treatment as a reward and will work hard to reach the day when they no longer have to attend treatment. This treatment is designed to last 3 months but can be extended if the client's goals have not been met in the 3-month period (Matheson & Lukic, 2011).

Family involvement in an adolescent's substance use treatment reduces the chances for relapse as well as increases the likelihood of long-term recovery. For this program, at least one family member is expected to be present at the intake meeting with the adolescent. Although parent participation can sometimes be difficult, they have found that the more opportunities become available for their involvement the more likely they begin to see the importance of their involvement and actually want to participate (Matheson & Lukic, 2011).

Multifamily group therapy is one of the options offered to the families. At Vanguard they have a 15-week program and each week they cover a certain topic. This allows the family to receive psychoeducation as well as participate in group therapy. Researchers have proven that psychoeducation is an important aspect of substance use treatment because many family members and the individuals themselves are not always aware of what their substance use really means (Matheson & Lukic, 2011).

Individual family therapy is used so that issues, which arise within multifamily group therapy, can be addressed individually. Along with individual family therapy, the adolescent receives individual group therapy and individual therapy. By allowing both the family and the individual to recover, researchers have noticed an increase in the long-term recovery of these individuals (Matheson & Lukic, 2011).

Similar to the previous discussion on group therapy, it is known that individual group therapy is effective and beneficial to an adolescent's substance use treatment. An expert on family therapy runs the groups with an individual with real life substance use experience. The adolescent individual also receives weekly therapy so that they are able to discuss any issues that they do not feel comfortable bringing up in front of their families or group members (Matheson & Lukic, 2011).

### **Key Informant Interview Results**

The individuals who were interviewed worked in a wide variety of agencies that served adolescents with substance use disorder. Because there is limited research done for adolescents with substance use disorder, it was important to look at a variety of services and systems that these individuals interact with. It was interesting to hear the different perspectives and experiences of the interviewees of the five different agencies. The five individuals that were interviewed worked in agencies including the Institute for Health and Recovery, Cushing House, Massachusetts General Hospital Addiction Recovery Management Service (ARMS), the Department of Children and Families, and Clean and Sober Teens Living Empowered (CASTLE). The Institute for Health and Recovery works with individuals on a wide variety of services and is funded by the Bureau of Substance Abuse Services to offer case management and community based services to adolescents in need of substance use treatment. (Youth and Young

Adult-IHR, 2014) The Cushing Houses is a program offered by the Gavin Foundation. The Cushing Houses offer two residential programs for adolescents coping with substance use disorder. One of the residential programs is for males and the other is for females. (Cushing Houses – Gavin Foundation) Massachusetts General Hospital ARMS program is an outpatient program that works directly with the Massachusetts General Hospital providing support to adolescents with substance use disorder and their families. (Addiction Recovery Management Services) The Department of Children and Families (DCF) works to promote and build a safe and strong system for protecting children and families. The Department of Children and Families offers numerous services but one of the services provided is case management services where some of the workers strive to help adolescents with substance use disorder. (Department of Children and Families) The CASTLE program of Brockton, Massachusetts is a short-term treatment program for individuals with substance use disorder that focuses on prevention, treatment and abstinence (Castle).

Table 4 illustrates agencies that were interviewed including the intervention(s) and their strengths, limitations, effectiveness and location.

TABLE 4: Key Informant Interviews Strengths, Limitation, Success, Strengths and Location

<b>Agency</b>	<b>Intervention</b>	<b>Successful?</b>	<b>Limitations</b>	<b>Strengths</b>	<b>Location</b>
Institute for Health and Recovery	Adolescent Community Reinforcement Approach and Assertive Continuing Care	Yes	Not applicable to adolescents with mental health disorders	Includes family and provides skill building	Cambridge, MA
Cushing House	Residential Treatment Facility (outpatient and inpatient groups, family groups, life skills training and individual therapy)	Sometimes	Client has to be motivated for it to work	Incorporates multiple interventions (inpatient, outpatient, groups, family, etc.)	Boston, MA
Massachusetts General Hospital Addiction Recovery Management Services	Adolescent Community Reinforcement Approach	Yes	Not applicable if adolescent has a mental health disorder	Engages adolescents who are typically difficult to engage	Boston, MA
Department of Children and Families	Community based interventions, legal interventions, motivational interviewing	If the adolescent wants it and depending on the individual	Works for some, others will relapse immediately after treatment	Scares adolescent (scare tactic)	Southeast Area
Clean and Sober Teens Living Empowered	IMAX Approach	Yes	Doesn't work for absolutely everybody	Includes adolescent, home, social environment and biology	Brockton, MA

**Institute for health and recovery**

The Institute for Health and Recovery serves individuals between the ages of 11 and 24 within their program. This program works with youth and young adult services and because of this they tend to serve a wider range of individuals. The Institute for Health and Recovery uses an adolescent community reinforcement approach (A-CRA) paired with continuing care and case management, which is known as assertive continuing care (Institute for Health and Recovery, personal communication, November 2015).

The individual at the Institute for Health and Recovery believed that this was a successful method because it had been used for eight or nine years. This intervention was also viewed as successful because it promoted positive skill building and helped adolescents learn how to enjoy their lives while maintaining sobriety. The major focus of their intervention was to focus on learning a happy, enjoyable, and safe way to live their life by incorporating improved communication with family, teachers and friends as well as learning coping and problem solving skills. One of the setbacks of this intervention that the interviewee disclosed was that it “obviously doesn’t work for everyone” (Institute for Health and Recovery, personal communication, November 2015). Another criticism that the interviewee mentioned about A-CRA and the assertive continuing care services that they offer is that adolescents with significant mental health disorders are not as successful with this program because it is not designed for co-occurring disorders (Institute for Health and Recovery, personal communication, November 2015).

When asked if this interviewee used other approaches or interventions for adolescents with substance use disorder, the interviewee said that she generally supervises the other clinicians who use a variety of methods to work with the individuals. She said that similar to any

diagnosis, whether it be substance use disorder or homelessness, different individuals respond to different interventions. Some of the difficulties that the interviewee from the Institute for Health and Recovery mentioned in terms of working with adolescents as opposed to adults is that you are working with individuals who are difficult to engage and who are trying to become more independent. While working with these individuals who are trying to achieve their independence you are also trying to incorporate their family members. Balancing the needs and desires of the adolescent with the needs and desires of the adult family members can cause difficulties in the treatment of substance use disorder for adolescents. Overall, the interviewee felt that there is always room for improvements when it comes to interventions for individuals but given the current research this interviewee believes that A-CRA combined with assertive continuing care services is an effective way to treat adolescents suffering from substance use disorder (Institute for Health and Recovery, personal communication, November 2015).

### **Cushing house**

The Cushing House program works with individuals between the ages of 16 and 20 years old. Since this is a residential program there are certain rules and guidelines they have to follow in regards to the genders and ages of the individuals in the houses. The Cushing House program incorporates a variety of different interventions. This program offers outpatient groups, inpatient groups, family groups, life skills training and individual therapy (Cushing House, personal communication, December, 2015).

When asked if this program was successful the interviewee from the Cushing House program responded bluntly with “if they want it [to be]” (Cushing House, personal communication, December 2015). This individual mentioned that with proper and open communication, individuals are able to get what they want and need out of the program. One of

the setbacks mentioned was that if the individual is not motivated to stay sober on their own or did not have the desire to get sober then the program would not be successful. The interviewee thinks this is true of most substance use disorder recovery interventions available (Cushing House, personal communication, December, 2015).

The interviewee from the Cushing House program felt very strongly about the difference in treating adolescents and adults. When working with adolescents, they are much more defiant. Adolescents also tend to be close-minded and think they are invincible. With an adolescent, they have only lived a very small portion of the average life and they tend to not have experienced subsequent consequences of their disorder in comparison to adults. Adolescents do not necessarily realize that their substance use affects not only their life but also the lives of the individuals around them and that is why incorporating their families and family therapy was important to the Cushing House. By the end of the interview, the interviewee from the Cushing House program said that although this was the only intervention she had used, she felt it was effective and successful for those who had the desire necessary to complete the program (Cushing House, personal communication, December, 2015).

#### **Massachusetts general hospital addiction recovery management services**

The Massachusetts General Hospital ARMS program typically works with individuals who are younger than 18. Similar to the Institute for Health and Recovery, they use the adolescent community reinforcement approach. They think this is successful in the sense that it helps to engage adolescents who are generally difficult to engage by allowing them to choose their own goals. With that thought process in mind, the adolescent will be more likely and more motivated to work towards the completion of their goal. Other programs tend to have distinct, strict outlined goals while this program allows the individual to choose what they want to work

toward. This program allows the adolescent to develop and learn new and different skills that they may not have already known (Massachusetts General Hospital Addiction Recovery Management Services, personal communication, November 2015).

In previous workplaces, as well as Massachusetts General Hospital ARMS, the interviewee has used cognitive behavioral therapy specifically with individuals who have co-occurring disorders including depression and anxiety. This interviewee, as well as other staff they work with, have also incorporated motivational interviewing as a general style of interacting with clients as well as incorporating skills regarding “rolling with resistance” and avoiding arguing (Massachusetts General Hospital Addiction Recovery Management Services, personal communication, November 2015).

The interviewee from the Massachusetts General Hospital ARMS program believes that interventions should differ drastically between adults and adolescents because they are at different stages in development. Some of the difficulties that were outlined from the Massachusetts General Hospital ARMS program were that there are often more systems involved when working with adolescents. When a program is working with an adolescent they are also working with the individual’s family, which is why they believe that systems and family work is crucial to working with adolescents. When the family is involved and active in the adolescent’s recovery, the adolescent is more likely to be successful. Although adolescents tend to come with fewer negative consequences, they also come with less motivation to do the work and have the idea that substance use is glorified and exciting. With the drinking age being 21 and individuals starting to use at younger ages, adolescents think it is “cool” to drink or smoke marijuana but unfortunately the adolescent does not see the consequence substance use entails (Table 1b). When concluding this interview, the interviewee stated that when reviewing and analyzing

evidence-based treatments it is apparent that they are all doing the same types of interventions. They argued that something is missing from these treatment programs and interventions if there are still thousands and thousands of adolescents who are still suffering and dying from substance use disorder. Regardless of this statement, they still believe that this program can be effective, but that it is necessary to not stop here and think of these interventions as the end all be all of interventions and instead continue to research, analyze and review interventions until less and less adolescents have to suffer from substance use disorder (Massachusetts General Hospital Addiction Recovery Management Services, personal communication, November 2015).

### **Department of children and families**

Interviewing a Department of Children and Families (DCF) worker allowed me to gain another perspective on interventions being offered to adolescents suffering from substance use disorder. DCF defines an adolescent as someone who is going through puberty up until his or her 18<sup>th</sup> birthday. Since DCF is not a substance use disorder specific treatment center, they have different interventions from those some would consider the “normal intervention” (Department of Children and Families, personal communication, January 2016).

The DCF social worker that was interviewed worked individually with adolescents who are suffering from substance use disorder. The intervention that is most commonly used is community based interventions and motivational interviewing. They try to gain a positive rapport with the adolescent so the adolescent knows that they are not alone and instead their treatment is a team effort. The DCF social worker believed this intervention to be a successful technique if there was evidence of good collaboration with the adolescent and their supporting team as well. One of the setbacks that this social worker has experienced involve adolescents

who do not have positive support to help them with the community-based interventions (Department of Children and Families, personal communication, January 2016).

Another intervention that the social worker has used with adolescents suffering from substance use disorder is legal intervention involving probation. When the adolescent is involved with the court system they are sometimes mandated to participate in treatment even though the services are generally voluntary. Working with adolescents who are reluctantly placed in a treatment program where they feel like they do not have a choice can cause tension and frustration for the adolescent. According to this social worker, they found that for some adolescent clients, when the court system was involved they would remain sober to stay out of jail, but when the court system was no longer involved they would go back to using the substance again. This DCF worker felt that legal intervention was a “temporary fix” for the adolescent and that it did not provide them with the tools and support necessary to remain sober throughout the rest of their life (Department of Children and Families, personal communication, January 2016).

The DCF worker identified that there is a difference in working with adolescents suffering from substance use disorder and adults who suffer from substance use disorder. She said that adolescents are still developing physically and mentally while they are trying to develop a sense of who they are. This idea correlates with Erik Erikson’s stages of development and how an adolescent is still trying to figure out their identity and their sense of self (Department of Children and Families, personal communication, January 2016).

When asked what they thought the most effective intervention for an adolescent suffering from substance use disorder would be she responded that it would have to incorporate “the needs and wants of the adolescent while working collaboratively with the adolescents

natural supports” (Department of Children and Families, personal communication, January 2016). In this interviewee’s opinion, it takes more than just mandating an intervention for an adolescent to remain sober. When an individual is actively involved in their treatment and has a say in what their treatment plan is they are more likely to remain sober (Department of Children and Families, personal communication, January 2016).

### **Clean And sober teens living empowered (CASTLE)**

Adolescents being served at the CASTLE program range in age from 13 to 18 years old. At the CASTLE program, the I-MAX approach is used. This approach is based on the idea that the adolescent suffering from substance use disorder is always at their “pinnacle of potential” and doing the best that they can do (Imax Approach – Dr. Shrand). The individual interviewed believes this method to be successful because it is based on respect and is a person-centered approach to treatment. It focuses on the fact that the individual is doing what they can in terms of their treatment and although their decisions may have consequences, it may be the best they can do at this time. According to the worker at CASTLE, this approach has a lot of successes because it incorporates the adolescent’s home environment, social environment, biology and the way the individual sees them self. By incorporating these parts in the treatment, you are able to work with the individual as a whole as opposed to one aspect of the individual (Clean and Sober Teens Living Empowered, personal communication, March 2016).

The worker at CASTLE believes that there are some differences in treating adolescents suffering from substance use disorder versus adults suffering from substance use disorder. There are numerous biological differences between adults and adolescents as well. This interviewee stated that an adolescent’s frontal lobe is not fully developed which impacts their decision-making abilities and they are also typically hypersexual. With this being said, the CASTLE

worker believes that this is an overall successful method because it takes into consideration where the individual is in their treatment as well as where they want to be while respecting them (Clean and Sober Teens Living Empowered, personal communication, March 2016).

### **Discussion**

Each of the interventions discussed in the peer reviewed articles and the ones that were disclosed during the interviews can be seen as successful on some level. The peer reviewed articles combined with the qualitative study offered insight into some of the successes, strengths and limitations of each intervention included in this paper.

Research says that the combination of A-CRA and assertive continuing care helps to improve retention and long term abstinence of substance use among adolescents. Another strength of this study is that it concluded that A-CRA is effective across different ethnical backgrounds and genders. When A-CRA was first used with adolescents it was primarily used with individuals whose substance use disorder involved marijuana. It is continuing to develop and become effective with other substances as well. An individual at the Institute for Health and Recovery noted that this intervention is not effective for every individual that uses it. During the interview, it was made clear that this approach was not designed to treat individuals with co-occurring disorders.. Due to the developmental stage an adolescent is in they are more likely to start showing signs or to develop a mental health disorder when they use substances at a young age. Because this can become very common among adolescents it is seen as a limitation to the intervention overall.

One of the most important aspects of the I-MAX approach is the concept of the therapist or worker meeting the needs of the adolescent where they are in their recovery. This is considered to be a strength in this intervention because it allows the adolescent to take control of

their recovery. As a developing adolescent, they are in a stage in their life where they are gaining skills related to increased independence. Therefore, allowing an adolescent to feel in charge of their recovery will make it so that there is not a conflict between their recovery and their developmental progress. One of the limitations to this approach is that there is very little research done on the intervention. With very little research, it is difficult to conclude whether or not this is an effective intervention. With more research and controlled studies this intervention could become a more successful and effective intervention but until that research is done it is difficult to determine the validity and success of it.

One of the strengths of motivational interviewing is that it is viewed as being non-confrontational which allows a therapeutic relationship between the adolescent with substance use disorder and the worker. This approach allows the worker to be empathic and supportive of the adolescent's treatment without being harsh to them. Motivational interviewing is often used with a combination of other interventions which is a strength of this intervention because it shows that it is a versatile intervention that has been used for years. One of the limitations of this would be the individual's need to be willing to work and change in order to accomplish sobriety. Part of the process of motivational interviewing is working with an adolescent to develop intrinsic and extrinsic motivation. If the client is unmotivated or does not want to attend treatment they likely will not remain sober for a long period of time. Although it is a strength that motivational interviewing is versatile and can be used with other interventions, it is also a limitation because if it is used on its own it is not incredibly effective.

Strengths-based group therapy has proven to increase group cohesion and retention within the program. This is a strength because one of the problems interventions and treatment programs face is that adolescents do not remain in the program long enough to fully get the

knowledge and skills they need to maintain sobriety throughout their life. With that being said, group therapy is used in most forms of intervention for substance use disorder. Whether it is family therapy or individual treatment, individuals with substance use disorder are often referred to group treatment because it allows the adolescent to interact with individuals who are in a similar situation. . One limitation could be the amount of time required to complete the program successfully. If an adolescent has other responsibilities to adhere to including school and work, they are more likely to drop out of their intervention program prematurely to continue attending school or work. Due to the inability to complete the treatment, they were more likely to use substances again in their future. Another limitation to this intervention are that the study was based in Canada and not the United States or Massachusetts. This could mean that there are some cultural limitations to the approach, but considering the overwhelming success in Canada it is possible that it could also be effective in the United States as well

Family treatment is also incorporated into multiple interventions mentioned in this paper. The inclusion of family members in an adolescent's treatment can lead to a higher chance of success and involvement. (ARMS) This study included a reward system for individuals who have transition into different levels of care and this encourages the adolescents to keep progressing in their recovery. Family therapy allows the adolescent to have the support of their family members throughout their recovery. As with any treatment or intervention option there are limitations and barriers. One of the barriers discussed was the fact that a lot of families like to keep their problems to themselves. Another barrier is that some families tend to blame the adolescent with substance use disorder for all of their family problems while others deny that the problem even exists. There are also some limitations in transportation for some families as well as financial limitations. Unfortunately, not many insurance companies cover substance use

treatment and if they do they do not cover the entire family and only cover the individual with the substance use disorder (Matheson & Lukic, 2011).

There are not many studies done regarding the success or failure of family involvement in therapy, but studies dated before 2005 show that family member involvement in an adolescent's substance use treatment increases the likelihood of the adolescent being successful in their treatment (Matheson & Lukic, 2011). After speaking with an individual from the Institute for Health and Recovery and asking them what the difference was between working with adolescents and adults she emphasized that it is crucial to get the family involved in the treatment. She stated that this can be difficult to balance because some of the adolescents, depending on their age, are developmentally becoming more independent and can get offended by their family's involvement in the treatment (Institute for Health and Recovery, personal communication, November 2015).

Based on the key informant interviews and the evidence based interventions there are many things that are still unclear in regard to treating adolescents with substance use disorder. Most of the interviewees and reviewed interventions had results that said that their intervention combined with other interventions would be more successful. None of the interventions were proven to be completely successful on their own or completely successful at all. Considering the fact that every individual and adolescent is unique and that every unique adolescent is going to respond differently to different types of interventions and treatments, it is difficult to say which intervention is the most effective.

There was one method that was incorporated into all of the interventions which was family therapy and involvement. This intervention allows the individual to have the support of their family while maintaining sobriety. Because there are limitations to this intervention, there

still needs to be research done to determine the most effective intervention for adolescents suffering from substance use disorder.

In conclusion, the most effective intervention for adolescent substance use disorder is family therapy and the involvement of family in an adolescent's recovery. With that being said, further research could prove that another intervention is more effective but considering the fact that many of the interventions covered did not have substantial research done for them, family therapy and involvement is crucial in an adolescent's substance use disorder recovery.

### **Limitations**

There were some limitations of the research process involved in this paper. The evidence based interventions review were limited because there is not a lot of research about interventions for substance use disorder for adolescents in particular. A lot of the interventions were either for adults, juveniles, or specific substances. Some of the interventions did not have any peer-reviewed articles with studies done that would allow for a critical assessment of whether or not the intervention was effective. The key informant interviews were crucial to this paper because it allowed the research to involve local real life experience with the interventions. After considering the interviews some of the information that the articles and sources were lacking the interviews were able to rectify.

With that in mind, there were a couple limitations to the key informant interviews. One of the limitations was the small sample size. Numerous calls would be placed and the individuals would either be busy or not have the availability any time in the near future to complete the survey. Of the numerous phone calls and emails five individuals agreed to participate in the study. Secondly, the interviewee's who were willing to participate in the study may not have been the best person at the agency to interview and there was a potential bias towards the

interventions their agency uses. All five of the interviewees believed that the intervention their agency used was the most effective intervention or was the most effective intervention when combined with another intervention. Although they were excited and eager to participate in the study they only had a limited amount of time to participate and because of this they were only able to offer a limited amount of information. Lastly, considering that the interviews lasted between five and twenty minutes some of the interviewees were unable to provide in depth information in response to the interview questions.

In the future, research should be focused on assessing interventions that are designed specifically for adolescents with substance use disorder. Researching agencies that use a combination of interventions and how these interventions interact with each other should also be considered. An objective assessment of the local agencies success would be necessary to lessen the significance of the bias of the interviewees. More key informant interviews and a more substantial sample size would be beneficial towards obtaining a better understanding of this ongoing crisis and to determine the most effective intervention for adolescents suffering with substance use disorder.

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