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Article 43

Best Practices: Substance Use Disorder Treatment for Adolescents

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Abstract

Best practices in substance use disorder treatment for adolescents is a focus for treatment providers and researchers. NIDA (2014a) reported that drug use is highest among people in their late teens. With different drugs of use widely available to teenagers, it is important that treatment providers offer appropriate research based treatments that match each client's drugs of use. These authors review the best practices for adolescent substance use disorder treatment which are outlined by National Institute of Drug Abuse (NIDA) and include: family involvement, motivational interviewing, cognitive behavioral approaches, adolescent brain considerations, and 12-step facilitation. In addition these authors include discussion and review research focused on current trends of mindfulness and spirituality. How these recommended practices are applied to adolescent substance use disorder treatment requires special attention, so implications for treatments providers are provided.

Keyword: Adolescents, substance use disorder treatment, substance abuse treatment, best practices

Introduction

Adolescents' alcohol and drug use remains a focus for treatment providers in regards to treatment development needs. According to the National Institute on Drug Abuse (NIDA) 15% of high school seniors used prescription drugs for a nonmedical purpose (2014b). In addition, 22.7% of 12th graders used marijuana in the past month in 2013, while 11.48% of 12th graders reported using synthetic marijuana in 2013 (NIDA, 2014b). Cigarette smoking among adolescents remains a problem, with reports showing that 15.6% of 12th graders were current cigarette smokers (NIDA, 2014b). In fact, NIDA (2014a) reported that drug use is highest among people in their late teens. It is important that treatment providers provide appropriate approaches to match the drug of use. NIDA (2012) recommended a number of behavioral therapies to help engage adolescent clients in substance use disorder (SUD) treatment such as family involvement, motivational interviewing, cognitive behavioral approaches, adolescent brain considerations, and 12-step facilitation. In that, these authors attempted to review these current trends in adolescent SUD treatment while paying special attention to family involvement, adolescent brain considerations, motivational interviewing, cognitive training, mindfulness, spirituality, and 12-step facilitation. Lastly, as a result of the reviewed research, these authors will review implications for treatment providers.

Family Involvement

It is understood in the field of addiction treatment that SUD not only affects the individual suffering with a SUD, but it also affects the individual's family, community, state, and nation as a whole. It has been estimated that SUD cost our nation over $600 billion annually in medical, legal, and treatment related activities (NIDA, 2007). Engaging in addictive behaviors isn't the only price individuals and their families pay. Other costs include:

- Loss of work or inability to acquire employment
- Increased insurance premiums
- Life and educational experiences lost while spending time searching for and using drugs and alcohol (NIDA, 2014a).

Family and friends could have a major impact in motivating individuals with a SUD to enter and stay in treatment while strengthening and extending treatment benefits.

Family-based or oriented approaches to treating SUD adolescent stress the importance to engage the family in the adolescent's treatment experience (NIDA, 2014b). Research has shown several types of family-based treatment models to be effective in treating SUD adolescents. According to NIDA (2014b), brief strategic family therapy (BSFT), family behavioral therapy (FBT), functional family therapy (FFT), multidimensional family therapy (MDFT), and multisystemic therapy (MST) are the most commonly used family-based treatment methods.

The family is an important socialization and controlling entity that affects the probability of adolescent drug use (Flewelling &Bauman, 1990). Numerous family variables, such as family socioeconomic status, number of parents in the home, parental supervision, and parent-adolescent relationship are considered as influencers of the

probability of drug use as well as SUD successful treatment experience. It can be understood that the aforementioned family factors can enhance and increase treatment outcomes that would improve the quality of sobriety of the adolescent. The caveat is these factors have to be positive and healthy for them to be ideally conducive for success. Most families need information, educational instructions, training, and support in the family structural factors mentioned earlier. Family involvement in SUD treatment of adolescent addicts is crucial (Howard, 2010). In essence, the family needs treatment too.

Some studies posited that involving the family in the treatment process within the context of family dynamics and communication is even more effective than treating the adolescent alone (Howard, 2010; Rigter et al., 2010; Sherman, 2010; Stein, 2013). The treatment plan must be tailored to the unique needs of the adolescent and his or her family, which begins with a comprehensive assessment of the adolescent and the family needs and strengths. In addition, it is recommended that treatment providers appropriately match treatment design with the neuroscience available on adolescent drug use and brain development.

Adolescent Brain Considerations

Addiction is a brain disease that impacts brain development and behavior, and these neurotoxic impacts are more notable during adolescence. Bava and Tapert (2010) suggested that adolescent brain development puts this population at risk for reward seeking and risky choices. "Maturing neural circuitry, particularly in the prefrontal cortex, limbic system, and white matter association and projection fibers is linked to advancements in cognition and behaviors, but also renders the adolescent brain vulnerable to unhealthy environmental influences" (Bava & Tapert, 2010, p. 399). Neuroimaging techniques have provided advanced information on neural consequences of substance use during the adolescent period (Wetherill & Tapert, 2013). Related to these advancements, there has been a call in the literature for future research on adolescent neuroscience and intervention development to improve SUD treatment interventions (Boyce & Lynn-Landsman, 2013).

Brain changes during the adolescent period are numerous. Blakemore (2012 discussed the steady increases in white matter volume in numerous regions of the adolescent brain and the important changes in both white and gray matter during this time. A study on male and female adolescent binge drinkers reported that female bingers had thicker cortices than female controls, and thicker left frontal cortices are associated with poorer visual spatial, inhibition, and attention performances. In addition, male bingers had thinner cortices than male controls and this was associated with worse attention for male bingers (Squeglia et al., 2012). These researchers suggested that these results are linked to different gray matter risk factors for males and females toward developing heavy drinking patters (Squeglia et al., 2012). Paus (2013) stated that genes and the environment play an important role in shaping the adolescent brain specifically related to how the gonadal hormones influence the adolescent brain and the role of social context on brain plasticity and shaping neural circuits. Adolescence is a complex time for brain and body development and substance use can influence these brain changes in a negative manner.

Exposure to illicit drugs and alcohol during the adolescent time period may interrupt brain development and related cognitive and behavioral functioning (Wetherill & Tapert, 2012). Research has continued to support these statements by showing that differences in hippocampal (De Bellis et al., 2000) and prefrontal cortex (Medina et al., 2008) volumes of heavy drinking adolescents can impact memory and executive functions of planning, inhibition, and self regulation. It is important that treatment providers take into account the damage that specific drugs can have on brain development and processes. When catering SUD treatment for adolescents, different approaches and evidence-based therapies such as motivational interviewing and cognitive behavioral therapies have shown effective.

Motivational Interviewing

A wealth of research and literature exists on motivational interviewing (MI) for adolescents with SUD. MI is a preferred clinical practice within SUD treatment due to its collaborative approach between treatment providers and clients. In addition, relational and technical components of MI are highly relevant for the adolescent development period (Naar-King, 2011). One study found that two-thirds of the MI studies reviewed showed reduced adolescent substance abuse (Barnett, Sussman, Smith, Rohrbach, & Spruijt-Metz , 2012). Another study reported that adolescents who received MI were less likely to drink and drive or be a passenger in a car with someone who had been drinking when compared to those who received relaxation training (Stein, Colby, Barnett, Monti Gelmbeske, & Lebeau-Craven, 2006). These studies provide promise for reduction in SUD risky behavior when utilizing MI with adolescents.

In order to implement MI, treatment providers must assure that the integrity and fidelity of MI is upheld within treatment programs. D'Amico, Osilla, Miles, Ewing, Sulivan, Kathz, and Hunter (2012) found that it was attainable to train group facilitators in adolescent treatment groups on MI and that these approaches could be utilized with integrity. MI group interventions on teens involved in alcohol and drug abuse reported high levels of evocation, collaboration, autonomy, support, and empathy within the group setting (D'Amico, Osilla, & Hunter, 2010). "Youth reported that they enjoyed the collaborative spirit of intervention; they felt that the facilitator listened to them and was empathic and that their points of view were supported" (D'Amico et al., p. 430). Lastly, another study reported that fidelity to MI showed difference in cannabis cessation for adolescents 3 months after a single session of MI and that the MI spirit and proportion of complex reflections were independently predictive of this outcome (McCambridge, Day, Thomas, & Strang, 2011). Therefore, integrity and fidelity to MI are feasible and beneficial to treatment outcomes.

Studies comparing MI to brief interventions such as brief advice and structured brief advice (SBA) were considered. One study that compared MI with SBA for adolescent smoking behavior found that adolescents who received MI showed greater reduction in cigarettes smoked per day than those who received SBA. Lastly, no difference in smoking abstinence between those who received MI and SBA were found (Audrain-McGover et al. 2011). Another study comparing MI versus brief advise for smoking cessation effects in adolescents during psychiatric hospitalization reported that MI was associated with improved substance use outcomes when compared to brief advice

during the first 6 months following psychiatric hospitalization (Brown, Strong, Abrantes, Myers, Ramsey, Kahler, 2009). These studies suggest that MI has slightly more significance than brief advice methods. In addition to MI cognitive therapies have shown to be effective for treatment outcomes.

Cognitive Behavioral Therapy

Cognitive behavioral therapy examines the relationship between thoughts, feelings, and behaviors and how these three variables impact one's life. Through the exploration of beliefs and feelings that lead to destructive behaviors, such as substance use in adolescents, one can begin to identify what leads to these behaviors. Research has explored the combined effect of cognitive behavioral therapy (CBT) and multiple other therapies such as motivational enhancement techniques (MET; Ramchand, Griffin, Suttorp, Harris, & Morral, 2011), abstinence-contingent incentives (CM; Krishnan-Sarin et al., 2013), and multidimensional family therapy (MDFT) on adolescents with SUD.

Ramchand et al. (2010) studied adolescents with marijuana problems and provided them with 5 sessions of MET plus CBT (MET/CBT5) in an experimental setting. When compared to adolescents with marijuana problems in exemplary community based outpatient treatment, the youth who received MET/CBT5 had greater reductions in substance use frequency, problems, and illegal behavior 12 months after treatment. In this study MET/CBT5 had significant impacts on the success of adolescents post treatment.

Utilizing CBT in combination with other approaches has been of interest. Researchers studied adolescent smokers and the impacts of CBT and CM (Krishnan-Sarin et al., 2013). They found higher abstinence in adolescents utilizing CM and CBT when compared to CBT alone and higher abstinence in adolescence utilizing CM alone when compared to CBT alone. For this study, CBT was more effective when combined with abstinence contingent incentives (Krishnan-Sarin et al., 2013).

Hendriks, Schee, and Blanken (2011) compared MDFT and CBT on adolescents with a cannabis diagnosis. The researchers reported that both groups of adolescents showed reductions in cannabis use and neither group was more superior. In a follow-up study, Hendriks et al., (2011) stated that older adolescents (17-18 years old) appeared to benefit more from CBT while younger adolescents (13-17 years old) benefited more from MDFT. This research identifies the need for age appropriate treatment and supporting research. In addition to building the relationship with the client through MI skills and helping adolescents improve awareness through CBT, mindfulness inclusion offers promise.

Mindfulness

According to Elias, Marian, and Frances (2011), mindfulness is defined as the capacity to attend to phenomena on a moment-to-moment basis, nonjudgmentally, and with accepting, relaxed awareness. Mindfulness is a cognitive strategy or coping mechanism that formulates a perspective that cultivates the recognition of thoughts and feelings as passing events created in the mind. By practicing these skills, an individual seeks to gain insight into patterns in thoughts, feelings, and interactions with others, and

then he or she can skillfully choose appropriately targeted responses rather than automatically reacting in habitual, overlearned, or unconscious ways (Appel & Kim-Appel, 2009).

Mindfulness has become increasingly important in the fields of mental health, pain management, stress reduction, and most recently, substance use disorder (SUD) treatment. Mindfulness therapies have gained considerable attention in empirical literature, revealing promise for the reduction of a variety of psychological and physiological symptoms among adults. Studies have offered promising results regarding the efficacy of acceptance and commitment therapy (ACT), dialectical behavior therapy (DBT), mindfulness-based cognitive therapy (MBCT), and mindfulness-based stress reduction (MBSR) for use with problems such as depression, anxiety disorders, borderline personality traits, internalizing and externalizing problems, chronic pain, psychosis, and epilepsy. Ryan (2013) suggested that the practice of mindfulness meditation could yield great benefits in the field of addiction. In a study conducted by Sarah Lazar at Harvard University on neurobiological mechanism, mindfulness meditation showed physical and physiological changes in the brain occurred; specifically, thickening of brain cells in areas in charge of decision-making, emotional flexibility, and empathy (Ryan, 2013).

Mindfulness-based relapse prevention (MBRP) developed by Addictive Behaviors Research Center at the University of Washington is just one evidence-based example of a mindfulness-based practice designed for individuals in recovery from a substance use disorder (Marlatt, Bowen, & Lustyk, 2012). In recent years, researchers have begun to investigate the impact of mindfulness therapies on adolescent in SUD treatment. To date there has been no synthesis of research on mindfulness therapies with adolescents in a treatment environment (Montgomery, Kim, Springer, & Learman, 2013). Mindfulness therapies could prove to be effective in treating substance use disorder among adolescents if utilized appropriately with regard to age, maturity, and cognitive development. In addition to the incorporation of mindfulness into adolescent treatment, spirituality is also recommended for inclusion. Spirituality encompasses a certain level of mindfulness.

Spirituality

Appel and Kim-Appel (2009) referenced Carl Jung's statement that spirituality is an essential ingredient in psychological health and that craving for alcohol was a spiritual thirst for wholeness—an attempt at a union with God—in their explanation of the connection between spirituality and addiction. Jung reminded us that "alcohol," in Latin is *spiritus*, the same word for "spiritual experience" (Miller, 2000). As we consider Alcoholics Anonymous and the 12-step program, we have to acknowledge that the program is a spiritual program and the 12 steps are spiritual principles that if adhered to offer promise to lead one towards sobriety.

Leigh, Bowen, and Marlatt (2005) posited that spirituality and mindfulness might be separate constructs. In their study of substance abuse, mindfulness, and spirituality, they found that substance abuse and abusive behavior were negatively correlated with scores on a spirituality scale. They found that this relationship was not true for

mindfulness, suggesting that mindfulness is a helpful, but not sufficient factor as a means to address substance abuse.

The relationship between spirituality and substance use should be explored further, as should the relationship and differentiation between the constructs of spirituality and religion. Pardini, Plante, Sherman, and Stump (2000) found in their study of those recovering from SUD that participants that had higher levels of faith and spirituality achieved higher positive outcomes. Recovering individuals rating themselves as being more spiritual than religious had better outcomes. Also, the study suggested that spirituality contributes to a more optimistic and promising life outlook whereas religious faith acted as a buffer to stress, anxiety, and frustration. Appel and Kim-Appel (2009) noted that spirituality and religiosity are often used interchangeably which results in construct merging and confusion. Therefore, the concept of spirituality and how it differs from religiosity remains an area that needs clarification.

Spirituality has been outlined as essential for SUD treatment but continued research is needed. Miller, Forcehimes, O'Leary, and LaNoue (2008) reported no measurable difference between the spiritual guidance (SG) tool and treatment as usual (TAU) protocol. Heinz, Epstein, and Preston (2007) posited that there has been minimal scientific research on the correlations between positive treatment outcomes and spirituality. It is recommended that continued research is conducted to determine the effects of spirituality on SUD treatment for adolescents. Spirituality is the core foundation upon which 12-step programs are constructed.

12-Step Programs

Throughout any 12-step program, the general understanding is that the program is a spiritual program. The first three steps: We (a) admitted that we were powerless over our substance and that our lives had become unmanageable; (b) came to believe that a Power greater than ourselves could restore us to sanity; and (c) made a decision to turn our will and our lives to the care of God as we understand Him, are all very spiritual in nature and in its construct. These steps are commonly referred to as the surrender and acceptance steps. The spiritual connotation here is that I can't, God can, and I think I will let Him take control of my life. Spirituality is a phenomenon that has gained currency among clinicians because of its close association with 12-step modalities and its perceived role in the advancement of meaningfulness in recovery.

Within most treatment programs (adolescent or adult), clients or patients are often strongly encouraged to attend and participate in AA (Alcoholics Anonymous), NA (Narcotics Anonymous), and CA (Cocaine Anonymous). It is believed that there is a correlation between AA attendance and abstinence, especially following treatment (Miller & Bogenschutz, 2007). Twelve-step members emphasize living by spiritual principles that promote freedom from mood and mind-altering chemical or substances (Greene & Nguyen, 2012). According to 12-step ideology and members sharing how they have achieved sobriety, spiritual growth is the core foundation upon which they built and maintain sobriety (Miller & Bogenschutz, 2007).

With regard to treatment and recovery from addiction, the existence of AA and other related 12-step groups plays an important role in the rehabilitation process. Kelly, Pagano, Stout, and Johnson (2011) conducted an analysis of adolescents in treatment and

found favorable treatment-related outcomes explained by working the 12 steps of AA or NA. However, more research is needed that reviews the correlation between 12-step programs and adolescent treatment outcomes.

According to Krentzman et al. (2012), numerous characteristics of spirituality and religiousness have shown to provide a shielding effect on a range of SUD behaviors among adolescents. Having a religious affiliation in early childhood was associated with lower susceptibility to alcohol-dependence symptoms during adolescence (Haber & Jacob, 2007). Other studies support that there is a positive correlation between spirituality/religiousness and successful SUD treatment outcomes (Chi, Kaskutas, Sterling, Campbell, & Weisner, 2009; Steinmann, Ferketich, & Sahr, 2008; Steinman & Zimmerman, 2004). When spirituality, religiousness, and a modified 12-step model are designed for an adolescent treatment program with regard to age, cognitive development, and maturity, successful outcomes could be greatly enhanced.

Implications for Treatment Providers

The practical implications of these findings on adolescent treatment are significant. The literature identified above indicates that specific evidence based practices (EBP) are effective at improving outcomes for adolescents in treatment. When these EBP are combined, they provide a holistic approach to treatment that addresses multiple aspects of the individual and have the greatest likelihood of positive results. Ideally, treatment programs serving adolescents should effectively integrate family involvement, consideration of adolescent brain development, motivational interviewing, cognitive approaches, mindfulness practices, and spirituality.

Family involvement is key in adolescent treatment (Howard, 2010; Rigter et al., 2010; Sherman, 2010; Stein, 2013). With the majority of adolescents returning to reside with their families of origin post-treatment, treatment facilities must be deliberate in soliciting the involvement of families. Establishing family agreements related to treatment, requesting family presence at intake, and encouraging involvement in the assessment and treatment planning process help create buy-in and empower families. Additional opportunities for family engagement may include weekly family sessions, frequent multi-family groups, caregiver groups, on-site Al-Anon opportunities, educational opportunities for families, and meals at the program with adolescent and treatment staff.

For many, adolescence is a time of individuation and establishing identity. Indeed, rigid therapeutic approaches can lead to needless power struggles that are counter-productive in a treatment setting. Motivational interviewing (MI) is one way to diffuse the “resistance” of the client by seeking engagement and emphasizing the goals of the individual while honoring his/her personhood.

All treatment should be developmentally appropriate and rooted in what neuroscience tells us about the adolescent brain (Wetherill & Tapert, 2013). Specifically, care should be taken to develop executive function by having activities and opportunities that engage and strengthen the pre-frontal cortex. Treatment approaches should be designed with the specific novelty needs of the adolescent brain in mind, accounting for the lessening reactivity of the dopaminergic receptors during adolescence.

One means of engaging and developing the prefrontal cortex is the use of cognitive approaches. These cognitive practices have great utility in aiding adolescents in identifying areas where their thoughts are counterproductive and encouraging more functional thought processes. Acknowledging that by changing their thoughts they are able to change their emotions and behaviors can have the impact of empowering the adolescents towards sustainable recovery.

Although approaches engaging the pre-frontal cortex are important, addiction is primarily a disease of the limbic system within the brain. Whereas cognitive approaches can be seen as "training the jockey" in preparation for a race, mindful practice can be conceptualized as calming the horse so that it might work in tandem with the jockey. Mindfulness practice is an approach that emphasizes focusing on the present in order to help regulate the limbic system and can aid with better sleep, pain management, and stress reduction. Mindfulness provides tools for the adolescent to tend to his or her body, thoughts, and emotions. This can be critical in early identification of triggers and understanding cravings as well as learning to cope adequately therewith.

Spirituality is an important aspect of treatment for adolescents with SUD. It is important to acknowledge that spirituality in this context is not aligned with any one particular faith and care must be taken to insure that no proselytizing occurs in a clinical setting. With regard to addressing spirituality in a treatment setting, a number of approaches can be used. Educating the adolescent about the distinction between religion and spirituality is beneficial for many and may help to reduce any negative feelings or connotations that may be present. Adolescents should be afforded the opportunity to worship or not worship, as they see fit, while in treatment. Involvement in mutual support groups such as AA, NA, CA, or Celebrate Recovery should likewise be encouraged, and opportunities to have adolescents attend meetings with a group of peers can be beneficial. Connecting adolescents with the recovery community at large through advocacy groups, mutual support groups, and the faith community of their choosing can all play a vital role in assisting adolescents in drawing from their own spirituality in the course of their recovery.

In conclusion, a multifaceted, holistic approach to adolescent SUD treatment is viewed as a novelty. There is very little empirical evidence that supports the efficacy of a multifaceted, holistic treatment model. It is recommended that more studies and research need to be conducted to determine its usefulness. We posit that just as polishing one facet of a diamond yields a greater reflection of light, polishing multiple facets increases its shine exponentially. Such is the case with adolescent treatment. A unilateral, singularly focused treatment modality will yield lesser results than a multifaceted, holistic approach. Weaving the evidence-based and promising treatment modalities into a logical approach can have a synergistic effect and yield better outcomes for both individuals and programs. Identifying approaches that yield the best results when combined over time is an area where additional study may prove beneficial. It is recommended that researchers and treatment providers focus on a mixed method research design that is inclusive of the discussed variables.

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