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DERLEME **REVIEW**

Substance Use Disorder (SUD) in Late Adolescents (LA) and Early Adults (EA)

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Abstract

This paper presents a selective review of focusing on new emerging age group (Late Adolescents (LA) & Early Adults (EA)) and their needs of psychological interventions for substance abuse (SA). Substance abuse, particularly involving alcohol and cannabis, poses significant risks to the well-being and development of LA and EA. The transitional phase from high school to college exposes this age group to various environmental factors that increase the likelihood of substance misuse. The review emphasizes the importance of tailored interventions for LA and EA, considering their unique needs.

A comprehensive review model has been employed for this research via Willey online, Elsevier, Dergipark, Google scholar. Inclusion criteria are, written in Turkish or English, published in respectable magazines. 94 articles screened and 54 included to the study.

Several evidence-based interventions are discussed in this review. The phone-based parent-to-parent support program (PPSP) is highlighted as a crucial adjunctive intervention that supports LA and EA by assisting their parents. Cognitive Behavioral Therapy (CBT) has shown effectiveness in addressing substance misuse and helping individuals develop coping skills. Dialectical Behavioral Therapy (DBT) has also proven valuable in preventing relapses and managing emotional regulation.

Additionally, the role of hope, mindfulness, and motivational interviewing (MI) in treatment is explored and used as adjunctive treatment for decades. These interventions promote positive expectations, enhance self-efficacy, and address ambivalence towards substance use. Music therapy is highlighted as a promising approach that utilizes music to modify emotional states associated with substance cravings. Schema Therapy is discussed as a potential intervention targeting maladaptive schemas and core beliefs.

In conclusion, this review underscores the need for specialized psychological interventions for LA and EA with substance abuse. Interventions provide a comprehensive approach that considers the unique characteristics and developmental processes of this age group. Further randomized trials are necessary to expand the knowledge.

Keywords: Substance Abuse, Late Adolescents, Early Adults, Psychotherapy for Substance Abuse, Substance Use Disorder, Substance Misuse

Geç Ergenlerde (GE) ve Erken Yetişkinlerde (EY) Madde Bağımlılığı

Öz

Bu makale, madde bağlamında yeni oluşmakta olan yaş grubuna (Geç Ergenler (GE) ve Erken Yetişkinler (EY)) dikkat çekmek ve bu grubun ihtiyaçlarına yönelik psikolojik müdahalelerin derlemesini sunmaktadır. Alkol ve esrar

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içeren madde kötüye kullanımı (MKK), GE ve EY'nin refahı ve gelişimi için önemli riskler oluşturur. Liseden üniversiteye geçiş aşaması, bu yaş grubunu MKK olasılığını artıran çeşitli çevresel faktörlere maruz bırakır. Derleme, benzersiz gelişim süreçleri ve bireysel ihtiyaçları göz önünde bulundurularak, GE ve EY için uyarlanmış psikolojik müdahalelerin önemini vurgulamaktadır.

Willey online, Elsevier, Dergipark, Google Scholar aracılığıyla ilgili makale ve yayınların tarandığı bu derlemede kapsamlı inceleme modeli kullanılmıştır. Makalelerin Türkçe veya İngilizce olarak yazılması, saygın dergilerde yayınlanmış olması ve verilerinin çevrimiçi olarak mevcut olması gereken makaleler için dahil edilme kriterleri olarak belirlenmiştir. Bu derleme için ilgili 94 makale taranmış ve bunlardan 54'ü çalışmaya dahil edilmiştir.

Bu derlemede çeşitli kanıta dayalı psikolojik müdahaleler tartışılmaktadır. Telefon tabanlı ebeveynden ebeveyne destek programı (EEDP), GE ve EY'yi ebeveynlerine yardım ederek destekleyen bir müdahale olarak vurgulanmaktadır. Bilişsel Davranışçı Terapi (BDT), MKK ile mücadelede ve bireylerin baş etme becerilerini geliştirmelerine yardımcı olmada etkili olduğunu göstermiştir. Diyalektik Davranışçı Terapinin (DDT) ayrıca nüksetmeleri önlemede ve duygusal düzenlemeyi yönetmede değerli olduğu kanıtlanmıştır.

Ek olarak, tedavide umut, farkındalık ve motivasyonel görüşmenin rolü genişleyerek araştırılmaktadır. Bu müdahaleler olumlu beklentileri teşvik eder, öz yeterliliği artırır ve madde kullanımına yönelik kararsızlığı ele alır. Müzik terapisi, madde istekleriyle ilişkili duygusal durumları değiştirmek için müziği kullanan umut verici bir yaklaşım olarak vurgulanmaktadır. Şema Terapi, uyumsuz şemaları ve temel inançları hedef alan bir müdahale olarak tartışılmaktadır.

Sonuç olarak, bu derleme, MKK ile GE ve EY için özel psikolojik müdahalelere duyulan ihtiyacın altını çizmektedir. Tartışılan müdahaleler, bu yaş grubunun benzersiz özelliklerini ve gelişimsel süreçlerini dikkate alan bir yaklaşım sağlar. Literatürü genişletmek ve madde kötüye kullanımı ile GE ve EY için psikolojik müdahalelerin etkinliğini artırmak için randomize araştırmalar gerekmektedir.

Anahtar Kelimeler: Madde Kötüye Kullanımı, Geç Ergenler, Genç Yetişkinler, Madde Bağımlılığı için Psikoterapi, Madde Kullanım Bozukluğu

Introduction

Substance abuse for late adolescent (LA) and early adults (EA) are mostly licit substances like alcohol and precipice medicine and illicit drugs such as heroin, cocaine, cannabis, methaqualone, and drugs of hallucinogenic. But alcohol and cannabis are by far more common for LA and EA's (Hingson, 2006; UNODC, 2012). Alcohol comes first in those 16-19 years and leads to a dependance that comes along with other problems (Hingson, 2006). The shifts in between high school and colleges are the main risk factors for LA and EA to be associated with the substance misuse as they may have kind of a trauma experience (Jackson, 2013). In Europe (Hibell, 2012), the United States (Johnston, 2015), Australia (White, 2012), and South Africa (Reddy, 2013) national school-based surveys have taken place and reported that alcohol use prevalence within LA and EAs were very high as well as other drugs. This alarming research are not just pointing out that youths are in danger of being associated with substance abuse (Winters, 2008), but also, they are in a very critical phase of life in which as consequence they may have mental disease and even death (Carney et al., 2006; Gore, 2011).

People who are between late adolescent (LA) (16-19) and early adults (EA) (19-25) are the focused groups age of the most attracted for researchers as the substance abuse in all forms are the emerging important conceptualized context in social, psychological and health issues for the last two decades (Arnett, 2000; Mason & Luckey, 2003). This age group has been the most vulnerable to new habits and could be influenced by many different aspects such as peers, loved ones, friends or any kind of environmental factors such as tv series and or older generations (Smith et al., 2014). This age group is also at the heart of their personality forming procedure as they build their personality by adding up the environmental

factors and learnings on the genetical and born characteristics (Smith, 2018). Within this age, individuals have opportunity and freedom to set their baseline of their future and fail when the time comes with adjusting perfectly with the transformational stage could be open to life impacting issues such as substance use disorders (SUD) or other life-threatening addictions (Smith et al., 2014). Lifelong highest rate of misuse of drugs and substance abuse is the age in between LA and EA (16-25) (Goodman et al., 2015). For instance, adults (age 26+) rate of substance abuse is 6.6% while early adult and late adolescents 21.5% and only adolescent is more than 10% (Dalton et al., 2021). The main risk factors of this specific group of early adults and late adolescents are developmental processes of the brain, the negative affective state's self-medication, parenting substance misuse (Arain et al., 2013; Casey & Jones, 2010). The way LA and EA use the substance may lead to developing of a SUD (Mayo Clinic, 2020). In 2020, there is approximately 31 million substance use disorder people in the world (World Health Organization (WHO) Management of substance abuse, 2020). LA and EA are the highest group that have SUD in the United States of America (USA), and Canada compared to other groups of age (American Addiction Centers – Addiction Statistics., 2019; CAMH Mental Illness and Addiction: Facts and Statistics., 2019). In 2017, the rate of age groups that struggle with SUD in the USA are as follows, 1 in 16 adults (26+), 1 in 25 for early adolescents (12-16) and 1 in 6 in EA and LA (16-25) (American Addiction Centers – Addiction Statistics., 2019). For the treatment face, LA and EA represent the biggest portion of the whole treatment programs compared to other age groups (Bergman et al., 2016; Wetherill & Tapert, 2019). These figures are very important highlights to focus on LA and EA groups for treatment procedures. There is a standard care procedure that follows for both 18+ all together which means almost all LA and EA groups are mixed with adults where they may need other kinds of treatment as they are in a different stage of their development (Helgeson et al., 2013; Mason & Luckey, 2003). With this "one fits them all" approach has its issues as it does not consider the difference of neuro development process of LA and EA, also the dynamics of how LA and EA's with SUD may involve with the treatment program (Adams et al., 2015; Albanese et al., 2014; Arnett, 2000; Mason & Luckey, 2003; Smith et al., 2014). When it comes to the treatment, age factor is important as dropping out is an important factor as with the LA and EA's dropout rate is higher than adults 26+, and this difference should be considered seriously (Feelemyer et al., 2014; Timko et al., 2015). LA and EA group take similar treatment with the Adults 26+ and consequently they show 22% less retention over time (Dalton et al., 2021).

When looking at the literature, research and clinical trials suggest that detoxification is the first phase of the treatment and different pharmalogical models are effective doing it. This may help the addictive person's withdrawal process till the detoxified and clean state accrues (Amato, 2011). Nonetheless the majority of the Substance Use Dependance (SUD) and considering the age group of LA and EA, going back to addictive state from clean state is a high possibility specially with the heroin, and this makes the treatment process very problematic. Maintaining the drug free state is becoming more and more important as the relapses are crushing all the detoxification process and makes it harder each time relapse happens, because of these psychological interventions are key aspect of keeping the clean state and preventing the relapses (Farrel, 1994; Philips, 1986). Coping with stress is becoming more difficult for the addictive youth (AY) as using illicit drugs continues. External factors may be used with these kinds AY such as substance mood modifier. After all, substance abuse is a condition that AY is

motivated by the outcome of the drug to be able to cope with stress that comes out of the demands of the situations (Castellani, 1997).

Addressing the complex needs of LA and EA with SUD requires a comprehensive and individualized approach. By incorporating evidence-based interventions such as Schema Therapy, Motivational Interviewing, Music Therapy, Cognitive Behavioral Therapy (CBT), Dialectical Behavioral Therapy (DBT), and Mindfulness-Based Interventions (MBI), treatment programs can provide tailored support to LA and EA, addressing their unique challenges and promoting successful recovery outcomes.

Method

This review employed a selective approach to identify and evaluate the most common psychological interventions for substance abuse among late adolescents (LA) and early adults (EA). A comprehensive literature search was conducted using electronic databases such as Cochrane, Scopus, PsycNet, Ebsco, Embase, LILACS, PubMed and WOS. The search strategy included keywords related to substance abuse, adolescents, psychotherapy, and interventions. The inclusion criteria were studies published in English, focusing on psychological interventions for LA and EA with substance abuse. Both qualitative and quantitative studies were considered. Articles that provided evidence-based interventions and their effectiveness were given priority. The review excluded studies that focused solely on pharmacological interventions or interventions targeting specific substances (e.g., alcohol-only interventions). The initial search yielded many articles, which were screened based on titles and abstracts. Relevant full-text articles were then assessed for eligibility. Data were extracted from the selected studies, including information on the type of intervention, target population, study design, and key findings. The selected psychological interventions were categorized and discussed based on their relevance and effectiveness in addressing substance abuse among LA and EA. The findings were synthesized and presented in the discussion section of the review.

Why it is important to do this review

The review of psychological interventions for substance abuse among late adolescents (LA) and early adults (EA) holds significant importance for several reasons. Firstly, substance abuse has become a prevalent and escalating issue among LA and EA, posing significant risks to their well-being and future development. Understanding and addressing effective interventions are crucial to mitigating the adverse consequences associated with substance misuse. Secondly, LA and EA represent a critical age group that is particularly vulnerable to the negative impacts of substance abuse. This period marks important developmental processes, and substance misuse during this time can lead to long-term neurological and mental health problems. By conducting this review, we can gain insights into the most up-to-date psychological interventions tailored specifically for LA and EA, which can ultimately contribute to improved treatment outcomes and enhanced support for this population. Furthermore, while there is existing research on psychological interventions for substance abuse, it is essential to focus specifically on LA and EA due to their unique characteristics and needs. This review can shed light on interventions that consider the developmental stage and individual requirements of LA and EA, offering targeted strategies to effectively address substance misuse in this age group. Overall, conducting this review is crucial for advancing knowledge in the field, informing evidence-based practices, and providing valuable guidance for clinicians, researchers, and policymakers involved in the treatment and prevention of substance abuse among LA and EA.

The parent-to-parent support program (PPSP)

PPSP delivered through phone-based mentoring and coaching, targets substance abuse among early adults (EA) and late adolescents (LA) by providing family members with accessible psychological interventions (Robbins et al., 2011; Liddle et al., 2011). However, there is limited research on evidence-based protocols directly assisting LA and EA's parents in navigating the treatment process (Orford, 1994; Toumbourou et al., 2001). Family members significantly influence their youths' willingness to seek help and benefit from treatment (Brigham et al., 2014; Roozen et al., 2010), and they can also improve their own psychological well-being through evidence-based coaching and mentoring strategies (Miller et al., 1999; Toumbourou et al., 2001).

Unfortunately, many parents of addicted LA and EA individuals lack access to experienced mentors or trained support systems (Ilgen et al., 2011). Cultural, religious, demographic, and financial factors may impede their connection with appropriate guidance. Establishing a system that enables SUD parents to connect with volunteer mentors and coaches could significantly impact the youths' treatment process (Carpenter et al., 2019). Consequently, interest has grown in expanding access to non-clinical or medical volunteer mentors and parent coaches, leading to an alliance of health workers, natural helping individuals, paraprofessionals, and peer counselors (Acevedo-Polakovich et al., 2013; Calzada et al., 2005; Cherington et al., 2008; Dewing et al., 2013). This approach has shown promising evidence-based outcomes, focusing on mental health and problematic health behaviors (Jelalian et al., 2014; Neuner et al., 2008).

Cognitive behavioral therapy (CBT) for LA and EAs

Cognitive Behavioral Therapy (CBT) has been recognized as an effective approach for addressing substance use disorders (SUD) among late adolescents (LA) and early adults (EA), supported by evidence-based outcomes in recent years (Moak et al., 2003; Riggs et al., 2007). The effectiveness of CBT has also been examined in randomized control trials, including one conducted by Hides et al. (2010), which investigated its efficacy in combination with pharmacology for LA and EA. The results of these studies have consistently shown that CBT is highly associated with significant improvements in the treatment of alcohol and cannabis misuse (Moak et al., 2003).

CBT focuses on the interplay between thoughts, emotions, and behaviors, aiming to identify and modify maladaptive patterns and cognitive distortions related to substance misuse. By challenging negative beliefs and behaviors and fostering more adaptive coping strategies, CBT helps LA and EA develop healthier attitudes and behaviors towards substance use. It equips individuals with practical skills to manage cravings, cope with triggers, and navigate challenging situations without resorting to substance misuse.

The evidence supporting the effectiveness of CBT in the treatment of SUD among LA and EA underscores its value as a therapeutic intervention. Its evidence-based approach provides a structured and goal-oriented framework for addressing the underlying factors contributing to substance misuse. By incorporating CBT techniques into treatment programs, clinicians can empower LA and EA to make lasting changes, enhance their overall well-being, and promote sustained recovery from substance misuse.

Dialectical behavioral therapy (DBT)

DBT was originally developed to treat suicidal attempts and personality disorders but has proven effective in addressing substance use disorders (SUD) as well (Azizi et al., 2010; Linehan, 1987; Linehan et al., 2002). Linehan (1993, 2014) underscored that implementing DBT models and techniques in daily life can prevent relapses and

substance misuse by promoting outcome-oriented behavioral activities (Linehan & Wilks, 2015).

DBT encompasses four major skills: emotional regulation, mindfulness, distress tolerance, and interpersonal effectiveness (Linehan, 1993). Emotional regulation assists individuals in managing intense emotions that may contribute to substance misuse, facilitating the development of healthier coping strategies. Mindfulness fosters present-moment awareness and non-judgmental acceptance of thoughts and emotions, thereby promoting self-control and reducing impulsive behaviors. Distress tolerance equips individuals with skills to navigate distressing situations without resorting to substance use as a coping mechanism. Interpersonal effectiveness concentrates on improving communication and relationship skills, enhancing social support, and reducing isolation.

By integrating these DBT skills into the treatment of LA and EA with substance misuse, therapists can address underlying emotional dysregulation, impulsive behaviors, and interpersonal difficulties. DBT offers a structured and comprehensive approach, empowering individuals to develop healthier coping mechanisms and effect positive behavioral changes. Through learning and practicing DBT skills, LA and EA can enhance their emotional well-being, reduce substance use, and improve their overall quality of life.

Hope

Help-seeking behavior is essential in engaging individuals with substance use disorders (SUD) in treatment (Weisner et al., 1995). However, geographical differences can impact willingness to participate in treatment programs (Ross et al., 1999). LA and EA demonstrate a higher propensity to seek treatment and actively collaborate in the treatment process compared to adults (Kaskatus et al., 1997).

Hope and expectations play a crucial role in treatment engagement. Individuals with hopeful states and positive expectations are more likely to seek and actively participate in treatment (Rollnick et al., 1997). Hope drives coping with stress and pursuing goals, enabling individuals to take control of their situation (Anderson, Irving & Snyder, 1997). Randomized control trials show the association between treatment outcomes and expectancy states akin to hope (Jackson et al., 2003; Scheier & Carver, 1985).

According to Bandura (1986), optimistic thinking and a positive context are linked to lower rates of SUD and an improved quality of life (Carvajal et al., 1998). Optimistic individuals are more likely to believe in their ability to overcome challenges and achieve recovery, increasing their motivation and commitment to treatment.

Understanding the influence of help-seeking behavior, hope, and positive expectations is vital when working with LA and EA in SUD treatment. Healthcare professionals can leverage these factors to promote treatment engagement and enhance motivation. By creating a supportive environment that cultivates hope and emphasizes the possibilities of recovery, clinicians can effectively support LA and EA in overcoming substance misuse and achieving a better quality of life.

Mindfulness-based interventions (MBIs)

MBIs have garnered considerable attention from scientists in recent years for their potential in addressing substance use disorders (SUD) among late adolescents (LA) and early adults (EA) (Kurdyak et al., 2014). These interventions center on the present moment, redirecting attention away from automatic stress responses and fostering a non-judgmental acceptance of one's experiences, including any unusual thoughts or sensations (Witkiewitz et al., 2013a).

Evidence indicates that integrating MBIs within the standard treatment of SUD yields promising results, including reduced substance use and decreased cravings and hunger (Witkiewitz & Bowen, 2010; Witkietz et al., 2013b). Moreover, mindfulness training has been scientifically proven to impact the neurological basis of human

experiences by engaging the prefrontal cortex and amygdala, which are associated with cravings and hunger (Fox et al., 2014; Holzel et al., 2008).

In the context of LA and EA substance misuse, incorporating mindfulness-based interventions can provide valuable tools for self-regulation and managing cravings. By cultivating present-moment awareness and acceptance, LA and EA can develop greater control over impulsive behaviors and make conscious choices regarding substance use. Mindfulness practices can also enhance emotional regulation, reducing stress and promoting overall well-being. Additionally, the neurobiological effects of mindfulness training provide a scientific basis for its efficacy in combating cravings and hunger associated with SUD.

Integrating MBIs into treatment programs for LA and EA with substance misuse offers a holistic approach that addresses both the psychological and neurobiological aspects of addiction. By training individuals to be fully present and accepting of their experiences, mindfulness-based interventions empower LA and EA to make healthier choices, develop emotional resilience, and ultimately reduce substance use.

Motivational Interviewing (MI)

MI has emerged as a promising approach in addressing addiction disorders, including smoking and alcohol misuse, which are prevalent among late adolescents (LA) and early adults (EA) (Burke, 2004; Carey, 2007; Hettema, 2005; Rubak, 2005). MI is guided by four essential principles: expressing empathy, supporting self-efficacy, rolling with resistance, and developing discrepancy (Martino et al., 2011).

In the context of MI, empathy plays a pivotal role, as therapists strive to understand LA and EA's unique perspectives and experiences without imposing their own judgments. Supporting self-efficacy entails encouraging LA and EA to take ownership of their own change process and acknowledge the consequences of their actions. Instead of confronting resistance head-on, the MI approach involves rolling with it, meeting the individual where they are, and facilitating progress at their own pace. Lastly, developing discrepancy involves guiding LA and EA to examine the disconnect between their current behaviors and desired outcomes, helping them envision their future goals, and the steps needed to achieve them. By recognizing that their current behaviors do not align with their aspirations, LA and EA can find motivation for change, with therapists serving as facilitators of their self-awareness and recognition of the need for change (Apodaca, 2009; Smedslund et al., 2011).

When applied to LA and EA substance misuse, MI can serve as a collaborative and empowering approach. By adopting a non-confrontational stance and fostering a supportive therapeutic alliance, therapists can help LA and EA explore their ambivalence towards substance use, strengthen their motivation for change, and increase their commitment to recovery. MI aligns with the developmental characteristics of LA and EA, emphasizing autonomy and responsibility while providing a safe space for self-reflection and decision-making. Integrating MI techniques into treatment can enhance engagement, promote positive behavioral changes, and ultimately support LA and EA in their journey towards overcoming substance misuse.

Music Therapy

Music therapy has proven to be a highly effective therapeutic approach in addressing substance misuse among late adolescents (LA) and early adults (EA). Combining music with clinical techniques, this intervention targets the emotional and behavioral associations associated with substance use disorders (SUD) (NVvMT, 2017). By engaging with triggers that evoke undesired SUD states, Music Therapy aims to modify these associations, reducing cravings and automatic behaviors (Bruscia, 1998).

Certified music therapists possess the expertise to select and employ music that triggers specific emotional states in patients, offering alternative

associations to mitigate SUD cravings. However, therapists must exercise caution to ensure that the chosen music does not exacerbate cravings. The primary objective is to guide patients toward developing a healthier, clean state of mind through the therapeutic application of music (Dijkstra, 2010).

Studies have demonstrated that engaging in music therapy significantly supports individuals in maintaining a clean state. Its positive impact on reducing substance misuse and supporting recovery has been well-documented (Ghetti, 2013; Ghetti et al., 2022).

By integrating music therapy into the treatment of LA and EA with substance misuse, therapists can harness the profound influence of music to address the underlying emotional and psychological factors that contribute to SUD. This therapeutic approach provides a unique and creative platform for individuals to explore their emotions, express themselves, and cultivate healthier coping mechanisms. Incorporating music therapy as part of comprehensive treatment programs can offer LA and EA a valuable avenue for self-discovery, emotional regulation, and a sustainable path to recovery.

Schema Therapy

Schema Therapy offers a highly effective therapeutic approach for tackling substance misuse among late adolescents (LA) and early adults (EA). To utilize Schema Therapy successfully in this context, therapists must first identify the maladaptive schemas and core beliefs that underlie the individual's substance misuse patterns. This process entails delving into the deep-seated emotional and cognitive factors that contribute to their behaviors. Once these maladaptive schemas are recognized, therapists can employ various Schema Therapy techniques to challenge and modify them.

Imagery rescripting is a powerful tool used within Schema Therapy, allowing LA and EA to reprocess past traumatic experiences or triggers related to substance use. By creating new positive associations through this technique, individuals can develop healthier responses to these triggers. Additionally, cognitive restructuring is utilized to help them identify and challenge distorted thoughts and beliefs that fuel their substance misuse. By addressing these cognitive distortions, Schema Therapy enables LA and EA to develop more realistic and constructive thought patterns.

Furthermore, experiential interventions, such as chair work or role-playing, provide opportunities for individuals to explore conflicting aspects of themselves and develop healthier coping mechanisms. By engaging with these experiential exercises, LA and EA can gain insight into their emotional conflicts and work towards resolving them in a more adaptive manner.

By targeting the underlying schemas and core beliefs that drive substance misuse, Schema Therapy offers a comprehensive framework for therapists to understand and intervene effectively. This approach not only addresses the surface symptoms of substance misuse but also delves into the root causes, facilitating lasting change and promoting self-awareness, emotional regulation, and the adoption of healthier coping strategies for LA and EA.

Conclusion

The present discussion sheds light on the critical and pressing issue of substance abuse among late adolescents (LA) and early adults (EA). This age group, encompassing individuals between the ages of 16 and 25, is particularly vulnerable to the detrimental effects of substance misuse, with a notably high prevalence of alcohol and cannabis consumption. The susceptibility of LA and EA to peer influence and environmental factors, especially during the transition from high school to college, contributes significantly to the risk of substance misuse. In light of these challenges, it becomes imperative to develop tailored psychological interventions to address the specific needs of this emerging age group.

It is essential to recognize that standard care procedures that treat all age groups together may

not adequately account for the unique characteristics and dynamics of LA and EA with substance use disorders (SUD). As such, specialized interventions that align with the neurodevelopmental stage and individual circumstances of LA and EA are crucial in providing effective and targeted support.

Within the realm of evidence-based psychological interventions, the phone-based parent-to-parent support program (PPSP) emerges as a particularly significant approach. This intervention aims to support the parents of LA and EA with substance abuse issues, acknowledging the profound impact of family involvement and support on treatment outcomes. By engaging parents in the treatment process, PPSP can foster a nurturing and supportive environment, enhancing the likelihood of successful recovery for LA and EA.

Cognitive Behavioral Therapy (CBT) is another prominent intervention that has shown efficacy in treating LA and EA with substance misuse. CBT equips individuals with essential coping skills, empowers them to identify and challenge maladaptive thought patterns, and addresses the underlying issues that contribute to their substance misuse. By targeting both cognitive and behavioral aspects of addiction, CBT can provide a comprehensive framework for LA and EA to initiate positive behavioral changes and address the root causes of their substance abuse.

Dialectical Behavioral Therapy (DBT) also holds promise as an intervention for LA and EA with substance abuse. This approach focuses on managing emotional regulation and preventing relapses, thereby helping individuals develop more adaptive coping mechanisms. By addressing emotional dysregulation, a common challenge among LA and EA with SUD, DBT can play a crucial role in maintaining long-term recovery and overall well-being.

The significance of hope and positive expectations in the treatment process should not be underestimated. These factors act as powerful motivators, inspiring LA and EA to seek help and embark on their journey towards recovery. Mindfulness-based interventions, which encourage present-moment awareness and acceptance, have shown promising results in reducing substance use and cravings among this age group. By cultivating mindfulness, LA and EA can develop greater self-control and reduce impulsive behaviors associated with substance misuse.

Motivational Interviewing (MI) is another valuable approach that aligns with the developmental characteristics of LA and EA. MI supports individuals in taking ownership of their change process by exploring their ambivalence towards substance use and facilitating motivation for behavior change. By empowering LA and EA to make informed decisions and set goals aligned with their values, MI can significantly enhance treatment engagement and promote positive behavioral changes.

An emerging therapeutic approach, music therapy, taps into the profound impact of music on emotional states associated with substance cravings. By utilizing music to trigger and modify emotional responses, music therapy aids individuals in maintaining a clean state and reducing cravings, offering an innovative and creative avenue for expression and coping.

Schema Therapy represents a promising intervention that targets the deep-rooted maladaptive schemas and core beliefs contributing to substance abuse. By addressing these underlying emotional and cognitive factors, Schema Therapy aims to facilitate lasting change and promote overall well-being.

In conclusion, the urgency of addressing substance abuse among late adolescents (LA) and early adults (EA) cannot be overstated. The prevalence of substance misuse in this age group underscores the need for effective and tailored psychological interventions. The interventions discussed in this review offer comprehensive approaches that consider various aspects of

addiction and support both individuals and their families in the recovery process. Tailoring these interventions to the unique developmental stage and individual needs of LA and EA is essential for successful treatment outcomes. Continued research and clinical trials are vital for expanding knowledge and improving the efficacy of psychological interventions for LA and EA with substance abuse.

Clinical Implications

The review of psychological interventions for late adolescents (LA) and early adults (EA) with substance misuse has significant clinical implications that can greatly impact treatment outcomes and overall well-being. Firstly, involving parents and families in the treatment process through phone-based parent-to-parent support programs (PPSP) can provide crucial support and guidance, enhancing treatment effectiveness and creating a supportive environment for LA and EA.

Secondly, clinicians should be trained in cognitive-behavioral therapy (CBT) and dialectical behavioral therapy (DBT) techniques. CBT can help LA and EA develop coping skills and address underlying issues contributing to substance misuse, while DBT can aid in emotional regulation and prevent relapses.

Emphasizing hope and using motivational interviewing (MI) techniques can foster a positive therapeutic alliance and motivate LA and EA for behavior change. Mindfulness-based interventions can also be incorporated to enhance self-awareness and manage cravings effectively.

Furthermore, clinicians can explore the therapeutic potential of music therapy to aid in emotional regulation, reduce cravings, and provide alternative means of expression and coping.

Overall, clinicians should be mindful of the developmental characteristics and specific needs of LA and EA with substance misuse. By tailoring interventions and integrating these evidence-based approaches into clinical practice, healthcare professionals can provide more effective and comprehensive care, ultimately supporting LA and EA on their journey to recovery and mitigating the long-term impacts of substance abuse.

Limitations: There are some limitations to consider in this review. Firstly, the review employed a selective approach, which may have led to the exclusion of relevant studies or interventions. Additionally, the review focused primarily on published literature in English, potentially introducing language and publication bias. The review may not have captured all the diverse range of psychological interventions available for LA and EA with substance abuse. Furthermore, the review did not include studies focusing on specific substances, potentially limiting the scope of interventions examined. Future research should aim to address these limitations by including a broader range of interventions and considering studies in multiple languages and unpublished literature.

Abrivations: LA: Late Adolescents EA: Early Adults UNODC: United Nations Office on Drugs and Crime SUD: Substance Use Disorder CBT: Cognitive Behavioral Therapy DBT: Dialectical Behavioral Therapy PPSP: Parent-to-Parent Support Program MI: Motivational Interviewing MBI: Mindfulness-Based Interventions NVvMT: Dutch Society for Music Therapy

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