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Haberman, Skylar, "Age and its Effect on Drug Addiction Treatment" (2023). *Williams Honors College, Honors Research Projects*. 1710.

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Age and its Effects on Drug Addiction Treatment

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Honors Research Project

May 1, 2023

Abstract

Substance use disorders and addiction have become increasingly serious problems in the United States. Diseases of this nature revolve around problematic patterns of substance use and abuse of alcohol, illicit drugs, prescription drugs, and over-the-counter medications. Substance use disorders are not limited to a certain demographic, which makes treatment of these illnesses complicated and multifaceted (Argyriou et al., 2017). This review paper will focus on age-related effects on substance use, and how age is consequential to the effectiveness of drug addiction treatment. The literature review focuses on the onset and progression of substance use disorders and treatment for these disorders for each age category: juveniles and adolescents, adults, and the elderly. Additionally, I evaluate how addiction and addiction treatment interacts with the United States criminal justice system. According to sociological, criminological, psychological, and biological theories and research, the age of an individual has a substantial impact on the development of a substance use disorder (McLaughlin and Newburn, 2010). As the nature of substance use disorders differs so drastically depending on the age of the individual, addiction treatment should be personalized according to the current stage of one's life course, rather than streamlined for all receiving treatment. Evidence-based practices, such as cognitive-behavioral therapy, must be implemented in the realm of treatment, both within and outside of the criminal justice system, based on the respective ages of those undergoing rehabilitation.

Introduction

Since the year 2000, drug overdose deaths have increased by 4% annually, and are now approaching a total of one million in the United States (NCDAS, 2020). Moreover, about 25% of those that use illegal drugs have a substance-related disorder, including the development of a dependence upon alcohol, illicit drugs, and prescription drugs (NCDAS, 2020). Substance abuse and addiction have evolved into an increasingly severe threat for populations across the country, and do not discriminate based on the age of the user; individuals of every age group are at risk for developing an addictive disorder. Research has indicated that predictors, risk factors, and pathways to addiction may differ depending on an individual's age, as age serves as an indicator for one's developmental stage (McLaughlin and Newburn, 2010). However, it remains unclear whether treatment practices are routinely individualized in accordance with life course progression (NCDAS, 2020).

Affected populations span across all age groups, ranging from adolescents to the elderly (Argyriou et al., 2017). The alteration of criminal justice institutions is a more recent approach to address addiction epidemics for offenders of all ages with the implementation of community corrections. Community correctional centers provide unique opportunities for oversight and rehabilitation. Large-scale projects and nationally funded evaluations have revealed treatment effectiveness with the deployment of natural settings and rehabilitative methods. Natural settings include the involvement of offenders in the community throughout their long-term treatment program, thereby allowing for a more comprehensive transition into society upon completion of the program (Simpson and Knight, 1998). Meanwhile, rehabilitative methods place a larger focus on therapeutic practices than punitive measures. Correctional settings that implement these practices see a reduction in relapse and recidivism (Simpson and Knight, 1998). The increased

use of community-based correctional programs in recent years has spearheaded a movement to provide rehabilitation to offenders who battle substance abuse, addiction, and mental health related issues. Allocating resources to these community correction programs prevents overcrowding of prisons, while providing treatment to those who require it. This system aims to encourage and aid individuals in becoming functioning members of society, to improve the quality of their own life as well as the well-being of the community (Simpson and Knight, 1998).

Community correctional programs specialize in the treatment of drug addiction and mental illness. Offenders admitted to these programs include individuals across age groups, therefore demonstrating differences in developmental factors considering their varying places in the human life span. This calls into question the nature of the treatment implemented throughout these programs, and whether these treatment plans are streamlined or personalized in accordance with the offender's age (Simpson and Knight, 1998).

Background

Substance abuse is a significant issue in the United States for all age groups. Research estimates that 25% of all illicit drug users suffer from a substance use disorder (NCDAS, 2020), and in total, 1 in 7 United States citizens over the age of 12 reports experiencing a substance use disorder (CDC, 2020). These disorders, while ranging in severity and symptom onset, follow a common pattern of repeated abuse of substances that lead to a diminishing in physical, social, and/or mental health (CDC, 2020). Additionally, 65% of offenders involved with the United States criminal justice system actively suffer from substance abuse disorders (NIDA, 2020). On a clinical level, Addictive Disorder is a specific term utilized in psychology that has outlined diagnostic criteria in the DSM. These diagnostic criteria outline whether a given set of behavioral

patterns constitute an addictive disorder, including but not limited to: repeated impulses to engage in said behavior, lack of control and relief once initiating behavior, failure to cease behavior, and preoccupation with the behavior. Addictive Disorder serves as an umbrella term for a variety of illnesses outlined in the DSM, including Psychoactive Substance Dependence, Pathological Gambling, Impulse Control Disorders, and even some Eating Disorders. At the root of all aforementioned disorders exists dependence as well as compulsion with both negative and positive reinforcement (Goodman, 1990). Understanding the fundamentals of Addictive Disorders is an integral component of accessing the full potential of treatment effectiveness.

Empirical data suggests there are differences in addictive behavior across the life span due to the progression of maturity the brain undergoes throughout its development (Argyriou et al., 2017). As previously noted, impulsion is a core component of addictive disorders, and this may be attributed to the stage of development of the brain. Adolescents and young adults are at a particularly high risk for drug use, showing a correlation with impulsive behavior. While these groups are high risk, some do not cease drug use in later years, developing substance abuse disorders and following addictive patterns into adulthood (Argyriou et al., 2017).

Delay discounting refers to the tendency of those with substance abuse disorders to attribute drug use with positive, immediate effects rather than detrimental, long-term consequences (Argyriou et al., 2017). Similarly, delay discounting is a touchstone of impulsive behavior and is increased in adolescents relative to adults. As brain development progresses throughout the life span, decision making capabilities sharpen (Argyriou et al., 2017). With adolescents being at high risk for drug use, as well as exhibiting more impulsive behaviors, drug use in adolescence and young adulthood may be connected to the impulsiveness that is associated with an underdeveloped brain.

However, although adolescents and young adults are at higher risk for substance abuse disorders than middle-aged and older adults, there is still a large population from these demographics that have an addictive disorder. Research indicates that repeated adverse childhood experiences create a predisposition for the development of drug abuse in adulthood (Zarse et al., 2019). In fact, childhood trauma may contribute to the onset of other mental health struggles, including, but not limited to, depression, PTSD, and psychosis (Zarse et al., 2019). Such disorders in themselves do not require drug abuse as a criterion but may include drug abuse as a consequence. The long-term effects of childhood trauma have the potential to manifest at any point in the lifespan, and create a threat to public health as a result. For this reason, it is crucial to implement behavioral health into the practices of correctional systems, especially in cases of drug-related offenses. Such is the goal of community correctional systems, and as these facilities provide treatment to a large range of age groups, should ensure that their practices are personalized to the age of the offender.

Goals and Objectives

This review paper will investigate the nature and treatment of addiction in separate stages throughout one's life course. As psychology presents itself differently depending on the age of the individual, there are varying causes of the onset of an addictive disorder. These differences do not exclusively exist on an interpersonal level, as patterns are made apparent upon examining the experiences of different demographics. In adolescents and young adults, there is a high risk for involvement in drug use, which can be attributed to the underdevelopment of the brain and high levels of impulsivity as a result (Moffit, 1993). Many individuals cease drug use in adulthood, yet there remain populations of middle-aged and older adults who struggle with

substance use disorders, possibly because of the manifestation of childhood trauma, or the onset of mental illness and other stressors (Moffitt, 1993).

Considering that there are patterns in causes of addictive disorders based on the age group to which one belongs, treatments for drug addiction should aim to reflect these findings. This review paper will examine how addiction presents itself in varying age groups, including adolescents, adults, and the elderly, as well as discuss what methods are currently being utilized to ensure that addiction treatments are appropriate for an individual's age. As substance abuse increasingly approaches emergency status in terms of public health threat, it is crucial to validate that treatment methods are not only effective, but appropriate for one's personal development to prevent further complications. Treatment practices should be personalized in the context of life course progression for increased effectiveness.

Literature Review

I. Life Course Model and Developmental Psychology

Most existing literature concerning drug usage in accordance with age centers around the Life Course Model and developmental psychology. This model aims to target the age ranges of highest risk for offending and drug use, as well as focus on life events and stressors that could influence an individual's risk for abusing substances. The Life Course Model is an interdisciplinary theory that combines the insight of several different areas, including psychology, public health, and sociology. In the context of criminology, it is commonly referred to as Developmental and Life-Course Criminology, or DLC (McLaughlin and Newburn, 2010).

A major finding of DLC theories highlights the ages of 15-19 as a peak in prevalence of offending, which decreases between the ages of 20-29 (McLaughlin and Newburn, 2010). This

pattern is commonly referred to as the Age-Crime Curve in criminology (Farrington, 1986). Furthermore, exhibiting antisocial behavior and offending in the late teenage years is demonstrated as a risk factor for offending later in life. However, this does not automatically dispose teenagers who offend to a life of crime; in fact, antisocial teenagers and young adults have shown to conform in adulthood and lead productive, well-connected lives as contributing members of society. This dissymmetry highlights the existence and importance of persistent heterogeneity, or individual differences, rather than a complete dependence upon the state of the life course (Moffitt, 1993). Moreover, there are identifiable risk factors for offenders of all ages; in younger years, factors such as low school performance, high hyperactivity levels, and lack of connection to familial and societal institutions. These crimes tend to be committed with others. In the desistance period between the ages of 20-29, there are risk factors that include stressors of instability, such as the loss of a loved one, and crimes are typically committed alone (McLaughlin and Newburn, 2010).

An important facet of DLC is the interactional theory (Thornberry and Krohn, 2005). This theory discusses the differences of age and risk factors that have the potential to develop into antisocial behavior. In childhood, between the ages of 6-12 years, neurological and temperamental issues, family influences, and neighborhood experiences serve as the most prevailing risk factors for antisocial behavior. In teenage years, peers and school networks are the most influential, and into early adulthood, protective family measures may erode and poor transitioning tactics to adult roles create risk for deviant behavior (Thornberry and Krohn, 2005). Ultimately, more empirical research must be conducted on older age groups, such as mid-to-late adulthood, in order to truly develop criminological theories of life course and antisocial behavior.

Separately from DLC theories, social control theory highlights attachment levels to social and interpersonal institutions as an indicator of present or future delinquency. Within the familial realm, parental styles and attachments may strengthen or weaken a juvenile's bond to societal structure (Sampson and Laub, 2017). Levels of parental supervision, disciplinary choices, and an adolescent's attachment to their parents are indicative of future offending patterns. Institutions such as school and extracurricular activities also create a buffer against criminal offending, and lack of attachment to these structures may predict delinquency. Conversely, a strong attachment to delinquent peers shows a positive correlation with individual delinquent behaviors.

Introducing an attachment to social institutions later in adolescence may even be undermined by the persistence of delinquent peers, leading to a "cumulative disadvantage" in which one accumulates bonds to delinquency that supersede bonds of social control (Sampson and Laub, 2017). Social control bonds are not exclusive to adolescents' introduction to their independent operation in society; they continue into middle and late adulthood in the form of employment and marital status. Weakened familial and spousal bonds, as well as a lack of job security or satisfaction, have proven a tendency to lead to consequences in the form of criminal offending (Sampson and Laub, 2017).

II. Substance Abuse Disorders (SUD)

a. SUD in Juveniles

Literature involving the adolescent experience of addiction is primarily concerned with the self-regulation of impulsivity that develops with the maturity of brain function. Neurological components interact with psychological cognitions and social settings, which may lead to the onset of a substance use disorder. These factors may act in summation or independently of each other. As a whole, adolescence is associated with higher levels of risk-taking behaviors,

including criminal behavior and drug experimentation, among other decisions such as partaking in unprotected sexual encounters, dangerous driving habits (Gladwin et al., 2011). These patterns of behavior are described as having an “inverted U-shape” trajectory, with risk-taking being low in childhood, peaking in adolescence and young adulthood, and declining again thereafter (Gladwin et al., 2011). The pace at which the brain develops plays a central role in the demonstration of these risk-taking behaviors. Neuroimaging research has pinpointed areas and systems that track the maturity of decision-making systems in cognitive function, which are located in the prefrontal regions of the brain (Gladwin et al., 2011). An affective-motivational system matures in early adolescence, which is responsible for the processing of rewards. Meanwhile the cortical control regions do not mature until later in adulthood, and this imbalance is responsible for the risk-taking behaviors demonstrated in adolescence and young adulthood. The two neural networks accountable for risk-versus-reward develop at two different paces, allowing for the onset of risk-taking in pursuit of reward prior to the commencement of considering long-term consequences (Gladwin et al., 2011).

Though risk-taking behavior due to asymmetric neural development has a high correlation with drug experimentation, this does not completely encapsulate the experience of addiction for juveniles and young adults (Gladwin et al., 2011). It is important to note that not all adolescents that experiment with drugs become addicted. This emphasizes the importance of individual differences, both from a psychological and sociological standpoint. Classical conditioning becomes a central factor in the sensitization of adolescent cognitions, as negative reinforcement patterns of engaging in substance use become associated with dependence. By taking in cues that signal drug and alcohol use, along with negative affect that becomes relieved upon the ingestion of substances, drug use may become a habitual response for adolescents

(Gladwin et al., 2011). Additionally, heavy use of these substances, whether a conscience choice or habitual, has the capability to impair the development of neural functioning. Animal studies and human observational studies have both shown a correlation between heavy drug use in adolescence and abnormalities in the structure of the brain and general functioning in adulthood. This damage has the potential to disrupt the “inverted U-shape” progression of risk-taking, preventing the decline of these behaviors (Gladwin et al., 2011).

The sociological component of addiction in adolescence is also worth noting, particularly concerning stigma and resource access. Although risk-taking behaviors such as drug use are most commonly conducted in group settings during adolescence and young adulthood, there remains heavy stigma from the community at large concerning addiction, primarily as a result of a long-held sentiment that addiction is a personal choice of a failure to uphold a society’s morals and values. As adolescence is a crucial developmental period in terms of neural pathways, it is also a formative period of socialization, in which the complexity of social behavior is keenly observed and internalized (Adalf et al., 2008). This observed and programmed stigma becomes harmful to adolescents and young adults, as it is channeled into practices of avoidance and ostracization of those suffering from addiction. The social control of the young individual battling addiction is therefore eroded, as there is a lack of connection to community institutions (Adalf et al., 2008).

b. SUD in Adults

Literature concerning adult addiction coincides with literature previously discussed about adolescent addiction; drug abuse disorders expressed in adulthood are oftentimes a continuation of repeated use in younger years but can also be a manifestation of epigenetic expression. Epigenetics is defined as “a series of biochemical processes through which changes in gene

expression are achieved throughout the lifecycle of an organism without a change in DNA sequence” (Nestler, 2014). In other words, epigenetics summarizes the communications and interactions between one’s biological genome and the surrounding environmental factors. Drug addiction is attributed to both genetic and environmental factors, with external stressors enacting a particularly harsh impact upon genetically vulnerable individuals. Furthermore, the manner by which epigenetic mechanisms function allows for the onset of addictive patterns to appear in any point in the life span, even if these behaviors were not present during adolescence.

Even so, drug abuse during younger years builds the foundation for addictive patterns to continue later in life. This repeated exposure introduces changes in the individual’s gene expression, as well as altering the inducibility of genes (Nestler, 2014). Gene inducibility refers to the expression of genes as a response to an external trigger, and in the context of adult drug addiction, means that not only genetically vulnerable individuals are predisposed to substance abuse disorders. In fact, the abuse of drugs at a young age can induce the ability for certain genes that would have otherwise remained dormant to become more sensitive to expression via external triggers in later adulthood. Furthermore, these alterations in genetic expression can introduce changes in reproductive features such as the sperm and ova, and produce a generational pattern of genetic vulnerability to addiction (Nestler, 2014).

c. SUD in Older Adults

Though often excluded from conversations concerning drug addiction, the elderly population in the United States account for one of the largest demographics of legal drug users (Miller et al., 1991). Most literature addressing this issue, particularly the disparity between prevalence and awareness, concerns the abuse of prescription drugs by elderly adults. The causes

and features of addiction within this demographic can often be traced to the individual's physician as the source of drugs in a majority of cases, usually a general practitioner or psychiatrist (Miller et al., 1991). Outside of prescription drugs, over-the-counter medications are a major component in dependence, with illicit drug abuse being less common in elderly populations (Miller et al., 1991).

Depending on a practitioner's attitude towards drug abuse and drug administration, elderly patients may be at higher or lower risk of dependence (Miller et al., 1991). Overprescription and haphazard prescription therefore pose a major threat to the prevalence of drug addiction in elderly adults. Additionally, these patients are typically responsible for the self-administration of their prescribed medications, allowing for overconsumption that produces intoxication and alteration of the central nervous system. After repeated heavy dosages or events of overconsumption, dependence develops as withdrawals bring symptoms of anxiety and/or depression (Miller et al., 1991).

Literature largely regards elderly drug abuse as a "silent epidemic" (Benshoff and Harrawood, 2003), as symptoms of the onset of addiction are commonly mistaken with general symptoms of old age and are therefore downplayed by family members and professional caregivers alike. This specific demographic of elderly adults that experienced the onset of addiction after the age of 65 are referred to as "late onset abusers" (Benshoff and Harrawood, 2003). While the supply for their addiction is usually sourced from their practitioners, this does not fully identify the onset of the addictive disorder itself. Life changes that warrant adjustment periods often serve as stressors for the abuse pattern of drugs, including retirement, the death of a loved one, health problems, or feelings of unimportance and neglect (Benshoff and Harrawood,

2003). What is unclear, and perhaps explained by the significance of individual differences, is which cognition triggers the behavior, whether it be grief or decrease in self-control mechanisms.

The mass socialization of technological experience of this age group may also play a role in elderly addiction as an exacerbating factor. For example, medical developments in the form of “wonder drugs”, advertised as cure-alls for severe ailments, did not exist for the entirety of elderly patients’ lives. (Benshoff and Harrawood, 2003) Therefore, this population is especially vulnerable to manipulation by pharmaceutical companies due to the relative novelty of these drugs, combined with the experience of declining health as a result of aging and its accompanying complications.

III. Current Methods

a. Drug Addiction and the Criminal Justice System

As previously noted, drug experimentation and criminal offending oftentimes originates during adolescence and young adulthood, creating pathways for the intersection of drug use and criminal offending, and therefore early introductions to the criminal justice system (Frank et al., 2020). Not all young populations, however, exist at the same level of risk. Recent literature suggests that economic inequalities affect young people, given that underprivileged families and communities experience little opportunities to enhance success. Frustration with the manner by which the U.S. economic system operates, combined with social pressure and lack of recognition, may manifest itself in young populations as drug abuse and criminal offending (Frank et al., 2020). Furthermore, early introduction and intervention of the criminal justice system in response to drug use and criminal offending creates a labelling issue for young adults by assigning them “problem identities” (Frank et al., 2020). These identity frameworks

ultimately become harmful for recovery, providing as negative reinforcement and disallowing cultivation of positive community networks at an early age. Therefore, it is crucial to incorporate positive techniques alongside offender-managing techniques when criminal justice intervention is necessary (Frank et al., 2020).

Into adulthood, there is increased risk of intersection between criminal offending and substance abuse disorders. This may be attributed to the desperation to obtain the substance that are driving the addiction, or the effect of the abused substance(s) itself. For example, the effects of stimulants manifest in behavior that may cause engagement in criminal activity, and property crimes may be committed in order to fund the supply of drugs. For this reason, criminal justice intervention can offer avenues for rehabilitation and treatment (Belenko et al., 2013).

There are several options for treatment within the criminal justice system for adults, offered on a case-by-case basis. Following an arrest, a screening takes place that determines whether offenders with substance abuse disorders receive an intervention and treatment referral, community treatment, or alternative sentencing. These treatments are often outsourced from local health providers, either public or contracted, or are facilitated by a case manager. In prisons, the most common form of treatments takes place through therapeutic communities, or TCs. TC treatment centers around the concept of re-socialization, encouraging prosocial behaviors through structure and interaction with staff and peers, who all contribute to influence the internal culture surrounding drug use. Medication-assisted treatment is rarely utilized by the criminal justice system (Belenko et al., 2013).

Treatment for drug addiction for adults is available at all levels of the criminal justice system, including jails, prisons, drug courts, and community-based correctional programs. TCs

are most commonly utilized in prisons and community corrections, though have shown conflicting results. In prisons, TCs have demonstrated the ability to effectively reduce recidivism rates, but lack the same effectiveness for relapse. On the other hand, in community corrections, TCs tend to have high dropout rates for serious offenders, and have failed to effectively reduce recidivism. Furthermore, little can be said for the aftercare provided for incarcerated individuals, as only 25% of adult males reported receiving substance abuse treatment following their release (Belenko et al., 2013).

A major component of why these programs may fail is the lack of access these programs have to the target population. Though TCs are commonly used, many exclusively entail drug education and low-intensity counseling. Ultimately, the criminal justice system fails to incorporate evidence-based practices (EBP) into the vast majority of institutions, and while they appear on an experimental level, are not present in any extensive sense. Staff attitudes play a significant role in the lack of implementation of EBPs, such as doubting treatment effectiveness and general negative or uneducated attitudes about addiction as an illness, rather than a behavioral choice. Furthermore, poor communication within criminal justice agencies, collaboration problems between institutional staff and local health providers, and high staffing turnover results in a poor foundation upon which to apply EBPs and cooperate on a professional level (Belenko et al., 2013).

b. SUD Treatments

Literature concerning the nature of substance abuse and addiction for adolescents often references risk-taking behavior throughout cognitive development to be at a central focus. That being said, adolescence is a crucial period of development for all generally reward-seeking

behavior, and is a process that allows for sensitivity and plasticity to treatment. Hormonal changes during puberty bolster the development to the striatum, which has connection to the onset of risk-taking behavior and substance abuse during this period in the life cycle. However, this may also mean that striatal development has connection to positive risk-taking as well, such as the pursuit of goals and motivation to overcome challenges. In the context of treatment for adolescents with addictive disorders, this can exemplify how utilization of positive risks may channel natural adolescent behaviors into a recovery process (Silvers et al., 2019). Moreover, adolescents do exhibit the ability to reason in abstract or hypothetical contexts, navigate negative emotions, and demonstrate planning towards a larger goal. All of these cognitions are important to note in a treatment context (Silvers et al., 2019).

The beginning of treatment for substance abuse in adolescents ideally begins with a physician taking concern in substance use. While questions to the young patient are often asked concerning use, there is little effort for differentiation of “use” and “abuse” through commonly-held screening processes. If a physician fails to initiate the conversation, they thus fail to demonstrate concern for patterns of substance use and abuse, and an important opportunity for necessary intervention is missed (McLellan and Meyers, 2004). Similarly, emergency rooms may serve as important opportunities for intervention, as for many young people, this is a primary source of health care. Emergency room visits are also often caused by use of drugs and alcohol by adolescents. However, not all of these visits are accompanied by referral to treatment. Schools are also in a unique position to identify and refer treatment, yet commonly fail to do so due to insufficient training and identification of students suffering from an addictive disorder (McLellan and Meyers, 2004).

Within treatment, literature evaluates that treatment is largely generalized, and there is a severe lack of treatment staff and systems in place that are adolescent-specific. Credentialing processes for staff to treat addiction do not require adolescent-specific training, calling into question whether professionals that are currently providing treatment to adolescents are providing adequate care. Furthermore, there is limited funding available for services that provide treatment to adolescents, and even if health insurance is in place, it may not necessarily cover the cost of behavioral health treatment (McLellan and Meyers, 2004).

While treatment for drug addiction can successfully repair the behavior of addictive disorders, addiction is a chronic illness that does not have an existing “cure”. The patient receiving treatment will likely maintain an addictive disorder for the remainder of the lifespan, but treatment may effectively counteract disruptive behaviors associated with a substance abuse disorder. Moreover, relapse is a common facet in the trajectory of recovery, though relapse can be dangerous and even lethal. This is because recovery and abstinence from the substance disrupts the tolerance that the patient had built up prior to beginning treatment. Therefore, though relapse can be expected on the path to recovery, there is a higher risk of accidental overdose in this regard (NIDA, 2023).

There have been streamlined methods of treatment for those who suffer from addiction that are built upon evidence (NIDA, 2023). These treatments are also dependent on the type of substance being abused by the patient. For example, when treating an opioid addiction, prescription medication should be the first treatment intervention. Methadone and similar medications aid in the detoxification process, though this is not sufficient treatment. Detoxification must be utilized in tandem with behavioral therapy in order to effectively prevent the resumption of drug use (NIDA, 2023).

Furthermore, different streamlined treatment interventions are necessary at each stage in the recovery process. First, withdrawal from the use of abused substances is associated with physical and psychological symptoms, both of which may be reduced by proper treatment medications. Further along in treatment, medications may be used to prevent drug cravings and allow the patient to focus on psychotherapy to be able to take a more holistic approach to recovery (NIDA, 2023).

Aside from medications, there are several streamlined behavioral therapies associated with recovery from addiction. Cognitive-behavioral therapy is the most commonly used form of counseling, which allows patients to fully evaluate the scope of situations in which they may abuse drugs. Contingency management utilizes processes of positive reinforcement through reward systems when engaging in treatment behaviors. Motivational enhancement therapy channels the drive to stop using drugs from the patient. Family therapy addresses domestic support systems, and allows families to cohesively treat the problem as a unit. Finally, TSF, or twelve-step facilitation, is an individual counseling program designed not to exist as a singular treatment, but aid patients in their recovery (NIDA, 2023).

Similar to blockages in treatment for adolescents, elderly adults find stigma to be a severe hurdle when overcoming addiction through treatment. Elderly patients were socialized during a time period in which mental health struggles did not have the visibility they do today, and thus are still under the influence of stigma, as they were in earlier years. Furthermore, in contemporary addiction treatment settings that involve group therapies, elderly adults are often uncomfortable. Not only do they report feelings of misplacement due to age, which in turn ignites maternal or paternal sentiments for younger patients, but also struggle with the lack of accessibility in modern treatment settings. Facilities may lack wheelchair-accessible architecture,

program materials may lack the proper size font for the vision impaired, and verbal facilitation often does not reach the qualifications to be understood by the hearing-impaired (SAMHSA).

Discussion

Existing literature and statistics concerning drug addiction establishes that there is no “one-size-fits-all” process for treatment. While predictions can be made given one’s age, gender, race, or class, intersectionality manifests in the form of individual differences for each patient. People who struggle with addiction have formed a series of unique life experiences that have led to the point of repeated substance abuse. No two life-course models between individuals is exactly the same, factoring in psychological and developmental differences. Though two individuals may have similar life experiences, genetic factors may put one at higher risk of developing an addictive disorder, and slower brain development may prolong the onset of risk-taking behaviors. Additionally, epigenetic theories allow for the late onset of risk-taking behavioral patterns. An individual may lack addiction-indicative behavioral patterns in early life, yet external stressors in adulthood have the capacity to shape the human genome and impact one’s resilience against substance abuse disorders. Moreover, no singular drug addiction treatment may be sufficient throughout the course of the recovery process. As individuals progress and undergo detoxification, withdrawal, and behavioral therapy, their cognitions may change alongside their respective treatments, signaling that an alteration in treatment plans may be necessary. Therefore, existing literature surrounding the onset, course, and treatment of substance abuse disorders supports a highly individualized method of treatment for the patient.

Currently, there is substantial research regarding the onset and experiences of addiction for all age groups. However, currently “streamlined”, or commonly referred to, treatment options

are modeled after adult experiences of addiction, often excluding adolescents and the elderly. While these treatment patterns may be effective for individuals well into their adulthood, this system fails to address the large number of people who suffer from an addictive disorder that began using in adolescence or early adulthood.

As previously noted, risk-taking behavior reaches its peak in adolescence and early adulthood, leading to an increased risk for the intersection of drug abuse and criminal justice intervention. However, when introduced to the criminal justice system at an early life stage, young people may develop a “problem identity”, according to labelling theory, and further refuse to comply or conform with societal expectations. This is especially true for those who were raised in an underserved community; frustrations with the neglect they experienced from social networks and institutions may manifest themselves in deviant behavior. Alongside problematic practices with the involvement of criminal justice intervention, stigma runs strong through young social networks. Adolescence and young adulthood are formative periods of the lifespan for socialization, and ostracization from the community due to drug use has a significant impact on young people who are on a path to developing an addictive disorder. This stigma further isolates them from social institutions such as school, family, extracurricular activities, employment, and positive social groups, making it more difficult to regain control and structure.

Though adolescent and young adult substance abuse derives from circumstances specific to brain development and socialization, there are few methods of treatment that are tailored to the psychologies of adolescents and young adults. Many evidence-based practices concerning age have been developed, yet lack of funding and willingness to alter the system in place have resulted in these practices being unable to come to fruition. Furthermore, even if these treatments were to become available, adolescents and young adults are rarely referred to treatment by their

social institutions. There are several reasons why young people may struggle to obtain treatment. First of all, schools and primary healthcare networks fail to recognize an existing problem in a young individual due to lack of proper training and resources. Schools are at a unique position to identify patterns of addictive behaviors and symptoms, as education staff see their students often and over relatively long time periods. However, not all staff are trained to identify behaviors indicative of addictive disorders, and fail to attribute problem behaviors to a larger problem. This reasoning is made under the assumption that students are well-connected to their academic careers. Students who suffer from a substance use disorder may lack adherence to social institutions, including schools, and therefore may not attend class or establish a relationship with educational staff. Isolation from school networks, including those with staff, extracurriculars, and positive social circles may create difficulty in the identification of a substance use disorder. Additionally, primary care physicians often neglect to ask about substance use, and when questions are asked, there is little follow-up in terms of habitual usage or dosage. Many young people are also not covered by health insurance, meaning that primary health care is received in emergency rooms. Even when treatment is received for a substance-related health issue, there is rarely aftercare or referral to treatment programs.

Outside of the criminal justice system, drug treatment programs for adults are relatively successful. However, given the overlap between drug abuse and criminal offending, many individuals are receiving treatment for addictive disorders within jails, prisons, and community correctional systems. Therapeutic communities are the most common form of addiction treatment found in correctional facilities, especially in prisons. However, this system aims to subtly change the culture surrounding drug use, and does not prove to reduce recidivism rates. Furthermore, offenders who undergo addiction treatment within correctional facilities report

receiving very little aftercare following release, meaning that there is little follow-up by the criminal justice system as a whole to ensure that ex-offenders obtain the necessary resources to continue recovery. Those who oversee correctional facilities are extremely hesitant to incorporate evidence-based practices into correctional methods, both due to lack of education about addiction and negative attitudes towards addiction as an illness.

Like adolescents, older adults struggle with a unique set of circumstances concerning addiction for which modern methods of treatment are unsuited. Stigma surrounding mental health, trauma, and addiction struggles was a significant component of the socialization of older adults in their younger years. For this reason, elderly patients are less likely to reach out for help, or recognize that their substance abuse is a problem. When elderly adults do seek treatment, they report feeling out-of-place within treatment settings, due to lack of accessibility and representation of their own age group. Furthermore, the origin of substance abuse for older adults is their own physician. This population is more likely to be overprescribed, as a result of unfamiliarity with modern medical technologies, and are largely unsupervised in the administration of their medication. Therefore, there is higher risk for overmedication, and behaviors indicative of addiction are unrecognized by caretakers and family members, as many of these behaviors overlap with aging complications.

Overall, treatment methods based on evidence have progressed substantially in recent years, with increased visibility of mental illness and, more specifically, the onset of substance abuse disorders. However, there is a lack of application to evidence-based practices for treatment in all age groups, specifically neglecting adolescents and elderly adults, despite research encouraging personalization of addiction treatment based on individual differences. Moreover, while treatment methods for adults have proven successful, evidence-based treatment practices

have not been absorbed by the criminal justice system. Many offenders struggle with addiction within prisons and jails yet receive subpar treatment for these disorders.

Solutions

As established by the discrepancy between literature and implemented practices, modifications must be made to the current systems in place for treating substance abuse disorders to more appropriately address adolescents, adults in criminal justice institutions, and older adults. Each age group faces unique struggles with addiction, given the differences in psychological and sociological experiences throughout the lifespan. Therefore, treatment for substance use disorders should not be as streamlined as it is in current practice. Substance use treatment professionals must evaluate how different age groups respond to methods of treatment in order to personalize rehabilitation strategies to the highest possible degree.

Regarding adolescents, more efforts should be made by academic institutions to properly identify and refer treatment to students who struggle with substance use disorders. This would likely require an allocation of funding to training educational staff to properly identify students who show symptoms of an addictive disorder. Even if these students fail to attend class, proper outreach and resource referrals may prevent students from feeling isolated from such a substantial social institution. Furthermore, medical policy should require questions to be asked in the physician's office, not only concerning drug use, but also inquiring about the patterns of substance use, even in emergency room settings. This way, physicians may be equipped to identify concerning patterns in early drug exposure (McLellan and Meyer, 2004). Utilizing mechanisms of social control will help to adhere adolescents to societal institutions and reduce

the manifestation of a problem identity (Frank et al., 2020), fueled by a lack of involvement in the community.

Finally, the manner by which the criminal justice system is introduced to adolescents plays a formative role in fear and self-perception through labelling. The threat of repercussion from the criminal justice system may serve as a deterrent for many young people, preventing them from reaching out for assistance in cases of habitual illicit substance use. Before criminal consequences are threatened, educational prevention programs should focus on resources that are available in cases of addictive disorders. Furthermore, when the criminal justice system intervenes in a young adult's substance use or criminal behavior, rehabilitative practices should be implemented above correctional practices. As adolescence is a period of time in which risk-taking behavior peaks, the behaviors exhibited may include negative risks and antisocial actions. However, utilizing correctional interventions for treatment may prove successful if such practices implement redirection strategies, that encourage positive risks to be taken, such as making steps towards a long-term career (Frank et al., 2020).

Ultimately, treating adolescent drug addiction should focus on early intervention and evidence-based practices. Early intervention allows for better detection and mitigation of risk factors, allowing specialists to break the cycle of addiction before it evolves into a chronic condition (Moffit, 1993). Furthermore, implementation of family-based counseling in the form of Functional Family Therapy fosters a parental bond that is fundamental for social control (Sampson and Laub, 2017).

Alterations to the methods by which adults receive treatment within the criminal justice system are also necessary. Though evidence has supported the use of medication and cognitive-

behavioral therapy to be most successful in assisting in the process of drug addiction recovery, many of these practices have not been implemented into jails or prisons (Belenko et al., 2013). Community-based correctional systems have successfully been implementing evidence-based practices through medication, behavioral therapies, employment placement, and rewards systems. However, offenders of more serious crimes who struggle with drug addiction may find themselves in prisons receiving subpar treatment. Evidence-based practices lack visibility in many correctional institutions due to poor communication and staff attitudes; high turnover rates and outdated stigma surrounding addiction remain as prevalent issues within correctional professionals (Belenko et al., 2013). Policy must be developed that requires evidence-based treatment practices to be implemented in all institutions under the criminal justice system, both in the efforts of enabling successful recovery and reducing recidivism rates. Additionally, for the adult population at large, addiction should be understood as a disease rather than a choice (Belenko et al., 2013).

Epigenetic factors interact with social and psychological factors, making abstinence from drug use an unrealistic ideal. This understanding must begin on a professional level, with specialists in the fields of criminal justice, psychology, sociology, and biology adopting this mindset into their practices, in order to alter the culture and stigma surrounding substance use disorders. This culture change may be implemented on a community level, with educational programs, increased job availability, and enhancement of employment settings and opportunities. In this stage of life, employment is an important institution of social control, in which a weak bond to one's employment is a risk factor for drug use (Sampson and Laub, 20017).

Finally, elderly adults struggle with both the identification and treatment of addiction. Medical practices should be modified to properly educate elderly patients, as well as their

families, about the full scope of complications that may arise from taking prescription drugs (Miller et al., 1991). Furthermore, supervised administration of certain drugs should be encouraged for some patients, specifically for those with a history of drug or alcohol abuse. Lastly, treatment facilities should be made more accessible for physically disabled patients, and increased treatment systems should be implemented to be specifically tailored to the experiences of older adults with substance abuse disorders (SAMSHA). The barriers older adults face concerning addiction treatment access primarily concern the fact that treatment systems are not designed for older adults. Therefore, treatment methods should be revisited to further tailor services to the elderly.

Conclusion

In recent years, substantial steps have been made towards preventing and reducing the prevalence of substance abuse disorders. Increased awareness of the seriousness and nature of addictive disorders has prompted the use of educational programs and psychological treatment in order to prevent and address complications arising from substance abuse. However, controversy and stigma remain prevalent surrounding the culture of addiction, discouraging the full implementation of evidence-based treatment practices for populations across age groups.

The DLC theories emphasize how different points upon the complete lifespan of an individual may alter their experience with risk-taking, criminal offending, and substance use habits. Even so, it is important to recognize that individual differences take the greatest importance in the onset, progression, and recovery of a substance use disorder. Methods of treatment should not only be modeled from what has previously held success for adult

populations. Instead, drug addiction treatments should be as individualized as possible, especially in regard to the patient's age and background.

Adolescents, adults within the criminal justice system, and elderly adults are often isolated from the treatment that is required for their respective situations and experiences. Despite evidence encouraging the specialization of treatment professionals in accordance with specific age groups, complications stemming from stigma and funding issues prevent the systemic implementation of most recent and well-informed findings. Medical, criminal justice, and community policy should therefore be revised to require individualization of drug addiction treatment to appropriately treat individuals at their current stage of life.

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