Alcohol Use Disorder: The Biopsychosocial Model

Marc Scott

Department of Counseling Wake Forest University

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Dr. Brittany Wyche

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Abstract

Alcohol consumption is associated with over 88,000 deaths annually in the United States and excessive alcohol use is the third leading cause of preventable death in the United States (National Institute on Alcohol Abuse and Alcoholism (NIAAA)). Previously classified as alcohol abuse and alcohol dependence, it is now classified by the Diagnostic and Statistical Manual of Mental Disorders, 5th ed. as alcohol use disorder (AUD). There are eleven different criteria that could meet the diagnosis of alcohol use disorder if two of the eleven have occurred within the previous 12-month period (American Psychiatric Association, 2013). The main theme throughout the diagnosis is that an individual is unable to stop consuming alcohol no matter the consequences faced. The addiction that occurs with alcohol is one, that although being thoroughly studied, has revealed no clear answers as to the reasons why individuals continue to consume alcohol despite the harm experienced. Three different paradigms have been studied to attempt to answer this burning question, which are biological, psychological, and sociological. All three of these play a significant role as to what causes alcohol dependency, which then can lead to alcohol use disorder. This paper will explore treatments that involve all three paradigms in order to best ensure the long term health of individuals recovering from AUD. This model is termed the biopsychosocial model of treatment.

Introduction

Alcohol use disorder (AUD) is a psychological condition in which an individual cannot stop or moderate alcohol use despite adverse social, occupational, or health consequences. Alcohol use is prevalent in the United States, according to the 2019 National Survey on Drug Use and Health (NSDUH): 85.6 percent of people ages 18 and older reported that they drank alcohol at some point in their lifetime and 69.5 percent reported to have consumed alcohol in the last twelve months. A person's risk for developing AUD depends on how much, how often, and how quickly an individual uses alcohol. An increased risk is also present in situations where individuals begin drinking at an early age, where alcohol is seen as more accepted by their environment. Genetics and family history of alcohol problems also can be a factor, as well as experiencing abuse or neglect (National Institute on Alcohol Abuse and Alcoholism (NIAAA)). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), AUD criteria are satisfied if an individual over the past twelve months has found himself or herself in two or more of the following situations: consumes more alcohol or spends more time drinking than intended; wants to limit or halt alcohol use, but has not succeeded; spends an inordinate duration drinking, being ill and undergoing the after-effects of alcohol use; has strong cravings for alcohol; consuming alcohol or becoming ill because it has kept them from properly attending to household duties and children, or resulted in difficulties perfuming on the job or at school; continues drinking in spite of it causing problems with family and loved ones; discontinues or are only sporadically involved with things that were once enjoyable or important to be able to drink; has repeatedly been in situations during the consumption of alcohol that have increased the chance of being injured (using machinery, driving); even though a person feels sad or

distressed, or it affects an already existing health problem, the person continues to drink; after episodes of forgetting or going blank about the events during drinking, the individual continues to use to use alcohol; has to increase drinking to get the results wanted (tolerance to alcohol builds); and when alcohol wears off, causing symptoms like insomnia, difficulty staying asleep, aggravation, nervousness, sadness, stomach aches and nausea or perspiring.

Evidence-based treatments exist and are available to those that have AUD, however, it is not a one-size-fits-all treatment given the wide variety of struggles and causes as a result of this disorder. Alcohol is a "cunning and baffling" disease (Alcoholics Anonymous, 1938). It affects different aspects of an individual differently, namely, biologically, psychologically, and sociologically. In order to treat individuals effectively, each of these three paradigms must be taken into consideration, thus addressing the person as a whole. Currently, there are medications such as disulfiram, naltrexone, and acamprosate, that have been approved by the Federal Drug Administration to help individuals reduce their alcohol cravings and potentially prevent relapse (Anker et al., 2016), but none of these treat the psychological or sociological root of the problem. Psychological treatments are also available to those that may need counseling or help treating co-occurring disorders which address underlying causes. Lastly, there are also social support groups, such as Alcoholics Anonymous that can help individuals receive peer support from those in similar situations. While each of these therapeutic tools can independently be helpful, it is necessary to use them in conjunction with each other to ensure holistic treatment and prevent relapse after the individual has stopped. This paper will explore treatment options that create an approach which addresses all three elements, also known as a biopsychosocial approach.

Methods

Initial research was utilized with the Diagnostic and Statistical Manual-5 in order to understand what the diagnosis criteria would be for alcohol use disorder. A secondary Google search was conducted to find out what causes exist and the statistics present for diagnosis. This research was done using the National Institute on Alcohol Abuse and Alcoholism website (**https://www.niaa.nih.gov**). The database selected was from the ZSR Library's database containing PsycINFO, PubMed, and ERIC, with an initial search of "alcoholism or alcohol dependence or alcohol abuse or alcoholic or alcohol addiction."

After a preliminary review of this foundational information, I narrowed the search to help identify specific issues such as "biological", "psychological", "social", and "biopsychosocial". I used terms in connection within the initial search to further help define an narrow such as "genetics", "mental health conditions", "anxiety", "social anxiety", "co-occurring disorders", "social support", "alcoholics anonymous", "treatment", "treatment outcomes", "relapse", and "relapse prevention" to better define each new subset of the biopsychosocial paradigm,. The most useful database was PsycINFO, and most of the articles came from ScienceDirect, whether available through ZSR library databases or other sources.

Results

Substance abuse may be influenced by the interaction of multiple psychosocial factors, which include negative mood states and poor coping skills, most commonly resulting from unresolved issues. For example, alcohol is often used as a means to cope with negative effects of trauma, negative social support systems, low self-esteem, negative belief systems, and negative mood states. The failure to treat these underlying causes of alcohol abuse tend to lead to high recidivism rates and relapse (National Institute on Alcohol Abuse and Alcoholism (NIAAA)).

Researchers who have attempted to solve the puzzle of addiction have expanded their studies to include individuals with dual diagnoses such as mood disorders, post traumatic stress disorder and borderline personality disorder, etc. Findings have shown that alcoholics with coexisting psychiatric disorders have a very difficult time maintaining abstinence and effectively recovering once out of treatment, instead relapsing and falling deeper into their disease (McGovern et al., 2006).

However, although studies on substance disorders exist and their scope is being broadened, most do not fully take into account biological, psychological and social factors to explain substance use and abuse in individuals in order to create a more comprehensive picture. An appropriate example of psychological and social factors that need to be addressed is childhood maltreatment, which may increase the risk for an individual to have low self-esteem. These same individuals may blame themselves for the maltreatment they've experienced, or the fact that they are unable to cope with the challenges of daily life. Low self-esteem and substance abuse are correlated, but there is not a clear or definite causality. Individuals with low self-esteem have a high need for social approval and continually seek validation outside of themselves. Community studies show that anxiety and depression may also lead to childhood

abuse (anxiety/depression, etc.), may lead to low self esteem and negative mood states, which in turn trigger cravings that can then lead to an increase in substance use (Turner et al., 2018).

Coping with daily stressors and the process of managing demands deemed to be taxing or difficult for a person to deal with can lead individuals with low self esteem to use avoidance coping methods such as alcohol, which allows one to escape negative internal and external states that are exacerbated by low self esteem and lack of support (Turner et al., 2018).

The aforementioned social support is a key element within any individual's existence. One of the more important purposes of a supportive relationship for someone recovering from AUD is to help aid in recovery and prevent relapse. Alcoholics Anonymous is an integral way to acquire and utilize the support of other people wherein there might not be any otherwise (Segal, 2020). Avoidance coping is used when there is little to no support, and creating connection and community has been shown as an effective way to combat the isolation that often precipitates relapse (Milani et al., 2008) .

Biopsychosocial model to explain substance abuse. The three paradigms being discussed; biological, psychological, social may all play a significant role in the course, cause, and outcome of addictive disorders (Turner et al., 2018).

Biological

The disease model of addiction is based on the initial principles of Alcoholics Anonymous, which was formed in 1935 as a group of alcoholics helping other alcoholics. Initially defined by those that started AA as having an "allergy" where its members were simply just born that way. However, while being born into alcoholism is a theory many have explored, no direct causation exists to genetics, however the correlation has proven to be strong (Alcoholics Anonymous, ,1938).

The nature of AUD as a disease has been studied based on family, twin, and adoption studies. Family studies have been proven to account for a two to four times higher correlation to severe alcohol related problems than those without any family history.

The genetics of alcoholism is the result of years of observations that alcohol problems cluster in families. This history, however, does not prove that there is a gene, or genes, associated with alcoholism. After understanding that alcoholism clusters in families, there was further research to find out if children raised in different environments but had the same genes still displayed alcoholic tendencies. Large samples of half siblings who were raised by both alcoholic families and foster families were observed, and the findings of the study confirmed that children raised by their biological families of alcoholics were more likely to abuse alcohol than the children raised by alcoholic parents in foster families. Along the same lines infants born from alcoholic parents, but adopted and raised in a non alcoholic environment still reported a four times greater likelihood of becoming an alcoholic than those adopted from non alcoholic biological parents. A final approach to study the theory of genes versus environment utilized a twin design model. The model utilized both fraternal and identical twins born to alcoholic parents to see if the identical twins with exact genetic makeup were more or less likely to become alcoholics. The study showed that all sets of twins, whether fraternal or identical, had the same likelihood of becoming alcoholic, which clearly shows that the environmental factors were not the cause, the contribution of alcoholic genes from the parents to their offspring was the main factor. While these studies clearly show a correlation between parents and their offspring's likelihood of becoming alcoholic, there is no definitive causation that can be exacted as to the definitive gene or reason that this exists (Reilly et al., 2017).

Psychological

Alcohol use is a symptom of an underlying issue or conflict. In order to quell the feelings that are involved in whatever the underlying issue may be, individuals tend to self medicate in order to reduce painful emotional states and to help cope with what seem to be unmanageable and overwhelming feelings. These repressed feelings are then "medicated" to help an individual cope with a childhood issue of trauma or maltreatment (or whatever else in their history may be causing said conflict) and help them overcome negative mood states and/or depression (Turner et al., 2018).

Co-Occurring Disorders

The most common co-occurring disorders that are identified as problematic are: mood disorders, anxiety disorders, post traumatic stress disorder (PTSD), severe mental illnesses (SMI), antisocial personality disorder, and borderline personality disorder (McGovern et al., 2006).

Alcohol use and mental health disorders have a strong linkage and correlation, however, there is a wide variation in the measurements and definitions used to measure criteria and to meet diagnostic criteria for both. Mood disorders and anxiety are common in individuals suffering from aud. While the direct linkage to unique components of both, findings are consistent that anxiety and mood disorders contribute to "negative emotionality', which correlates with the risk for alcohol dependence and the need to employ coping mechanisms (Milani & Perrino, 2021).

Anxiety disorders and social anxiety disorders have produced supportive evidence not only of correlation, but also of causality. There are three models for this causal link: self-medication, tension reduction, and stress response dampening. In each of the three models, individuals use alcohol as a means to cope with the onset of anxiety. These individuals are more

likely to develop an addiction to alcohol and its perceived positive reinforcement expectations (Anker et al., 2016).

Other co-occurring disorders have shown that individuals utilize alcohol to avoid feelings, such as those that have experienced a trauma (PTSD), or the alleviation of dysphoria (bipolar disorders and schizophrenia). Alcohol use is increased to help individuals feel more positively and extract from them the feelings of sadness and loneliness. While these all need to be further researched to include causation effects along with correlation, it is clear that co-occurring disorders must be taken into consideration when treating those with alcohol use disorders, because treating one and not the other will not pose a long-term solution for individuals who are suffering from both (Milani et al., 2008).

Treatment

Alcohol is treated with different methods. The therapeutic approach with the highest level of empirical support for the treatment of alcohol abuse disorders has been Cognitive Behavioral Therapy (Carroll & Kiluk, 2017). CBT is able to capture a large range of treatments which target operant learning processes and motivational barriers to improvement (motivational enhancement therapy) (McHugh et al., 2010). Another way that alcohol use disorder has recently been treated is through pharmacological approaches such as disulfiram, naltrexone, and acamprosate. These approaches are normally utilized in conjunction with behavioral approaches and have had varying results (Kuhlemeier et al., 2021).

Classical and operant conditioning can help explain why once alcohol is used, the environment, along with nature, may take over keeping an individual in the midst of the addiction. Alcoholics develop a conditioned response to the feeling initially achieved with their use of alcohol to cope. The operant conditioning model shows that a positive reinforcement

occurs after alcohol is consumed. This initial feeling of relaxation gives rise to the continued use of the substance, despite negative outcomes and consequences (Skewes & Gonzalez, 2013).

Sociological

The social environment that an individual is raised in involves family, social, and spiritual support. The need for support systems and positive reinforcement is necessary for a positive sense of self and an ability to have appropriate, non-destructive coping mechanisms. Some parenting practices have proven beneficial in building positive self efficacy in young individuals. Monitoring, communication, and emotional support have a positive effect on individuals and thus have proven to lower the incidents of alcohol use in teenagers. Lack of support from family and social networks have in turn proven to be detrimental toward self efficacy and can produce low self esteem, which in turn leads to alcohol use and then abuse (Watkins et al., 2006).

Many supportive systems have been associated with recovery and have proven to improve self efficacy as well as self esteem. One of the most prominent groups, Alcoholics Anonymous, creates a social support system of alcoholics helping other alcoholics. This provides the necessary support that many alcoholics have hot been exposed to growing up. AA also provides a vast spiritual component to help alcoholics have something to turn to instead of alcohol as a coping mechanism. Social support is of utmost importance for an individual to maintain sobriety, self efficacy and raise self esteem (Segal, 2020).

Discussion

Based on the information gathered, it is clear that alcohol use disorder (AUD) is something that has garnered significant attention. It still remains unclear, however, the best way to treat any person with the disorder, other than holistically and as a unique individual (Roos et al., 2017). There are many different correlations that exist through biological factors of family genetics, childhood environment, including childhood maltreatment. Also, there are many disorders that have been identified as frequently co-occurring with AUD and have also been hypothesized to enhance the prevalence of addiction. There have not, however, been any studies that have pointed directly to a single causation which best allows an understanding of the diagnosis. There exists much research that needs to be done in order to report how to best integrate the different types of treatments for each of the biological, psychological, and sociological factors that make up AUD and are available to treat an individual holistically to help ensure long-term sobriety and enhanced mental health (Astramovich & Coker, 2007).

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