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Alcohol as food, drug, and poison: Its multifaceted impact on society

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Abstract

The intricate effects of alcohol on society and human health are examined in this article titled "Alcohol as Food, Drug, and Poison: Its Multifaceted Impact on Society." This paper accentuates the impacts and complications of alcohol by exploring it from three different angles: as a food, a drug, and a poison. Although alcohol has historically been used for therapeutic, dietary, and recreational purposes, this paper brings to the fore the serious hazards associated with its use, such as addiction, deteriorating health, and negative societal effects. The essay explores the social variables that affect the use of alcohol and the mechanisms by which it affects the body. It offers a balanced perspective that considers both the advantages and perils to guide more effective regulation and social attitudes.

Contents

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1 Introduction

This paper seeks to provide a nuanced understanding of the intricate and often contradictory nature of alcohol in human life. Alcohol is a unique substance that straddles multiple domains. Either as a food in cultural and religious rituals, as a drug for its psychoactive effects, and as a poison with the potential for severe health and social consequences. The paper examines these diverse roles from the historical, medical, and sociocultural contexts in which alcohol is consumed or used. The paper analyses how the status of alcohol as a socially accepted substance often masks its potential for harm and how societal attitudes towards alcohol have evolved. By investigating the effect-inclined dichotomies of alcohol, that is, its capacity to nourish, heal, or harm, this study aims to shed light on its impact on individuals and societies, highlighting the need for balanced perspectives and policies.

The role of alcohol as a drug raises significant concerns. It is a psychoactive substance that alters mood, behaviour, and cognitive functions. Globally, alcohol use disorders affect about 283 million people, contributing to three million deaths annually, representing 5.3% of all deaths (Herman & Quadir, 2021). The addictive properties of alcohol often lead to misuse, dependence, and significant social and economic costs, including loss of productivity and increased healthcare expenditures (Joshua & Joshua, 2017). As a poison, alcohol is toxic at high doses; acute alcohol poisoning is a medical emergency. Chronic excessive consumption leads to severe health issues, including liver cirrhosis, cancers, and neurological damage. The World Health Organization reports that alcohol contributes to over 200 diseases and injury conditions (WHO 2024). The dichotomy of alcohol, with its possible advantages and significant hazards, emphasises the necessity for comprehensive public health strategies and social perspectives to properly regulate its use (Schrieks et al., 2015; Hegde et al., 2018).

Alcohol as a Food, Drug, and Poison

Alcohol holds a unique and complex place in human society, serving as a source of sustenance, a recreational substance, and a significant health risk as posited by Holt (2006) in his seminal paper "Alcohol: A Social and Cultural History". While its diverse influence has shaped cultures, social behaviours, and health outcomes throughout history, Gunzerath et al. (2011) assert in a systematic review of past, present, and future research on alcohol that understanding the multifaceted impact of alcohol requires exploration of its functions as a food, drug, and poison. Alcohol, particularly in fermented forms like beer, wine, and spirits, has been integral to human diets for millennia, as observed by Tamang (2010) in his explorative work on the diversity of fermented beverages and alcoholic drinks (O'Keefe et al., 2014; Patel et al., 1972).

Historically, alcoholic beverages provided a safer alternative to contaminated water and were a crucial calorie source during food shortages, as argued by Follett (2017) in a publication by the Cato Institute titled Alcohol and Caffeine Created Civilization. Follett further maintains that ethanol, the type of alcohol humans consume, delivers approximately seven calories per gram, nearly double the energy provided by carbohydrates and proteins. This caloric content made alcohol a valuable energy source, especially in times of scarcity. In addition to calories, some alcoholic beverages offer minor nutritional benefits (Falck-Ytter & McCullough, 2000).

Beer, for example, contains B vitamins from the yeast used in fermentation, and red wine is noted for its antioxidant resveratrol, which is beneficial for heart health. However, research has proved the nutritional value of alcohol to be limited. While it may contribute some vitamins and minerals, these are minimal compared to other nutrient-rich foods. Furthermore, alcohol can hinder the body's ability to absorb nutrients, leading to deficiencies and associated health problems such as anaemia and osteoporosis, according to Foster & Marriott (2006), who weighed the risks and benefits of alcohol consumption in the new millennium. Pharmacologically, alcohol is classified as a central nervous system depressant because, as Davies (2003) claims, its psychoactive properties primarily arise from its interaction with neurotransmitters in the brain, even though evidence abounds that it enhances the effects of gamma-aminobutyric acid, the main inhibitory neurotransmitter, and inhibits glutamate, the main excitatory neurotransmitter (Corrao et al., 2004; de Lorimier, 2000).

This dual action results in the characteristic effects of alcohol consumption, described by Lath & Meshram (2021) in their paper titled Effect on Neurotransmitters in Alcoholic People as relaxation, euphoria, and

reduced inhibitions. In moderate volumes, alcohol can promote sociability and reduce anxiety, making it a popular social emollient. However, higher doses impair cognitive functions, motor skills, and judgment, increasing the risk of accidents and harmful behaviours (Schweizer & Vogel-Sprott, 2008). Further, chronic use of alcohol leads to tolerance, dependence, and potential addiction, a condition clinically recognised as alcohol use disorder Becker (2008), while withdrawal from alcohol dependence can be severe and life-threatening, underscoring its potent drug-like properties (Rehm et al., 2018). Ethanol is inherently toxic, and its toxic effects are dose-dependent, claims Le Dare et al. (2019) following an investigation of Ethanol and its metabolites on toxicity and immunomodulatory.

Also, acute alcohol poisoning results from consuming large amounts in a short period and has the potency to suppress the central nervous system to dangerous levels, risking respiratory failure, unconsciousness, or death, according to a 1961 study on the Problems in acute alcohol poisoning by Koppanyi, Canary, and Maengwyn-Davies (Koppanyi et al., 1961; Enzmann et al., 2017). The significant health challenges that occur due to chronic excessive alcohol consumption cannot be overstated, as these range from liver diseases such as cirrhosis to cardiovascular diseases and an increased risk of various cancers (Åberg et al., 2023).

The liver, responsible for metabolising alcohol, produces toxic byproducts like acetaldehyde during alcohol metabolism which in turn causes inflammation and cellular damage, contributing to liver disease as evidenced by results from a meta-analysis on alcohol consumption and risk of fatty liver disease led by Cao et al. (2016). Chronic alcohol use also weakens the immune system, making the body more susceptible to infections. This is even more so as alcohol is a diuretic, which leads to dehydration, electrolyte imbalances, and associated health issues (Cook, 1998; Szabo, 1999).

Alcohol and its Societal Impact

Beyond its sweeping impact on human physical health through the triumvirate explored above of food, drug, and poison, the adverse effects of alcohol reach into our everyday societal realities, exerting a profound influence on human behavioural predispositions. As Collins & Messerschmidt (1993), found in their study on the epidemiology of alcohol-related violence, alcohol is linked to domestic violence, accidents, and criminal activities, primarily due to impaired judgment and diminished coordination. Supporting this position, Chikritzhs & Livingston (2021) hold the view that alcohol-related accidents, including car crashes, are a leading cause of injury and death in many countries and a major contributor to healthcare expenses, lost productivity, and legal quandaries (Rehm et al., 2009).

First, the role of alcohol in human society is multifaceted, deeply embedded in cultural practices, and marked by a complex interplay of benefits and risks (Gorman et al., 2001). Precisely, alcohol plays a significant role in shaping community cohesion and crime rates, leading Bryden et al. (2013) to consider it a catalyst for social disruption. High levels of alcohol consumption are frequently linked to increased incidents of violence, public disorder, and other forms of crime, which can weaken the fabric of communities. For instance, studies have shown that alcohol is involved in violent crimes globally, with victims perceiving offenders to be under its influence in a substantial number of cases (World Health Organization 2009).

The impact of alcohol on crime extends beyond individual incidents, contributing to a broader sense of insecurity and reducing trust among community members, which can erode social cohesion (Cabras & Mount 2017; Pabayo et al,, 2020). The effects of alcohol-related crime are often most pronounced in marginalised and lower-income communities, where access to resources for prevention and recovery is limited (Schmidt et al., 2010). These communities, as observed by Breen (2011), frequently experience higher rates of alcohol-related violence, domestic abuse, and property crime, which can perpetuate cycles of poverty and social instability. For example, Fone et al. (2012) reveal in their study on the "Change in alcohol outlet density and alcohol-related harm to population health (CHALICE)" that areas with higher alcohol outlet density are associated with increased rates of violence and anti-social behaviour (Measham, 2006; Gutjahr & Gmel, 2001). This correlation highlights the importance of regulatory measures, such as limiting alcohol availability and implementing community-based interventions, to mitigate the negative impacts of alcohol on community cohesion and safety (Holmila & Warpenius, 2012; Porthé et al., 2021).

Addressing the role of alcohol in crime requires a multifaceted approach that includes both law enforcement and public health strategies, aiming to reduce alcohol-related harm while supporting community resilience. By understanding its functions as food, drug, and poison, we can make informed decisions about consumption and address the broader societal and health challenges it presents. The goal is to balance the

cultural and social benefits of alcohol to minimise its potential harms (Prichard & Shipman Jr, 1990; Wilcox et al., 2004).

2 Conclusion

From the foregoing, as a food, alcohol has historically provided nutritional value and energy, though its contributions are limited and can displace more nutrient-rich foods. As a drug, it exerts powerful effects on the brain and behaviour, offering both medicinal uses and risks of addiction. As a poison, it poses serious health risks capable of causing acute and chronic harm. Recognising these dimensions is crucial for proper and responsible alcohol consumption. Public health strategies must therefore address these diverse impacts to mitigate the detrimental effects of alcohol on individuals and communities.

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