

Research Paper

## A Study on Influence of Impulsivity and Suggestibility on Alcohol Dependence

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### ABSTRACT

Worldwide, alcohol consumption is on the rise. Trait impulsivity, characterized by risky and unplanned behavior, has been studied in association with alcohol use. Social influence is another factor linked to alcohol consumption, and trait suggestibility, which relates to susceptibility towards suggestions, has been identified as a predictive factor for social influence. While previous studies have individually explored the impact of trait impulsivity and trait suggestibility on alcohol use, their combined effect has not been measured. To address this gap, the present study focused on individuals with alcohol dependence and measured their levels of impulsivity and suggestibility. The results indicated no significant relationship between impulsivity and alcohol dependence, but a significant association was found between alcohol dependence and suggestibility. Moreover, impulsivity and suggestibility were found to be related, along with some of their subdomains. Further research is recommended to gain deeper insights into these two traits and their influence on alcohol use and dependence.

**Keywords:** *Trait Impulsivity, Trait Suggestibility, Alcohol Dependence*

**A**lcohol dependence is a pressing concern worldwide, with significant implications for individuals and societies alike. While previous research has explored various factors contributing to alcohol dependence, there remains a gap in understanding the relationship between impulsivity and suggestibility in this context. Impulsivity and social influence have been separately linked to alcohol dependence, but their combined impact has not been thoroughly studied. This present research aims to address this gap and shed light on the underlying traits that may contribute to alcohol dependence.

In India, where the general youth population is often introduced to alcohol and other substances through peers, it becomes essential to examine the underlying traits that might predispose individuals to substance-related dependence. Understanding these traits can aid in identifying individuals at high risk of developing alcohol dependence (Times of India news, 2010).

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Alcohol use disorder or alcohol dependence is a significant concern globally, with the World Health Organisation (WHO) reporting a substantial increase in alcohol consumption (WHO, 2018). This rise in alcohol consumption has led to various problems, especially among adolescents, affecting verbal learning, visual-spatial processing, memory, attention, and central nervous system development, impacting behavioral, emotional, social, and academic aspects in later life (Brown et al., 2008; Windle et al., 2008).

Alcohol, a psychoactive substance, can act as both a stimulant and a depressant, affecting moods, thinking, and behavior (Maisto, Galizio & Connors, 2011). Its consumption in small doses may initially energize individuals, leading to increased talkativeness, self-confidence, and reduced inhibitions due to its impact on the brain's control of inhibitions (Global status report WHO, 2014). Alcoholic beverages like Beer, Wine, and Vodka, containing alcohol, are commonly used in recreational settings and are legally regulated for adult consumption (Maisto, Galizio & Connors, 2011).

However, the harmful use of alcohol poses significant health and socio-economic burdens in societies, causing more than 200 diseases and injuries, including a causal relationship with infectious diseases like HIV/AIDS and tuberculosis (World Health Organisation, 2014). Worldwide in 2016, alcohol resulted in 3 million deaths (5.3% of all deaths) and 132.6 million disability-adjusted life years (DALYs), representing 5.1% of all DALYs in that year (World Health Organization, 2018). Mortality resulting from alcohol consumption was higher than that caused by diseases such as tuberculosis, HIV/AIDS, and diabetes, with an estimated 2.3 million deaths and 106.5 million DALYs attributable to alcohol among men, and 0.7 million deaths and 26.1 million DALYs among women (World Health Organization, 2018).

Globally, alcohol consumption varies, with 57% of the population aged 15 years and over abstaining from alcohol, while 2.3 billion people are current drinkers. Total per capita alcohol consumption increased from 5.5 to 6.4 liters of pure alcohol between 2005 and 2010 (World Health Organization, 2018).

The DSM 5 (2013) defines Alcohol Dependence as a problematic pattern of alcohol use leading to impairment or distress, with specific criteria such as unsuccessful efforts to cut down or control alcohol use, withdrawal symptoms, and tolerance (APA, 2013).

A review article on alcohol consumption in India reveals varying rates across states, with a rise in both male and female alcohol consumption in rural and urbanizing areas. This has resulted in a substantial increase in disability and death rates, strongly associated with alcohol consumption (Gururaj et al., 2020).

Moreover, alcohol use has been linked to risky sexual behavior, increasing the likelihood of engaging in unprotected sex or selecting risky partners (Rehm et al., 2012; Williams et al., 2016). Such practices elevate the risk of sexually transmitted diseases, including HIV/AIDS (Rehm et al., 2017).

The relationship between impulsivity and alcohol dependence has been extensively studied, with numerous research studies suggesting that impulsivity is a significant predictor for alcohol dependence (Vitaro et al., 2001; Courtney et al., 2012; Dawe and Loxton, 2004). Impulsivity is not a unitary construct but comprises various facets, including poor planning, reduced response inhibition, and a preference for immediate rewards despite negative

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consequences (Courtney et al., 2012; Dawe and Loxton, 2004). Genetic factors also play a role in impulsivity, with offspring of individuals with a history of substance use disorders displaying elevated levels of impulsivity (Tarter et al., 2004).

Recent research suggests that impulsivity, particularly urgency and sensation seeking, has a predictive value for alcohol consumption and drinking problems (Smith et al., 2007; Fischer and Smith 2008; Cyders et al., 2009). The neural systems associated with executive functioning and impulsive decision-making are related to alcohol dependence (Bickel et al., 2007). Impulsivity also influences mind-wandering and lack of perseverance, contributing to difficulties in inhibitory control (Gay et al., 2008; Bechara and Van der Linden, 2005).

On the other hand, research on suggestibility and its association with alcohol use is limited, but it has been linked to social influence, especially peer conformity (Teunissen et al., 2012). Studies show that high suggestibility predicts motivational dimensions of alcohol use, such as coping and enhancement (Stangl et al., 2019). Other research indicates that alcohol impairs frontal lobe function, heightening hypnotic suggestibility (Semmens-Wheeler et al., 2013; Carhart-Harris et al., 2014).

Overall, impulsivity and suggestibility appear to play significant roles in alcohol consumption and dependence, with various facets of impulsivity showing differential effects on drinking patterns and alcohol-related problems (Coskunpinar et al., 2013; Henges and Marczinski, 2013). The interplay between personality traits, genetic factors, and environmental influences in alcohol use requires further exploration to better understand alcohol dependence and develop effective prevention and intervention strategies (Whiteside and Lynam, 2009; Whiteside et al., 2009). The relationship between suggestibility and alcohol use also warrants more investigation to explore its potential influence on alcohol-related behaviors (Kalsoom and Malik, 2019). Studies on social influence and peer conformity further highlight the importance of understanding how external factors can influence alcohol consumption (Hawkins et al., 1992; Osgood et al., 2013).

By considering both impulsivity and suggestibility as multifaceted constructs and examining their relationships with alcohol use, researchers can gain a more comprehensive understanding of the complex factors underlying alcohol dependence, contributing to the development of targeted interventions and prevention strategies.

## METHODOLOGY

### *Sample*

For the current study, purposive sampling technique is adopted. In which patients who are admitted in rehabilitation centers in Pune were approached. Sample size of 30 participants was taken. All participants were adult males between the age range of 20 to 55 and was admitted in rehabilitation center for the alcohol dependence problem. And of Indian nationality.

### *Instruments*

Six measures were used in this study,

- 1. Consent form-** The consent form was prepared to give the participant information about the research. To inform about the confidentiality of the data and with this obtaining the informed consent from the participant.

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- 2. Socio-demographic form-** The socio-demographic form was prepared to obtain information about educational qualification, age and gender. To check if the participant is suited for the study.
- 3. Mini-mental Status Examination Scale (MMSE)-** This scale is used to measure the cognitive functioning of the individual. It is widely used in clinical settings to check the conditions related with organic conditions.
- 4. Alcohol Use Disorders Identification Test (AUDIT)-** World Health Organization (WHO) has developed this tool. This screening tool is use to evaluate the alcohol consumption, alcohol related problems and drinking behaviors. The scale is valid across gender and different racial or ethnic groups. It is a 10-item scale and its clinician administered version is used.
- 5. Short version of Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behavior Scale. (UPPS-P)-** It is based on the UPPS-P model of impulsivity given by Whiteside et al., (2001). Whiteside and Lynam developed the scale in 2009. Cyders et al., (2014), developed the short version. It measures the different aspects of impulsivity as a trait.
- 6. Short version of Multidimensional Iowa Suggestibility Scale (MISS)-** This scale was developed by Kotov et al., (2004). It is a multidimensional measure of suggestibility with two additional companion constructs. The short version developed by considering the five primary subscales of suggestibility. The scale measures the trait suggestibility and it is one of the scale developed to measure self-reported suggestibility.

### *Procedure*

The study's inclusion criteria consisted of the following factors: Firstly, participants were required to meet the criteria for the diagnosis of alcohol dependence according to ICD-10. Secondly, their alcohol use disorder should have been present for at least one year leading up to the study. Thirdly, the age range of the participants was restricted to individuals between 20 to 55 years old. Lastly, participants were required to have completed education up to at least the 12th standard or higher.

Certain exclusion criteria were applied to the selection process. Participants with any history of organic conditions were not considered for the study. Additionally, individuals who exhibited comorbidity with other psychoactive substances were also excluded from participation. These criteria were set to ensure a homogeneous and relevant sample for the study. First, the rehabilitation centers were approached. Then the in-patients case file was studied and only those who are not presented with any organic disorder was selected for the study. Then these selected participants were approached and were informed about the study along with one of the counsellor from the rehabilitation center. After informing the participant informed consent form was taken from the participant. Then the participants was screened under MMSE to check if there is any cognitive impairment. If there is no sign for any cognitive impairment then the AUDIT was administered for the screening of dependence. After the administration of AUDIT scale, UPPS-P was administered to measure the impulsivity then lastly MISS was administered to measure the suggestibility. After receiving the response sheet the scoring was done. The scores of the participant was recorded and the total score of each participant was found.

**RESULTS**

*Table No. 1 Correlation between Alcohol use disorder scale (AUDIT) and Urgency, premeditation (lack of), perseverance (lack of), and sensation seeking, positive urgency impulsive behavioral scale (UPPS-P) and with Multidimensional Iowa suggestibility Scale (MISS).*

Variables	Pearson Correlation	p- value
AUDIT and MISS	0.402	0.028*
AUDIT and UPPSP	0.222	0.237
MISS and UPPSP	0.524	0.003**
*. Correlation is significant at the 0.05 level (2-tailed).		
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 1 indicates significant relationship between Alcohol use disorder scale (AUDIT) and Multidimensional Iowa suggestibility scale (MISS). The value of Pearson correlation between the two scales is 0.402 (p- 0.028). It states that the increase in alcohol leads to increase in suggestibility. There was no significant relationship found between alcohol use disorder scale (AUDIT) and Negative urgency, Premeditation (lack of), perseverance (lack of), sensation seeking, positive urgency impulsive behavioral scale (UPPS-P). The table indicates significant relationship between Multidimensional Iowa suggestibility scale (MISS) and Urgency, premeditation (lack of), perseverance (lack of), sensation seeking, positive urgency impulsive behavior scale (UPPS-P). The Pearson correlation value is 0.524 (p- 0.003). It states that the increase in scores of Multidimensional Iowa suggestibility scale (MISS) leads to increase in impulsivity.

*Table No. 2: correlation between Alcohol use disorder scale (AUDIT) and multidimensional Iowa suggestibility Scale (MISS)*

	MISS				
	Consumer suggestibility	Persuadability	Sensation contagion	Physiological reactivity	Peer conformity
<b>AUDIT</b>	0.273	0.194	0.342	0.356	0.273

The table 2 indicates that there is no significant relationship between different domains of Multidimensional Iowa suggestibility scale (MISS) and Alcohol use disorder scale.

*Table No. 3: correlation between Alcohol use disorder scale (AUDIT) and Negative urgency, premeditation (lack of), perseverance (lack of), sensation seeking, positive urgency impulsive behavior scale (UPPS-P).*

	UPPS-P				
	Negative urgency	Premeditation (lack of)	Perseverance (lack of)	Sensation seeking	Positive urgency
<b>AUDIT</b>	0.125	0.258	-0.019	0.180	0.130

Table 3 indicates no significant correlation between domains of Negative urgency, premeditation (lack of), perseverance (lack of), sensation seeking, positive urgency impulsive behavior scale (UPPS-P) and alcohol use disorder scale (AUDIT).

## DISCUSSION

The present study aimed to explore the relationship between impulsivity and suggestibility in the context of alcohol dependence. No significant relationship was found between alcohol dependence and impulsivity, contrary to previous research which established impulsivity as a significant factor in alcohol dependence. Previous studies have linked various facets of impulsivity, such as sensation seeking, negative and positive urgency, and engaging in risky behavior, with alcohol dependence (Smith & Cyders, 2015; Whiteside & Lynam, 2005; Bates & Labouvie, 1995; Camatta & Nagoshi, 1995; Wood et al., 1995; Sher & Trull, 1994). However, in the current study, no such relationship was observed. One potential reason for this discrepancy could be response bias. Response bias, where participants tend to provide responses that they believe are socially desirable, can influence the results (Gove & Geerken, 1977). As the data was collected in a rehabilitation setting, participants might have been concerned about the impact of their answers on their discharge from the center. Consequently, they may have provided responses they believed would ensure their release, potentially affecting the results. Although it was clarified that the study was not related to their discharge, response bias could have influenced their answers.

Additionally, most previous studies explaining the relationship between impulsivity and alcohol primarily relied on self-report measures. Self-report measures have limitations, including potentially inaccurate insight, which could have contributed to the present study's results (Littlefield et al., 2014). Despite these unexpected findings, further research is needed to gain a deeper understanding of the complex interplay between alcohol dependence, impulsivity, and suggestibility. Addressing the limitations of self-report measures and exploring alternative methodologies may help shed more light on this subject.

The findings of the study reveal a significant positive relationship between alcohol and suggestibility. This indicates that as the score on suggestibility increases, the score on alcohol consumption also increases. It is important to note that there are limited studies exploring the link between alcohol and suggestibility. However, a study conducted by Stangl et al. in 2019 also suggested a relationship between suggestibility and alcohol use disorders.

Suggestibility, which is considered a trait, refers to an individual's susceptibility to the influence of others' suggestions. Unlike peer conformity, suggestibility is a unique tendency exhibited by individuals (Polczyk, 2016). A separate study investigating treatment conformity with antidepressants and suggestibility found that high suggestibility was associated with the placebo effect. Participants with high suggestibility reported experiencing the alleviation of depressive symptoms within one month, even though the standard treatment duration typically takes four weeks for the effects to be felt (Nitzan et al., 2015).

Given these insights, it is plausible that suggestibility could play a role in shaping an individual's subjective experience of alcohol. This research establishes a preliminary understanding of the relationship between suggestibility and alcohol, paving the way for further exploration into the potential role of suggestibility in alcohol-related behaviors and experiences. However, it is worth noting that more research in this area is needed to gain a comprehensive understanding of the interplay between suggestibility and alcohol consumption.

In the present study, significant relationships were observed between certain domains of impulsivity and suggestibility. Notably, a positive relationship was found between

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persuadability and sensation seeking. Persuadability refers to the acceptance of others' viewpoints through argument, reasoning, or entreaty, while sensation seeking reflects the tendency to seek novel and thrilling experiences. The data suggested that an increase in persuadability could lead to a rise in sensation-seeking behavior.

Additionally, a relationship was identified between sensation contagion and sensation seeking. Sensation contagion refers to one person's emotions or behaviors directly triggering similar responses in others. Moreover, physiological reactivity showed significant connections with both positive urgency (the tendency to engage in risky behaviors when exposed to extremely positive affect) and negative urgency (risky behaviors when experiencing negative affect).

Furthermore, peer conformity exhibited a significant positive relationship with positive urgency, indicating that an increase in peer conformity could lead to an increase in positive urgency behaviors.

Overall, the study explored the relationships between different facets of impulsivity and suggestibility within a sample of individuals with alcohol dependence. These findings may suggest that impulsivity and suggestibility together may have an impact on alcohol dependence. Further investigation into these variables and their association with alcohol could prove valuable for the prevention and treatment of alcohol-related disorders.

### **CONCLUSION**

The current study delved into the relationships between impulsivity, suggestibility, and alcohol dependence. While trait impulsivity did not exhibit a significant relationship with alcohol dependence, the findings unveiled a notable link between suggestibility and alcohol dependence. Additionally, the study revealed a significant association between trait impulsivity and trait suggestibility, making it the first of its kind to establish such a connection in the context of alcohol dependence. Various domains of impulsivity and suggestibility, including Urgency, premeditation, perseverance, sensation seeking, positive urgency impulsive behavior scale (UPPS-P), and Multidimensional Iowa Suggestibility Scale (MISS), were also found to be related, offering valuable insights into their interplay.

The research assumes greater significance in light of several studies highlighting the glorification of alcohol use on social media and its potential link to addiction and increased alcohol consumption, particularly among adolescents. The influence of such glorification can be particularly pronounced in individuals with higher trait suggestibility, as they are more susceptible to getting carried away by these portrayals. Exploring the relationship between suggestibility and alcohol use, therefore, holds implications for understanding alcohol use behaviors among adolescents and addressing potential issues related to alcohol glorification in social media. (Moreno & Whitehill, 2014; Döring & Walter, 2022.)

Despite its strengths, the study had certain limitations, including a smaller sample size due to time constraints and the pandemic situation, which may have affected the test's statistical power and the accuracy of population representation. Additionally, the sample consisting solely of males limits the generalizability of the findings. Moreover, the study did not control for the medical treatment the participants were undergoing.

In light of the above findings, this research underscores the significance of examining the relationships between impulsivity, suggestibility, and alcohol dependence. The study offers

potential avenues for future investigations, contributing to advancing knowledge in this area and informing strategies to address alcohol-related issues among vulnerable populations.

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### **Conflict of Interest**

The author declared no conflict of interests.

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