**Precipitating Factors Behind Substance Abuse: A Case Study of Rural Punjab, India**

**ABSTRACT**

***Background:*** *Substance abuse is influenced by a range of individual, social, and environmental factors. Identifying the key predictors of its intensity is essential for developing targeted interventions.*

***Aim:*** *This study aims to explore the key factors influencing substance abuse intensity among respondents in Punjab, focusing on individual, familial, societal and socio-economic contributors.*

***Methods:*** *This quantitative study was conducted in three cultural regions of Punjab, selecting 240 respondents from eight government de-addiction centres across four districts (Tarn Taran, Patiala, Moga, and Shaheed Bhagat Singh Nagar) using purposive sampling. Data was collected via a structural interview schedule. Exploratory Factor Analysis and Principal Component Analysis (EFA and PCA) identified predictors, while ordinal logistic regression quantified their impact. Statistical significance was set at p<0.05, and all analyses were performed using SPSS.*

***Results:*** *The study highlights the need for Younger respondents, those with high impulsivity, a family history of substance abuse, neglectful parenting, peer pressure, easy access to substances, unemployment, and lower socio-economic status are at higher risk for substance abuse. Peer influence and parenting style emerged as the strongest predictors, while socio-economic status had a lower but notable impact.*

***Conclusions:*** *Hence, findings underscore the need for targeted interventions that address these critical factors, particularly focusing on peer influence and parenting styles to reduce substance abuse. The findings underscore the importance of comprehensive strategies focusing on high-risk individuals and socio-environmental factors to curb substance abuse.*

Keywords: Substance abuse, De-addiction centres, socio-economic status, Interventions

1**. INTRODUCTION**

Substance abuse remains a pressing public health challenge, significantly impacting individuals, families, and communities worldwide. In recent years, the issue has gained particular attention in various regions, including Punjab, where alarming rates of substance abuse have emerged. Understanding the precipitating factors behind substance abuse is crucial for developing effective prevention and intervention strategies (Jain, 2023; Dua, 2022). Adolescent age is an important transitional period and comes with a high level of vulnerability, curiosity, experimentation, and making choices that may be detrimental to them in the long run (Kantor & Straus, 1989). The problem of substance abuse has become very popular among adolescents, several researchers from different parts of the world have reported a high prevalence rate of substance abuse among teenagers and its resultant health and social problems (Chisom et al., 2022; Malik et al., 2024).

Substance abuse is a serious problem faced by diverse societies worldwide; this problem does not discriminate in terms of gender, age, race, or religious affiliation, which indicates that substance abuse is somehow associated with human nature in general (Alhammad et al., 2022; Expósito-Álvarez et al., 2021).

Substance abuse can occur for multiple reasons. For example, prescribed drugs for the treatment of depression or pain may develop into an addiction to that particular drug. Addiction can also begin with a person's first experience in a social gathering (Conner & Duberstein, 2004). When an individual decides to smoke cannabis for the first time, he/she will likely experience a soothing and comfortable feeling which leads them to repeat the same process (Hawkins et al., 1992). Drug availability, peer pressure, difficult family situations, high aspirations among the general public, unemployment and societal change increase the risk of substance abuse (Dua 2022, Motyka and Al-Imam 2022 and Randhawa, Brar, Kumari and Chaudhary 2020). Humans often experience alienation, which has philosophical, sociological, psychological, and literary components. It may result in detrimental mental health problems like stress, loneliness, and anxiety (Kilpatrick et al., 2000). A person's personality and lack of flexibility are examples of factors that can lead to conflict and alienation, which can result in bad behaviours (Smith and Miller, 2021, Felman 2018, Wright *et al* 2017, Saidi 2016; Salam 2009).

Numerous studies have identified a range of factors influencing substance abuse. For instance, a study by Kumar *et al* (2020) highlighted how high unemployment rates correlate with increased substance abuse among youth in Punjab, indicating that economic distress often leads individuals to seek escape through substances. Similarly, Romer & Hennessy (2007) found that peer pressure significantly heightens the likelihood of substance experimentation, particularly among adolescents seeking acceptance and validation from their social circles.

Family dynamics also play a critical role. Research by Singh *et al* (2021) indicated that unstable family environments, characterized by neglect or conflict, often lead to increased vulnerability to substance abuse. Patel and Sharma (2018) noted that supportive family structures can act as protective factors, reducing the likelihood of substance abuse among young individuals. The significance of parental involvement and positive role models is further emphasized by Chopra and Mehta (2020), who assert that strong parental guidance can deter substance abuse among adolescents.

Cultural attitudes toward substance abuse can shape behaviors and perceptions. According to Grewal (2018) study examined how cultural normalization of substance abuse can contribute to its prevalence in communities, particularly when substances are perceived as a means of social bonding or coping. This cultural context is compounded by economic pressures, as noted by Kaur *et al* (2022), who argue that socioeconomic factors often dictate access to substances and the social acceptance of their use.

Furthermore, the role of mental health cannot be overlooked as indicated by Verma *et al* (2022) indicate that untreated mental health issues, such as depression and anxiety, significantly increase the risk of substance abuse, creating a vicious cycle of dependency. A comprehensive analysis by Sethi *et al* (2021) highlights the need for integrated mental health services in addiction treatment, highlighting the importance of addressing both mental health and substance use disorders concurrently.

In a society grappling with economic hardships and social change, young people are often vulnerable to these pressures, leading them to seek solace in substances as a coping mechanism. The stigma surrounding addiction can exacerbate the problem, preventing individuals from seeking help and support (Tedeschi et al., 1998). Joshi *et al* (2022) emphasize that societal stigma not only discourages treatment-seeking behaviour but also perpetuates cycles of abuse. Their research points to the importance of community education and awareness campaigns in mitigating stigma and promoting understanding of addiction as a health issue.

Additionally, the role of social media and technology has emerged as a significant factor in substance use trends. A study by Singh and Kapoor (2023) found that exposure to substance-related content online can normalize substance abuse among adolescents, influencing their attitudes and behaviours toward substances. The increasing prevalence of online communities that promote substance abuse poses a challenge to traditional prevention strategies, necessitating innovative approaches that engage youth through digital platforms.

The complex interactions between these variables are examined in this research paper, along with how they all work together to contribute to the growing prevalence of substance abuse. This study looks at the socioeconomic effects, family dynamics, and cultural perspectives on drug use to offer a thorough grasp of the problem. The findings' implications for community initiatives and public policy will also be examined, with a focus on the necessity of comprehensive strategies that take into account the complex character of substance abuse. This research paper aims to explore the underlying causes of substance abuse, focusing on socio-economic, psychological, and cultural dimensions that contribute to this complex phenomenon.

**2. MATERIALS and METHODS**

A sample of 240 respondents was drawn from three cultural regions of Punjab, and then four districts Tarn Taran, Patiala, Moga, and Shaheed Bhagat Singh Nagar were selected. From each district, two government de-addiction centres with the most registered substance abusers were selected, and 30 substance abusers were chosen from each centre to ensure a varied representation of the affected population. Data collection involved structured interviews, which provided a solid dataset for the study’s analysis.

**Exploratory Factor Analysis (EFA)**

To identify underlying factors contributing to substance abuse:

**Procedure:** EFA was conducted using principal axis factoring. The adequacy of the sample was assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity.

**Extraction Method**: Factors were extracted based on eigenvalues greater than 1, and the Varimax rotation method was employed to enhance interpretability.

**Outcome:** This process revealed distinct factors related to substance abuse, which were subsequently categorized into individual, familial, societal, and socio-economic factors.

**Principal Component Analysis (PCA)**

To further validate the structure identified through EFA:

Procedure: PCA was performed on the factor scores obtained from EFA. This method helped in confirming the dimensionality of the data and in reducing data complexity.

Analysis: The component loadings were analyzed, and factors explaining the most variance in the data were identified.

**Ordinal Logistic Regression (OLR)**

To assess the influence of identified factors on substance abuse intensity:

Dependent Variable: Substance abuse intensity was categorized into three levels: Mild, Moderate, and Severe.

Predictor Variables: The factors identified through EFA and PCA served as independent variables in the OLR model.

Model Fitting: The model was assessed for goodness-of-fit, and significance levels were determined for each predictor variable. Odds ratios (OR) were calculated to quantify the strength and direction of associations.

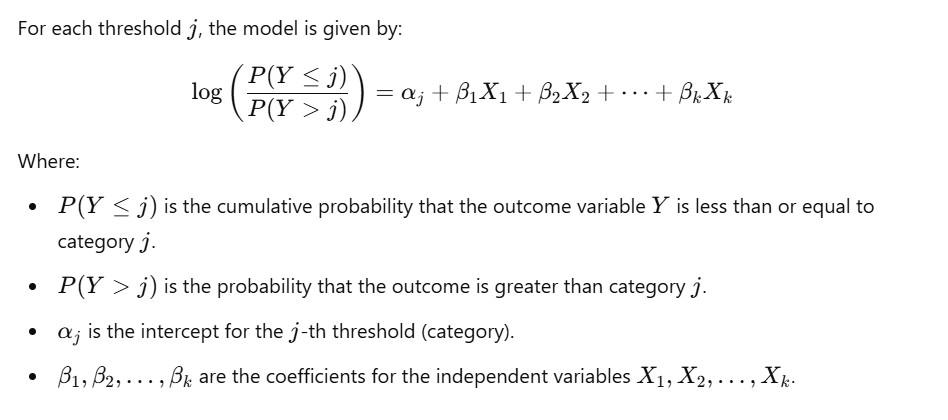
Scale for measuring impulsive behaviour

**Ordinal Logistic Regression**

‘Ordinal Logistic Regression (OLR) is used when the dependent variable is ordinal, it has multiple ordered categories, but the distances between categories are not known or assumed to be unequal. The goal of ordinal logistic regression is to predict the probability of the dependent variable falling into one of the ordered categories based on the independent variables.’

The **Ordinal Logistic Regression** model uses the **cumulative log odds** for each threshold jjj of the ordinal outcome variable.

For an outcome *YYY* with *JJJ* ordered categories, the ordinal logistic regression model estimates the probability that *YYY* falls in a category *jjj* or lower. The log odds of this event are modelled as a linear function of the independent variables.



The model estimates the probability of each category by applying the inverse of the logit transformation (i.e., the logistic function) to the cumulative log odds.

**Impulsive Behaviour Scale**

**Instructions:** For each statement below, please indicate how often you feel it applies to you using the following scale:

* **0 = Never**
* **1 = Rarely**
* **2 = Sometimes**
* **3 = Often**

List 1 : List of statements used for the study

|  |  |
| --- | --- |
| **Statement** | **Score** |
| 1. I often act on impulse without thinking about the consequences. |  |
| 2. I find it hard to wait my turn in conversations or activities. |  |
| 3. I make decisions quickly without considering all the information. |  |
| 4. I have difficulty controlling my urges to engage in risky behaviours. |  |
| 5. I tend to interrupt others when they are speaking. |  |
| 6. I often feel the need for immediate gratification. |  |
| 7. I frequently engage in activities that are potentially harmful to me. |  |
| 8. I have trouble sticking to plans or commitments once I start something new. |  |
| 9. I often lose my temper and act on it without thinking. |  |
| 10. I find it hard to resist temptations, even if I know I shouldn’t. |  |

**Scoring:**

* **Total Score:** Add up the scores for all items.
* **Interpretation:**
  + **0-10:** Low Impulsivity
  + **11-20:** Moderate Impulsivity
  + **21-30:** High Impulsivity

**Statistical Analysis**

All statistical analyses were performed using SPSS (version 16). Significance was set at p < 0.01, p < 0.05. The OLR provided insight into how the predictor variables contributed to the likelihood of varying levels of substance abuse, while the EFA and PCA offered a robust framework for understanding the underlying constructs.

**Ethical Considerations**

The study was approved by the Institutional Review Board. Informed consent was obtained from all respondents, and confidentiality was maintained throughout the study. Respondents were informed of their right to withdraw at any time without any repercussions.

**3. RESULTS**

The analysis illustrated the complex interplay of sociological and psychological factors influencing substance initiation and abuse among respondents. It highlighted that most respondents began abusing substances between ages 16 and 25, a period marked by heightened risk-taking and peer influence. Personality traits, particularly impulsivity, significantly correlate with susceptibility to substance abuse, while a family history of substance abuse highlighted the impact of socialization. Parenting styles, especially permissive approaches create environments lacking necessary boundaries, contributing to increased substance abuse. Peer pressure emerges as a dominant factor, reflecting social learning dynamics, while socioeconomic status and unemployment further complicate the situation by increasing stress and the likelihood of substance reliance. This multifaceted perspective needs comprehensive prevention and intervention strategies that address these interconnected influences.

The data presented in Table 1 offered insights from a study examining the factors influencing substance initiation and abuse among respondents and highlighted a significant trend grounded in sociological theories.

Age of Initiation- The majority of respondents (65.84 %) began abusing substances between the ages of 16 to 25. This trend corresponds with sociological theories that emphasize adolescence and young adulthood as pivotal stages for engaging in risk-taking behaviours, often driven by peer pressure and the surrounding social context.

Personality Traits- When it comes to personality traits, impulsive behaviour was notably prevalent among respondents, with 45.83 per cent showing moderate impulsivity and 37.50 per cent classified as highly impulsive. This finding suggested the idea that personal characteristics significantly affect an individual’s vulnerability to substance abuse, as supported by both psychological and sociological perspectives.

Family History of Substance Abuse- A significant 37.91 per cent of respondents had a family history of substance abuse. This figure highlighted the sociological perspective on socialization and its role in shaping behaviour, suggesting that family environments influence attitudes toward substance abuse and potentially contribute to ongoing cycles of substance abuse.

Parenting Style- In examining parenting styles, the permissive approach was the most frequently found among 37.91 per cent of respondents, followed by authoritative parenting styles (35.00%) and balanced type of parenting (27.08%). Sociological theories suggest that parenting practices play a crucial role in influencing children's behaviour and decision-making, indicating that permissive parenting lacks the necessary structure to prevent substance abuse.

Peer Influence- Third forth of respondents initiated the abuse of substances due to peer influence. This finding supports social learning theory, which speculates that individuals are likely to imitate behaviours observed in their peers, particularly during their formative years.

Unemployment Status- It was seen that 42.91 per cent of respondents were unemployed. This highlighted sociological insights regarding how socioeconomic factors, including unemployment, can lead to increased stress and a greater likelihood of substance abuse as a coping mechanism.

Socio-economic Status- Although specific data on socio-economic status was not provided, it remains a critical factor in understanding substance abuse patterns. Previous sociological research has shown that lower socioeconomic status often correlates with higher rates of substance abuse, largely due to restricted access to education, job opportunities, and healthcare resources.

In conclusion, the study demonstrated how a variety of sociological factors such as age, personality traits, family dynamics, parenting styles, peer influence, and economic conditions interacted to shape individual experiences with substance initiation and usage. Understanding these complex relationships is essential for developing effective interventions and support systems.

**Table 1: Frequency and percentage of influencing factors in drug initiation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Category** | **Frequency** | **Percentage (%)** |
| Age of initiation (Years) | 10-15 | 41 | 17.08 |
| 16-25 | 158 | 65.84 |
| 26 and more | 41 | 17.08 |
| Personality Trait  (Impulsive Behaviour) | Low | 40 | 16.66 |
| Moderate | 110 | 45.83 |
| High | 90 | 37.50 |
| Family History of Drug Abuse | Yes | 91 | 37.91 |
| No | 149 | 62.08 |
| Parenting Style | Authoritative | 84 | 35.00 |
| Permissive | 91 | 37.91 |
| Balanced | 65 | 27.08 |
| Peer Influence | Yes | 180 | 75.00 |
| No | 60 | 25.00 |
| Unemployment Status | Employed | 137 | 57.08 |
| Unemployed | 103 | 42.91 |
| Socio-economic Status | Low | 110 | 45.83 |
| Medium | 90 | 37.50 |
| High | 40 | 16.67 |

**Substance Abuse Intensity Among Respondents**

The substance abuse intensity of 240 respondents in the sample is analyzed in Table 2, which groups respondents according to their intensity ratings. The population's prevalence of mild, moderate, and severe substance abuse is shown in this breakdown. It is crucial to comprehend these levels to identify respondents who need specialized treatments and assistance to properly address their substance abuse.

The data revealed that a majority of respondents (72.00%) were classified in the moderate intensity category, indicating that many respondents were engaged in substance abuse at levels that result in negative health consequences and social issues. This high prevalence of moderate abuse revealed that there is a need to consider the social environments influencing these behaviours, including peer pressure, community standards, and socioeconomic factors that heighten the risk of substance abuse. Additionally, 19.00 per cent of respondents were identified as experiencing severe substance abuse, highlighting an urgent need for targeted intervention programs for those at greatest risk. On the other hand, only 9.00 per cent fell into the mild category, suggesting that minimal substance-related problems were uncommon in these respondents. Overall, the findings pointed to the importance of implementing community-based strategies to tackle the social factors contributing to substance abuse, creating supportive environments that encourage healthier choices and provide necessary resources for individuals facing more significant substance-related challenges.

**Table 2: Distribution of Substance Abuse Intensity**

**(n=240)**

|  |  |  |
| --- | --- | --- |
| **Substance Abuse Intensity**  **(Intensity score)** | **Frequency** | **Percentage (%)** |
| Mild (0-16) | 22 | 9.00 |
| Moderate (17-32) | 173 | 72.00 |
| Severe (33-56) | 45 | 19.00 |

**Ordinal Logistic Regression Results for Predictors of Substance Abuse Intensity**

This analysis aims to identify key predictors of substance abuse intensity, examining factors such as demographic characteristics, psychological traits, social influences, and behavioural patterns. By modelling the relationship between these predictors and the ordinal outcome variable, the goal is to identify significant factors that contribute to the progression or severity of substance abuse, which can ultimately inform prevention and intervention strategies. Some of the key predictors are given in Table 3-

**Age**

For respondents aged 16-25, the odds of engaging in substance abuse were 1.42 times higher than in older age groups. Since the p-value is significant (p < 0.05), this suggests that being younger significantly increases the likelihood of substance abuse.

**Impulsive Behaviour (High vs. Low)**

Respondents with high impulsive behaviour were 1.39 times more likely to engage in substance abuse compared to those with low impulsive behaviour. The significance (p < 0.01) indicates a strong link between impulsivity and substance abuse.

**Family History of Drug Abuse**

Respondents with a family history of drug abuse were 1.30 times more likely to develop substance abuse problems themselves. The significant p-value (p < 0.01) shows that family history plays a significant role in the intensity of substance abuse.

**Parenting Style (Neglectful vs. Authoritative)**

Respondents who experienced neglectful parenting were 1.45 times more likely to engage in substance abuse compared to those who had authoritative (balanced) parenting. The highly significant p-value (p < 0.001) highlights the strong impact of parenting style on substance abuse.

**Peer Influence (High vs. Low)**

Respondents who experienced high peer influence were 1.73 times more likely to engage in substance abuse. This strong association (p < 0.01) suggests that peer pressure or influence is a critical factor in substance abuse behaviour.

**Unemployment**

Unemployment increases the likelihood of substance abuse by 1.46 times. The significant p-value (p < 0.01) reflects that unemployed respondents were at a higher risk of substance abuse.

**Low Socio-economic Status**

Respondents from lower socio-economic backgrounds were 1.27 times more likely to engage in substance abuse compared to those from higher socio-economic statuses. This factor is significant (p < 0.05), indicating that poverty and lack of resources contribute to substance abuse vulnerability.

The table shows that factors like peer influence, impulsive behaviour, parenting style, unemployment, and socio-economic status have a statistically significant impact on the intensity of substance abuse. Interventions targeting these risk factors could be effective in reducing substance abuse among vulnerable populations.

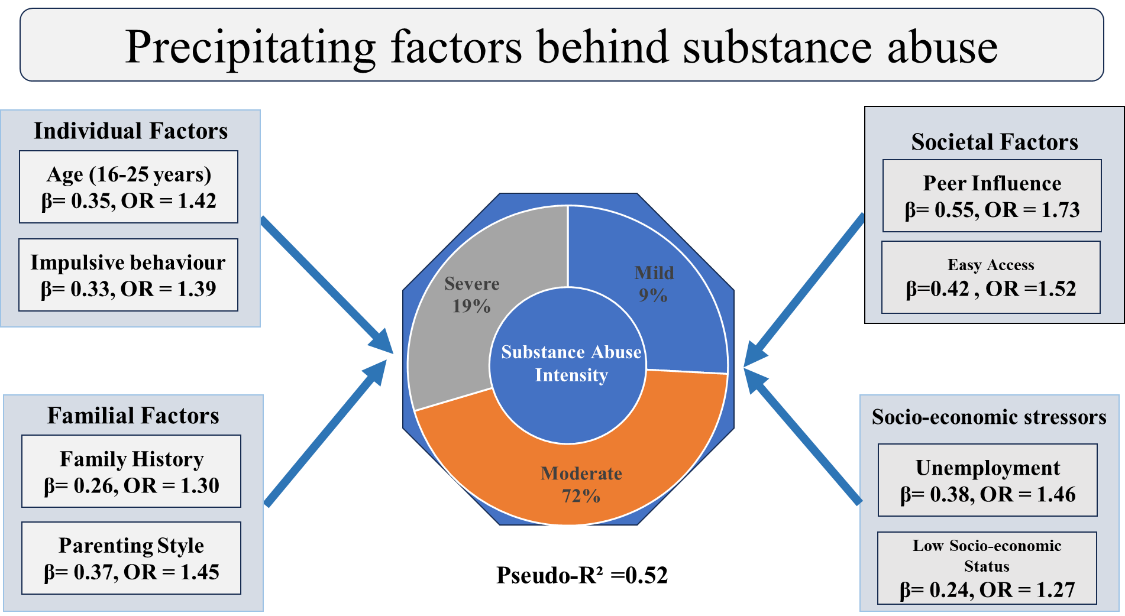
**Table 3: Ordinal Logistic Regression Results for Predictors of Substance Abuse Intensity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Predictor Variable** | **Coefficient (β)** | **Standard Error** | **Odds Ratio (OR)** | **p-value** |
| Age (16-25) | 0.35 | 0.10 | 1.42 | 0.015\* |
| Impulsive Behavior (High vs. Low) | 0.33 | 0.12 | 1.39 | 0.005\*\* |
| Family History of Drug Abuse | 0.26 | 0.11 | 1.30 | 0.008\*\* |
| Parenting Style (Neglectful vs. Authoritative) | 0.37 | 0.14 | 1.45 | 0.001\*\*\* |
| Peer Influence (High vs. Low) | 0.55 | 0.13 | 1.73 | 0.003\*\* |
| Unemployment | 0.38 | 0.10 | 1.46 | 0.002\*\* |
| Low Socio-economic Status | 0.24 | 0.09 | 1.27 | 0.022\* |
| Threshold (Mild to Moderate) | 1.20 | 0.08 | - | - |
| Threshold (Moderate to Severe) | 2.10 | 0.07 | - | - |

\*Note: Odds Ratio (OR) > 1 indicates a higher likelihood of severe substance abuse for the given predictor. Significance: (\*p < 0.05), \*\*p < 0.01), \*\**p < 0.001)*.

**Results:**

* **Mild Category (N=62):** The model correctly classified 80% (50 out of 62) of respondents as Mild. However, 16% of Mild cases were misclassified as Moderate, and 4% were misclassified as Severe.
* **Moderate Category (N=107):** The model correctly identified 72% (77 out of 107) of respondents as Moderate. However, 17% of respondents in this category were misclassified as Mild, and 11% were misclassified as Severe.
* **Severe Category (N=71):** The model correctly classified 75% (53 out of 71) of respondents as Severe. However, 8% of respondents were misclassified as Mild and 17% were predicted as Moderate.
* While the model demonstrates strong overall prediction accuracy, particularly in identifying individuals in the Severe substance abuse category, there is room for improvement in distinguishing between Mild and Moderate levels of substance use. Misclassifications in these categories arise due to the overlap of risk factors across these levels, suggesting that refining the predictor variables or adjusting the model structure can enhance its ability to accurately differentiate between these groups. Additionally, further investigation into the model's performance within specific demographic or behavioural subgroups provides valuable insights, enabling more precise predictions, particularly when distinguishing between cases of lower and moderate intensity. These refinements significantly improve the model's predictive power and its utility for targeted interventions.



**Fig 1 Factors influencing the intensity of substance abuse**

**Factors influencing the intensity of substance abuse**

The logistic regression analysis revealed key predictors influencing the intensity of substance abuse among the respondents. These predictors included age, impulsive behavior, family history of drug abuse, parenting style, peer influence, easy access, unemployment, and socio-economic stressors. Each factor demonstrated a varying degrees of significance and impact, as measured by their coefficients, odds ratios (OR), and p-values.

**Age**

The odds of engaging in substance abuse were 1.42 times higher for respondents aged 16-25 compared to older age groups, with a statistically significant p-value (p = 0.015).

**Impulsive Behavior**

The data reveal that the respondents with high levels of impulsive behaviour were 1.39 times more likely to engage in substance abuse than those with lower impulsivity. The statistical significance (p = 0.005) indicates a clear link between impulsivity and substance abuse, suggesting that managing impulsive tendencies could help in mitigating the risk of substance abuse.

**Family History of substance abuse**

The findings demonstrate that respondents with a family history of substance abuse are 1.30 times more likely to engage in substance abuse compared to those without such a history. This relationship is statistically significant, as indicated by a p-value of 0.008. These results underscore the substantial influence of familial factors on substance use behaviours.

A family history of substance abuse may contribute to substance abuse through both genetic predisposition and environmental influences. On one hand, genetic factors may increase susceptibility to addiction, making individuals with a family history more vulnerable.

**Parenting Style**

Individuals from neglectful parenting backgrounds are 1.45 times more likely to engage in substance abuse compared to those raised under authoritative parenting styles. The highly significant p-value (p = 0.001) underscores the critical role of parenting styles in shaping behaviour, suggesting that promoting balanced and supportive parenting could reduce substance abuse risks.

**Peer Influence**

Peer influence emerges as the most impactful predictor of substance abuse among the factors analysed, with individuals under high peer influence being 1.73 times more likely to engage in substance use compared to those with low peer influence. The statistical significance (p = 0.003) underscores the critical role that social interactions and peer dynamics play in shaping substance use behaviours.

**Easy Access to Substances**

The logistic regression analysis indicates that easy access to substances significantly increases the risk of substance abuse, with a coefficient (β) of 0.42 and an odds ratio (OR) of 1.52. This means that respondents who had easy access to substances were 1.52 times more likely to engage in substance abuse compared to those with limited or restricted access.

**Unemployment**

The Ordinal Logistic Regression Analysis of the data show that the respondents who were unemployed were 1.46 times more likely to engage in substance use compared to employed ones. The association between unemployment and substance abuse can be understood through multiple interconnected factors. Unemployment often leads to financial stress, reduced self-esteem, and feelings of hopelessness or purposelessness, all of which can contribute to an increased vulnerability to substance use. The lack of structure and routine that employment provides can also create opportunities for idle time, which, when coupled with emotional distress, may lead to substance use as a coping mechanism.

**Low Socio-economic Status**

The findings indicate that the respondents from lower socio-economic backgrounds were1.27 times more likely to engage in substance abuse compared to those from higher socio-economic statuses. This underscores the profound influence of economic disparities on the risk and intensity of substance use, pointing to the challenges faced by individuals in financially disadvantaged communities.

Low socioeconomic status is often associated with limited access to education, healthcare, and social services, which can contribute to a heightened vulnerability to substance abuse. Financial instability and poverty can create chronic stress, fostering feelings of frustration, hopelessness, and inadequacy. Such emotional distress can lead individuals to seek temporary relief through substance use, which often exacerbates the cycle of poverty and dependency. The findings highlight the critical need for targeted interventions and support systems aimed at breaking the cycle of poverty and substance abuse.

Policymakers and stakeholders must focus on addressing the root causes of economic disparity, promoting equity, and creating environments where individuals have the resources and opportunities to thrive. Building strong support networks within these communities can empower individuals to make healthier choices, reducing the prevalence and intensity of substance abuse and improving overall community well-being.

**Table 4: Pseudo-R² Values for Each Group:**

|  |  |
| --- | --- |
| **Factor Group** | **Pseudo-R² Value (Nagelkerke)** |
| Full Model R² | 0.52 |

**Overall Predictive Power model**

The overall predictive power of the model is reflected by a pseudo-R² value of 0.52, indicating that the model explains 52.00 per cent of the variance in substance abuse intensity. This demonstrates a moderate to strong ability to predict substance abuse based on the included factors. Among the predictors, peer influence and parenting style emerge as the most impactful, exerting significant influence on substance use behaviours. In contrast, factors like low socio-economic status show relatively lower predictive strength compared to the others, though they remain significant contributors. Collectively, the analysis underscores the diverse and multifaceted nature of influences on substance abuse, with certain social and behavioural factors playing a more dominant role in determining the intensity of substance use.

**4. DISCUSSION**

Numerous studies have explored the factors influencing substance abuse, highlighting a complex interplay of social, economic, psychological, and biological elements. Verma (2019) found that peer pressure plays a significant role in substance experimentation, especially among adolescents seeking acceptance in their social circles. This finding is supported by Ghosh (2017), who discovered that in Punjab, high unemployment rates are closely associated with increased substance abuse among youth. The research suggested that economic hardship often drives individuals to use substances as a means of coping with distress. Likewise, Singh and Sharma (2017) found that unstable family environments, including neglect or familial conflict, significantly increase the vulnerability of individuals to substance abuse. In contrast, supportive family structures, as highlighted by Patel and Sharma (2018), act as protective factors, reducing the likelihood of substance abuse among young people.

The importance of parental involvement in preventing substance abuse is further emphasized by Chopra and Mehta (2020), who argue that active, emotionally supportive parents are key to reducing the likelihood of their children engaging in substance use. Verma (2022) also identified mental health issues, such as depression and anxiety, as crucial factors that heighten the risk of substance abuse, creating a cyclical relationship where individuals use substances to manage their mental health problems. Charles et al. (2015) points to peer influence, family breakdowns, and stress as primary contributors to the high prevalence of substance abuse among youth.

Theoretical perspectives further help to explain the underlying causes of substance abuse. Biological theories suggest that addiction may stem from physiological, genetic, or neurochemical factors. These theories argue that a predisposition to addiction can be due to changes in brain chemistry, where substances provide a pleasurable release of dopamine, thereby reinforcing continued use.

Psychological theories, including the Cognitive-Behavioral Theory (Marlatt & Gordon, 1985), propose that substance abuse is learned behaviour, where individuals associate both positive and negative effects with the use of substances. The positive aspects include the euphoric feelings after consumption, while the negative aspects relate to using substances as a coping mechanism for stress, anxiety, or boredom. Furthermore, Reinforcement Theory, as suggested by Surk (1975), suggests that the pleasurable effects of substances encourage individuals to continue using them. Similarly, personality theory, which was explored by Chein (1969) and Bales (1962), suggests that people with specific personality traits—such as low self-esteem and difficulty managing frustration—are more susceptible to substance abuse.

McClelland's (1977) Power Theory provides another perspective, explaining substance use as a manifestation of the desire for power. According to this theory, heavy drinkers experience a boost in personal power, while lighter drinkers seek social power through their use. Additionally, the Weakened Self Theory (Peele & Brodsky, 1975) sees substance abuse as a response to the fear and uncertainty associated with modern life. According to Erickson’s (1964) Socio-Psychological Labelling Theory, individuals may begin to depend on substances after being labelled as addicts or alcoholics by society, though this theory does not address why people initially begin using substances.

Sociological theories offer another perspective, suggesting that substance abuse is a result of an individual's social environment. Sutherland’s Differential Association Theory (1939) highlights that substance use is learned through interactions with peers in close-knit social groups. Akers and Burgess (1966) expanded on this with the Social Learning Theory, which integrates social reinforcement into the learning process. This theory suggests that individuals continue using substances when they receive positive reinforcement from others who share similar behaviours. Merton’s Strain Theory (1938) asserts that individuals may turn to substance abuse when they face societal pressures and lack the means to achieve conventional success.

Hirschi’s Social Bond Theory (1969) explains that individuals with weaker ties to social institutions like family or community are more likely to engage in substance abuse. This theory emphasizes the importance of emotional connections, societal roles, and individual commitment to social norms as factors that deter substance use. The Psychodynamic Theory (Khantzian, 1985) posits that substance abuse can be a form of coping with unresolved emotional disturbances, trauma, and unmet needs from childhood. Becker’s Labeling Theory (1963) further suggests that when individuals are labelled as substance abusers, they internalize this identity and act in accordance with the expectations set by society, perpetuating the cycle of abuse. Together, these studies and theories provide a comprehensive understanding of the multifaceted nature of substance abuse, emphasizing the role of environmental, psychological, and biological factors in shaping individuals’ likelihood of engaging in harmful substance use.

**CONCLUSION**

This finding highlights the vulnerability of younger individuals to substance abuse, emphasizing the need for age-specific interventions targeting this group. On the other hand, growing up in an environment where substance abuse is normalized or frequently observed can shape attitudes and behaviours, reducing perceived risks associated with substance use. Peers can exert influence in various ways, including direct pressure to engage in substance use, modelling substance-using behaviours, or creating an environment where substance abuse is perceived as acceptable or even desirable. This influence is particularly potent during adolescence and early adulthood when the respondents were more susceptible to peer norms and sought social acceptance. The need to belong and gain approval leads individuals to conform to behaviours prevalent in their social circles, including substance abuse. Easy access to substances stems from several factors, including the proliferation of unregulated supply chains, weak enforcement of drug control policies, and the presence of environments where substances are readily available. For instance, communities with a high density of alcohol or drug outlets, lack of regulation, or insufficient monitoring may inadvertently foster conditions that facilitate substance abuse.

**POLICY IMPLICATION**

Based on these findings, the following policy interventions are recommended to effectively address substance abuse**:**

* Develop specialized prevention programs aimed at younger individuals, particularly those aged 16-25, focusing on building resilience against substance use. These programs should include education on the dangers of substance abuse and healthy coping strategies.
* Establish community-based initiatives that engage youth in positive activities (e.g., sports, arts, mentorship programs) to provide alternatives to substance abuse and reduce peer pressure.
* Offer accessible cognitive-behavioural therapy (CBT) and other evidence-based therapeutic programs to help individuals with high impulsivity manage their behaviours and decision-making processes.
* Integrate impulse control training into school curricula and workplace wellness programs to address impulsivity as a risk factor for substance abuse from an early age.
* Implement programs that educate and support families, particularly those with a history of substance abuse. These programs should focus on strengthening family bonds, improving parenting skills, and addressing familial dynamics that contribute to substance use.
* Establish early intervention systems that identify families at risk of substance abuse and provide counselling or support services before patterns of abuse are established.
* Conduct public awareness campaigns that address the dangers of peer pressure and emphasize the importance of making independent, informed decisions regarding substance use.
* Strengthen regulations around the sale and distribution of substances, particularly in areas where access is easily available. Policies should aim to limit easy access to drugs and alcohol in vulnerable communities.
* Promote policies that limit the advertising and availability of substances, particularly targeting areas with high rates of substance abuse.
* Develop targeted job training and employment programs aimed at unemployed individuals, especially in economically disadvantaged areas. Employment can offer structure and purpose, which may reduce the likelihood of substance use.
* Community Development: Invest in community development initiatives that improve the living conditions in low socio-economic areas. This can include infrastructure development, educational opportunities, and access to healthcare, aiming to break the cycle of poverty and substance abuse.

Consent

Informed consent was obtained from all respondents, and confidentiality was maintained throughout the study.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**REFERENCES**

Charles, N. E., Mathias, C. W., Acheson, A., Bray, B. C., Ryan, S. R., Lake, S. L., ... & Dougherty, D. M. (2015). Increased pre-and early-adolescent stress in youth with a family history of substance use disorder and early substance use initiation. *Journal of youth and adolescence*, *44*, 1954-1967.

Fox, B. (2017). It's nature and nurture: Integrating biology and genetics into the social learning theory of criminal behavior. *Journal of Criminal Justice*, *49*, 22-31.

Wangensteen, T., Bramness, J. G., & Halsa, A. (2019). Growing up with parental substance use disorder: The struggle with complex emotions, regulation of contact, and lack of professional support. *Child & Family Social Work*, *24*(2), 201-208.

Becker, H. S. (1963). *Outsiders: Studies in the sociology of deviance*. Free Press.

Romer, D., & Hennessy, M. (2007). A biosocial-affect model of adolescent sensation seeking: The role of affect evaluation and peer-group influence in adolescent drug use. *Prevention Science*, *8*, 89-101.

Dua, J. (2022). The problem of drug addiction in India: Its consequences and effective measures. *Journal of Drug Delivery and Therapeutics*, 12(3), 159-163.

Hirschi, T. (1969). *Causes of delinquency*. University of California Press.

Marlatt, G. A., & Gordon, J. R. (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors*. Guilford Press.

McClelland, D. C. (1977). *The achieving society*. Princeton University Press.

Merton, R. K. (1938). Social structure and anomie. *American Sociological Review*, 3(5), 672-682.

Motyka, M. A., & Al-Imam, A. (2022). Causes of drug initiation among adolescents. *Canadian Journal of Family and Youth Studies*, 14(1), 63-81.

Randhawa, A., Brar, M. S., Kumari, B., & Chaudhary, N. (2020). Socio-demographic profile and pattern of substance abusers: A retrospective study to unveil the public health problem of Punjab. *Journal of Family Medicine and Primary Care*, 9(7), 3338-3342.

Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998). The context for posttraumatic growth: Life crises, individual and social resources, and coping. In Posttraumatic growth (pp. 107-132). Routledge.

Chisom, H. I., Beatrice, O., Iyanuoluwa, O. O., & Oluwatoyin, B. (2022). Risk Factors Associated with Substance Abuse among Adolescents. International Neuropsychiatric Disease Journal, 18(1), 11–24. <https://doi.org/10.9734/indj/2022/v18i130214>

Malik, B. K., Mishra, P., & Prasad, K. (2024). A Study on Substance Use among School Adolescents in Jharkhand, India. Asian Journal of Education and Social Studies, 50(12), 270–278. <https://doi.org/10.9734/ajess/2024/v50i121695>

Alhammad, M., Aljedani, R., Alsaleh, M., Atyia, N., Alsmakh, M., Alfaraj, A., ... & Alsmakh, M. A. (2022). Family, individual, and other risk factors contributing to risk of substance abuse in young adults: A narrative review. Cureus, 14(12).

Expósito-Álvarez, C., Lila, M., Gracia, E., & Martín-Fernández, M. (2021). Risk factors and treatment needs of batterer intervention program participants with substance abuse problems. European Journal of Psychology Applied to Legal Context, 13(2), 87-97.

Jain, A. (2023). Substance Use Disorder in Punjab: Patterns, Challenges, and Implications. International Journal of English Literature and Social Sciences, 8, 196-204.

Kantor, G. K., & Straus, M. A. (1989). Substance abuse as a precipitant of wife abuse victimizations. *The American journal of drug and alcohol abuse*, *15*(2), 173-189.

Conner, K. R., & Duberstein, P. R. (2004). Predisposing and precipitating factors for suicide among alcoholics: empirical review and conceptual integration. *Alcoholism: Clinical and Experimental Research*, *28*, 6S-17S.

Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychological bulletin*, *112*(1), 64.

Kilpatrick, D. G., Acierno, R., Saunders, B., Resnick, H. S., Best, C. L., & Schnurr, P. P. (2000). Risk factors for adolescent substance abuse and dependence: data from a national sample. *Journal of consulting and clinical psychology*, *68*(1), 19.