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UNPACKING NICOTINE DEPENDENCY: THE ROLE OF FAMILY AND SOCIOECONOMIC FACTORS IN YOUTH ADDICTION

[1]Harsha Sadgun Singampalli*, [2]Angeline Bhaskar Busi, [3]Sushma Putla, [4]Dhana Sai Krishna Burada

[1]PhD Candidate, [234]MSc Graduate,

[1234]Department of Psychology, Andhra University, Visakhapatnam, Andhra Pradesh, India

*Corresponding author e-mail: harshasadgun5.sh@gmail.com

ABSTRACT

Nicotine dependency, primarily driven by tobacco products containing the psychoactive substance nicotine, poses a significant global health challenge due to its physical and psychological effects, making cessation difficult. Adolescents and young adults are particularly vulnerable to nicotine addiction, influenced by biological, social, and environmental factors. This study aimed to examine nicotine dependency among 300 youth aged 15 to 24 years, residing in Visakhapatnam, Andhra Pradesh, India, using the Fagerström Test for Nicotine Dependence (FTND). The sample, selected through purposive sampling, comprised 255 males and 45 females. While no significant differences were observed in dependency levels based on gender or area of residence, family-related and socioeconomic factors emerged as significant contributors. Youth from joint families and those with a family history of nicotine use exhibited higher dependency levels, influenced by shared environments, genetic predispositions, and learned behaviors. Furthermore, individuals with lower parental monthly income demonstrated higher nicotine dependency, highlighting the impact of economic stressors. These findings emphasize the need for targeted preventive measures and interventions tailored to familial and socioeconomic contexts. Recommendations include preventive counseling, psychoeducation, Cognitive Behavioral Therapy (CBT), nicotine replacement therapy (NRT), and relapse prevention strategies, particularly for those in high and very high dependency categories, to curb long-term addiction.

KEYWORDS: Nicotine Dependency, Tobacco Addiction, Youth, Adolescents, Emerging Adults

I. INTRODUCTION

Nicotine dependency, primarily caused by tobacco products containing the psychoactive drug nicotine, is a global health challenge recognized for its physical and psychological effects, which make cessation difficult (WHO, 2023). Adolescents and young adults are particularly vulnerable to this addiction due to biological, social, and environmental factors. According to the United Nations and the World Health Organization, the term "youth" encompasses individuals aged 15–24 years, while "adolescents" include those aged 10–19 years (UNFPA, 2023). This phase of life represents critical developmental milestones, with choices made during this time often having long-term implications for health behaviors and outcomes.

Indian youth, regarded as the nation's future, face significant health challenges due to nicotine dependency. According to the Ministry of Social Justice and Empowerment (2022), 1.8% of adolescents aged 10-17 years in India are dependent on opioids, with a notable overlap in tobacco and nicotine use. Studies indicate that peer pressure, curiosity, and reduced parental supervision contribute significantly to nicotine experimentation and dependency among adolescents. Furthermore, nearly 35% of youth report initiating substance use after being influenced by friends, and many start as casual users before developing dependency (Rehabs.in, 2023). National initiatives like the Nasha Mukt Bharat Abhiyaan have reached over 10.72 crore

individuals, including 3.38 crore youth, through awareness campaigns, underscoring the critical need for targeted interventions to address this issue (Government of India, 2023).

Nicotine dependency in youth is not just a personal health issue but a pressing public health concern, especially in low- and middle-income countries where 90% of the global youth population resides. Peer pressure, family influences, and targeted marketing by tobacco companies exacerbate this problem. For instance, familial tobacco use can normalize the behavior, increasing the likelihood of youth initiation. Moreover, the addictive nature of nicotine reinforces usage patterns, leading to dependency. Addressing these influences is essential to mitigate the harmful impacts of tobacco use, including increased risk of non-communicable diseases later in life (Patton et al., 2009; UNFPA, 2023).

The psychology of nicotine use, abuse, and dependency is deeply rooted in an intricate network of biological, psychological, and social influences. Nicotine, a highly addictive substance, acts on the brain's reward pathways by releasing dopamine, leading to feelings of pleasure and reinforcing repetitive usage (Benowitz, 2010). These neurochemical changes create a cycle of dependency, where individuals seek nicotine to avoid withdrawal symptoms, which include irritability, anxiety, and cravings.

From a psychological perspective, factors such as stress, coping mechanisms, and mental health conditions like anxiety and depression contribute significantly to nicotine use. Adolescents often begin using nicotine as a means of managing stress or peer pressure, which can quickly evolve into habitual use. Moreover, environmental and social factors, including parental tobacco use, peer influence, and targeted advertising by tobacco companies, play a crucial role in shaping nicotine-related behaviors (USDHHS, 2014). Understanding these dynamics is vital for crafting effective prevention and intervention strategies, including cognitive-behavioral therapies and community-based programs aimed at reducing initiation and promoting cessation.

The increasing nicotine dependency among Indian youth demands urgent attention due to its adverse impacts on physical health, emotional well-being, and future societal contributions. Understanding the psychological, familial, and social factors influencing this dependency is critical for developing effective preventive measures and interventions tailored to adolescents. This study aims to fill the existing research gaps, emphasizing the need to address this growing public health concern and protect the potential of the nation's youth.

1.1 OBJECTIVES

- To examine Gender Disparities in Nicotine Dependency.
- To explore Nicotine Dependency Across Urban and Rural Residents.
- To assess the Influence of Family Types on Nicotine Dependency.
- To investigate the Influence of Family History on Nicotine Dependency.
- To examine the Role of Parental Monthly Income in Nicotine Dependency.

1.2 HYPOTHESIS

- There is a significant difference in nicotine dependency levels between male and female adolescents.
- There is a significant difference in nicotine dependency levels between adolescents residing in rural and urban areas.
- There is a significant difference in nicotine dependency levels between adolescents from nuclear families and joint families.
- Adolescents with a family history of substance use have significantly higher nicotine dependency levels than those without such a family history.
- There is a significant relationship between parental monthly income and nicotine dependency levels among adolescents.

II. METHOD

2.1 Sample

The study was conducted with a total sample of 300 participants, aged 15 to 24 years, classified as youth according to the World Health Organization (WHO). The sample consisted of 255 males and 45 females, selected using the purposive sampling technique. Participants were residing in Visakhapatnam.

2.2 Data Collection

Data were collected online through Google Forms to ensure convenience and accessibility. Participants were informed about the purpose of the study, and their confidentiality and anonymity were strictly maintained throughout the process. Necessary permissions were obtained from relevant authorities to conduct the study ethically.

2.3 Tools

A. Biographical Variables: Information on participants' age, gender, family type (nuclear or joint), area of residency (rural or urban), parental monthly income, and family history of substance use was collected.
B. Dependent Variable: Nicotine dependency was assessed using the Fagerström Test for Nicotine Dependence (FTND), developed by Heatherton et al. (1991). The FTND is a widely used instrument for evaluating the severity of nicotine addiction. This six-item scale evaluates both the behavioral and physiological aspects of nicotine addiction. The questions focus on factors such as the frequency and timing of cigarette use, difficulty refraining from smoking in prohibited areas, and dependency-related behaviors like smoking when ill. Each item on the FTND is scored on a weighted scale, with the total score ranging from 0 to 10. Higher scores indicate greater levels of nicotine dependency. The scale's simplicity, reliability, and validity make it a preferred tool for both clinical assessments and research studies. It is particularly effective in identifying individuals who may require targeted interventions or treatment for nicotine addiction. The FTND has been extensively used globally, including in diverse cultural contexts, to study patterns of smoking behavior and dependency.

III. RESULTS AND DISCUSSION

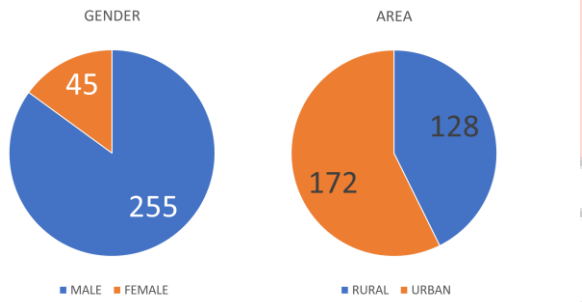

figure 1: distribution of youth by gender and area of residency

Table 1: Independent Samples t-Test for Gender and Area of Residency on Nicotine Dependency Levels

	Group 1	N	Mean	SD	Group 2	N	Mean	SD	t	p
GENDER	Male	255	3.13	2.206	Female	45	3.33	2.205	-.583	.280
AREA	Rural	128	3.31	2.201	Urban	172	3.04	2.204	1.057	.146

Table 1, t-test comparing nicotine dependency levels between male (N=255, M=3.13, SD=2.206) and female (N=45, M=3.33, SD=2.205) participants yielded a non-significant result (t = -0.583, p = 0.280). There is no significant evidence of a difference in nicotine dependency levels between genders. t-test comparing nicotine dependency levels between individuals from Rural (N=128, M=3.31, SD=2.201) and Urban (N=172, M=3.04, SD=2.204) areas yielded a non-significant result (t = 1.057, p = 0.146). There is no significant evidence of a difference in nicotine dependency levels between individuals residing in rural and urban areas.

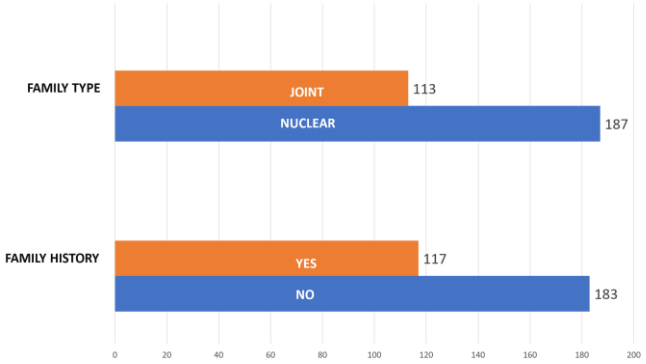

figure 2: distribution of youth by family type and family history

Table 2: Independent Samples t-Test for Family Type and Family History on Nicotine Dependency Levels

	Group 1	N	Mean	SD	Group 2	N	Mean	SD	t	p
FAMILY TYPE	Joint	113	3.59	2.219	Nuclear	187	2.89	2.158	2.694**	.004
FAMILY HISTORY	Yes	117	3.74	2.405	No	183	2.79	1.984	3.712***	<.001

P*< 0.05, p**< 0.01, p***< 0.001

Table 2, t-test comparing nicotine dependency levels between individuals from Joint family (N=113, M=3.59, SD=2.219) and nuclear family (N=187, M=2.89, SD=2.158) family types yielded a significant result (t = 2.694, p = 0.004**). There is significant evidence of a difference in nicotine dependency levels between individuals from Joint and Nuclear family types, with individuals from Joint families showing higher nicotine dependency levels. Joint families often involve shared spaces and increased social interactions, potentially exposing adolescents to tobacco use within the family, leading to a higher likelihood of initiation and dependency due to social and environmental influences. Cultural significance of tobacco use within joint families and also contributes to elevated nicotine dependency rates among adolescents in this familial structure. Adolescents from a joint family exhibited a significantly higher mean FTND score (Islam et al., 2019). A study by Brown and Rinelli (2010) found that individuals from non-traditional family structures, such as single-parent or stepfamilies, exhibited higher rates of smoking compared to those from two-biological-parent families.

The nicotine dependency levels between individuals with a Family History of Nicotine Dependence (N=117, M=3.74, SD=2.405) and those without (N=183, M=2.79, SD=2.405) yielded a highly significant result (t = 3.712, p < 0.001***). There is strong evidence of a difference in nicotine dependency levels, with individuals having a family history showing higher levels compared to those without a family history. Adolescents with a family history of nicotine dependence have a genetic predisposition to addictive behaviors, increasing their vulnerability to nicotine dependency. Familial norms and behaviors play a significant role, as growing up in an environment where nicotine use is prevalent within the family and lack of good communication between parents and adolescents contribute to a higher likelihood of adolescents developing nicotine dependency. Adolescents are susceptible to viewing tobacco use as positive and acceptable when influenced by family members engaged in such behavior. Gilman et al. (2009) found that adolescents with smoking parents were more likely to start smoking themselves. Chassin et al. (1994) found that young adult smokers with familial smoking backgrounds smoked more cigarettes daily, had smoked for more years, and perceived themselves as more addicted than their peers without a family history of smoking.

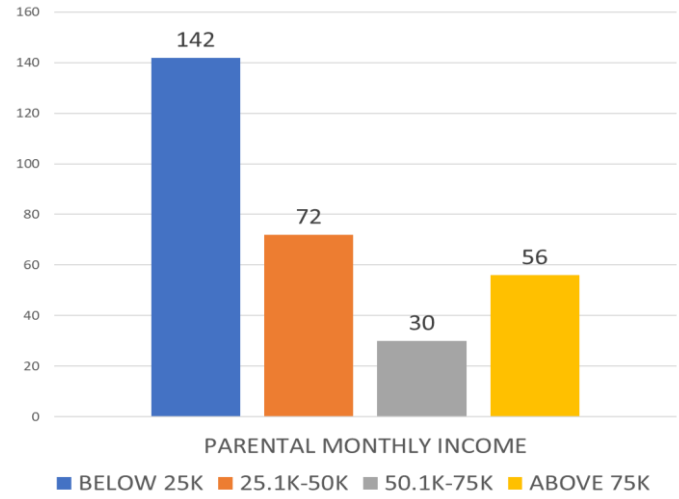

figure 3: distribution of youth across parental monthly income categories

Table 3: One-Way ANOVA for Parental Monthly Income on Nicotine Dependency Levels

Parental Monthly Income	N	Mean	SD	F	Sig.
Below Rs.25,000	142	3.53	2.143	3.361*	.019
Rs.25,001-Rs.50,000	72	3.00	2.385		
Rs.50,001-Rs.75,000	30	2.30	1.841		
Above Rs.75,000	56	2.88	2.150		

P*< 0.05, p**< 0.01, p***< 0.001

Table 3, one-way ANOVA comparing nicotine dependency levels across different parental monthly income groups (Below Rs.25,000, Rs.25,001-Rs.50,000, Rs.50,001-Rs.75,000, and above Rs.75,000) yielded a significant result ($F = 3.361$, $p = 0.019$*). Test revealed that individuals with parental monthly income Below Rs.25,000 (M=3.53, SD=2.143) showed significantly higher nicotine dependency levels compared to those with income Rs.50,001-Rs.75,000 (M=2.30, SD=2.30). Adolescents with lower parental monthly income experiences higher nicotine dependency, potentially influenced by economic stressors, limited access to resources, and coping mechanisms. Socioeconomic factors could contribute to a higher prevalence of nicotine dependence in this group compared to those with higher parental income. Lower-income smokers exhibited significantly higher mean levels of nicotine dependence on the FTND compared to their higher-income counterparts (Andréa L. Hobkirk et al. 2018). Research indicates that young adults from lower-income families exhibit higher rates of smoking. A study from Centers for Disease Control and Prevention done by Garrett B. E. et. al (2019) smoking prevalence was significantly higher among men with incomes below the federal poverty level (41.1%) compared to those with higher incomes (23.7%). Similarly, 32.5% of women below the poverty level smoked, versus 18.3% of those above it. These findings suggest that lower parental income is associated with increased smoking rates among young adults.

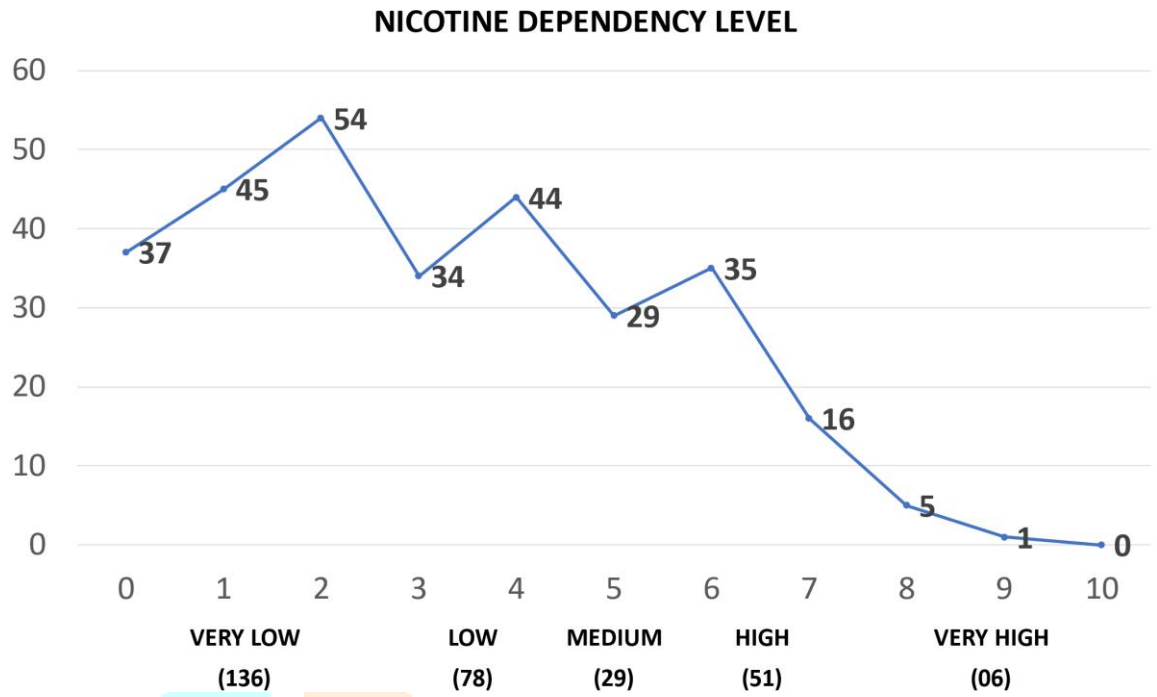

figure 4: classification of nicotine dependency levels based on FTND scores

Table 4: Distribution of Nicotine Dependency Levels Among Youth Participants

Description	Value	Frequency	Percent
Very Low Dependence	0 to 2	136	45.3
Low Dependence	3 to 4	78	26.0
Medium Dependence	5	29	9.7
High Dependence	6 to 7	51	17.0
Very High Dependence	8 to 10	6	2.0
		[TOTAL SAMPLE SIZE: 300]	

Note. Dependency levels classification as per the National Institute on Drug Abuse (NIDA) Clinical Trials Network- National Institute on Drug Abuse. (n.d.)

Table 4, analysis of nicotine dependency levels among 300 youth participants showed that 45.3% had very low dependency and 26.0% had low dependency, suggesting the need for preventive counseling and psychoeducation to curb early-stage dependency. For the 9.7% with medium dependency, psychological treatments like Cognitive Behavioral Therapy (CBT) are recommended to address triggers and manage withdrawal. Alarmingly, 17.0% exhibited high dependency, and 2.0% fell in the very high dependency category, highlighting an urgent need for intensive interventions such as CBT, nicotine replacement therapy (NRT), and relapse prevention strategies. These findings stress the importance of tailored treatments to address the varying severity of nicotine dependency and prevent long-term addiction.

IV. LIMITATIONS

The study has a few limitations. The predominantly male sample (85%) limits the generalizability of the findings to females and the broader population. Moreover, the geographic focus on Visakhapatnam may reduce applicability to other regions with varying cultural and socioeconomic contexts. The use of purposive sampling could also introduce selection bias, affecting the representativeness of the sample. Future research should address these limitations by ensuring a more balanced gender distribution, expanding the geographical scope, and adopting random sampling techniques. Longitudinal studies could further explore the evolution of nicotine dependency over time, considering diverse demographic and psychosocial factors.

V. CONCLUSION

In conclusion, the study provides valuable insights into the factors influencing nicotine dependency among youth or adolescents and emerging adults. While no significant differences were found in dependency levels based on gender or area of residence, family-related and socioeconomic factors were identified as significant contributors. Individuals from joint families and those with a family history of nicotine use exhibited higher dependency levels, reflecting the influence of shared environments, genetic predispositions, and learned behaviors. Additionally, lower parental income was associated with increased dependency, highlighting the role of economic stressors and limited resources.

These findings underscore the importance of targeted preventive measures and interventions that address familial and socioeconomic contexts to mitigate nicotine dependency in young populations. The study also highlights the need for targeted interventions ranging from preventive counseling to intensive treatments like CBT and NRT, addressing varying nicotine dependency levels among youth, with a focus on those in high and very high dependency categories to prevent long-term addiction.

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