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Health and Socio-Economic Analysis of Adolescent Drug Abuse in Ukhrul District, Manipur

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ABSTRACT

Adolescent drug abuse has become a pressing public health concern in Ukhrul District, Manipur, driven by socio-economic, social, psychological, and environmental factors. This study examines patterns, causes, and influencing dimensions of drug use among 100 adolescents using a structured questionnaire survey and stratified random sampling. Findings reveal that 81% of users are male, predominantly aged 17–19, with college students being the most affected. Peer pressure, curiosity, easy access to substances, emotional stress, and unstructured free time are major contributing factors. Commonly used drugs include Ganja, Heroin, cough syrups, and prescription medications. Multivariate factor analysis identified five core dimensions economic factors, social factors, influencing factors, sources of drugs, and initiation sources explaining 58.54% of the variance in drug use behavior. The study highlights the critical role of family, social environment, and accessibility in shaping adolescent drug abuse. Results underscore the urgent need for integrated interventions, including awareness programs, counseling, rehabilitation, and community engagement, to mitigate the rising crisis in Ukhrul.

Key words: Adolescent -Drug Abuse- Socio-Economic Determinants- Factor Analysis- Drug Access-Rehabilitation & Prevention

1. Introduction

Drug abuse has emerged as one of the most pressing global health and social issues of the 21st century. No region of the world is free from the challenges associated with drug trafficking and substance addiction, which cut across geographical, cultural, and socio-economic boundaries (**1**). The consequences of drug abuse are far-reaching, affecting physical health, psychological well-being, emotional stability, and moral as well as intellectual development (**2,3)**.Drug abuse or misuse refers to the consumption of substances in ways that deviate from accepted medical guidance or social norms. It includes taking drugs without medical recommendation, using them excessively, or consuming substances that serve no medical purpose (**4,5**). Such misuse can have a profoundly adverse impact on an individual's daily life, health, and functioning (**6,7**). Over the years, healthcare professionals and social workers have increasingly recognized drug abuse as a serious public health issue, particularly due to its rapid spread among young people(**8,9**). Factors such as peer pressure, stress, family dysfunction, and the easy availability of substances contribute significantly to adolescent drug use, leading many into cycles of dependency that harm education, relationships, and future prospects (**10,11, 12**).The rising drug abuse crisis in India has been closely linked with socioeconomic conditions including unemployment, domestic violence, and labor exploitation, which create traumatic circumstances that drive individuals toward substance use (**13,14, 15**). Age, gender, family structure, and poverty are also significant predisposing factors, with vulnerability being higher in developing countries due to weak socio-economic conditions (**16,17,18**).Family background plays a critical role, as adolescents with less educated parents or those in lower-income jobs are more prone to substance use(**19,20).** Supportive family environments, especially maternal support, have been found to reduce drug use among youth also contribute to experimentation (**21,22**). In India's northeastern states, particularly Manipur, drug abuse has become a severe concern due to its geographical proximity to the Golden Triangle a major hub of opium and heroin trafficking. The region's porous borders, cultural influences, and recreational tourism have facilitated narcotic inflow, leading to widespread availability of heroin, opium, and synthetic drugs (**23,24,25,26**).The Moreh–Imphal highway has long served as the main trafficking route, with newer routes, including through Ukhrul District, now emerging (**27,28,**).Adolescent drug abuse has emerged as a serious concern in Ukhrul District, Manipur, where substance use has taken deep roots over the last two decades. The district, already vulnerable due to its remote location and socio-economic challenges, has seen an alarming rise in opioid and pharmaceutical drug consumption among young people(**29,30).** Several socio-cultural factors contribute to adolescent drug use in Ukhrul. Peer pressure, lack of recreational opportunities, idle time during school or college closures, and emotional instability are identified as major drivers

response, multiple community-led and institutional interventions have emerged (**31,32,33,34**). Drug use among adolescents is influenced by an interplay of multiple factors, including peer pressure, family environment, socioeconomic background, and broader social conditions (**35,36,37,38**). Family history of substance use, lack of parental supervision, and academic stress act as strong triggers (**39,40,41,42**).

2.Objectives

The objectives of the study are to examine the socio-economic factors contributing to adolescent drug abuse in Ukhrul, Manipur and to analyze health impacts, the sources, initiation, and influencing factors of adolescent drug use in Ukhrul, Manipur.

3. Methodology

3.1.Data Sources

The present study is based on both primary and secondary data. Primary data were collected through a structured questionnaire survey targeting 100 adolescents in Ukhrul District, Manipur. A stratified random sampling method was adopted to ensure fair representation across different age groups, genders, and socio-economic backgrounds.(**43,44,45,46**) Secondary data were drawn from the Statistical Handbook of Manipur and other official records to provide demographic and social information about the district.

3.2.Techniques of Analysis

Factor analysis**,** a multivariate statistical technique, was employed to identify the major underlying dimensions influencing adolescent drug use at the micro level. This approach helped reduce a large number of interrelated variables into fewer meaningful factors that explain the patterns of substance abuse.

4.Study Area

Ukhrul District, located in the northeastern corner of Manipur between 24°29′N to 25°41′N latitude and 94°12′E to 94°54′E longitude, covers 4,544 sq. km and is bounded by Nagaland, Myanmar, Chandel, and Senapati. The district is hilly with elevations ranging from 913 m to 3,114 m. Administratively, it has five subdivisions, four blocks, and three assembly constituencies. However, the steep terrain and heavy rainfall make the region vulnerable to landslides and soil erosion.

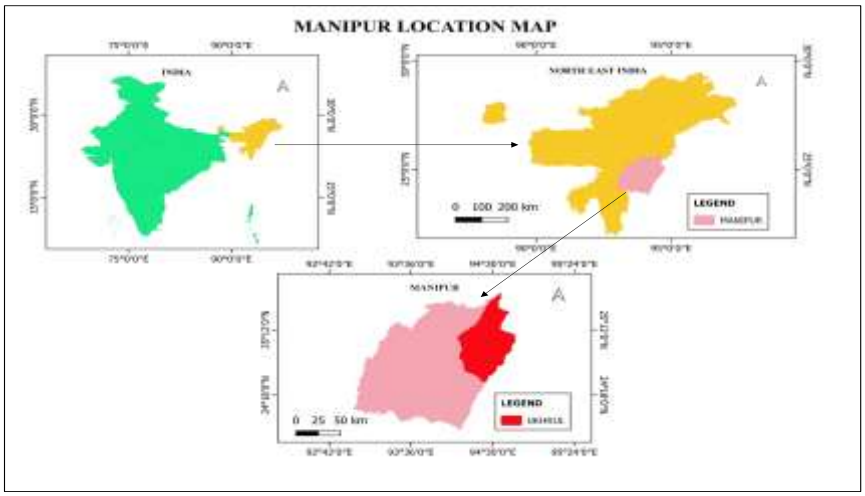

Fig.1 Location Map of Ukhrul District in Manipur

5.Results

5.1. Socio-Economic Factors Contributing to Adolescent Drug Abuse in Ukhrul, Manipur

Adolescent drug abuse in Ukhrul District, Manipur, is driven by a complex interplay of socio-economic, peer, and psychological factors, as revealed by a survey of 100 respondents (Table 1). The study shows a clear gender disparity, with 81% of drug users being male and 19% female, and most users fall within the 17–19 age group (86%), while younger adolescents (14–16) account for 14%, and none from the 10–13 group. Drug use is most prevalent among college students (43%), followed by higher secondary (22%), other educational levels (22%), and high school students (13%). The factors

contributing to drug use include peer pressure (57%), curiosity/joy-seeking (45%), access to drugs (29%), depression (24%), free time (22%), and family problems (10%). Frequency of use indicates that 41% consume drugs weekly, 36% daily, 19% occasionally, 3% monthly, and 1% several times a week. The most commonly used drugs are Ganja (73%), Heroin (56%), cough syrups (48%), prescription drugs such as Alprazolam and Spasmonil (41%), Spasmodart (40%), Nitrosun 10 (37%), Tramazac (35%), Valium (33%), Cyclopsam (29%), Brown Sugar (27%), OST (25%), and Avil (17%). Most adolescents (86%) take drugs at no specific time, 10% before eating, and 4% after eating. Sources of drugs include illegal markets (74%), pharmacies (69%), friends/family (32%), and government/NGO programs (15%). Adolescents usually consume drugs with friends (69%), anytime (34%), at public gatherings/parties (28%), when bored/free (26%), and alone (12%). Monthly expenditure on drugs ranges from ₹500–3000 (47%), ₹100–500 (25%), above ₹3000 (23%), and below ₹100 (5%). Family and public reactions vary, with 44% offering help, 22% being understanding, 9% ignoring the user, and 25% treating them badly. The effects of drugs include feeling sleepy/lazy (69%), craving sweet food (62%), acting impulsively (30%), stealing (10%), and aggressive behaviour (11%).

Table 1: Consolidated Data on Adolescent Drug Abuse in Ukhrul

Parameter	**Categories**	**% of Respondents**
Gender	Male	81
	Female	19
Age Group	17–19	86
	14–16	14
	10–13	0
Educational Level	College	43
	Higher Secondary	22
	Other	22
	High School	13
Factors to Use Drugs	Peer Pressure	57
	Curiosity / Joy Seeking	45
	Access to Drugs	29
	Depression	24
	Free Time	22
	Family Problems	10
Frequency of Use	Daily	36
	Weekly	41
	Several times a week	1
	Occasionally	19
	Monthly	3
Drugs Used	Ganja	73
	Heroin	56
	Cough Syrups	48
	Alprazolam / Spasmonil	41
	Spasmodart	40
	Nitrosun 10	37
	Tramazac	35
	Valium 10 mg	33

Parameter	**Categories**	**% of Respondents**
	Cyclopsam	29
	Brown Sugar	27
	OST	25
	Avil	17
Timing of Intake	No specific time	86
	Before eating	10
	After eating	4
Source of Drugs	Illegal market	74
	Pharmacy	69
	Friends/Family	32
	Government/NGO	15
Situation of Intake	With friends	69
	Anytime	34
	Public gatherings/parties	28
	Bored/free time	26
	Alone	12
Money Spent per Month	₹500–3000	47
	₹100–500	25
	₹3000+	23
	<₹100	5
Family/Public Reaction	Tries to help	44
	Understanding	22
	Ignores	9
	Treated badly	25
Effects of Drugs	Sleepy/Lazy	69
	Sweet cravings	62
	Acts without thinking	30
	Stealing	10
	Aggressive/violent	11
Initial Exposure	Friends	85
	Self	15
Source of Money	Pocket money	82
	Borrowed	47
	Family	31
	Personal earnings	12
	Stolen goods trafficking	7

Initial exposure was mostly via friends (85%), with 15% self-discovery, while money sources for buying drugs include pocket money (82%), borrowed money (47%), family support (31%), personal earnings (12%), and trafficking in stolen goods (7%). These findings indicate that adolescent drug abuse in Ukhrul is strongly influenced by peer pressure, social settings, accessibility of substances, lack of structured engagement, emotional stress, and insufficient parental monitoring, emphasizing the urgent need for targeted awareness, counselling, and rehabilitation programs.(**47,48,49,50**)

6.Discussion

Factor analysis was conducted on primary data collected from adolescents in Ukhrul District, Manipur, to identify the underlying dimensions influencing drug abuse. Fifteen variables, including age, gender, education level, peer influence, economic status, sources of drug access, and socio-economic background, were considered for analysis. The analysis extracted five significant dimensions explaining 78.84 % of the total variance in adolescent drug abuse (Table 2). The scree plot (Fig 2) confirmed that retaining the first five components was justified, as eigenvalues sharply decreased after the fifth factor. These dimensions reflect the complex interplay of economic, social, behavioural, and environmental factors affecting adolescent drug use.

Table 2: Eigenvalue and the total percentage variance explained by each of the Five Dimensions

Factor	Name of the Dimension	Eigen value	% of Variance	Cumulative Percentage
I	Health Impact Related to Drugs Abuse	4.34	22.55	22.55
II	Social factors related to drug use	4.10	22.14	44.69
III	Influencing factors	3.45	16.54	61.23
IV	Source of drugs	2.40	10.50	71.73
V	Initiation source	1.22	7. 11	78.84

Figure 2 shows the diagram derived from the factor analysis conducted on the primary data related to adolescent drug abuse in Ukhrul district. The plot displays the eigenvalues corresponding to each of the 15 components extracted. As observed, the first few components have relatively high eigenvalues, indicating that they account for a larger portion of the total variance in the data. The curve begins to flatten after the fifth component, which suggests retaining factors with eigenvalues greater than 1, it is evident that the first five components are significant and should be retained for further analysis.

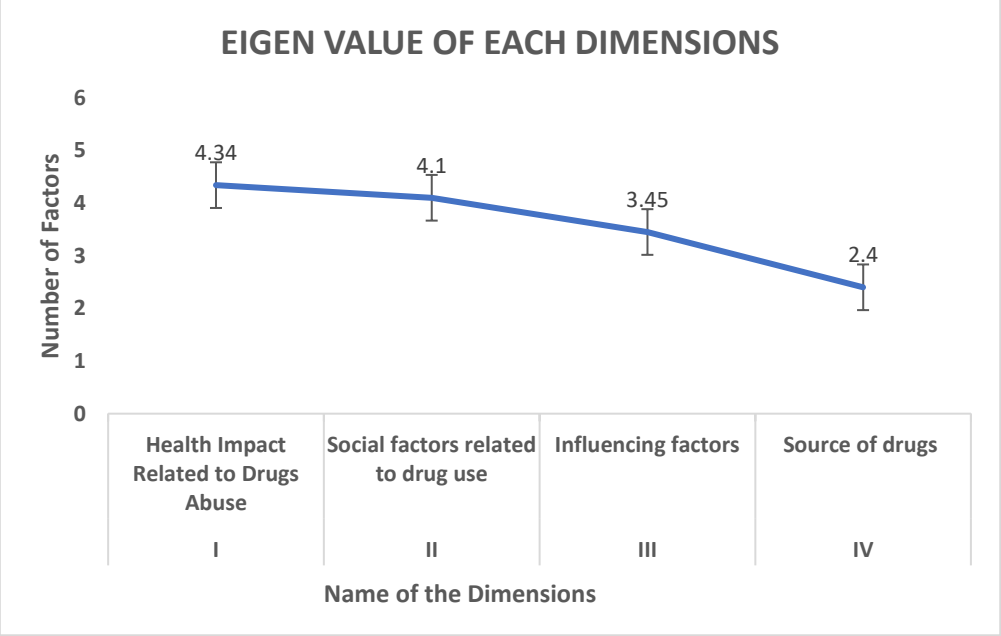

Fig 2 Number Of Eigen Value Contribute in Each Dimensions

These five components collectively represent the underlying dimensions contributing to adolescent drug use, which may include factors such as peer pressure, family and public, socioeconomic status, source of drugs and influences. The scree plot thus provides a visual justification for selecting five major factors, helping to simplify the complex data structure while preserving the most meaningful patterns.

Dimension 1-Health Impact Related to Drug Abuse

The first dimension, Economic Factors, accounted for 22.55% of the total variance and eigenvalue 4.34 (Table 3).

Table 3 Dimension -1 Health Impact Related to Drugs Abuse

Variable Number	Variable name	Factors loading
1	Economic factors	-0.63
2	Gender	0.23
5	Illegal drug use	-0.23
6	Impact of Health	0.79
7	Current drugs	0.23
11	Mental Health	0.53
12	Family/ Public Health	0.67
13	Feel/do after taking drug	0.42
15	Source of money	0.20
Eigen value= 4.34		**% of variance=22.55**

The strongest loading was observed for the impact of health (0.79), highlighting a direct link between habitual drug use and economic behavior. The significant positive loading of mental health (0.53) suggests that higher financial involvement is associated with more regular drug use, while "Source of money" (0.20) indicates that how adolescents obtain money whether through allowance, work, or illicit means plays a role in sustaining drug habits(**51,52**).These findings indicate that economic conditions are central to understanding adolescent drug abuse in Ukhrul, emphasizing the role of disposable income and financial autonomy in facilitating access to drugs.

Dimension 2 -Social Factors Related to Drug Abuse

The second dimension, Social Factors**,** explained 22.14 % of the variance (eigenvalue = 4.10) and primarily captured age, education, peer influence, and environmental accessibility (Table 4). Age group (0.85) and educational level (0.80) were the most influential variables, suggesting that older adolescents (17–19 years) and their education status significantly impact drug use behaviour. The place of drug access (0.43) indicates that easy availability within social networks encourages consumption. Conversely, family and public reactions (-0.22) exhibited a deterrent effect, highlighting the protective influence of social monitoring and disapproval. Overall, social environment, peer pressure, and educational context emerge as critical determinants of adolescent drug use(**53,54**).

Table 4: Social Factors Related to Drug Abuse

Variable Number	Variable Name	Factors Loading
3	Age group	0.85
4	Educational level	0.80
5	Illegal drug use	0.27
7	Current use	-0.30
9	Place to get drugs	0.43
11	Mental health	0.24
12	Family/ Public health	-0.22
Eigen value=4.10		**% of variable = 22.14**

Dimension 3 -Influencing Factors

The third dimension, Influencing Factors**,** accounted for 16.54 % of the variance (Eigenvalue = 3.45) and represented variables related to drug accessibility, psychological effects, and ongoing use patterns (Table 5). The strongest factor loading was "Desire for stronger effect" (0.68), indicating that the intensity of psychoactive effects motivates continued use. Current use (0.51) and economic factors (0.49) reinforce the role of habitual consumption and financial conditions in perpetuating drug abuse. "Place to get drugs" (0.49) further confirms the importance of environmental access. These findings demonstrate that psychological, behavioural, and economic motivations collectively drive drug use among adolescents.(**55**)

Table 5: Influencing Factors

Variable Number	Variable Name	Factors Loading
1	Economic Factors	0.49
5	Illegal drug use	0.34
7	Current use	0.51
8	Stronger effect	0.68
9	Place to get drugs	0.49
13	Feel/do after taking drugs	0.33
Eigen value= 3.45		**% of Variance=16.54**

Dimension 4 -Source of Drugs

The fourth dimension, Source of Drugs**,** explained 10.50% of the variance and eigenvalue of 2.40(Table 6). Frequency of drug use (0.72) and gender (0.57) were positively associated with source patterns, indicating habitual use and gender differences in drug acquisition. Negative loadings for mental health (-0.52) and place to obtain drugs (-0.36) suggest that higher cost or restricted access reduces consumption likelihood. Family and public health reactions (0.38) moderately influenced access, highlighting the role of social oversight in regulating adolescent behavior. This dimension emphasizes the interplay of accessibility, social monitoring, and gender in shaping drug procurement patterns(**56**).

Table 6:Source of Drugs

Variable Number	Variable Name	Factors Loading
2	Gender	0.57
9	Place to get drug	-0.36
10	Usually take drug	0.72
11	Mental health	-0.52
12	Family/ public health	0.38
Eigen value = 2.40		**% of variance= 10.50**

4.8 Dimension V-Initiation Source

The fifth dimension, Initiation Source**,** accounted for 7.11% of the variance eigenvalue1.22(Table 7). The strongest positive loading was "First introduced" (0.63), highlighting that early exposure strongly influences later usage. The variable "Source of money" (0.70) further underscores the role of economic access in facilitating initiation. Negative loadings for current use (-0.35) and motivation to use illegal drugs (-0.38) suggest that once habits are established, initial motivational factors become less relevant. These findings indicate that initiation occurs primarily through social and economic channels, with early exposure strongly determining future consumption patterns (**57**).The factor analysis reveals that adolescent drug abuse in Ukhrul District is a multidimensional phenomenon shaped by economic, social, behavioral, and environmental factors**.**

Table 7:Initiation Source

Variable Number	Variable Name	Factors Loading
5	Factors to use illegal drugs	-0.38
7	Current use	-0.35
9	Place to get drugs	0.20
13	Feel/do after taking drugs	0.27
14	First introduced	0.63
15	Source of money	0.70
Eigen value = 1.22		% of variance = 7.11

Economic conditions, particularly frequency of use and money availability, significantly influence sustained consumption. Social factors, including age, education, peer influence, and community monitoring, are critical in shaping initial and ongoing use. Accessibility and psychological effects further drive habitual use, while initiation is strongly tied to early exposure and sources of money. These results are consistent with previous studies in Northeast India,

which highlight the combined influence of peer pressure, socio-economic status, and environmental access on adolescent drug behaviour.The findings suggest that prevention strategies must be multi-pronged, addressing not only supply and access but also peer education, family involvement, and financial literacy. Interventions targeting the age group 17–19 years, coupled with community awareness and stricter monitoring of drug sources, may effectively reduce adolescent drug abuse in Ukhrul District.

7.Conclusion

The study "Health and socio-economicof Drug Abuse Among Adolescents in Ukhrul District, Manipur" reveals that adolescent drug abuse in the region is a complex, multidimensional issue shaped bythe impact of health,socio-economic, social, psychological, and environmental factors. Predominantly affecting males aged 17–19, particularly college students, drug use is largely initiated through peer influence, curiosity, emotional distress, and easy access to substances such as marijuana, heroin, and prescription drugs, often obtained from illegal markets, pharmacies, and social networks. Frequent usage patterns, emotional and behavioural effects,mental healthproblems, occupational health and high monthly expenditures highlight the severity of the problem. Socio-economic vulnerability,including poor parental education, unemployment, family instability, and pre-existing substance use in households,significantly increases the risk of adolescent drug abuse. Multivariate analysis identified five core dimensions (economic factors, social factors, influencing factors, sources of drugs, and initiation sources) explaining 58.54% of variance, underscoring the interplay of multiple determinants. Family and societal responses were mixed, ranging from support to severe stigma, affecting recovery and social reintegration. Overall, the findings emphasise that effective interventions must address peer influence, economic pressures, emotional well-being, accessibility of drugs, and community awareness in an integrated manner to curb adolescent drug abuse in Ukhrul

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