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Psychosocial Factors and Psychological Adjustment Among Adolescents and Young Adults: A Comparative Analysis of Occasional Drug Craving and Non-Craving

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Objective The rate of drug craving not only in Pakistan is escalating rapidly, but also from a wide range of cultures and geographically have been impacted by the drug problem. Recently, drug cravings among young Pakistani school and college students have significantly increased, particularly illegal substances like hashish, heroin, and ecstasy.

Methods We recruited 338 students and gathered demographic and drug-craving data through a survey. To assess the study variables, we used the parental acceptance-rejection short version, peer pressure questionnaire, and adult personality assessment scale.

Results The prevalence rate of occasional drug craving was 44.1% (tobacco, 39.9%; heroin, 1.8%; ice, 0.6%; and others), and 55.9% have never tried them. Initially, drug craving at the first onset at the age of 14 in friend gatherings (15.7%) in stressful situations (11.2%), high-income families, particularly in joint family systems with paternal rejection, peer enforcement, and maladjustment had a higher risk than affectionate parents and conventional peers. Stepwise binary logistic regression analysis disclosed that age, socioeconomic status, father affection, hostility, rejection, negligence, peer influences, and psychosocial adjustment, mother hostility were independently associated with occasional drug cravings.

Conclusion Findings suggested the high prevalence of occasional drug cravings in Pakistani students in the capital territory. Furthermore, the demographic and other social and clinical aspects could be linked. This study carried out theoretical significance in understanding the predictors of occasional drug craving and psychological adjustment, highlighting the peer and parent's roles and the educational institutions.

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Keywords Psychosocial factors; Psychological adjustment; Peer pressure; Occasional drug-craving; Adolescents; Adult.

INTRODUCTION

Drug craving presents a major public health issue globally, significantly affecting adolescents in Pakistan,[1] where the rapid rise in drug use for recreational purposes—from late adolescence into early adulthood is accompanied by a recognition of the risks these substances pose. Such substances distort reality and diminish rational thought upon entering the bloodstream.

Presently, Pakistan sees more than six million adults using drugs, with five million among them grappling with addiction.[1] Worldwide, prevalent drugs like tobacco, alcohol, heroin, cannabis, and various stimulants are regularly consumed by individuals of both sexes.[2] Adolescence is marked by an escalation in negative emotions and risk behaviors,[3] leading to a surge in illicit substance use.[4] Among these drugs, such as heroin use is driven by multiple factors, including stress, parental education levels, family conflict and the influence of peers, particularly in males.[5] Psychosocial peer pressures, alongside inadequate parental involvement and educational shortcomings, are significant contributors to addiction.[6] Parental dynamics, specifically acceptance, act as a deterrent to drug use, whereas a lack of parental warmth and understanding has been

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shown to compound psychological challenges and increase substance dependence.[7] For instance, smoking tends to be more prevalent among male adolescents, attributed to challenges in executive functioning and poor parental relationships.[8,9] Similarly, alcohol misuse and distress are often consequences of problematic parenting styles[10] similar to authoritarian and neglectful parents.[11] On the other hand, authoritative and supportive parental interactions offer resilience against adolescent drug use.[12]

During adolescence—a critical phase for self-discovery—young people tend to align with their peers, heightening their likelihood of experimenting with substances and other risky behaviors.[13] Peer offerings of alcohol are seen as high-status activity among youth,[14] while factors like parental influences and socioeconomic standing significantly shape smoking patterns[15] and the propensity for addiction among Pakistani youth.[6] Drug and alcohol use are further linked to family structure, educational level of parents, and their professions.[16] Evidence suggests that individuals using drugs tend to experience amplified psychological adjustment[17] and social maladjustment problems[18] and related disorders.[19] Specifically, prolonged marijuana[17] and cannabis use[20] are associated with greater psychological challenges. In Pakistan's Sindh region[21] and the capital,[21] studies report that drug users often feel a heightened sense of rejection by their parents, perceive their parents as hostile or neglectful, and frequently engage in poly-drug use, relying heavily on their family's guidance for life decisions.

The current study

Late adolescent drug consumption has been consistently associated with factors such as peer influence,[22] parental acceptance-rejection,[16] association with deviant peers, and psychological adjustment.[17] Prior research within the Pakistani context has rarely drawn comparisons between occasional and non-occasional drug craving. This study aims to explore the psychosocial attributes and psychological adjustment within these two user groups in Pakistan. It has been established that the bonding between children, their parents, and peers is crucial, with parental acceptance acting as a protective factor against psychological complications, substance use, and related issues.[23] Notably, drug utilization rates have been observed to be higher in males than in females,[24] and a history of low socioeconomic status (SES) has been correlated with cannabis use later in life.[25]

This research endeavors to ascertain the impact of psychosocial factors, parental dynamics, peer pressure, and psychological adjustment on occasional drug users. The findings are intended to equip society, including parents, educators, and social welfare groups, with vital knowledge to implement early intervention strategies aimed at reducing substance misuse among Pakistani youth.

METHODS

Participants

Participants were drawn from a pool of students attending six high schools and six colleges within Islamabad and Rawalpindi, the twin cities that make up Pakistan's capital territory. Eligible participants were: 1) currently enrolled students; 2) residents of the aforementioned cities; 3) possessing more than eight years of educational background; 4) free from other mental health diagnoses or psychiatric clinic visits; and 5) able to provide parent signed informed consent agreeing to participate in the study. Although G Power 3.1.9.7 (Franz Faul, Kiel University, Germany) suggested a sample size of 210 and the Rao Soft (Raosoft Inc., Seattle, WA, USA) sample calculator recommended 240, this study exceeded both suggestions with a total of 338 participants, boasting a mean age of 18.64±1.18 years.

The Institutional Review Board & Ethics Committee (IRB & EC) and the Federal Education Directorate (FED) of educational institutions sanctioned the study's protocols (ref no: STMU/PSY/IRB23/2020). Some participants were minors; in such cases, expert researchers thoroughly explained the study procedures to the parents, who provided signed informed consent.

Demographic characteristics

Employing a cross-sectional design, the study collected data through comprehensive questionnaires administered by the researchers. These questionnaires solicited demographic details such as age, gender, educational attainment, family structure, monthly family income estimates, drug usage patterns, occasions of drug use, initial drug influence, cravings, family history of drug cravings, and parental education levels.

Measures

Adult Parental Acceptance-Rejection Questionnaire - Short Form

The Adult Parental Acceptance-Rejection Questionnaire Short Form, originally designed by Rohner and Khaleque,[26] measures perceptions of parental care, acceptance, warmth, and neglect from childhood experiences. This short form captures the essence of whether children felt accepted or rejected by their parents. It features 48 items, split evenly to reflect maternal and paternal experiences, each rated on a 4-point Likert scale from "almost always true" (4) to "almost never true" (1), yielding scores ranging from 24 to 96. The subscales include warmth/affection (8 items), hostility/aggressiveness (6 items), indifference/neglect (6 items), and undifferentiated/overall rejection (4 items). In this study, reliability coefficients were 0.819 for fathers and 0.832 for mothers, aligning with the pre-

viously reported 0.95.[26]

Peer Pressure Questionnaire-Revised

The Peer Pressure Questionnaire-Revised assesses the magnitude of peer influence through 25 items by Saini and Singh,[27] each with a 5-point Likert response option from "strongly disagree" (1) to "strongly agree" (5). It reflects the level of peer pressure in current circumstances, with total scores spanning from 25 to 125. Higher scores indicate stronger peer influence. Previous literature cited the reliability of 0.77,[27] while this study reports a Cronbach's alpha of 0.866.

Adult Personality Assessment Questionnaire

The Adult Personality Assessment Questionnaire, developed by Rohner and Khaleque,[26] evaluates self-perceptions across seven personality domains, including aggression, dependency, self-esteem, self-adequacy, emotional responsiveness, emotional stability, and worldview. Each of the 42 items is scored on a 4-point Likert scale from "almost never true" (1) to "almost always true" (4). The total score, which provides a comprehensive picture of psychological adjustment, can range from 42 to 168. This study's reliability was recorded at 0.705, close to the previously documented[28] 0.86.

Statistical analysis

Initially, data prepossessing steps such as outlier removal and missing value handling were conducted. Next, we assessed the normality of demographic and other variables using the Kolmogorov–Smirnov test. Non-normally distributed variables underwent log transformation for standardization prior to analysis. The Kruskal–Wallis H test was applied to variables that remained non-normal. Categorical variables were analyzed using the chi-square test to contrast occasional drug craving with non-drug craving. For variables showing normal distribution, Pearson's correlation, independent samples t-tests, and analysis of variance determined mean differences based on gender, drug use frequency, family structure, SES, and age in relation to parental acceptance-rejection, peer pressure, and psychological adjustment. Post-hoc analyses for multiple comparisons were conducted with a 95% confidence interval. Binary logistic regression was utilized to gauge the strength of effects within the Statistical Package for the Social Sciences (SPSS) version 25 (IBM Corp., Armonk, NY, USA).

RESULTS

The current investigation sought to scrutinize the psychosocial factors and psychological adjustments among adolescents and young adults, contrasting occasional drug craving with non-craving.

Prevalence, demographic characteristics, and correlations

Of the 338 participants, 44.1% reported occasional drug cravings. Table 1 delineates the demographic distinctions between the subgroups of occasional and non-occasional drug craving participants, highlighting differences in age, gender, parental education, SES, drug usage patterns, initiation scenarios for drug craving, and familial drug history. Frequencies in Table 1 depict demographic variables, including the prevalence of drug use among users and non-users, distinguished by gender, age, educational level, SES, family structure, type of drug use, and initial drug use circumstances. All variables (peer pressure, father acceptance-rejection, mother acceptance-rejection, and adult personality assessment) achieved the alpha threshold levels of 0.819, 0.832, 0.866, and 0.705, respectively.

Peer pressure showed a positive association with paternal warmth, hostility, indifference, and undifferentiated rejection (ranging from $r=0.171$ to $r=0.421$, $p<0.01$), and similarly with maternal undifferentiated rejection, hostility and warmth ($r=0.138$ to $r=0.192$, $p<0.05$ to $p<0.01$). Conversely, psychological adjustment correlated negatively with paternal warmth ($r=-0.240$, $p<0.01$), suggesting that parental affection fosters better psychological adjustment. Maternal hostility exhibited a positive correlation (Supplementary Table 1).

Drug types and situation-specific drug craving behaviors were found to correlate with the study variables; peer pressure and psychological adjustment showed negative associations with drug types and positive links with context-specific drug craving behaviors. Notably, paternal hostility, indifference, and undifferentiated rejection were negatively related to drug types and context-based drug craving, contrasting with maternal associations (Supplementary Table 1).

Comparative analyses

Significant contrasts emerged between occasional drug craving and non-craving participants, with paternal undifferentiated rejection playing a larger role in occasional drug craving [$t(338)=-15.43$, $p=0.001$] than maternal undifferentiated rejection [$t(338)=-0.822$, $p=0.412$] (Table 2). Peer pressure significantly influenced adolescents and young adults in terms of drug craving [$t(338)=-11.91$, $p=0.001$], and personality assessments indicated higher psychological adjustment challenges among those with occasional cravings [$t(338)=-7.82$, $p=0.001$]. Peer pressure and psychological adjustment levels were higher in individuals with occasional drug cravings [$t(338)=-1.989$, $p<0.05$; $t(338)=2.076$, $p<0.05$]. Parental acceptance-rejection patterns, especially paternal undifferentiated rejection, were more prevalent in joint family structures [$t(338)=-2.588$, $p=0.010$], and paternal hostility was notable

Table 1. Demographic characteristics of occasional and non-occasional drug carving

Characteristic	Total (N=338)	Occasionally drug craving (N=149)	Non-drug craving (N=189)	df	H or χ^2	p	Eta
Age				2	47.21	0.001***†	0.374
14–16 yr	47 (13.9)	5	42				
17–19 yr	192 (56.8)	76	116				
20–22 yr	99 (29.9)	68	31				
Gender				1	24.12	0.001***†	0.267
Male	237 (70.1)	125	112				
Female	101 (29.9)	24	77				
Education levels				2	41.13	0.001***†	0.349
Metric	8 (2.4)	2	6				
Intermediate	189 (55.9)	56	133				
Graduation	141 (41.7)	91	50				
Socioeconomic status				2	12.49	0.002**†	0.192
Lower	30 (8.9)	2	6				
Middle	285 (84.3)	56	133				
High	23 (6.8)	91	50				
Family system				1	0.96	0.330†	0.053
Nuclear	245 (72.5)	104	141				
Joint	93 (27.5)	45	48				
Type of occasional drug carving				5	321.97	<0.001***†	0.976
Tobacco	135 (39.9)	133	2				
LSD	1 (0.3)	1	0				
Heroine	6 (1.8)	6	0				
Ice	2 (0.6)	2	0				
Never use	189 (55.9)	2	187				
All substance tried	5 (1.5)	5	0				
Starting situation of drug carving				7	318.22	<0.001***†	0.970
Friends gathering	53 (15.7)	51	2				
Cousins	3 (0.9)	3	0				
For pleasure and adventure	13 (3.8)	13	0				
Party	9 (2.7)	9	0				
Sad	17 (5.0)	17	0				
Every situation	17 (5.0)	17	0				
Stress	38 (11.2)	37	1				
Family drug carving: smoking history				1	15.32	0.001***†	0.213
Yes	120 (35.5)	70	50				
No	218 (64.5)	79	139				
Impress from family member							
Yes	21 (6.2)						
No	317 (93.6)						
Influenced by group							
Yes	35 (10.4)						
No	303 (89.6)						

Table 1. Demographic characteristics of occasional and non-occasional drug carving (continued)

Characteristic	Total (N=338)	Occasionally drug craving (N=149)	Non-drug craving (N=189)	df	H or χ^2	p	Eta
Father occupation							
Government employ	122 (36.1)						
Private employ	41 (12.1)						
Businessman	81 (24.0)						
Work abroad	22 (6.5)						
Other	72 (21.3)						
Mother occupation							
Government employ	10 (3.0)						
Private employ	9 (2.7)						
House wife	312 (92.3)						
Other	7 (2.1)						
Approximate family income							
10,000−25,000 PKR	42 (12.4)						
25,000−40,000 PKR	81 (24.0)						
45,000−50,000 PKR	87 (25.7)						
>50,000 PKR	128 (37.9)						
Carving situation of drugs	NA	78.04	241.6		453.5	0.001***‡	NA
Type of carving drugs	NA	83.64	237.19		1,287.0	0.001***‡	NA
Family income	NA	181.66	159.91		12,268.0	0.033*‡	NA

Values are presented as n (%) or numbers only. *p<0.05; **p<0.01; ***p<0.001; †chi-square test; ‡Mann–Whitney U-Test. LSD, lysergic acid diethylamide; PKR, Pakistani Rupees; NA, not applicable

in nuclear families [t (338)=-2.835, p=0.005].

Gender disparities were evident, with females experiencing more peer pressure than their male counterparts [t (338)=3.866, p=0.001], although no significant differences were found in adjustment. The data indicated a typical Asian paternal role, with heightened rejection directed towards male children [t (338)=5.835, p=0.001], and increased neglect and hostility towards females [t (338)=2.069, p=0.040; t (338)=3.074, p=0.002], in opposite, higher paternal warmth for male [t (338)=-2.017, p=0.046].

SES and age comparisons

Table 3 shows that SES significantly differed across three groups, impacting peer pressure, psychological adjustment, and parental acceptance-rejection. Particularly, mother hostility was most pronounced in higher-income families [F (2,335)=7.033, p<0.01], and a similar trend was observed with paternal neglect [F (2,335)=2.874, p<0.01].

Age differences were also significant, with individuals aged 20−22 years exhibiting the highest levels of peer pressure and psychological adjustment challenges [F (2,335)=17.95, p<0.001; F (2,335)=4.16, p<0.01], as well as higher paternal rejection [F (2,335)=1.181, p<0.001]. Post-hoc Bonferroni-adjusted comparisons underscored that the 20−22 age group is at higher risk, as indicated by significant mean differences in parental acceptance-rejection scores.

Factors associated with drug craving

Stepwise binary logistic regression analysis highlighted factors independently associated with occasional drug cravings. The model (Wald χ^2=93.14, df=7, p<0.001), accounted for a significant proportion of the variance (32.2% to 0.1%) and correctly classified a majority of cases (74.0%). Older adolescents (20−22 years) 7.865 times were significantly more likely to exhibit drug cravings, while higher family income within the middle-class bracket was associated with reduced drug craving likelihood (Table 4).

Further analysis indicated that Model (Wald χ^2=224.685, df=10, p<0.001), accounted for a significant proportion of variances (81.7% to 60.9%) and correctly classified for majority of cases (90.2%). Increased paternal hostility, indifference negligence, undifferentiated rejection, peer pressure and psychological adjustment significantly predicted higher odds of occasional drug cravings 2.50, 1.93, 6.23, 5.28 and 1.04, respectively.

Table 2. Comparative analysis based on occasional and non-occasional drug craving, family structure, and gender

Drug craving	Non-drug-craving (N=189)	Occasional drug craving (N=149)	t (338)	p	Cohen's d
PPQ	-0.483±0.834	0.613±0.845	-11.911	0.001***	0.839
PAQ	-0.343±0.976	0.435±0.851	-7.820	0.001***	0.923
F-PAR	-1.043±1.150	-0.402±0.862	-3.643	0.001***	0.962
M-PAR	-0.527±1.223	-0.217±0.675	-1.961	0.051†	1.031
M-warmth	-0.573±1.157	-0.600±1.080	0.147	0.883	1.123
M-hostile	-0.138±0.691	-0.409±0.750	2.212	0.014**	0.718
M-indiffer	-0.399±0.779	-0.399±0.856	0.000	>0.999	0.711
M-undiff	-0.682±1.170	-0.517±1.222	-0.822	0.412	1.198
F-undiff	1.812±0.364	2.318±0.234	-15.430	0.001***	0.314
F-indiffer	-0.342±0.648	-0.301±0.690	-0.347	0.729	0.678
F-hostile	-0.274±0.652	-0.337±0.656	0.558	0.577	0.655
F-warmth	-0.466±1.139	-0.654±1.350	0.881	0.380	1.245
Family structure	Joint family (N=93)	Nuclear family (N=245)	t (338)	p	Cohen's d
PPQ	0.174±0.878	-0.066±1.036	-1.989	0.047*	0.995
PAQ	-0.164±0.834	0.062±1.050	2.076	0.039*	0.996
F-PAR	-0.594±1.041	-0.608±0.988	-0.091	0.928	1.007
M-PAR	-0.229±1.001	-0.446±1.058	-0.811	0.419	1.040
M-warmth	-0.385±1.102	-0.699±1.119	-1.654	0.100	1.113
M-hostile	-0.057±0.692	-0.327±0.730	-1.919	0.057	0.721
M-indiffer	-0.524±0.690	0.336±0.858	1.475	0.143	0.807
M-undiff	-0.435±1.146	-0.683±1.214	-1.139	0.256	1.195
F-undiff	2.119±0.340	2.004±0.419	-2.588	0.010**	0.399
F-indiffer	-0.291±0.721	-0.323±0.663	-0.270	0.787	0.678
F-hostile	-0.119±0.627	-0.419±0.646	-2.835	0.005**	0.639
F-warmth	-0.638±1.174	-0.511±1.287	0.576	0.565	1.247
Gender	Male (N=237)	Female (N=101)	t (338)	p	Cohen's d
PPQ	0.134±1.021	-0.315±0.875	3.866	0.001***	0.979
PAQ	-0.028±1.020	0.066±0.952	-0.795	0.427	1.000
F-PAR	-0.507±0.912	-1.041±1.274	2.211	0.033*	0.986
M-PAR	-0.275±0.874	-0.707±1.333	1.944	0.057	1.023
M-warmth	-0.643±1.156	-0.397±0.978	-1.142	0.255	1.118
M-hostile	-0.214±0.743	-0.378±0.681	1.182	0.239	0.727
M-indiffer	-0.355±0.843	-0.468±0.753	0.849	0.397	0.810
M-undiff	-0.495±1.245	-0.907±1.022	1.903	0.059	1.186
F-undiff	2.115±0.377	1.849±0.397	5.835	0.001***	0.383
F-indiffer	-0.256±0.661	-0.524±0.700	2.069	0.040*	0.696
F-hostile	-0.257±0.634	-0.697±0.654	3.074	0.002**	0.637
F-warmth	-0.691±1.285	-0.225±1.081	-2.017	0.046*	1.231

Values are presented as mean±standard deviation. *p<0.05; **p<0.01; ***p<0.001; †marginally significant. PPQ, Peer Pressure Questionnaire; PAQ, Personality Assessment Questionnaire; F-PAR, Parental Acceptance Rejection Father Questionnaire; M-PAR, Parental Acceptance Rejection Mother Questionnaire; M-warmtn, mother warmth/affection; M-hostile, mother hostility/aggresson; M-indiffer, mother indifferent/neglect; M-undiff, mother undifferentiated rejection; F-undiff, father undifferentiated rejection; F-indiffer, father indifferent/neglect; F-hostile, father hostility/aggresson; F-warmth, father warmth/affection

Table 3. Comparative analysis based on socioeconomic status and age groups

SES	Lower class (1) (N=30)	Middle class (2) (N=285)	High class (3) (N=23)	F (2,335)	η^2	Post-Hoc
PARQF	51.001±8.782	45.160±11.273	51.394±7.830	0.837	0.010	3>1>2
PARQM	45.370±8.013	39.691±10.654	36.222±7.422	0.416	0.006	1>2>3
PPQ	73.600±12.524	69.222±16.822	74.261±12.355	1.850	0.011	3>1>2
A-PAQ	113.401±9.170	111.760±8.070	115.300±5.623	2.461	0.015	3>1>2
M-warmth	-0.668±1.127	-0.586±1.143	-0.303±0.664	0.285	0.004	1>2>3
M-hostile	-0.082±0.604	-0.243±0.726	-1.371±0.000	7.033**	0.094	3>2>1
M-indiffer	-0.529±0.839	-0.327±0.792	-1.059±0.696	2.874**	0.056	3>1>2
M-undiff	-0.595±1.256	-0.621±1.189	-0.311±1.705	0.144	0.001	2>1>3
F-undiff	2.189±0.283	2.020±0.407	2.026±0.436	0.388	0.014	1>3>2
F-indiffer	-0.374±0.831	-0.283±0.641	-0.471±0.729	0.285	0.008	3>1>2
F-hostile	-0.212±0.715	-0.346±0.654	-0.212±0.595	0.243	0.007	2>3=1
F-warmth	-0.509±1.305	-0.596±1.232	-0.219±1.364	0.787	0.007	2>1>3
Age	14–16 yr (1) (N=47)	17–19 yr (2) (N=192)	20–22 yr (3) (N=99)	F (2,335)	η^2	Post-Hoc
PARQF	40.791±10.540	45.050±10.990	50.695±9.831	0.143	0.013	3>2>1
PARQM	40.533±11.011	39.600±9.842	40.370±11.233	2.357	0.031	1>3>2
PPQ	61.010±13.554	68.644±16.132	76.741±15.132	17.950***	0.097	3>2>1
PAQ	109.282±9.300	112.353±6.940	113.350±8.071	4.160**	0.024	3>2>1
M-warmth	-1.000±1.140	-0.653±1.109	-0.321±1.097	3.091	0.033	3>1>2
M-hostile	-0.095±0.719	-0.347±0.710	-0.187±0.759	0.697	0.019	3>2>1
M-indiffer	-0.371±0.843	-0.401±0.807	-0.411±0.812	0.013	0.000	3>2>1
M-undiff	-0.187±0.981	-0.776±1.221	-0.551±1.220	3.305	0.032	2>1>3
F-undiff	1.869±0.407	2.023±0.381	2.138±0.411	1.181***	0.043	3>2>1
F-indiffer	-0.156±0.565	-0.305±0.674	-0.359±0.706	0.227	0.006	3>2>1
F-hostile	-0.373±0.643	-0.339±0.645	-0.280±0.673	0.087	0.003	1>2>3
F-warmth	-0.652±1.424	-0.729±1.246	-0.729±1.246	3.099	0.029	3=2>1

Values are presented as mean±standard deviation. **p<0.01; ***p<0.001. PARQF, Parental Acceptance-Rejection Questionnaire Father-Form; PARQM, Parental Acceptance-Rejection Questionnaire Mother-Form; PPQ, Peer Pressure Questionnanire; PAQ, Adult Personality Assessment Questionnaire; M-warmth, mother warmth/affection; M-hostile, mother hostility/aggresson; M-indiffer, mother indifferent/neglect; M-undiff, mother undifferentiated rejection, F-warmth, father warmth/affection; F-hostile, father hostility/aggresson; F-indiffer, father indifferent/neglect; F-undiff, father undifferentiated rejection

Conversely, increased paternal warmth and maternal hostility were associated with reduced odds (0.57 and 0.19 times) of occasional drug cravings.

DISCUSSION

The exploration of sociodemographic attributes linked to occasional drug cravings among Pakistani students remains limited. Our study's findings are crucial: 1) the prevalence of occasional drug cravings is considerable, at 44.1%, among students in Pakistan's capital territory, typically from families considered part of the elite class. 2) There is a heightened risk for occasional drug cravings among male students aged 17 to 19 years from high-income, nuclear families with higher parental education levels and those who use tobacco in social gatherings or as a response to stress but without a family history of drug cravings. 3) Aggressive and hostile paternal behavior, paternal rejection and negligence, maternal aggression and hostility, warmth and love significantly correlate with occasional drug cravings. 4) Higher maternal hostility and negligence were more prevalent in high-income families. Binary logistic regression further confirmed the independent associations of paternal and maternal behaviors, peer pressure, and psychosocial adjustment with occasional drug cravings.

Our cross-sectional analysis revealed a significant prevalence of tobacco use (39.9%) among occasional drug users, contrasting with previous studies[29,30] that reported higher rates for heroin and ice (19% and 11%, respectively) and heroin and cannabis.[31] Notably, drug initiation among young adults aged 14 to 16 years stood at 13.9%, marking a deviation from Paki-

Table 4. Binary logistic regression analysis for study variables

	B	SE	Wald	df	p	OR	95% CI
Step 1‡							
Age			2.681	2	0.262		
Age (1)	0.863	0.952	0.822	1	0.365	2.370	0.367–15.319
Age (2)	1.621	1.057	2.352	1	0.125	5.056	0.637–40.105
Gender (1)	0.263	0.621	0.180	1	0.671	1.301	0.386–4.392
SES			3.798	2	0.150		
SES (1)	-1.305	0.696	3.514	1	0.061	0.271	0.069–1.061
SES (2)	-0.832	0.991	0.704	1	0.402	0.435	0.062–3.038
Education			2.333	2	0.311		
Education (1)	0.170	1.944	0.008	1	0.930	1.185	0.026–53.565
Education (2)	0.995	2.004	0.246	1	0.620	2.704	0.053–137.450
F_warmth	-0.651	0.292	4.961	1	0.026*	0.521	0.294–0.925
F_hostility	0.927	0.333	7.734	1	0.005**	2.526	1.315–4.853
F_indifferent	0.834	0.334	6.222	1	0.013**	2.303	1.196–4.436
F_undiff_reject	1.904	0.369	26.688	1	<0.001***	6.715	3.260–13.830
M_undiff_reject	-0.202	0.310	0.422	1	0.516	0.817	0.445–1.502
M_indifferent	-0.378	0.289	1.713	1	0.191	0.685	0.389–1.207
M_hostilitiy	-1.386	0.375	13.692	1	<0.001***	0.250	0.120–0.521
M_warmth	0.290	0.227	1.629	1	0.202	1.337	0.856–2.086
PPQ	1.712	0.334	26.296	1	<0.001***	5.543	2.880–10.665
APAQ	0.104	0.034	9.030	1	0.003**	1.109	1.037–1.187
Constant	-12.977	4.429	8.584	1	0.003**	0.000	NA
Step 2§							
Age			4.452	2	0.108		
Age (1)	0.993	0.899	1.222	1	0.269	2.700	0.464–15.713
Age (2)	1.965	1.007	3.809	1	0.051†	7.136	0.992–51.348
Gender (1)	0.029	0.583	0.003	1	0.960	1.030	0.328–3.230
SES			5.706	2	0.058		
SES (1)	-1.557	0.668	5.436	1	0.020*	0.211	0.057–0.780
SES (2)	-1.060	0.953	1.236	1	0.266	0.347	0.054–2.243
Education			3.134	2	0.209		
Education (1)	0.174	2.080	0.007	1	0.933	1.190	0.020–70.215
Education (2)	1.093	2.125	0.264	1	0.607	2.983	0.046–192.133
F_warmth	-0.563	0.282	3.988	1	0.046*	0.570	0.328–0.990
F_hostility	0.916	0.316	8.393	1	0.004**	2.500	1.345–4.646
F_indifferent	0.655	0.316	4.300	1	0.038*	1.925	1.037–3.575
F_undiff_reject	1.825	0.349	27.409	1	<0.001***	6.201	3.132–12.279
M_hostility	-1.643	0.309	28.364	1	<0.001***	0.193	0.106–0.354
PPQ	1.664	0.321	26.897	1	<0.001***	5.278	2.815–9.898
APAQ	0.102	0.033	9.851	1	0.002**	1.108	1.039–1.181
Constant	-12.762	4.269	8.935	1	0.003**	0.000	NA

*p<0.05; **p<0.01; ***p<0.001; †marginiallly significant; ‡variable(s) entered in step 1; §variable(s) entered in step 2. SES, socioeconomic status; F_warmth, father warmth/affection; F_hostility, father hostility/aggresson; F_indifferent, father indifferent/neglect; F_undiff_reject, father undifferentiated rejection; M_undiff_reject, mother undifferentiated rejection; M_indifferent, mother indifferent/neglect; M_hostilitiy, mother hostility/aggresson; M_warmth, mother warmth/affection; PPQ, Peer Pressure Questionnanire; APAQ, Adult Personality Assessment Questionnaire; SE, standard error; OR, odds ratio; CI, confidence interval; NA, not applicable

stan's historical drug use trends. This is compounded by reports of individuals aged 15 to 20 years[32] and 19 to 21 years[32] using drugs to cope with stress, alongside a notable increase in smokers by 9.1% since 2018.[33] Such early initiation often escalates to severe cravings and addiction, with about 90% transitioning to heroin by age 18.[31-34] Our findings confirm tobacco's status as the most widely used drug across genders,[2] suggesting a shift in youth attitudes toward social engagement, peer influence, and drug exploration.

Comparatively, previous research indicated drug use rates at 41.6%,[35] 8%,[31] and 7.4%[36] among students. Our study identified a greater prevalence of drug craving (44.1%), with primary substances including tobacco (39.9%), heroin (1.8%), ice (0.6%), lysergic acid diethylamide (0.3%), and a small fraction (1.5%) using a variety of drugs. This highlights the significant role of peer pressure and familial dynamics in fostering drug cravings. Literature suggests that perceived parental neglect greatly increases the risk for substance use disorders,[13] with peer encouragement for drug experimentation leading to psychosocial and behavioral issues.[19,20] This pattern likely stems from the influence of peers over neglectful or hostile parental relationships. In our cohort, 11.2% resorted to drugs due to stress, 5.0% from sadness, and 15.7% in social settings, underscoring the impact of peer dynamics.[13,22,37] The challenge of resisting peer pressure, driven by the need for acceptance and fear of exclusion, may explain these trends.

Although recent data on the general population's occasional drug craving rates are lacking, earlier reports suggest a higher prevalence than our current findings.[13,30] Our results align with global observations on adolescent drug experimentation[13,30,38] especially tobacco[15] and, to a lesser extent, heroin and cannabis[31] as primary substances used in peer gatherings and media.[39]

Our analysis also highlighted the strong predictive role of paternal rejection in occasional drug cravings, reinforcing the linkage established by previous research between sub-optimal parenting and drug cravings.[11,14,22] One possible explanation could be for the findings that in Pakistan's patriarchal society, fathers often adopt an authoritarian stance, limiting open communication with their children. Conversely, maternal rejection and hostility were associated with drug cravings, underscoring the children's need for maternal empathy and protection. Thus, the mother is perceived as a protective figure.[40]

In our results, students exhibited higher psychological adjustment levels and showed lower drug cravings, suggesting that psychosocial well-being mitigates the risk of substance use. This is consistent with literature associating psychological challenges with substance use, both licit and illicit.[17,19] It appears that students under stress, or those from families marked by negligence or negative peer influences, are more vulnerable to drug use. We also observed that male students, especially those from joint family systems, are more susceptible to drug cravings than females; these results are in line with past research.[30,41] Cultural norms may lead to under reporting in females, while the dynamics of joint families might contribute to less parental attention, potentially increasing the likelihood of drug use. Moreover, parental rejection was more significant in families with higher SES, potentially due to less parental engagement; the children follow their peers and try out new things for fun, particularly trying elite-class families' life patron. This finding complements studies linking lower SES with smoking and higher status with alcohol and marijuana use.[30,41]

There are limitations to consider: the cross-sectional design and student-based sample size restrict our ability to establish causal relationships. Future longitudinal research should broaden the sample to include general and clinical populations for a more comprehensive understanding. Furthermore, as the data were self-reported by students without parental input, incorporating parent-child dyadic data could offer more robust insights.

In sum, our study unveils a significant rate of occasional drug use (44.1%) among Pakistani students, driven by various factors, including parental acceptance rejection, peer pressure, and psychological adjustment. Given these findings, it is imperative to develop educational and preventative measures targeting institutes, families, and youth, as well as awareness programs for parents about parenting styles and the ramifications of drug use and addiction.

Supplementary Materials

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Availability of Data and Material

The supplementary material for this article can be found online or obtained from the corresponding author upon reasonable request.

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Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

Author Contributions

Conceptualization: Ayesha Nida, Arsalan Haider. Data curation: all authors. Formal analysis: Ayesha Nida, Arsalan Haider. Funding acquisition: Xiang-Yang Zhang. Investigation: Ayesha Nida, Arsalan Haider. Methodology: Ayesha Nida, Arsalan Haider. Resources: Arsalan Haider, Xiang-Yang Zhang. Software: Ayesha Nida, Arsalan Haider. Supervision: Xiang-Yang Zhang. Validation: Arsalan Haider, Xiang-Yang Zhang. Writing—original draft: Ayesha Nida, Arsalan Haider. Writing—review & editing: Arsalan Haider, Xiang-Yang Zhang.

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