Pakistan Journal of Positive Psychology

Print ISSN : 3078-6428 | Online ISSN : 3078-6436
Pakistan Journal of Positive Psychology

Original Article

Drug Abuse, Emotional, and Externalizing Behavioral Problems among Incarcerated Juveniles in Punjab, Pakistan

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KEYWORDS:
Incarcerated Juvenile Offenders, Drug Abuse, Emotional Problems, Depression, Anxiety, Stress, Externalizing Behavioral Problems, Rehabilitation

CITE THIS ARTICLE:
Khan, I., Sheikh, S. M., Malik, A., & Niazi, I. (2026). Drug abuse, emotional, and externalizing behavioral problems among incarcerated juveniles in Punjab, Pakistan. Pakistan Journal of Positive Psychology, 3(6), 63-73.

ABSTRACT

Drug abuse among incarcerated juvenile offenders is an important public health and criminal justice concern, particularly where access to mental health and rehabilitation services is limited. The present study examined the relationships among drug abuse, emotional problems (depression, anxiety, and stress), and externalizing behavioral problems among incarcerated juveniles in Punjab, Pakistan. A quantitative correlational design was used with 300 incarcerated male juveniles aged 13–19 years recruited through purposive sampling from jails in Punjab, Pakistan, where designated wards were available for juveniles. Data were collected using a demographic information form, the Drug Abuse Screening Test–10 (DAST-10), the Depression Anxiety Stress Scales–21 (DASS-21), and the Externalizing Spectrum Inventory–Brief Form (ESI-BF). Drug abuse was positively associated with externalizing behavioral problems ($r = .60$, $p < .01$) and negatively associated with overall DASS-21 scores ($r = -.49$, $p < .01$). Drug abuse significantly predicted externalizing behavioral problems, explaining 34.9% of the variance, and significantly predicted emotional-problem scores, explaining 24.5% of the variance. Age, age at first drug use, substance type, offence type, and duration of current drug use were associated with distinct psychological and behavioral patterns. Overall, the findings support integrated rehabilitation approaches that address substance use, emotional functioning, and externalizing behavior while considering developmental and offence-related characteristics.

I. INTRODUCTION

Juvenile delinquency is a major social, psychological, and public health concern because persistent involvement in antisocial or unlawful behavior can disrupt education, family relationships, social development, and later opportunities. Adolescence is a distinctive developmental period characterized by continuing changes in cognitive functioning, emotional regulation, social relationships, and behavioral control. Developmental perspectives indicate that juvenile offending can follow different pathways: for some adolescents, antisocial behavior is largely limited to adolescence, whereas for others it can become more persistent. These differences underscore the importance of examining developmental and psychological factors associated with offending (Loeber & Farrington, 2012; Moffitt, 1993; Steinberg, 2014; Ishfaq & Kamal, 2025). Externalizing psychopathology is particularly relevant to juvenile offending because it includes aggression, rule-breaking, delinquency, impulsivity, substance-related behaviors, and other forms of behavioral dysregulation. These difficulties may reflect broader problems in

behavioral disinhibition and self-regulation (Beauchaine & McNulty, 2013; Frick & Nigg, 2012; Haq et al., 2025). Substance use is an important component of this profile. Adolescents may initiate substance use in the context of peer influence, emotional distress, family difficulties, social disadvantage, or risk-taking. Substance use may impair judgment and behavioral control while delinquent environments may increase exposure to substances, creating reciprocal associations between substance use and delinquency (Farrell et al., 2005; Jessor, 1991; White et al., 2013; Suhail et al., 2025; Wilson & Lipsey, 2024).

The relationship becomes particularly important among justice-involved youth. Adolescents in detention frequently present with multiple psychological and behavioral needs, including substance-related problems, conduct difficulties, aggression, trauma symptoms, anxiety, and mood problems (Abram et al., 2004, 2015, 2021; Beaudry et al., 2021; Teplin et al., 2002). Adverse developmental experiences such as family instability, maltreatment, neglect, violence, poverty, and school disruption may further contribute to difficulties in emotional development and behavioral regulation (Baglivio et al., 2014; Ford et al., 2012; Hughes et al., 2017; Ishfaq & Kamal, 2025). Emotional functioning is another important dimension. Depression, anxiety, and stress may influence how adolescents interpret situations, regulate emotions, and cope with demands. Emotional distress may coexist with behavioral problems and may be accompanied by maladaptive coping strategies, including substance use or aggressive responses (Compas et al., 2017; Gross, 2015; Ishfaq & Kamal, 2025). The DASS-21 provides a structured assessment of depression, anxiety, and stress (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Externalizing behavior, in contrast, is expressed primarily through observable actions such as aggression, violence, rule-breaking, delinquency, and impulsivity. Substance use, antisocial behavior, and disinhibitory traits may form part of a broader externalizing spectrum (Krueger et al., 2002, 2007; Nelson et al., 2011; Haq et al., 2025). The Pakistani context warrants specific attention because family structures, socioeconomic conditions, peer environments, and juvenile justice practices may differ from those examined in Western research. Pakistani studies have documented relationships between juvenile delinquency and family, parenting, self-control, emotional, and psychiatric factors, but comparatively limited work has examined drug abuse, depression, anxiety, stress, and externalizing behavior together among incarcerated juveniles (Ahmed & Murtaza, 2016; Ishfaq & Kamal, 2025; Riaz et al., 2021; Shafiq & Asad, 2020; Ullah et al., 2021; Haq et al., 2025; Suhail et al., 2025).

Understanding these domains together may help inform psychological assessment and rehabilitation within juvenile jail settings. Adverse childhood experiences and social disadvantage may further complicate the relationship between substance use and offending. Exposure to violence, neglect, family disruption, economic pressure, and school discontinuity can affect coping, emotional regulation, and opportunities for healthy development. Family support, supervision, and consistent behavioral boundaries may serve protective functions, whereas conflict, rejection, inadequate supervision, and problematic peer affiliations may increase vulnerability to delinquency and substance use (Barber et al., 2005; Chambers et al., 2001; Kauser & Pinquart, 2016; Nisar et al., 2015; Wilson & Lipsey, 2024). These contextual influences are important because the behavior observed during incarceration may reflect developmental patterns established before justice-system involvement. Mental health assessment within jail settings is therefore not simply an adjunct to legal supervision; it is a component of rehabilitation. Evidence from juvenile detention populations indicates substantial psychiatric morbidity and emphasizes the value of early identification and appropriate intervention (Abram et al., 2021; Beaudry et al., 2021; Tedeschi et al., 2024). Substance-use services may be particularly important because untreated problems can continue after release and may interfere with community reintegration. Adolescent-responsive treatment should be connected with continuing care and broader psychosocial support (Aalsma et al., 2019; Goldman et al., 2023). In Pakistan, a rehabilitation-oriented approach is also consistent with the broader direction of juvenile justice policy and the need to address psychological as well as behavioral needs. Accordingly, examining these variables within the same incarcerated population can provide a more integrated picture of young offenders' functioning. Such an approach may help distinguish patterns that are primarily emotional from those expressed through externalizing behavior and may identify groups requiring different forms of psychological support. The present study addresses this need by examining drug abuse, emotional problems, and externalizing behavioral problems together among incarcerated juveniles in Punjab.

Objectives

1. To assess levels of drug abuse, emotional problems, and externalizing behavioral problems among incarcerated juveniles in Punjab, Pakistan.
2. To examine relationships between drug abuse and emotional problems, drug abuse and externalizing behavioral problems, and emotional problems and externalizing behavioral problems.
3. To determine whether drug abuse significantly predicts externalizing behavioral problems and emotional problems.
4. To examine differences in study variables according to age, age at first drug use, type of substance, type of offence, and duration of current drug use.

Hypotheses

1. Drug abuse, emotional problems, and externalizing behavioral problems will be significantly related among incarcerated juveniles.
2. Drug abuse will significantly predict externalizing behavioral problems.
3. Drug abuse will significantly predict emotional problems.
4. Study variables will differ according to age and age at first drug use.
5. Emotional and externalizing outcomes will differ according to current drug-use duration, type of offence, and type of drug used.

II. METHOD

Participants

A quantitative correlational research design was employed. The sample comprised 300 incarcerated male juveniles detained in jails in Punjab, Pakistan, in designated wards for juvenile. Participants were aged 13–19 years, could understand Urdu or English, and participated voluntarily. Both first-time and repeat offenders were eligible. Juveniles with severe intellectual disability, severe psychotic or acute psychiatric conditions that interfered with assessment, inability to provide informed assent/consent, or serious physical illness preventing participation were excluded. Purposive sampling was used.

Table I: Socio-demographic Characteristics of Participants (N = 300)

Characteristics	Categories	n	%
Age	13–15 years	179	59.7
	16–19 years	121	40.3
Gender	Boy	300	100.0
Education	No formal education	28	9.3
	Primary	156	52.0
	Middle	115	38.3
	Matric	1	0.3
Family system	Nuclear	123	41.0
	Joint	177	59.0
Residence	Urban	129	43.0
	Rural	171	57.0
Current incarceration	Less than 6 months	167	55.7
	6 months–1 year	128	42.7
	1–2 years	1	0.3
Primary substance	Cannabis	24	8.0
	Heroin	56	18.7
	Ice	82	27.3
	Opioids	2	0.7
	Inhalants	136	45.3
Age at first drug use	11–14 years	180	60.0
	15–18 years	120	40.0

Current offence	Theft	104	34.7
	Robbery	41	13.7
	Drug-related offence	58	19.3
	Assault/violence	97	32.3

Measures

A demographic information form recorded age, gender, education, family system, family income, residence, offence type, duration of incarceration, previous incarceration, family history of substance abuse, type of substance used, and duration of drug use. Drug-related problems were assessed with the Drug Abuse Screening Test–10 (DAST-10; Skinner, 1982), a 10-item self-report measure of drug-related problems other than alcohol during the previous 12 months. Emotional problems were assessed with the Depression Anxiety Stress Scales–21 (DASS-21; Lovibond & Lovibond, 1995), comprising seven-item depression, anxiety, and stress subscales. Externalizing behavioral problems were assessed with the 102-item Externalizing Spectrum Inventory–Brief Form (ESI-BF; Patrick et al., 2013), which assesses aggression, rule-breaking/delinquent behavior, impulsivity, and related behavioral disinhibition.

Procedure

Following ethical approval and permission from the relevant jail authorities, eligible juveniles were approached and the purpose of the research was explained. Informed assent/consent was obtained. Participants completed the demographic form and study measures individually under the researcher's supervision. Responses were coded and entered into IBM SPSS Version 25. Descriptive statistics, Cronbach's alpha, Pearson product–moment correlations, simple linear regression, independent-samples t tests, and one-way ANOVAs were conducted. Statistical significance was evaluated at $p < .05$. Ethical safeguards included voluntary participation, confidentiality and anonymity, the right to withdraw without penalty, and psychological support or referral if assessment-related distress arose. Ethical approval was obtained from the relevant jail authorities before data collection, and informed assent/consent was obtained from participants. Participation was voluntary, confidentiality and anonymity were maintained, participants could withdraw without penalty, and psychological support or referral was available if assessment-related distress arose.

III. RESULTS

The analyses examined reliability, descriptive characteristics, associations among study variables, predictive relationships, and differences across age, age at first drug use, substance type, offence category, and duration of current drug use. The statistics below reproduce the results reported in the study.

Table II: Psychometric Properties

	Panel A: Descriptive Statistics and Reliability of Study Measures			
Measures	M	SD	Range	α
Drug Abuse (DAST-10)	4.50	4.50	0–9	.90
DASS-21 Total	35.73	10.06	10–63	.91
Depression	12.0	3.73	3–21	.77
Anxiety	11.87	3.56	4–21	.76
Stress	11.86	3.56	3–21	.74
Externalizing Spectrum Inventory	228.75	43.0	134–287	.95
Aggressive/Violent Externalizing	32.0	6.58	17–44	.82
Rule-Breaking/Delinquent	54.78	10.91	29–74	.87
Impulsivity Trait	27.44	5.53	12–41	.75

	Panel B: Pearson Correlations, Means, and Standard Deviations of Study Variables										
Variables	M	SD	1	2	3	4	5	6	7	8	9
1. Drug Abuse	4.50	4.50	—								
2. Depression Anxiety Stress	35.73	10.06	−.49**	—							
3. Depression	12.00	3.73	−.51**	.93**	—						
4. Anxiety	11.87	3.56	−.40**	.92**	.80**	—					

5. Stress	11.86	3.56	−.46**	.92**	.79**	.78**	—				
6. Externalizing Problems	228.75	43.00	.60**	−.53**	−.54**	−.44**	−.50**	—			
7. Aggressive Violent Externalizing	32.00	6.58	.53**	−.47**	−.48**	−.40**	−.44**	.93**	—		
8. Rule Breaking Delinquent	54.78	10.91	.57**	−.52**	−.53**	−.43**	−.50**	.96**	.87**	—	
9. Impulsivity Trait	27.44	5.53	.48**	−.44**	−.45**	−.35**	−.43**	.90**	.80**	.83**	—

Note. M = mean; SD = standard deviation; α = Cronbach's alpha.

The study measures demonstrated acceptable to excellent internal consistency. The DAST-10 showed α = .90, the DASS-21 total showed α = .91, and the ESI-BF showed α = .95. The DASS-21 subscales ranged from α = .74 to .77, while ESI-BF subscales ranged from α = .75 to .87.

Table III: Linear Regression Analysis

Variables	B	SE	t	p	95% CI
	Predicting Externalizing Behavioral Problems from Drug Abuse				
Constant	203.407	2.838	71.672	< .001	[197.822, 208.992]
Drug Abuse	5.633	0.446	12.63	< .001	[4.755, 6.510]
	Predicting Emotional Problems from Drug Abuse				
Constant	40.7	0.715	56.916	< .001	[39.293, 42.107]
Drug Abuse	-1.105	0.112	-9.836	< .001	[-1.326, -0.884]

Note. B = unstandardized regression coefficient; SE = standard error; C I= confidence interval; dependent variable = Depression Anxiety Stress Scale.

Simple Linear Regression Predicting Externalizing Behavioral Problems: Drug abuse was significantly negatively correlated with DASS-21 total scores and depression, anxiety, and stress (r = −.40 to −.51, p < .01), while it was positively associated with externalizing problems and their dimensions. The strongest positive association was with overall externalizing problems (r = .60, p < .01). Simple Linear Regression Predicting Emotional Problems from Drug Abuse: The regression model was statistically significant, F (1, 298) = 159.528, p < .001, R = .590, R^2 = .349, adjusted R^2 = .346. Drug abuse therefore accounted for 34.9% of the variance in externalizing behavioral problems.

Table IV: Independent Sample t test

Variables	13–15 (*n*=179) M	13–15 (*n* 179) SD	16–19 (*n* = 121) M	16–19 (*n* =121) SD	t	p	Cohen's d
	Panel A. Independent-Samples t-Test of Age Differences in Study Variables						
Drug Abuse	5.03	4.48	3.72	4.45	2.48	.013	.29
DASS-21 Total	33.91	10.20	38.42	9.26	−3.90	< .001	−.46
Depression	11.44	3.76	12.82	3.53	−3.18	.002	−.38
Anxiety	11.27	3.64	12.76	3.24	−3.63	< .001	−.43
Stress	11.20	3.53	12.84	3.39	−4.03	< .001	−.48
Externalizing Problems	233.10	40.19	222.33	46.27	2.08	.038	.25
Aggressive/Violent	32.64	6.13	31.05	7.12	2.00	.046	.24
Rule-Breaking/Delinquent	55.83	10.29	53.21	11.63	2.00	.046	.24
Impulsivity Trait	27.75	5.17	26.98	6.03	1.14	.255	.14
	Panel B. Independent-Samples t-Test of Age at First Drug Use Differences						
Variables	11–14 (*n* = 180) M	11–14 (*n*=180) SD	15–18 (*n*= 120) M	15–18 (*n* =120) SD	t	p	Cohen's d
Drug Abuse	4.95	4.49	3.83	4.47	2.13	.034	0.25
DASS-21 Total	33.99	10.19	38.33	9.32	−3.74	< .001	−0.44
Depression	11.53	3.78	12.69	3.55	−2.67	.008	−0.32

Anxiety	11.25	3.64	12.80	3.23	−3.78	< .001	−0.44
Stress	11.21	3.53	12.84	3.38	−4.00	< .001	−0.47
Externalizing Problems	232.50	40.61	223.13	45.95	1.81	.071	0.22
Aggressive/Violent	32.56	6.19	31.16	7.06	1.76	.079	0.21
Rule-Breaking/Delinquent	55.74	10.41	53.33	11.50	1.85	.065	0.22
Impulsivity Trait	27.70	5.24	27.05	5.95	0.97	.332	0.12

Independent-Samples t-Test of Age Differences in Study Variables: The regression model was statistically significant, F (1, 298) = 96.740, p < .001, R = .495, R^2 = .245, adjusted R^2 = .243. Drug abuse explained 24.5% of the variance in DASS-21 emotional-problem scores. The negative coefficient should be interpreted as an observed statistical association rather than a causal or protective effect. Independent-Samples t-Test of Age at First Drug Use Differences: Younger participants reported significantly higher drug-abuse scores and externalizing problems, including aggressive/violent and rule-breaking/delinquent behavior. Older participants reported significantly higher DASS-21 total, depression, anxiety, and stress scores. Impulsivity did not differ significantly between age groups.

Table V: One Way ANOVA

Measures	Panel A. One-Way ANOVA by Type of Drug Used										*F*(4, 295)	η^2
	Cannabis		Heroin		Ice		Opioids		Inhalants			
	M	SD	M	SD	M	SD	M	SD	M	SD		
Depression Anxiety Stress	37.50	10.26	37.16	8.55	39.50	10.47	55.00	11.31	32.26	9.07	10.37	.12
Depression	12.38	3.72	12.77	3.55	13.13	3.66	20.00	1.41	10.81	3.43	9.26	.11
Anxiety	12.58	3.80	12.11	3.07	13.09	3.63	17.50	4.95	10.83	3.33	7.44	.09
Stress	12.54	3.24	12.29	3.20	13.28	3.82	17.50	4.95	10.63	3.13	10.14	.12
Externalizing Behavioral Problems	228.92	42.26	224.30	41.75	222.60	43.87	161.00	21.21	235.26	42.19	2.65	.03
Aggressive Violent Externalizing	33.67	6.47	30.84	6.12	31.22	6.80	22.00	4.24	32.79	6.49	2.83	.04
Rule Breaking Delinquent	54.29	10.97	53.45	10.25	53.24	11.25	41.50	10.61	56.53	10.75	2.28	.03
Impulsivity Trait	26.29	5.25	27.23	5.63	26.84	5.41	19.00	1.41	28.21	5.52	2.39	.03

Measures	Panel B. One-Way ANOVA by Type of Current Offence								*F*(3, 296)	η^2
	Theft		Robbery		Drug Related Offence		Assault/Violence			
	M	SD	M	SD	M	SD	M	SD		
Depression Anxiety Stress	28.98	6.95	34.95	10.04	32.41	5.20	45.27	7.57	87.43	.47
Depression	9.54	2.67	11.34	3.71	11.05	2.12	15.47	2.77	80.96	.45
Anxiety	9.74	2.68	12.20	3.34	10.55	2.26	14.80	3.06	58.73	.37
Stress	9.70	2.59	11.41	3.69	10.81	2.41	14.99	2.73	65.15	.40
Externalizing Behavioral Problems	252.31	18.12	257.66	24.69	254.03	24.78	176.16	25.47	252.10	.72
Aggressive Violent Externalizing	35.26	3.12	36.10	4.32	35.62	4.41	24.60	4.81	152.87	.61
Rule Breaking Delinquent	60.53	5.20	62.02	7.09	60.50	7.33	42.12	6.98	181.13	.65
Impulsivity Trait	30.05	3.22	29.95	4.44	30.81	4.08	21.57	3.80	117.18	.54

Note. N = 300. M = Mean; SD = Standard Deviation; F = one-way analysis of variance statistic; η^2 = eta squared, η^2 values were calculated from the reported F statistics and degrees of freedom

One-Way ANOVA by Type of Drug Used: Participants who began drug use at ages 11–14 reported significantly higher drug-abuse scores, whereas those who initiated use at ages 15–18 reported higher DASS-21, depression, anxiety, and stress scores. Age at first drug use did not significantly differentiate externalizing problems or impulsivity. One-Way ANOVA by Type of Current Offence: Significant differences across substance groups were found for DASS-21 total, depression, anxiety, stress, externalizing problems, and aggressive/violent externalizing. Opioid users reported the highest emotional-problem scores; inhalant users had the highest externalizing mean; and cannabis users had the highest aggressive/violent mean. Rule-breaking/delinquent behavior and impulsivity were not statistically significant across substance groups.

Table VI: One-Way ANOVA by Duration of Current Drug Use (N = 300)

	Less than 6 Months		6 Months–1 Year		1–2 Years			
Measures	M	SD	M	SD	M	SD	*F*(2, 297)	η^2
Depression Anxiety Stress	32.94	9.61	38.75	9.10	59.67	5.77	23.97	.14
Depression	11.19	3.63	12.85	3.49	19.67	2.31	14.98	.09
Anxiety	10.95	3.54	12.86	3.09	20.00	1.73	20.90	.12
Stress	10.80	3.29	13.04	3.32	20.00	1.73	26.21	.15
Externalizing Behavioral Problems	232.75	40.63	224.15	45.46	206.00	51.10	1.90	.01
Aggressive Violent	32.60	6.29	31.26	6.87	30.00	8.72	1.67	.01
Externalizing								
Rule Breaking Delinquent	55.71	10.31	53.75	11.53	47.67	13.43	1.84	.01
Impulsivity Trait	27.75	5.55	27.12	5.55	24.33	3.21	0.96	.01

Note. F = one-way ANOVA statistic; η^2 = eta squared. The emotional outcomes were significant; externalizing outcomes were not.

Offence type was significantly associated with all assessed emotional and externalizing outcomes. Assault/violence showed the highest emotional-problem scores. Robbery showed the highest overall externalizing, aggressive/violent, and rule-breaking/delinquent scores, while drug-related offences showed the highest impulsivity score. Longer duration of current drug use was associated with significantly greater DASS-21 total, depression, anxiety, and stress scores. No statistically significant differences were found across duration groups for externalizing problems, aggressive/violent behavior, rule-breaking/delinquent behavior, or impulsivity.

IV.DISCUSSION

The present study examined drug abuse, emotional problems, and externalizing behavioral problems among incarcerated juveniles in Punjab, Pakistan. The findings indicate that these domains should be considered together when assessing young people in jail settings. The sample was predominantly younger, had limited educational attainment, frequently came from rural areas, and commonly reported early initiation of drug use. These characteristics provide important context for interpreting the observed psychological and behavioral patterns. (Riaz et al., 2021; Irfan & Rafique, 2022). Drug abuse showed a strong positive association with externalizing behavioral problems, and regression analysis indicated that drug abuse significantly predicted externalizing scores. This pattern is consistent with literature describing connections among substance use, disinhibition, aggression, and delinquent behavior (Krueger et al., 2002, 2007; White et al., 2013; Suhail et al., 2025; Wilson & Lipsey, 2024). From a problem-behavior perspective, substance use and delinquency may represent co-occurring manifestations of broader psychosocial maladjustment rather than isolated difficulties. The relationship between drug abuse and emotional problems was statistically significant but negative in this sample. Drug abuse correlated negatively with DASS-21 total scores and significantly predicted emotional-problem scores. Because the design was cross-sectional, this result should be interpreted as statistical association and prediction within the model rather than evidence that drug use protects against emotional distress. The unexpected direction may reflect characteristics of this incarcerated sample, measurement or reporting factors, or other unmeasured influences. It therefore warrants replication. (Tedeschi et al., 2024). Age findings showed a differentiated pattern.

Younger adolescents reported higher drug-abuse and externalizing scores, including aggressive/violent and rule-breaking/delinquent behavior, whereas older adolescents reported higher depression, anxiety, and stress. Earlier initiation of drug use was associated with higher drug-abuse scores, while later initiation was associated with greater emotional difficulties. These results emphasize developmental timing and suggest that assessment and intervention may need to vary according to age and substance-use history. Substance type was also associated with different psychological and behavioral profiles. Opioid users reported the highest emotional-problem scores, inhalant users had the highest overall externalizing mean, and cannabis users had the highest aggressive/violent mean. However, rule-breaking/delinquent behavior and impulsivity did not significantly differ by substance group. Offence type showed particularly large differences: assault/violence was associated with the highest emotional-problem scores, while robbery was associated with the highest overall externalizing, aggressive/violent, and rule-breaking/delinquent scores; the drug-related offence group had the highest impulsivity score. These patterns support individualized assessment rather than treating all justice-involved adolescents or all substance-use histories as psychologically interchangeable. (Tedeschi et al., 2024). Finally, longer duration of current drug use was associated with greater overall emotional problems, depression, anxiety, and stress, but not with externalizing behavior, aggression, rule-breaking, or impulsivity. This distinction suggests that prolonged substance involvement may be particularly relevant to emotional distress in this sample, whereas externalizing behavior may be influenced by a broader set of developmental, familial, peer, and offence-related factors. (Stokes et al., 2023; Tedeschi et al., 2024).

Clinical and Practical Implications

Routine screening in juvenile jail settings should assess substance use, depression, anxiety, stress, aggression, rule-breaking, and impulsivity together. Rehabilitation plans should integrate substance-use interventions with psychological treatment, emotional-regulation work, anger management, impulse-control strategies, and coping-skills training. Younger adolescents and those with early drug-use histories may require particular attention. Intervention planning should also consider substance type, offence characteristics, and the adolescent's individual emotional and behavioral profile. Jail services should strengthen referral pathways to mental-health professionals and support continuity of care after release.

Limitations and Future Research

The cross-sectional design prevents causal conclusions. Purposive sampling limits generalizability to all incarcerated juveniles in Punjab or Pakistan. The sample consisted only of incarcerated males. Self-report measures may be affected by social desirability, recall problems, or reluctance to disclose sensitive information. Substance and offence groups were unequal in size, which may affect the stability of group comparisons. Family functioning, peer influence, socioeconomic conditions, trauma history, and social support were not directly examined.

V. CONCLUSION

Future studies should use longitudinal designs to examine changes in substance use, emotional problems, and externalizing behavior over time; use probability sampling across multiple regions and jail settings; compare incarcerated and non-incarcerated adolescents; examine specific substances when adequate group sizes are available; combine self-report with caregiver, teacher, case-record, clinician, and behavioral data; and evaluate integrated substance-use, emotional-regulation, aggression-management, and rehabilitation interventions.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

The author received no funding from any organizations.

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