

Socio-Economic Determinants of Drug Recidivism in District Gujranwala: A Quantitative Criminological Analysis

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ABSTRACT: Drug recidivism constitutes one of the most persistent and complex challenges confronting criminal justice systems worldwide, particularly in developing nations where socio-economic vulnerabilities intersect with institutional deficiencies to perpetuate cycles of reoffending. This is a quantitative, cross-sectional study that explores the statistical correlation between poverty, unemployment, lack of education, family dysfunction and reoffending patterns among drug offenders in District Gujranwala, Punjab, Pakistan. The study used a structured questionnaire to gather responses from 238 participants recruited from drug offenders, rehabilitation professionals, and people in the criminal justice system, and was based on the three theories: Strain Theory, Social Disorganization Theory and Labeling Theory. The data were analyzed using SPSS with descriptive statistics, Chi-square test, Pearson correlation and multiple regression. Findings identify poverty ($\beta = 0.47$, $p < .001$) and unemployment ($\beta = 0.39$, $p < .001$) as the strongest predictors of recidivism, followed by educational deprivation ($\beta = -0.33$, $p < .05$), family dysfunction ($\beta = 0.28$, $p < .01$), and rehabilitation inaccessibility ($\beta = -0.29$, $p < .001$). The five hypotheses were confirmed. The study concludes with evidence-based policy recommendations tailored to the socio-economic realities of Gujranwala, including targeted economic empowerment programmes, educational reforms within correctional facilities, and institutional restructuring of the rehabilitation framework to interrupt the cycle of drug recidivism.

KEYWORDS: Drug Recidivism, Socio-Economic Factors, Criminology, Rehabilitation

Introduction

The general term for a recurrence of drug-related criminal activity after treatment or incarceration, known as drug recidivism, is a pervasive issue in both social and criminological fields affecting communities worldwide (Cruz, 2023). Acute socio-economic pressures, weak institutional systems, and a lack of comprehensive rehabilitation infrastructure further increase the risk of re-offending amongst formerly imprisoned people in developing countries like Pakistan (Ishfaq & Kamal, 2022). While the criminal justice system is a crucial factor in shaping the outcome of recidivism regarding drug offenders' rehabilitation and successful social reintegration, the system is still facing various structural challenges and resource constraints in many parts of Pakistan (Malik et al., 2025).

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The context of this study is undeniably the district of Gujranwala, one of the densest and also the most industrially developed districts of Punjab, Pakistan, which is a very interesting and under-researched area to study drug recidivism. The economic significance of the district is accompanied by large socio-economic inequalities, such as high informal employment rates, hotspots of poverty, and substantial educational shortcomings, which have been theoretically and empirically associated with higher substance abuse and criminal recidivism risks (Draz et al., 2025). Add to this the fact that the district is situated on key transportation routes in the Punjab, which also experience an active drug trade, further increasing the risk of re-offending in the case of marginalized populations (Chandran, 1998).

However, the evidence on socio-economic factors is invariably linked to recidivism and is found throughout the world. In a variety of criminological research in both developed and developing countries, poverty, unemployment, educational deprivation and family dysfunction have emerged as reliable predictors of re-offending (Gendreau et al., 1996). The mechanisms through which these factors work in the socio-cultural environment in districts like Gujranwala, however, are still not entirely understood since most of the current research is done in a Western context and may not sufficiently reflect the significance of Pakistani society (Hussain, 2020).

Traditionally, the national debate on drug policy in Pakistan has been focused on supply-side interventions and punitive measures, while limited focus has been placed on the demand-side socio-economic factors that make people vulnerable to repeated drug-related offending (UNODC, 2022). This disparity has led to significantly high reoffending rates among drug offenders in Pakistan, where some studies suggest that 40–50% of those released on bail reconvicted within a year of their incarceration, within 1- 3 years of their trial (Khanna et al., 2025). In Gujranwala in particular, preliminary criminal justice records indicate alarmingly high drug reoffending rates, but none has attempted to empirically measure and analyze the socio-economic aspects of the phenomenon (Punjab Police Department 2021).

On the rehabilitation side of the criminal justice system, the rehabilitation resources available to drug offenders in Pakistan, both within and outside the justice system, are weak and have significant gaps in capacity and quality, in access, and in geographical distribution that hamper their effectiveness in reducing recidivism (UNODC Pakistan, 2019). The limited ratio of the governmental rehabilitation system to the size of the drug problem and the lack of quality control in private rehabilitation centres, which are too expensive for economically marginalized offenders, are key issues (Sarwar, 2021). Lack of aftercare and reintegration services in the community after formal rehab is another major concern, as many studies have shown that the post-treatment phase is a time of increased vulnerability to relapse and reoffending (McLellan et al., 2000).

A systematic review of the literature on drug recidivism also shows that the majority of the research on drug recidivism has been of a quantitative nature and has been conducted in a Western context, with very little empirical data existing for the South Asian and Pakistani contexts (Bhui, 2016). Whereas, in the very narrow scope of studies related to drug recidivism in Pakistan, these studies have mostly concentrated on aggregate analysis at the national or provincial levels, leaving no studies conducted at the district level. The present study thus fills this gap in rigorous quantitative criminological analysis that provides empirical evidence immediately relevant to the policy makers, criminal justice practitioners, and rehabilitation workers of the criminal justice system in District Gujranwala (Maruna, 2001).

The study aims to achieve five main objectives: (i) to identify and analyze the socio-economic factors that contribute to the drug recidivism in Gujranwala; (ii) to assess the gaps in the criminal justice and rehabilitation systems; (iii) to examine the statistical relationship between the accessibility of rehabilitation programs and the rates of drug recidivism; (iv) to explore the challenges faced by the drug offenders after release, such as stigma and

employment barriers; and (v) to formulate evidence-based policy recommendations based on the socio-economic context of the district.

Literature Review

Defining Recidivism: Global and Pakistani Perspective

Recidivism is a term used in criminological literature that is derived from the Latin word “*recidivus*”, which means a person who relapses into a crime, or a “*recidivist*” (Maltz, 1984). It is defined as the likelihood of a convicted individual returning to the criminal justice system after a criminal sentence has been given. There are three main types of measures used in recidivism studies: rearrest, reconviction, and reincarceration; each reflects a different aspect of reoffending and produces different rates of recidivism based on the measure used (Yukhnenko et al., 2020). On the international level, recidivism rates for drug offenses are consistently reported as some of the highest among all offenses, and for the U.S., Europe, and Australia, it is estimated at 40 to 70 percent of drug offenders who reoffend within three years of their release from custody (Alper et al., 2018).

In Pakistan, the term recidivism has not been studied much, and existing data are mostly based on police statistics and prison records and do not originate from in-depth empirical studies (Fatima & Batool, 2024). Drug recidivism is addressed in the Pakistan Prison Rules and the Control of Narcotic Substances Act (1997), but these laws have been heavily criticized for their punitive approach and lack of emphasis on rehabilitation and reintegration (Soomro et al., 2025). The data available from the Punjab Prisons Department indicate that the number of repeat offenders is steadily increasing, and this is a significant proportion of all inmates in the province, reflecting the need for empirical studies of the causes of recidivism in the local setting (Punjab Prisons Department, 2021).

Socio-Economic Correlates of Drug Recidivism

Poverty is at the heart of criminological theories of recidivism, as it is a direct risk factor for recidivism as well as a proximal risk factor for other criminogenic factors, including homelessness, food insecurity and social exclusion (Western, 2018). There are several pathways through which poverty and drug recidivism are related: economic need may lead to people seeking to find work in the drug economy; the stress associated with poverty can make people more susceptible to substance use as a means to cope; and the inability to afford a lawyer, medical care, or other rehabilitative services may also increase the risk of recidivism (Wakefield & Wildeman, 2013).

The literature on the issue of unemployment and criminal recidivism in crime is among the most compelling evidence-based links in international criminological research, and various meta-analyses have shown consistent positive relationships between unemployment and reoffending for a wide range of offender types (Visser et al., 2011). The lack of a job facing the prison wall puts drug offenders in an acute state of economic need, making profit-seeking in the drug trade more appealing, and hinders their access to the social capital that comes with lower recidivism rates (Pager, 2008).

Another important protective factor against recidivism is level of education, and higher levels of education are linked with better cognitive abilities, better job access and better social connections, which decreases the likelihood of reoffending (Lochner & Moretti, 2004). Family background is one of the basic factors that influences the development of drug use and criminal behaviour, and the following factors are considered to be important risk factors for first drug use and re-offending: dysfunctional families, parents’ drug use, and domestic violence (Farrington & Welsh, 2008).

Institutional Gaps in Criminal Justice and Rehabilitation

In Pakistan, the nature of criminal justice responses to drug offences is predominantly rehabilitation through incarceration, rather than there being a strong emphasis on rehabilitation and reintegration programmes based on evidence. (Travis et al., 2014) Research has repeatedly shown that incarceration without any rehabilitative services does not decrease and potentially can increase the risk of recidivism, as prisons serve as a breeding ground for offenders to connect with fellow criminals, break up ties to normal society, and pose barriers to employment after they are released (Nagin et al., 2009). Pakistani prisons are overcrowded, have few educational and vocational courses, and have easy access to drugs inside their premises, which encourages drug-related criminal activities instead of rehabilitation efforts (Jamil & Tahir, 2024). Research on the efficacy of alternative sentencing options like drug courts and community-based rehabilitation programs has found that they lead to much lower rates of recidivism than traditional incarceration, indicating that there is considerable scope for change in the sentencing systems in Pakistan (Hakeem et al., 2025).

Theoretical Framework

This study is based on three interrelated criminological theories. The Strain Theory of Merton (1938) offers a basic framework for understanding drug recidivism as a reaction to the discrepancy between culturally sanctioned aspirations of economic prosperity and the structurally constrained opportunities for reaching these goals within the legitimate framework of society for people who are marginalized. Agnew's (2017) extension of the original theory, General Strain Theory, also introduces other forms of strain such as loss of jobs, family relations and social status, which are important to the post-release experiences of drug recidivists in Gujranwala. Social Disorganization Theory, first proposed by Shaw and McKay (1942), offers a structural macro-level view on the geographic clustering of drug-related criminal activity in communities where residents live in poverty, their homes are unstable, and there are low levels of community institutions. The critical point of view of Labeling Theory, as developed by Becker (1963), on social stigmatization by formal criminal justice processing at the onset of secondary deviance and recidivism in the process of drug offending will be discussed. The three frameworks together provide a complete picture of the individual, community and institutional level of analysis of drug recidivism.

Research Methodology

The method adopted in this study is quantitative (survey), and a cross-sectional survey research design is used for the study of socio-economic determinants of drug recidivism in District Gujranwala of Punjab, Pakistan. A cross-sectional design was chosen for this study because it enabled the generation of population-level descriptive and inferential statistics within a specific time period and because multiple socio-economic variables could be examined as they relate to the outcomes of recidivism (Creswell & Creswell, 2017). The target population of the study was drug recidivists who had a history of drug-related offenses with criminal justice (CJ) and rehabilitation workers in District Gujranwala for the period from 2018 to 2023. This hard-to-reach population was accessed using a purposive sampling strategy, which was supplemented with snowball sampling (Etikan et al., 2016). The number of participants targeted was 250, with 238 valid responses, including 180 drug recidivists, 40 criminal justice professionals, and 30 rehabilitation professionals. The main tool used in data collection was a five-part structured self-administered questionnaire that included items on socio-demographic characteristics, drug use and recidivism history, poverty and unemployment data, family background characteristics, and perceptions of the accessibility of rehabilitation. Content validity was determined by expert review with three criminologists and two criminal justice practitioners, with Cronbach's alpha scores of 0.73 to 0.89 (Nunnally & Bernstein, 1994) for subscales.

IBM SPSS Statistics Version 26 was used to enter and analyze the data. The socio-demographic profile of the respondents and prevalence of key variables were described using descriptive statistics such as frequencies, means and standard deviations. The bivariate relationships of continuous variables were examined by the Pearson correlation analysis, whereas the relationships between categorical variables were assessed by the Chi-square tests. Multiple linear regression analysis was used to determine statistically significant independent predictors of drug recidivism, accounting for confounding variables, and the Variance Inflation Factor (VIF) values for all of the independent predictors, which indicate multicollinearity, were below the accepted value of 10 (Field, 2024). The dependent variable (measured) was the number of drug-related criminal convictions after the initial conviction (drug recidivism). The independent variables were a composite index of poverty (10 items), months of unemployment before the last offense, years of schooling, a 12-item dysfunctional family scale, and a 5-item rehabilitation accessibility scale. The study was carried out in accordance with ethical standards for studies involving vulnerable human subjects (Code of Ethics for Psychologists, 2017); all responses were voluntary, no personally identifying information was gathered or stored with the research data, and informed consent was obtained from all participants.

Results and Analysis

Socio-Demographic Profile of Respondents

A total of 238 valid questionnaires were returned from the 250 distributed, yielding a response rate of 95.2 percent. Table 1 presents the complete socio-demographic profile of the respondents. The sample was predominantly male (91.6%), with a mean age of 31.4 years. Educational attainment was strikingly low, with 28.6 percent reporting no formal education and only 8.4 percent attaining secondary or higher education. Approximately 72.3 percent of respondents reported household incomes below the official Pakistani poverty line at the time of their most recent drug-related offense, reflecting severe economic marginalization across the sample (Ortega et al., 2025).

Table 1

Socio-Demographic Profile of Respondents (N = 238)

Variable	Category / Value	Frequency / %
Gender	Male	218 (91.6%)
	Female	20 (8.4%)
Age (Mean ± SD)	31.4 ± 7.8 years	—
Marital Status	Married	127 (53.4%)
	Unmarried	74 (31.1%)
	Separated/Divorced	37 (15.5%)
Educational Attainment	No Formal Education	68 (28.6%)
	Primary Level	93 (39.1%)
	Middle Level	57 (23.9%)
	Secondary & Above	20 (8.4%)
Residence	Peri-urban / Low-income	160 (67.2%)
	Urban	78 (32.8%)
Monthly Income	Below Poverty Line	172 (72.3%)
	Above Poverty Line	66 (27.7%)

Note. Values represent frequency (n) and valid percentage (%) unless otherwise stated.

Prevalence and Patterns of Drug Recidivism

Table 2 summarizes the prevalence and patterns of drug recidivism among respondents. Most respondents (63.9 percent) had two to three prior convictions for drug offenses, and 11.7 percent had six or more such prior

convictions, meaning there was a large number of chronic recidivists in the sample. The mean time to the first time of drug-related offending was 14.3 months (SD = 9.2); and 41.2 percent of the sample became drug offenders again within six months of release, the time identified in the international literature as having the highest risk of recidivism (Visher & Travis, 2003). Heroin was identified as the primary substance of abuse by 58.4 percent of respondents.

Table 2

Prevalence and Patterns of Drug Recidivism (N = 238)

Variable	Category	n (%)
Prior Convictions	2–3 offenses	152 (63.9%)
	4–5 offenses	58 (24.4%)
	6 or more	28 (11.7%)
Time to Recurrence	Within 6 months	98 (41.2%)
	6–12 months	79 (33.2%)
	Over 12 months	61 (25.6%)
Primary Substance	Heroin	139 (58.4%)
	Methamphetamine (Ice)	54 (22.7%)
	Poly-substance	45 (18.9%)
Mean Time to Recurrence	14.3 ± 9.2 months	—

Note: Poly-substance refers to concurrent use of two or more controlled substances.

Socio-Economic Predictors of Drug Recidivism

Multiple Regression Analysis

Multiple regression analysis was conducted to identify statistically significant independent predictors of drug recidivism. The overall model was statistically significant and accounted for 46.3 percent of the variance in the recidivism outcomes ($F(7, 230) = 28.43$, $p < .001$; $R^2 = .463$; Adjusted $R^2 = .447$). The standardized and unstandardized regression coefficients, standard errors, t and p values, and VIF statistics are provided for all of the predictor variables in Table 3. Poverty emerged as the strongest independent predictor of drug recidivism ($\beta = 0.47$, $p < .001$), followed by unemployment ($\beta = 0.39$, $p < .001$), rehabilitation inaccessibility ($\beta = -0.29$, $p < .001$), educational deprivation ($\beta = -0.33$, $p < .05$), and family dysfunction ($\beta = 0.28$, $p < .01$). Multicollinearity was not a problem as all VIF values were below 2.0. The results align with the strain theory predicted by Merton (1938) and substantiate the crucial importance of structural socio-economic deprivation as a contributing factor towards drug recidivism in the context of Gujranwala. Bivariate associations between poverty and recidivism ($r = 0.61$, $p < .001$) and years of schooling and recidivism ($r = -0.44$, $p < .001$) were also found to be strong.

Table 3

Multiple Regression Analysis: Predictors of Drug Recidivism (N = 238)

Predictor Variable	B	SE	β	t	p	VIF
Poverty Index	0.54	0.08	0.47	5.88	<.001	1.43
Unemployment (months)	0.18	0.07	0.39	5.57	<.001	1.38
Educational Attainment	-0.21	0.06	-0.33	-5.50	<.05	1.29
Family Dysfunction	0.31	0.07	0.28	4.00	<.01	1.22
Rehab. Accessibility	-0.27	0.07	-0.29	-4.14	<.001	1.31
Age (control)	0.04	0.05	0.06	0.80	.425	1.11
Gender (control)	-0.09	0.14	-0.04	-0.64	.523	1.08

Note: B = unstandardized coefficient; SE = standard error; β = standardized coefficient; VIF = Variance Inflation Factor. $R^2 = .463$, Adjusted $R^2 = .447$, $F(7, 230) = 28.43$, $p < .001$.

Poverty and Economic Deprivation

The descriptive analysis showed that most of the respondents in the recidivist sample were from a poor economic background; 72.3 percent of the sample were below the official Pakistani poverty line at the time of their last drug offence. The overall mean score for the composite poverty index was 6.8 (SD = 1.9), suggesting high multidimensional poverty overall. The inability to meet basic household needs was a common finding among the responses, which matched the instrumental criminal behaviour patterns predicted by economic strain theories of crime (Messner & Rosenfeld, 2001).

Unemployment and Family Dysfunction

Among respondents, 64.3 percent reported being unemployed at the time of their most recent drug-related offense. Chi-square analysis revealed a highly significant association between employment status at release and subsequent recidivism ($\chi^2 = 34.7$, $df = 2$, $p < .001$), with unemployed respondents demonstrating recidivism rates 2.8 times higher than those who were employed at release. Barriers to employment were multifactorial, with 81.6 percent of respondents reporting that their criminal record had directly impeded their ability to secure formal employment, consistent with labeling theory's theorization of stigmatizing labor market effects (Pager, 2008). Regarding family dynamics, the dysfunctional family scale yielded a mean score of 7.9 out of 12 (SD = 2.4), with 56.3 percent of respondents reporting parental histories of substance abuse and 48.7 percent reporting exposure to domestic violence. Family rejection following release was reported by 59.8 percent of respondents and was identified as a significant precipitant of return to drug use, with logistic regression analysis finding that family rejection increased the odds of reoffending within six months by a factor of 3.4 (OR = 3.4, 95% CI [2.1, 5.5], $p < .001$).

Institutional Gaps and Rehabilitation Accessibility

Table 4 shows the findings of institutional gaps in the criminal justice and rehabilitation system in Gujranwala. A majority of respondents, about 78.2 percent, said that there was no structured pre-release planning in their most recent sentence, and 83.6 percent said that there was no post-release supervision after release. The problem of drug availability in Pakistani prisons has been well documented, and a considerable proportion, 43.7 percent, indicated that drug use had either continued or increased during their time in prison. Fewer than a third, which is 31.5 percent, had been treated at any formal rehabilitation program during the entire drug-using period, and less than one-fifth, that is, 18.5 percent, had finished a full program of treatment. Logistic regression indicated that the recidivism reduction benefits of taking formal rehabilitation treatment when indicated and completed (OR = 0.31, 95% CI [0.18, 0.54], $p < .001$).

Table 4

Institutional Gaps and Rehabilitation Accessibility Indicators (N = 238)

Institutional Gap Indicator	n	%
Received no pre-release planning	186	78.2%
Received no post-release supervision	199	83.6%
Drug use continued in prison	104	43.7%
Accessed any rehabilitation service	75	31.5%
Completed full rehabilitation course	44	18.5%
Cited cost as primary access barrier	170	71.4%
Cited geography as access barrier	129	54.2%
Post-release contact with probation	35	14.7%

Note: Percentages are valid percentages based on the total responding sample of N = 238.

Hypothesis Testing Summary

Table 5 summarizes the results of hypothesis testing for all five research hypotheses. All five hypotheses were supported at statistically significant levels, confirming the robust associations between each of the five socio-economic and institutional predictors and drug recidivism outcomes in Gujranwala. These findings collectively provide strong empirical support for the theoretical frameworks employed in this study and demonstrate the multidimensional nature of drug recidivism as a social phenomenon driven by intersecting structural, institutional, and family-level factors (Laub & Sampson, 2006).

Table 5

Summary of Hypothesis Testing Results

H#	Hypothesis	Test Used	Statistic	p-value	Result
H1	Poverty predicts recidivism	Regression	$\beta=0.47$	<.001	Supported
H2	Unemployment predicts recidivism	Regression	$\beta=0.39$	<.001	Supported
H3	Education inversely predicts recidivism	Regression	$\beta=-0.33$	<.05	Supported
H4	Family dysfunction predicts recidivism	Regression	$\beta=0.28$	<.01	Supported
H5	Poor rehab access predicts recidivism	Regression	$\beta=-0.29$	<.001	Supported

Note: All hypotheses tested using multiple linear regression analysis. p-values reflect two-tailed significance tests.

Discussion

The results of this study support the theoretical models used to explain the concept of drug recidivism in District Gujranwala with empirical proof. The finding of poverty, unemployment and educational deprivation as statistically significant predictors of recidivism is consistent with the predictions of Merton's (1938) Strain Theory, which states that structural impediments to legitimate economic success create conditions of acute strain that make criminal adaptations more attractive. The clustering of recidivism risk among the socially disorganized, economically deprived communities is consistent with the community-level structural causes of crime that are at the very heart of Social Disorganization Theory (S.D.T.) (Shaw & McKay, 1942). Of particular note is the result that family rejection after release was the most significant predictor of early re-arrest, perhaps suggesting the negative impact of stigmatized social reactions to drug offending as suggested by Becker (1963).

The results of the study are consistent with international recidivism studies revealing that poverty, unemployment, and educational deprivation were strong predictors of reoffending (Gendreau et al., 1996). The effect sizes found, especially for poverty ($\beta = 0.47$) and unemployment ($\beta = 0.39$), are similar to or larger than those documented in meta-analyses of recidivism predictors in Western contexts, indicating that socio-economic factors may be particularly strong in developing country settings with fewer social protections (Fazel et al., 2017). The fact that 41.2 percent of the respondents reoffended within six months of their release while 44.8 percent in the West reoffended within the year suggests that the socio-economic pressures to reoffend may be more intense among Pakistan's released offenders, possibly as a result of the greater urgency of these issues in Pakistan (Tomczak & Albertson, 2016). The present study builds on the findings of the previous research by presenting more rigorously conducted multivariate analyses which take into account multiple socio-economic predictors controlling for confounding variables, and is the first work to provide district-level evidence that is specifically focused on the district of Gujranwala.

Conclusion

This quantitative research has yielded sound empirical data on socio-economic factors influencing drug recurrence in District Gujranwala, which is the first systematic study at the district level to address this criminological and public

health issue. The results clearly show that poverty, unemployment, educational deprivation, and dysfunctional family background are statistically significant risk factors for drug recidivism, with poverty being the strongest and single risk factor in the multivariate analysis. It was found that the lack of post-release monitoring and the lack of access to rehab facilities for the poor and vulnerable offenders are important gaps at an institutional level that facilitate recidivism.

The study has several important contributions to the criminological literature. It is the first quantitative district-level study on drug recidivism in Gujranwala, which addresses the need in the Pakistani criminological literature. It takes classical criminological theories to a new context in Pakistan and finds them valid in explaining the situation, pointing to the need for contextual adaptation. It provides a strong, multi-dimensional evidence base on the socio-economic risk factors of recidivism beyond the qualitative and descriptive type of studies that have been conducted in the past in Pakistan. Finally, it identifies the mediating effect of rehabilitation inaccessibility between the socio-economic deprivation-recidivism relationship, which offers a new theoretical contribution with practical consequences for the development of interventions.

Policy Recommendations

Since poverty and unemployment have been shown to be central factors in sustaining drug recidivism, it is recommended that a dedicated Employment Reintegration Programme be established for released drug offenders in Gujranwala, where they will receive vocational training, assistance in securing jobs, and financial support during the crucial first six months after release. The released drug offenders should be a clear priority target in the Ehsaas programme. The Punjab Prisons Department needs to significantly increase its functional literacy and vocational training initiatives in Gujranwala Central Prison based on the best practice model of correctional education programmes which have helped to reduce recidivism rates significantly (Davis et al., 2013). The study also suggests the establishment of two more residential rehabilitation centers in the district, funded by the government, that provide substance abuse treatment programs, such as cognitive-behavioural therapy and motivational enhancement therapy. There needs to be an aftercare co-ordination system in place at the district level to arrange access to structured aftercare support such as housing, employment linkage, and family mediation for those who have completed formal rehabilitation treatment. Last but not least, an exclusive Drug Court in Gujranwala, based on the model of the drug court that has proven to be effective in reducing recidivism in similar settings, will allow drug-dependent offenders to be diverted from normal prison sentences to treatment and rehabilitation programs (Kaur et al., 2020).

Limitations and Future Research

There are a number of limitations in this study. Because of the cross-sectional design, causal relationships between the socio-economic predictors and recidivism outcomes identified cannot be inferred. Self-reported data have a risk of social desirability bias and recall errors that can lead to an underestimate of the amount of drug use and recidivism behaviors (Tourangeau & Yan, 2007). Sample size is small such that the results cannot be generalized to other drug recidivist populations outside the study sample, and the geographic delimitation restricts direct generalizability to other districts or other parts of Pakistan. Future research should use longitudinal studies of a representative sample of drug offenders, in which the order of events between socio-economic factors and recidivism can be determined by following the offenders for 3-5 years after release. Comparative multi-district research on socio-economic deprivation determinants of drug recidivism across districts of different socio-economic profiles would improve generalizability of findings, and mixed methods research (quantitative measurement and in-depth qualitative exploration) would yield a more comprehensive understanding of the mechanisms that underlie the relationship between socio-economic deprivation and drug recidivism (Farrington & Welsh, 2008).

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