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Methamphetamine Use in a Bangladeshi Rehabilitation Center: Sociodemographic Patterns, Educational Associations, and Family Financial Burden

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Abstract: Background: Methamphetamine use is an escalating public health challenge in Bangladesh, yet data from district-level rehabilitation settings remain scarce. This study examines sociodemographic patterns of substance use, the association between educational attainment and methamphetamine use, and the family financial burden of rehabilitation treatment among patients admitted to a rehabilitation center in Cumilla district. Methods: A cross-sectional, observational study was conducted at a purposively selected rehabilitation center in Cumilla district, Bangladesh, from October 28 to November 11, 2023. All 29 admitted patients were enrolled. Demographic, educational, occupational, and financial data were extracted from medical records. Descriptive statistics were used for analysis. Results: All 29 patients were male, predominantly aged 15–24 years (55.2%) and unemployed (62.1%). Methamphetamine (Yaba) was used by 34.5% of patients, with 80% of methamphetamine users being educated and 90% aged 15–24 years. Notably, all methamphetamine users were unmarried. Geographically, 75.8% of patients originated from Bangladesh-India border districts. The average treatment cost was approximately 9,000 BDT per month, constituting nearly 30% of the average family's monthly expenditure, with a mean rehabilitation stay of 64.5 days. Conclusion: Methamphetamine use is disproportionately prevalent among young, educated, unmarried males in border-adjacent districts of Bangladesh. The financial burden on families is substantial. Targeted health literacy programs and socioeconomic counseling should be integrated into substance use prevention and rehabilitation frameworks.

Keywords: Methamphetamine; Yaba; substance use; Bangladesh; rehabilitation; financial burden; education

INTRODUCTION

Methamphetamine, commonly known as Yaba in the South and Southeast Asian context, is a synthetic psychostimulant that has emerged as one of the most widely trafficked and abused substances globally(1). Originating primarily in South Asian countries like Cambodia and Myanmar (2), Methamphetamine has permeated the borders of neighboring countries, with Bangladesh now representing a critically affected transit and consumption zone (3). The substance's affordability, accessibility, and rapidly addictive properties have made it particularly attractive among young, economically vulnerable populations.

Bangladesh faces a mounting public health crisis related to methamphetamine (4). Despite growing anecdotal and clinical evidence of widespread use, formal epidemiological data—especially from district-level or non-metropolitan rehabilitation settings—remain limited (4). Most published studies have focused on urban centers such as Dhaka or Cox's Bazar, leaving significant data gaps regarding patterns of use in border-adjacent districts such as Cumilla, which lies along the Bangladesh-India frontier and serves as a known corridor for illicit drug trafficking (5).

The relationship between educational attainment and substance use is paradoxical in the South Asian context (6). While illiteracy and unemployment are widely recognized as predisposing risk factors for substance abuse, emerging evidence suggests that methamphetamine use may be particularly prevalent among educated young people, possibly due to social exposure, recreational use norms, or peer influence within educational settings (7). Understanding this association is critical to designing effective, evidence-based prevention programs.

Beyond individual health consequences, substance use disorders impose a profound financial burden on families. In resource-limited settings such as Bangladesh, where out-of-pocket healthcare expenditure is disproportionately high, the cost of rehabilitation treatment can consume a substantial portion of household income, exacerbating economic vulnerability and social marginalization (8).

This study was conducted to address these knowledge gaps. Specifically, it aims to describe the sociodemographic characteristics of patients admitted to a rehabilitation center in Cumilla district, examine the association between educational attainment and methamphetamine use, and quantify the family financial burden associated with rehabilitation treatment. The findings are intended to inform targeted public health interventions and policy responses at the district and national levels.

METHODS

This was an observational cross-sectional study conducted at a local Rehabilitation Center, a purposively selected facility in Cumilla district, Bangladesh. It was conducted between October 28 and November 11, 2023. All 29 patients admitted to the rehabilitation center during this period were included using a census sampling approach. No exclusion criteria were applied, as the study aimed to capture the complete profile of the center's patient population. Demographic, medical, occupational, and financial data were extracted from existing medical records maintained by the rehabilitation center. Variables collected included age, sex, educational attainment, occupation, marital status, district of origin, type of substance used, duration of substance use, duration of rehabilitation stay, monthly family expenditure, and comorbidities. Data were collected by the principal investigator using a structured data extraction form. Substance use type was categorized as methamphetamine, marijuana, or other substances. The financial burden was estimated as the monthly treatment cost as a proportion of the family's monthly expenditure. Border districts were defined as districts sharing an international boundary with India. Descriptive statistics were used to summarize all variables. Data were analyzed using Microsoft Excel. Due to the small sample size, inferential statistical tests were not applied. Data were extracted from de-identified medical records with the approval of the rehabilitation center

authority. Patient confidentiality was maintained throughout the study. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki.

RESULTS

A total of 29 patients were enrolled in the study. All were male. The mean age was 24.7 years (range: 18–40 years). The largest age groups were 15–19 years and 20–24 years, each comprising 27.6% of the study population. The majority of patients were unemployed 62.1%, while students accounted for 10.3%. Unmarried individuals constituted 72.4% of the study population. All patients identified as Muslim. Regarding educational status, 37.9% were illiterate, 17.2% had completed primary education (up to Class 5), 31.0% had completed junior secondary education (up to Class 8), 10.3% had completed secondary education (SSC), and 3.4% had completed higher secondary education (HSC) (Table I).

Table I: Sociodemographic Characteristics of Rehabilitation Center Patients (N=29)

Variables	Categories	n (%)
Age Groups	15-19 years	8 (27.6)
	20-24 years	8 (27.6)
	25-29 years	5 (17.2)
	30-34 years	6 (20.6)
	35-39 years	1 (3.4)
	>39 years	1 (3.4)
Education	Illiterate	11 (37.9)
	Primary (1-5 Grade)	5 (17.2)
	Junior (6-8 Grade)	9 (31.0)
	Secondary (SSC)	3 (10.3)
	Higher secondary and above	1 (3.4)
Occupation	Unemployed	18 (62.1)
	Student	3 (10.3)
	Businessman	2 (6.9)
	Service	2 (6.9)
	Immigrant	4 (13.8)
Marital Status	Unmarried	21 (72.4)
	Married	8 (27.6)

Among the 29 patients, 34.5% used methamphetamine, 62.1% used marijuana as their primary substance, and a small proportion used other substances, including Phencidil and Afim (6.9%). Multiple substance use was recorded in several patients.Geographically, 65.5% of patients were from Cumilla district, followed by Narayanganj (13.8%), Brahmanbaria (10.3%), Noakhali (6.9%), and Narshingdi (3.4%). A notable 75.8% of patients originated from districts sharing a border with India. Among the methamphetamine users (n=10), 90% (n=9) were aged 15–24 years, and all (100%) were unmarried. Regarding geographical distribution, 60% of methamphetamine users were from Cumilla district and 40% from other border-adjacent districts (Figure 1).

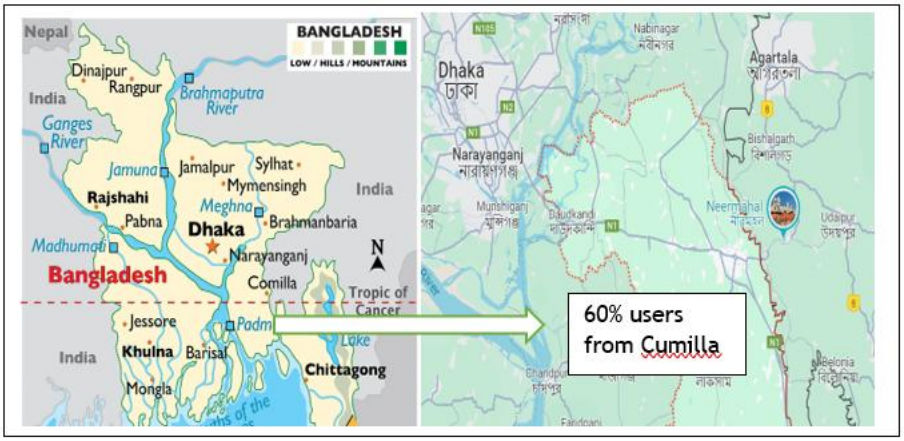

Figure 1: Geographical distribution of the methamphetamine users.

Among the methamphetamine users (n=10), 80% (n=8) had received some form of formal education, while only 20% (n=2) were illiterate. In contrast, among non-methamphetamine users (n=19), a larger proportion was illiterate or had lower educational attainment. Table 2 presents the distribution of substance use by educational status (Table II).

Table II: Substance Use Type by Educational Status (N=29)

Education Status	Methamphetamine n (%)	Marijuana/Others n (%)	Total n (%)
Illiterate	2 (18.2%)	9 (81.8%)	11 (37.9)
Educated	8 (44.4%)	10 (55.6%)	18 (62.1)
Total	**10 (34.5)**	**19 (65.5)**	**29 (100)**

The mean duration of rehabilitation stay was 64.5 days. The average monthly treatment cost per patient was approximately 9,000 BDT. The majority of methamphetamine users' families (80%) reported a monthly household expenditure between 20,000 and 40,000 BDT, indicating that treatment costs consumed approximately 30% of monthly family income. The mean family size was 6.97 members, reflecting the substantial dependents per household affected by one member's rehabilitation. Table 3 summarizes the key financial indicators (Table III).

Table III: Financial Burden of Rehabilitation Treatment

Financial Variable	Finding
Monthly family expenditure (most common range)	20,000–40,000 BDT (80% of meth users)
Average monthly treatment cost per patient	~9,000 BDT
Treatment cost as % of family income	~30%
Average duration of rehabilitation stay	64.5 days
Mean family size	6.97 members

DISCUSSION

This study provides valuable district-level insights into the sociodemographic profile of substance users in Bangladesh, the relationship between education and methamphetamine use, and the economic burden of rehabilitation. The exclusively male patient profile observed in this study is consistent with broader epidemiological trends across South Asia, where male gender is a well-established risk factor for substance use disorder (9). The predominance of young patients aged 15–24 years underscores the vulnerability of adolescents and young adults, a finding that aligns with global evidence on the early onset of substance use during formative developmental stages (10). One of the most noteworthy findings of this study is the higher prevalence of methamphetamine use among educated individuals compared to illiterate ones. Among methamphetamine users, 80% had received some form of formal education, while only 20% were illiterate. This paradoxical finding may reflect several dynamics. First, educated young people may have greater social exposure to recreational drug use networks, including peer pressure within educational institutions (11). Second, methamphetamine's stimulant properties may appeal to students or employed individuals seeking to enhance performance or manage stress (12). Third, educated users may have greater financial capacity to access methamphetamine, which, while relatively inexpensive, still requires a minimum purchasing threshold. This finding has critical implications for health literacy programs: education alone is insufficient as a protective factor, and drug prevention curricula must be explicitly integrated into school and college-level health education frameworks.

The geographical concentration of patients from border districts—with 60% originating from the district (Cumilla) adjacent to the India-Bangladesh border—corroborates existing intelligence on methamphetamine trafficking routes. Cumilla district, as a primary border corridor, represents a high-exposure zone where substance availability and trafficking networks facilitate local use (13). This geographic clustering points to the need for border-specific interventions, including community surveillance, cross-border law enforcement coordination, and localized awareness campaigns.

The financial burden imposed by rehabilitation treatment is substantial. With monthly treatment costs approximating 30% of average household income and a mean stay of over two months, families face significant economic strain. For households already managing unemployment—the primary occupation of 62.1% of patients—this burden may precipitate further financial hardship, including debt, asset depletion, or withdrawal from rehabilitation before completion. Incorporating financial counseling and social protection mechanisms into rehabilitation programs would be an important policy response (14).

The high proportion of unmarried individuals among methamphetamine users (100%) may reflect the younger age distribution of this group, as unmarried status is more common among those aged 15–24 years. However, it may also suggest that social integration and family responsibility serve as protective factors against methamphetamine initiation, a hypothesis that warrants further investigation in larger studies.

This study has several limitations. The small sample size (n=29) limits statistical power and generalizability. The single-center design and purposive sampling approach restrict the representativeness of findings. Data were extracted from medical records, introducing potential for missing or inaccurate information. The absence of a control group precludes causal inference regarding the education-methamphetamine association. Future

studies should employ larger, multi-center designs with validated instruments and comparison groups.

CONCLUSION

This study demonstrates that methamphetamine use in the Cumilla district of Bangladesh is predominantly concentrated among young, educated, unmarried males from border-adjacent districts. The educational paradox—whereby educated individuals show higher methamphetamine use—challenges conventional assumptions about education as a protective factor and calls for drug prevention to be explicitly embedded in school and university health curricula. The substantial financial burden of rehabilitation, consuming approximately 30% of monthly household income, underscores the socioeconomic dimensions of substance use disorder and the need for integrated socioeconomic support within treatment programs. Targeted, evidence-based interventions addressing both demand and supply reduction, with attention to geographical vulnerability and socioeconomic context, are urgently needed.

Conflict of Interest

The author declares no conflict of interest.

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