



Substance use among treatment seeking Indian adolescent girls: Are they unique?



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ABSTRACT

Introduction: Substance use among adolescents is on the rise across the globe along with a diminution of gender gap observed earlier posing a huge public health burden. Unfortunately, there is a paucity of literature on adolescent substance use. The literature is even sparse about substance use among adolescent girls. The current study aims to provide a glimpse of the profile and pattern of substance use among Indian adolescent girls seeking treatment for substance use problems in a specialty addiction treatment centre in India.

Materials and methods: This study is retrospective in design. Information regarding socio-demographics and substance use were extracted from the medical records of adolescent girls (≤ 19 years) who sought treatment for substance use problems during 2004–2018, at the adolescent clinic of a tertiary addiction treatment centre located in north India was retrieved carried out. The data was statistically analysed using SPSS.

Results: A total of 28 girls sought treatment during this period. The mean age of the girls was 15.89 ± 2.72 years. Most of the girls were students (6/28) or had never started working (12/28). Majority of them were coming from an urban background (89.3%) and were educated up to 10th class (85.5%). A total of 17 (60.7%) girls sought treatment for opioids use of which 11 were using illicit opioids like heroin and five (29.9%) of them reported taking opioids by injecting route primarily. History of past abstinence attempts, and treatment attempt were present in very few of them (10.7% and 14.3%).

Conclusion: Our study suggests a distinct substance use profile of adolescent girls. There is a need for further systematic studies to assess their clinical needs.

1. Introduction

Substance use has been seen as a problem phenomenon among young adult males until recently. However, current trends in the epidemiological data not only indicates consistent increase in use of various psychoactive substances among adolescents but also a shrinking gender gap in this age group. Such changes have been reflected in the recent Monitoring The Future study reports from USA (Johnston et al., 2017). Few of the major changes have been a near complete elimination of the long-standing gender difference in annual use of marijuana (with males somewhat higher than females in their use) across classes (grades) over last 5 years, narrowing in the pattern of alcohol and higher rates of use for some of the substances like inhalants and amphetamines among eighth grade females. (Johnston et al., 2017).

There is overall lack of epidemiological data on adolescent substance use from India. As per National Family Health Survey-3, 2005–06, 28.6% of boys aged 15–19 years reported tobacco use while 11% reported alcohol use. This survey reported comparatively lower rates of

substance use (3.5% tobacco use and 1% alcohol use) among adolescent girls. It is important to note that as compared to National Family Health Survey-2, 1998–99, there was an upward trend of alcohol use (0.6% for girls and 2.4% for boys). A more recent nationwide survey conducted on 4024 substance using children and adolescents aged between 5–18 years of age from 135 sites of 27 states, included 169 girls out of which 72.8% reported tobacco use (Tikoo et al., 2014). Other commonly reported substances were alcohol (51.5%), inhalants (37.3%) and opioids (25.4%) (Dhawan et al., 2016).

The data on treatment seeking female adolescents in India is even sparse. Most of the studies do not report any girl substance user (Saluja et al., 2007; Gupta et al., 2014; Pawar et al., 2013). According to a 2 year (2009–11) retrospective chart review from our centre, girls constituted only 6% (3) of the total (50) treatment seeking inhalant users. (Quraishi et al., 2013) Another centre reported use of 3% of adolescent girls seeking treatment for the same in 2 (2012–13) year period. (Ghosh et al., 2014). However, none of the study provides the clinical details of the adolescent girls. To the best of our knowledge, this

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is the first study from India which looked at the socio-demographic and clinical profile of the adolescent girls seeking treatment for substance use.

2. Materials and methods

The study was conducted at a national level centre for treatment of drug dependence situated in northern part of India. It is a retrospective chart review of all the records of adolescent girls (≤ 19 years) registered for treatment for substance use and related problem at the centre during last 14 years (2004–2018). Details of socio-demographic and clinical profile were retrieved from the records and analysed using SPSS V20.0. A total of 28 patients aged ≤ 19 years, for whom the record could be retrieved, were included in the final analysis.

Ethical clearance was obtained from institutional ethics committee.

3. Results

3.1. Socio-demographic profile

The adolescent girls constituted only 1.8% of the total number of adolescent treatment seekers during the time frame (2004–2018). The mean age of the girls was 15.89 ± 2.72 years. Most of them came from an urban background ($n = 25, 89.3\%$) and belonged to the Hindu religion ($n = 19, 67.9\%$). Details of the socio-demographic profile is given in Table 1.

3.2. Substance use profile

Opioid in various forms was the most common substance use for which treatment was sought ($N = 17; 60.7\%$) and 11 out of them were illicit opioid users (64.7%). More than half of the patients (53.2%) reported initiating drug use out of curiosity or for experimentation. Only three (10.7%) patient reported a significant abstinence attempt (lasting > 1 month) in the past. A total of four patients (14.3%) reported treatment seeking in the past for their substance use problems, all of whom received inpatient treatment. Tables 2 and 3 describe the substance use pattern in detail.

A total of 11 girls (39.6%) reported family history of substance use, alcohol use in father being the commonest (5/11). A total of 7 (25%) girls reported injecting drug use ever, of which 5 were current injecting opioid users. The age of onset of injecting drug use was

Table 1
Socio-demographic profile of the participants ($n = 28$).

Socio-demographic variable		N (%) / Mean (SD)
Education	Illiterate	04 (14.3)
	Primary (up to 5 years formal education)	05 (17.9)
	High school (up to 10 years formal education)	15 (53.6)
	Higher secondary (up to 12 years formal education)	02 (07.1)
	Missing data	02 (07.1)
Occupation	Skilled worker	01 (03.6)
	Business / self-employed	01 (03.6)
	Student	11 (39.3)
	Housewife	01 (03.6)
	Unemployed/Never started working	12 (42.9)
	Missing data	02 (07.1)
Marital status	Never married	27 (96.4)
	Married	1 (3.6)
Residence	Urban	25 (89.3)
	Rural	03 (10.7)
Religion	Hindu	19 (67.9)
	Islam	05 (17.9)
	Sikhism	01 (03.6)
	Not known	03 (10.7)

Table 2
Types of substance use ($n = 28$).

Substance use variable	Frequency (Percentage)
Primary substance	
Tobacco	07 (25.0)
Smokeless tobacco	05(17.9)
Smoking	02 (07.1)
Opioids	17 (60.7)
Buprenorphine	01 (03.6)
Dextropropoxyphene	01 (03.6)
Pentazocine	03 (10.7)
Heroin (Smack)	11 (39.3)
Tramadol	01 (03.6)
Cannabis	03 (10.7)
Ganja (Marijuana)	03 (10.7)
Inhalant	03 (10.7)

12.72 ± 3.32 years (with a median and mode both being 14 years). There was only one girl who had been regularly injected heroin by her step mother since 6 years of age. Four (57.1%) girls with injection drug use reported a history ulcers at injecting sites. One patient reported a legal complication due to substance use (in form of being caught by police for consumption of drugs). Three of them have been abandoned by the family due to perceived stigma. Six (21.4%) of them reported high risk sexual behaviour and sexual assault while intoxicated state is commonly reported. Two of them with h/o sexual assault were found pregnant during the time of assessment. Co-morbid current psychiatric diagnosis was present among 25% of the girls, diagnosis of emotionally unstable personality disorder (3/28) being the commonest followed by dissociative disorder (2/28) and somatoform pain disorder (1/28) and conduct disorder (1/28).

4. Discussion

To our knowledge, this is the first study reporting profile and pattern of substance use among treatment seeking Indian adolescent females. In the absence of any comparative data from within the country, the authors cannot comment about the unique features of this population. However, among all the three previous studies, only a small fraction of adolescents was reported to be girls. The under-representation of girls in treatment seeking adolescents may be due to low motivation and lack of gender sensitive specialized adolescent treatment services in India along with lack of understanding about the substance use disorders. It has been mentioned elsewhere that the girls using substances remains largely a hidden population due to these multitude of factors (Dhawan et al., 2017).

In the current study, more than 60% of the girls sought treatment for illicit drugs (illicit opioids and cannabis). Although similar pattern has been described in other studies on treatment seeking male adolescents from north India (Saluja et al., 2007; Ghosh et al., 2014) but this is the highest reported proportion of opioid user among all the study reports on treatment seeking adolescents from India. More so, injection drug users form a major portion of the total substance users (25%). However, only few of them reported alcohol use unlike reports from the western part of the world (Dir et al., 2017). The only nationwide study had reported tobacco as the commonest substance of abuse followed by alcohol (51.5%), inhalants (37.3%) followed by use of pharmaceutical opioids (25.4%) and less use of cannabis (17.2%) among girl substance users in India (Tikko et al., 2014). On the contrary, alcohol use was reported by a relatively lower proportion of patients in our sample. This finding is in line with previous Indian study on treatment seeking adolescents from North India where the commonest substance used was heroin (Saluja et al., 2007). The treatment seeking child/adolescent sample is largely represented by opioids, inhalants and cannabis (and not by tobacco and alcohol as seen in the community surveys) (Dhawan et al., 2017). This pattern might also be reflective of an availability of various substances. It is also likely that a tertiary care centre like ours

Table 3
Pattern of substance use (n = 28).

Substance*	Ever use N (%)	Last 1 year N (%)	Last 1 month N (%)	Dependence ever N (%)	Age of onset of use Mean (± SD)
Opioids	17 (60.7)	17 (60.7)	16 (57.1)	17 (60.7)	14.29 (± 02.78)
Alcohol	08 (28.6)	08 (28.6)	06 (21.4)	03 (10.7)	15.38 (± 01.77)
Cannabis	10 (35.7)	09 (32.1)	08 (28.6)	03 (10.7)	14.78 (± 01.56)
Tobacco	22 (78.6)	22 (78.6)	21 (75.0)	22 (78.6)	12.90 (± 02.97)
Pharmaceutical sedatives	03 (10.7)	03 (10.7)	03 (10.7)	02 (07.1)	14.00 (± 01.00)
Volatile solvents	03 (10.7)	03 (10.7)	03 (10.7)	02 (07.1)	12 (± 1.2)
Injection drug use	7 (25)	7 (25)	6 (21.4)		12.72(± 3.32)

* No patient reported use of other substances.

may attract patients who are dependent on more harder drugs like opioids. Thus, the pattern of substance use among treatment seeking female adolescents differ from that seen in community surveys (Dhawan et al., 2017).

Previous studies also reported that boys tend to use drugs more for sensation seeking, while girls use drugs to boost their confidence, cope with stress and tension, and to manage their weight (Poulin et al., 2005; Cavallo et al., 2006; Saluja et al., 2007; Malmberg et al., 2010). However, this was not the case in our study where more than 50% of patients started using substances for experimentation or out of curiosity. Also, higher rates psychiatric comorbidities especially depression are known to be associated with girl substance use (Kumpfer et al., 2008). On the contrary, in our study, none of the patients suffered from depressive illness. This difference might be attributable to obvious differences in the study methodology i.e. study sample and ethnicity etc.

These girls had used illicit opioid use for more 2–3 years before presenting to the treatment setting for the first time with multitude of psycho-social complications including family abandonment, physical complications related injecting drug use, high risk sexual behavior and related complications. Although the time to seek treatment is comparable to their male counterparts as mentioned in previous studies, the rates and severity of complication are manifold. Poor perception regarding the gravity of substance use problem and need for treatment seeking has been indicated as one of the reasons for such delay in treatment (Tikko et al., 2014). These findings are in harmony with earlier research findings which indicates that females are at greater risk of developing dependence once substance use starts and that the time taken to progress to problematic pattern of substance use is shorter than their male counterparts (Ridenour et al., 2006). With increasing severity of substance use, there is increase in risky sexual behaviour as well among girls (Naimi et al., 2003; Poulin and Graham, 2001).

The study should be interpreted cautiously considering its limited sample size and single centre experience which limits its generalizability. Further details regarding their family background, financial aspects, comorbidities and reasons for initiation could not be extracted. Yet, to the best of authors' knowledge, this is the first report on the profile of treatment seeking adolescent girls from India and provides important insights in to the relatively hidden subpopulation of adolescent substance users.

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