

Sociodemographic and psychosocial correlates of substance abuse among street children: A cross-sectional survey in the streets of Kolkata, West Bengal

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ABSTRACT

Context: India is now witnessing steady increase of substance abuse in younger age group. Street life is a major reason in addition to curiosity, unawareness of harm, migration, peer pressure. **Aims:** To assess the prevalence, pattern and related factors of substance use and stress among the street living children. **Settings and Design:** This street-based observational, cross sectional survey included 150 street children living in vicinity of railway stations, business activity centre and major religious places of Kolkata. **Methods and Material:** A descriptive research was done in 150 street children, aged 6 to 18 years and stayed in the street for at least six months. Respondents and care givers were interviewed with pre designed proforma to obtain information on socio demographic attributes, pattern of substance abuse, psycho social issues, self rated health. Weight and height were recorded by calibrated standardized instrument. **Statistical analysis used:** Collected data were analyzed with SPSS 22.0(licensed). Chi-square test or Fisher's exact test was done for normally distributed, skewed and categorical variables respectively. The significance level was set at 5%. **Results:** Two-thirds of participants used substance. Illiteracy was significantly more in females. Perceived positive benefit was commonest reason while feeling happiness and diminished pain was the most common expectation behind substance abuse. Peer group had the biggest influence (92.0%) on their life. Substance abuse was significantly more in males, adolescents, employed, without family attachment, adult as influencer and in those who lived on street without family. **Conclusions:** Higher prevalence of substance abuse among males, adolescents with adult influencer, employed and without family attachment highlighted the urgent need of intervention to see a better future.

Keywords: Marginalized, psychosocial stress, self-rated health, street children, substance abuse

Introduction

Street children being marginalized constitute a truly “hidden” fraction, not covered by any health information system.^[1] Substance abuse is one of the main reasons to claim lives in the streets of India. This is aggravated by lack of access to

basic amenities, rapid urbanization, migration, poverty, and population explosion and makes them more addict prone. A recent government survey in Delhi has found that children as young as nine are getting trapped in the vicious circle of drug abuse. Delhi and Mumbai seem to be the worst affected, Kolkata is not far behind.^[2] In 2016, according to United Nation (UN), 250 million people between the ages of 15 and 64 years used at least one drug in 2014 and more than 29 million are suffering drug use disorders compared with 27 million in 2013.^[3] This century has witnessed political unrest, economic recession, civil turmoil,

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Received: 15-12-2020

Revised: 21-02-2021

Accepted: 17-03-2021

Published: 02-07-2021

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_2449_20

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How to cite this article: Basu G, Biswas S, Pisudde P, Mondal R. Sociodemographic and psychosocial correlates of substance abuse among street children: A cross-sectional survey in the streets of Kolkata, West Bengal. J Family Med Prim Care 2021;10:2259-64.

natural calamities, industrialization, and urbanization. This has led to increase in the frequency of street children.^[4] India is the home to 18 million street children, considered as the largest global contributor of street children.^[5] In India, they have indulged in variety of substances, ranging from inhalant, solid cigarettes to “charas” preparation.^[6,7] Street children encounter problems like occupational hazards, substance dependence, violence, sexual exploitation.^[8,9] Therefore, this study aims to understand the prevalence, pattern of substance use, and related factors among the children living in the streets of Kolkata.

Subjects and Methods

An observational, descriptive epidemiological study using cross-sectional survey design was carried out for 2 months in the streets of Kolkata focusing on railway stations, business activity center, and major religious places. All willing street children aged between 6 and 18 years, detached from their families live in temporary shelters such as abandoned houses and other buildings, hostels, shelters, remained in contact with their families but because of poverty, overcrowding, or sexual and physical abuse within the family, spent some nights and most of their days on the streets and also children who lived with their families on the street were included in the study. The study included only those children, who stayed in the street for at least 6 months. The study was started after obtaining institutional ethical clearance and the pre-designed proforma was pre-tested on 10 children living on the streets of Kolkata. After that, final modification of proforma was made according to the responses obtained (Date of the approval was 14-06-2019). According to the WHO, substance abuse is defined as “persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice” (WHO, 1994).^[10] The objectives and importance of the study were explained to them and in case of minors, to their guardians or any senior person, if present. Informed verbal consent was taken from every participant, aged more than 12 years. In case of children aged less than 12 years, consent was obtained from their guardians or accompanied senior person. Investigator collected data on fixed days per week from every participant on sociodemographic attributes, pattern of substance abuse, and also psychosocial issues by direct interview. The pre-designed, pre-tested proforma was translated in local language before it is applied in study setting. Direct interview was conducted for every children in the study setting after making them comfortable. Confidentiality regarding the respondent identity was strictly maintained. The average time taken to complete one interview was around 20–30 min. The respondents were also asked to rate their own health. The healthcare seeking practices was enquired along with their knowledge regarding any social scheme for street children. Anthropometric measurements like weight and height were recorded. Body weight was measured using a standard portable weighing scale. Each subject was requested to remove their shoes and weighed wearing light clothing. Weight was measured to the nearest 0.1 kg. Height was measured without shoes on using a fixed wooden stand with which a steel tape is attached to the nearest 0.1 cm. Collected information were coded, entered into

MS Excel 2010 and analyzed with SPSS 22.0 (licensed) and Stat Calc version 8.2. Numerical data was presented with help of mean, standard error, median. Proportion was calculated for both categorical and numerical attributes. Chi-square test or Fisher’s exact test was done for normally distributed, skewed, and categorical variables, respectively. Graphs and charts was done for some variables. The significance level was set at 5%. $P < 0.05$ was considered significant. Odds ratio, confidence interval was calculated as a relative risk estimate.

Results

The present cross-sectional survey had 150 street children living by the sides of railway tracks in slums around railway stations of Kolkata.

Sociodemographic and economic profile: The mean (SE) age of the street children under this survey was 12.82 (0.305) years. The average age of female was little higher (12.91 years vs. 12.76 years). Adolescents comprised majority of study population (72.0%). Most (88.7%) of the children studied less than 5 years, 31.3% were illiterate. Illiteracy rate was significantly more females in comparison to males ($P = 0.003$). Begging was the most common occupation followed by servant and labor. Four out of five children (79.33%) worked between 4 and 7 days a week. As gender is concerned, more than half males choose begging as a way to earn, whereas half of female children earned by working as maids and the difference in proportion between sexes was significant. The difference in the proportion of education among non-adolescent and adolescents and also in both sexes was found significant. Similar significance was noted

Table 1: Socio demographic profile (n=150)

Variables	Frequency	Percentage
Age group (years)		
6-10	42	28.0
11-15	63	42.0
16-18	45	30.0
Gender		
Male	93	62.0
Female	57	38.0
Religion		
Hindu	93	62.0
Muslim	57	38.0
Education level		
Illiterate	47	31.3
Class 1 to Class 3	67	44.7
Primary completed	19	12.7
Above primary	17	11.3
Employment status		
Employed	120	80.0
Unemployed	30	30.0
Type of occupation		
Begging	56	37.3
Servant	42	28.0
Labor	22	14.7

in the proportion difference of employment among adolescents and non-adolescents [Table 1].

The prevalence, pattern of substance use: The current study had two-third substance abusers. Volatile substance was used most commonly (41.3%). It was noted that 26.7% of children took substance on daily basis, 18.0% took most of the days of week. The children started to take substance at an average age of 12.16 years while half of respondents were below and above 12 years. More than half of the children were doing it more than a year. Perceived positive benefit was the commonest (54.7%) reason behind substance abuse. In family, substance abuse was mainly practiced by father followed by sibling (48.7%, 31.3%). In more than four-fifth of study population, peers used substance, too. Out of peers, more than half used any one between cannabis, inhalant, or alcohol. Feeling happiness and diminished pain was the most common expectation for using any substance (17.3%). The other expectations were forgetting sorrows, decrease of hunger, arousal of sex, confidence boost, etc. The prevalence of use of any single substance was less except alcohol, cigarette, and dendrite. There was a tendency of using more than one substance in different combination. Significant difference was noted among adolescent and non-adolescent age group in relation with age of initiation, duration, and type substance abuse, whereas males used volatile substances more, but females preferred both [Table 2].

Psychosocial issues: Fifty four (54) children had both parents, four were orphans. Peer group had the biggest influence on their life (92.0%). Nearly half of the children thought that they had insufficient meal to survive. Twenty nine (29) children stayed on street with gang and 78.0% lived with family. Only thirty two (32) children were lucky to live in covered shelter as 78.7% lived in unprotected environment. For food, more than half (58.7%) took from street food stalls only. The reasons for living on street were multiple like financial, family problems, drug problems in family, self-drug use, etc. Among the respondents, 74.0% had no awareness of any social welfare scheme available. As per Likert's scale, 72.7% children rated their health good to average. Most of the children went to either Govt. or Private health care facility in most of the times (91.3%), 11 (7.3%) practiced self-medication [Table 3].

Risk factors of substance abuse: Substance abuse was significantly more prevalent among males (71.0%), adolescents (73.2.4%), employed (78.3%), having education primary and above (91.4%), without family attachment (100.0%), adult as influencer (91.7%), work under supervision (56.7%), with more than five substance abuser friends (82.4%), getting sufficient food (72.3%), and those who lived on street out family (96.9%) in comparison with females, non-adolescents, unemployed, below primary level education, with family attachment and less number of peers using substance and live on street without family. Substance abuse was practiced by most of the children irrespective of both parents present or single parent (Table 4 and 5).

Table 2: Patterns of substance abuse (n=150)

Attributes	Frequency	Percentage
Substance abuse		
Yes	97	64.7
Type of substance		
Volatile	62	41.3
Non volatile	22	14.7
Both	13	9.3
Attitude towards substance abuse		
Perceived positive benefit	82	54.7
Perceived as dangerous	40	26.7
Personal disapproval	28	18.7
Substance abuse in family		
Father	73	48.7
Mother	6	4.0
Sibling	47	31.3
Both parents, Father and sibling	4	2.7
Number of peers using any substance		
1-5	62	42.2
6-10	64	43.3
>10	21	14.5

Table 3: Socio-familial attributes (n=150)

Attributes	Frequency	Percentage
Parents present		
Only mother	51	34.0
Only father	41	27.3
Both	54	36.0
None	4	2.7
Attachment with family		
No	14	9.3
Yes	136	90.7
Significant influence on life		
Adult member	12	8.0
Only peer	138	92.0
Intactness of family		
Broken	59	39.3
Intact	85	56.7
Don't know	6	4.0
Everyday meal		
Sufficient	83	55.3
Insufficient	67	44.7

Discussion

The present observational, cross-sectional study among 150 street children aimed at finding out the prevalence, pattern, and correlates of substance use among them. There was paucity in research enlightening this aim in the current study area. The study population was one of the most marginalized section of the society, therefore, the present study encountered with many challenges but despite all obstacles faced, it had attempted to fill the gap and throw some light on this vulnerable issue. The present study revealed that 64.7% respondents abused any one substance. The higher aged children used more substance (81.4%). The risk of substance abuse was significantly more among males, adolescents, employed, having primary and

Table 4: Socio demographic correlates of substance abuse

Variables	Substance Use		Statistics
	Yes (n, %)	No (n, %)	
Gender			
Male	66 (71.0)	27 (29.0)	$\chi^2=4.253, P=0.030$ OR=2.050 (1.031-4.076)
Female	31 (54.4)	26 (45.6)	
Age Category			
Non adolescents	18 (42.9)	24 (57.1)	$\chi^2=12.144, P=0.001$ OR=0.275 (0.131-0.580)
Adolescents	79 (73.2)	29 (26.8)	
Employment status			
Employed	94 (78.3)	26 (21.7)	$\chi^2=49.049, P=0.000$ OR=32.538 (9.143-115.795)
Not employed	3 (10.0)	27 (90.0)	
Education level			
Primary and above	33 (91.4)	3 (8.6)	$\chi^2=15.113, P=0.000$ OR=8.594 (2.491-29.651)
Below primary	64 (56.1)	50 (43.9)	
Monthly income (Rs.)			
Below median (<2500)	45 (58.4)	22 (41.6)	$\chi^2=0.331, P=0.609$ OR=1.219 (0.620-2.399)
Median and above (>=2500)	52 (62.7)	31 (37.3)	

Table 5: Psychosocial factors of substance abuse

Variables	Substance Use		Statistics
	Yes (n, %)	No (n, %)	
Family attachment			
No	14 (100.0)	0 (0.0)	$\chi^2=8.381, P=0.006$ OR=2.369 (1.433-1.874)
Yes	83 (61.0)	53 (39.0)	
Influencer			
Adult	11 (91.7)	1 (8.3)	$\chi^2=2.976, P=0.034$ OR=6.651 (0.834-53.019)
Peer	86 (63.7)	52 (36.3)	
Jobs supervision			
Supervised	42 (79.2)	11 (20.8)	$\chi^2=7.623, P=0.005$ OR=2.915 (1.342-6.334)
Unsupervised	55 (56.7)	42 (43.3)	
Everyday meal			
Sufficient	60 (72.3)	23 (27.6)	$\chi^2=4.260, P=0.039$ OR=2.027 (1.031-3.982)
Not sufficient	37 (53.7)	30 (46.3)	
Living status			
Street without family	31 (96.9)	1 (3.1)	$\chi^2=16.721, P=0.000$ OR=24.424 (3.226-184.982)
Street with family	66 (36.7)	52 (63.3)	
Number of peers using substance			
<=5	27 (43.6)	35 (56.4)	$\chi^2=24.052, P=0.000$ OR=0.165 (0.781-0.350)
>5	70 (82.4)	15 (17.6)	

above education, without family attachment, adult as influencer, work under supervision, with more than five substance abuser friends, getting sufficient food, and those who lived on street without family. An observational study done by Benegal *et al.* among 321 street children of Bangalore reported mean (SD) age of 14.5 (3.4) years ranged from 7 to 20 years with majority males (81.9%). The average (SD) years of education and weekly working days was 2.4 (2.9) years and 5.3 (2.4) days, respectively.^[11] An observational, cross-sectional study done among 215 street children residing in Guwahati city reported that two-thirds of street children were aged between 10 and 15 years. Maximum were males (90.7%).^[11] A community-based cross-sectional study among 554 street children of Kolkata, West Bengal also revealed that, half aged between 11 and 15 years with a median age of 13 year, 65% were male, 47% were illiterate, 85% were

never married. By occupation, 72% children were found to be engaged in some kind of work, 28% remained jobless at the time of study, whereas 37.4% engaged in different types of small shops or hotels as daily laborers. Income analysis revealed that majority (36%) earned between Rs 500 and Rs 1,000 per month. Thirteen percent were orphans, the rest had either a single (23%) or both parent (64%) alive.^[12] A study conducted among 220 street children in Assam, India reported that majority (67.7%) aged between 10 and 16 years and 56.9% were illiterate.^[13] A study from Hyderabad that was done in the observation homes had a total of 178 children. In that research, peer pressure was reported as the commonest reason for initiating substance use.^[14]

Substance abuse among street children was found as a great public health concern as suggested from earlier literature. A Mumbai

study among 163 street boys reported 80.98% prevalence of substance abuse.^[15] A study from Guwahati between 215 children showed that around 80.9% participants were substance abusers. Considering the age distribution as a risk of substance use, 10–15 years age group and the senior sections were carried the highest burden (86%) than the younger group (57.8%), similar to present study.^[11] The Kolkata study reported the total prevalence exclusive tobacco smoking plus nontobacco substance use was 52%.^[12] The study from south India reported 71% of substance abuse.^[10] A study from Sambalpur, Orissa with 502 adolescents revealed that 43.4% were substance abusers with overall males abusing more (49.5%) than females (34.6%).^[16] In comparison with the reported prevalence of 35% in the Hyderabad study, the study from North India showed the prevalence more than half among the respondents.^[14,17] A study in eight districts of Colorado, USA showed prevalence of 66% and 90% in case of lifetime and recent substance use.^[18] Egypt study reported nearly 91% prevalence of substance abuse.^[19]

The Bangalore study revealed that the proportion of smoking tobacco was most common followed by inhalant use, chewing tobacco, and using alcohol. The proportion of cannabis use was less. Most of the younger children started off with tobacco use but shifted gradually to use inhalants as they aged more.^[1] The most common reasons of substance use reported by participants of Mumbai were peer pressure (62.1%), experimentation (36.3%), or to boost self-confidence (28.7%).^[15] In Kolkata study, substance use was common among children, 30% reported regular drug use, only 22% children were exclusive tobacco smokers and did not use substances other than “bidi” or “cigarette.” It was evident that the rate of substance use was much higher in males of all ages compared with the females of same age.^[12] The Andhra Pradesh study described that, among the users, the most prevalent substance abuse was tobacco smoking (48.9%), followed by alcohol (40.6%), solvent (31%), tobacco chewing (28.8%), cannabis (14.9%), and other substance use (1.5%).^[10] Alcohol, kolanut, tobacco, and cannabis were used as psychoactive substances in a study conducted in Nigeria. None reported use of cocaine, opiates, or any hallucinogens.^[20]

Step parents presence in the family along with the child maltreatment were the significant predictors found in a study from Delhi.^[6] The risk of substance abuse was higher in school absentees and children from joint family, though not significant. Significant risk was seen in case of deaths of parents, maternal death, presence of step parents, substance use in family, duration of street life.^[11] Substance use had significant association with older age, male children, orphans, children without contact with family and children spending the night at public places in the study from Kolkata.^[12] The study from Orissa showed that risk of substance abuse was significant in broken families, addicted peer group, joint family, parental abuse status, working status, and illiteracy or school-drop out.^[16] The history of family wise substance use was a risk factor behind the substance use among street children as reported from USA study.^[18]

In general, the problems associated with street children have always remained understudied. The present study has highlighted prevalence, pattern, and correlates of substance use among the street children of Kolkata, India. The problem is the least researched in streets of Kolkata, though it is home to many. Age determination was difficult and some respondents were found in altered sensorium as an after effect of substance abuse. There were multiple reasons for street living like financial, family, and drug problems. Substance abuse was significantly more among males, higher age, employed, without family attachment, etc. The health system is comprised of various service providers ranging from primary care physicians to government and private hospitals. The street children with substance abuse will not seek treatment by themselves, either because of unawareness or disbelief of requiring treatment. Therefore, primary care physicians may put their step forward and show the access to the quality treatment available. They can act as a facilitator to serve both the individual and the society in broader sense. This study opens many aspects of street life. Extensive, planned, multi centric approach is necessary to understand and overcome the problem to induct them into the mainstream society with active involvement of social, political system.

Acknowledgement

We sincerely like to acknowledge all the respondents, their care givers and local administration for their unconditional support. We also extend our sincere gratitude to ICMR for selection of this topic as a STS.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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