ORIGINAL ARTICLE

Volatile Substance Misuse Among Street Children in India: A Preliminary Report

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Although substance misuse among children in India has been documented for over a decade, volatile substance misuse (VSM) is a comparatively recent phenomenon there. This paper reviews available Indian studies about VSM among street children and documents the extent of misuse, experienced benefits and harms, and risk factors. Reported perceived benefits include enhanced physical strength, decreased shyness, sleep induction, feeling good, and numbing physical and psychological pain. Identified risk factors include domestic violence, a dictatorial father, presence of step-parents, migrant status, and substance use in the family. Limitations of the current paper and the need for further research are discussed.

Keywords volatile substance misuse, inhalants, street children, India, toluene

INTRODUCTION

India has the largest number of street children in the world, with 18 million living and working in India’s urban slums (Benegal, Bhushan, Seshadri, & Karott, 1998; Sinha, Ambekar, & Tripathi, 2009). The heterogeneity of India’s street children population can be categorized into three general groupings—those who live and work on the streets and have no contact with their families; children who live with their families on the streets or live alone on the streets and have contact with their families, who live elsewhere; and children who live at home with their families but spend most of their time on the streets with other children. This latter grouping turns to their “street family” most frequently due to poverty, overcrowding, and familial sexual and physical abuse (Kant & Verma, 1993).

“Volatile substances” refers to a broad group of substances that produce chemical vapors that can be inhaled to induce a psychoactive effect. There are four general classes of inhalants—volatile solvents, aerosols, gases, and nitrites. Toluene-containing compounds such as glues, nail polish removers, lighter fluids, spray paints, deodorant, hair sprays, and cleaning and correcting fluids are the most commonly misused products by India’s street children (Benegal et al., 1998; Gupta, Bali, & Jiloha, 2009; Praharaj, Verma, & Arora, 2008; Ray, Dhawan, Ambekar, Yadav, & Chopra, 2009; Seth, Kotwal, & Ganguky, 2005; Sood & Sood, 2009).

INDIAN STUDIES

Reports of substance misuse among Indian children have traditionally focused on the street children population, with attention directed to the misuse of volatile substances only recently. Epidemiological studies conducted a decade ago either had no questions about volatile substance misuse (VSM) or did not identify any use. Further, the Indian National Household Survey on Drug Use surveyed 8,587 children aged 12–18 years and did not identify VSM; 3.8% of youth self-identified as using alcohol, 0.6% cannabis, and 0.2% opiates (Ray, 2004). A study using a systematic, multistage stratified random sample that corresponded to the Census of India found that 76.2% of the subjects reported using opioids (heroin was the most common, used by 36.5%) and that more than half (54.2%) were nicotine dependent (Saluja, Grover, Irpati, Mattoo, & Basu, 2007).

Although there are no national statistics, several recent studies identify VSM as a problem among street children. A concern, however, is that the studies cover small geographical areas and cannot be extrapolated to the national level. This should be kept in mind as these studies are reviewed below.

In a study of drug use among street children in Bangalore, Benegal et al. (1998) reported that 76% smoked tobacco, 45.9% chewed tobacco, 48% inhaled volatile substances, 42% drank alcohol, 15.7% smoked cannabis, and 2% ingested opioids. In a recent study of drug use...
patterns among 487 incarcerated male juveniles (ages 8–18 years) in Delhi, many of whom had been street involved, Sharma and Sharma (2010) reported the most commonly misused substances among the youth prior to their detention were tobacco (25.7%), followed by cannabis (17%), alcohol (15.8%), heroin (13.3%), volatile substances (10.1%), and benzodiazepines (4.5%). Unlike the Benegal et al. findings, 70.2% of this group reported use of only one drug, while 26.3% used two or more drugs. Further, a study of 163 street boys in Mumbai found that 132 (80.9%) reported using illicit substances (Abhay et al., 2008).

A study by Seth et al. (2005) assessed 45 homeless street (n = 30) and working (n = 15) children in Delhi who misused whitener fluid containing toluene. The age of onset ranged from 6 to 14 years (median 10). Although whitener fluid containing toluene was the preferred substance, most children used other substance concurrently, including tobacco, alcohol, cannabis, and to a rare extent heroin.

Ray et al. (2009) undertook a national study of misused toluene products among street children in India. A total of 100 inhalant users and 30 nonusers were assessed. The mean age of users was 12.8 (SD: 2.4) with age of first use being 9.3 ± 2.8 years. Only four of the users were girls. All the users were working, whereas 16% of nonusers were students. Most users lived alone on footpaths, streets, or railway platforms. The most commonly misused product containing toluene was eraser fluid (83%), followed by glues (34%) and petroleum products (3%). Although toluene was the primary substance of misuse, most children used other drugs concurrently, most frequently tobacco, followed by alcohol, cannabis, raw opium, heroin, sleeping tablets, and cough syrups. Numerous case reports have also appeared recently documenting VSM among street children. For example, nine children were identified by Praharaj et al. (2008) as having misused typewriter correction fluid and Gupta et al. (2009) identified two children misusing typewriter erasing fluid and an adhesive used to fix punctured tires. Further, Sood and Sood (2009) reported two children admitted to pediatric emergency with acute abdominal pain following glue sniffing episodes. Duggal and Khess (2001), Basu, Jhirwal, Singh, Kumar, and Mattoo (2004), and Mathiyazhagan (2006) have sought to bring attention to the existence of the problem in India through various publications in the past decade of VSM.

**Perceived Benefits and Harms**

Few studies in India have examined the benefits and harms experienced by street youth from misusing volatile substances. Those studies that have addressed the issue record that youth generally perceive VSM benefits to include increased activity level, enhanced physical strength, decreased shyness, decreased appetite (often these children had nothing to eat), sleep induction, feeling good, getting a high, numbing of physical and psychological pain, feeling dreamy and lighthearted, overcoming sadness and negative feelings about having to work for a living, avoiding withdrawal, and enjoying the sweet taste and fruity smell (Benegal et al., 1998; Sharma & Sharma, 2010; Simlai & Khess, 2008).

The harms experienced from VSM among children include experiencing a “burning of lungs,” tuberculosis, stomach ailments, kidney stones, vomiting blood, blackened teeth, constriction of the heart (Sinha et al., 2009), weak bones, weight loss, reduced thinking power, aggressive behavior and violence (Seth et al., 2005; Sharma & Sharma, 2010), changed appearance, money loss, and involvement in risky activities (Simlai & Khess, 2008).

**Risk Factors**

Similar to studies documenting the risks and harms experienced by the dearth of children from VSM, there are limited studies documenting risk factors for VSM. Most obvious, however, from the reviewed studies is street involvement. The work of Sharma, Singhal, and Sharma (2009) and Sinha et al. (2009) found that the majority of street children who misused volatile substances did not attend school, were employed as unskilled laborers, and that the nature of their occupation was a significant contributor to their substance misuse (see Elkoussi, this issue). For example, empty bottle pickers on train platforms frequently reported smoking or huffing volatile substances while waiting for the next train to arrive. What money they earned was used to purchase more products containing volatile substances. This is partly explained by the facts that most had access to free food from religious groups or leftovers from restaurants and lived in constant fear that any unspent money might be stolen. Further, the work of Pagare, Meena, Singh, and Saha (2004) about risk factors for substance use among street children in Delhi found that peer pressure was ubiquitous and very often children were living in a subculture where VSM was the norm. These children manifested very high levels of trauma, suicidality, psychiatric distress, and antisocial behavior.

In a 2009 study, Sharma and Sharma found that, in a sample of street-involved children living with their families and misusing volatile substances, domestic violence, a dictatorial father, physical abuse, presence of stepparents, migrant status, substance misuse by a family member, and association with delinquent peers were risk factors (Sharma & Sharma, 2009).

**LIMITATIONS**

This study introduces some preliminary data about VSM among street children in India. Drawing on existing studies, the authors were limited by what was described in published materials. It is clear, nevertheless, that much more attention to the issue of VSM among street children is needed. It is hoped that this focus on VSM may increase, as attention to substance use among youth generally has been increasing in India in recent years.

**CONCLUSION**

Effective responses to VSM among street children can be put into place only after proper documentation is done of
the extent of the problem. At the same time, public awareness about VSM and its associated risks and harms needs to be raised.

Drawing on the India-specific studies reviewed, suggestions for moving forward include: A public–private partnership with nongovernmental organizations leading psychoeducation initiatives, detoxification opportunities, recreation activities, planning and responsibility programming, family reintegration, and occupational mainstreaming (Ray et al., 2009). Sinha et al. (2009) offer additional suggestions, such as peer education, decreased cash liquidity with encouragement to save, life skills training, attention to general and sexual health, sensitizing police personnel to protect rather than exploit children, night school, vocational training centers, and an increase in community awareness.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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GLOSSARY

Street children: The term for three broad groups of children—those who live and work on the streets with no contact with their families; those who live with their families on the streets or live alone on the streets but have contact with their families; and those who live in their homes with families but spend most of their time on the streets with other children because of poverty, overcrowding, or sexual and physical abuse in the family.

REFERENCES


