

Glue Sniffing Among the Street Children Residing at Pokhara Metropolitan, Nepal: A Descriptive Cross-sectional Study

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Abstract

Introduction: Glue sniffing usually refers to volatile substance abuse (VSA) for psychoactive effects. Street children are the children who live, work, and earn their livelihood through the streets of urban settlements. Street children are mostly attracted to substance abuse and more particularly towards volatile substances as they are cheap, easy to access and have psychoactive effects as alcohol intoxication. This study aimed to assess the general characteristics of street children of Pokhara Metropolitan, Nepal who are addicted to glue sniffing.

Methods: A cross-sectional study was conducted among street children who were addicted to glue sniffing through the snowball sampling method in Pokhara Metropolitan, Nepal.

Results: All 88 children who were addicted to glue sniffing were males. Of the total children, 59 (67%) children started glue-sniffing at the age of five to ten years of age while nine (10.2%) children started sniffing even before they were five years old. Addiction to glue (n = 33, 37.5%), pleasure (n = 18, 20.5%), coping with hunger (n = 14, 15.9%), and being a part of street children group (n = 13, 14.8%) were the major reasons to sniff glue for these children.

Conclusions: It has been observed that the majority of street children are at increased risk of getting involved in glue sniffing. It has resulted in different ill outcomes such as self-destruction and problematic behavior, fights and police arrest. There is a need to focus on the issue of glue sniffing among the street children to save and ensure the quality of life of these vulnerable children.

Introduction

Street children are the marginalized and vulnerable population in most urban centers of the world but it is hard to estimate the number of street children and the magnitude of difficulties that they encounter.¹ Glue sniffing usually refers to volatile substance abuse (VSA) which involves slow inhalation of these solvents for psychoactive effects.^{2,3} These volatile solvents are present in many products including paints, rubber, pharmaceuticals, adhesives, and dendrites glues which makes them simply available.^{4,7}

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Glue sniffing practice has been linked with various morbidity related to the respiratory system, cardiac system, renal system, intoxication, risk of other addiction and even may lead to a sudden sniffing death syndrome.^{3,7-12}

It has been noted that children's addiction to glue sniffing is a common problem among street children in Thailand, Indonesia, Cambodia, Malaysia, Pakistan, Bangladesh, India and the Philippines.¹³⁻¹⁵ In Nepal, child rights organizations suggest that glue-sniffing is increasing at alarming rates among street children.¹⁶ In this scenario, this study aimed to assess the general characteristics of street children of Pokhara Metropolitan, Nepal who are addicted to glue-sniffing.

Methods

A descriptive cross-sectional study was conducted among the street children residing at Pokhara Metropolitan of Nepal from June to December 2017. Due to the hidden nature of the study population, snowball sampling technique was used. In this technique, one of the eligible participants (Glue sniffer) was identified, and with his / her help next participant was identified and the chain continued. The study was executed after acquiring ethical approval from the ethical review committee of Pokhara University (Ref. No: 90/074/75). Permission from Pokhara Metropolitan administrative office was taken. The children were informed about the study and their assent was obtained along with the parental consent for the legal representative of the children prior to the study. Confidentiality of the participants was ensured and maintained through coding of the participants instead of the name of the children. Voluntary participation of the subjects was encouraged as the participants were notified about their option to withdraw from the study at any time on their will.

In this study, the term glue-sniffing referred to the use of solvent glues by the children's which are volatile in nature such as dendrites in order to achieve intoxication. UNICEF classifies street children into two main categories as "Children on the street" and "Children of the street". Children on the street are the children who are engaged in some kind of economic activity on the streets to contribute their earnings to their families, and they go back to their home at the end of the day. Whereas, children of the street are the children who have no home to go to so they live, work, and sleep in the street as their home.^{16,17} Thus, the children who sniffed glue and had satisfying any of the given two criteria were eligible to be included in this study.

For the data collection, a set of structured questionnaires was used. The questionnaire was prepared by modifying the questionnaire used by Child Workers In Nepal (CWIN) study on glue sniffing among street children in Kathmandu Valley.¹⁶ Face-to-face interviews were performed to collect the necessary information related to glue sniffing among street children, its frequencies, patterns, and other related variables along with socio-demographic variables. The interview with participants was divided into three phases. The first phase included rapport building and taking informed consent from the participants and legal representatives (Guardians). The second phase included the main part of the research i.e. data collection and the last phase was conducted after a thorough check of missing information and vote of thanks. The collected data was entered using EpiData software version 3.1 while the Statistical Package for Social Sciences (SPSS) version 20 was used for the analysis using descriptive statistical methods such as frequency and percentage.

Results

In this study with the help of the participants, a total of 88 street children addicted to glue sniffing were identified and sampled. Based on the information acquired from these identified glue-sniffing street children, it was noted that there were a total of 114 children were living and working together on the streets in that circle. This leads to a roughly estimated proportion of glue sniffers among this group of street children to be at 77.2% but we cannot conclude it as a true prevalence of glue sniffers.

In the study, all the identified glue-sniffing street children were males of ages ranging from five years to 17 years with a median age of 14 years. Of the total participants, 80 children (90.9%) belonged to the marginalized ethnic group. It was noted that 73 (83%) children were not living with their parents. The major reasons for the children to end up on the streets were that 53 (60.2%) had run away from their home alone on their free will while 15 (17.0%) ran away with their friends and 14 (15.9%) were working on the streets with their families. Furthermore, 28 (38.4%) children had experienced domestic violence while six (8.2%) reported peer influence to be their major reason to run away. Of the total 88 children, 37 (42%) children reported picking rag and scrap for income while 41 (46.6%) begged on the streets to earn their livelihood (Table 1).

Table 1. Sociodemographic characteristics of the street children's addicted to glue sniffing

Demographic Characteristics	Number (%)
Age of the children	
5 - 9	12 (13.6%)
10 - 14	34 (38.6%)
15 - 17	42 (47.7%)
Ethnicity / Caste	
Brahmin / Chettri	6 (6.8%)
Dalit	71 (80.7%)
Relatively advantaged Janajati	2 (2.3%)
Disadvantaged Janajati	9 (10.2%)
Living with parents	
Yes	15 (17.0%)
No	73 (83.0%)
Reason why children ended up on streets	
Work on street with family	14 (15.9%)
Ran away from home	53 (60.2%)
Ran away from work	1 (1.1%)
Ran away with friends	15 (17.0%)
Brought by the relatives	4 (4.5%)
Others reasons	1 (1.1%)
Reasons for Running away (n = 73)	
Domestic violence	28 (38.4%)
Seeking employment	3 (4.1%)
Peer pressure / Influence	6 (8.2%)
Just wandering	36 (49.3%)
Duration of work on the street	
6 months	8 (9.1%)
1 year	12 (13.6%)
More than a year	68 (77.3%)
Occupation	
Porters	4 (4.5%)
Rag picking	37 (42.0%)
Begging	41 (46.6%)
Others	6 (6.8%)

In this group of 88 addicted street children, it was seen that 59 (67%) children started glue-sniffing between the age of five to 10 years, while, it was also noted that nine (10.2 %) children started sniffing at the age less than five years of age. Of all the sniffers, 77 (87.5%) children admitted that they sniff glue daily, among which 51 (58%) children said they sniff it more than five times a day. Addiction to glue, pleasure, coping with hunger, and being a part of the street children group were the major reasons to sniff glue for these children. All of these children also reported that glues are cheap and easily available to them in comparison to other psychoactive substances. Of the total children, 76 (86.4%) stayed under the psychoactive influence of glue for half-an-hour while only two (2.3%) children said that the glue provides them intoxication for almost two hours. (Table 2).

Table 2. Factors linked to glue sniffing

Factors	Number (%)
Age at which glue sniffing was started	
< Five years of age	9 (10.2%)
Five - 10 years of age	59 (67.0%)
10 - 15 years of age	20 (22.7%)
Learned sniffing glue from	
Friends	87 (98.9%)
Other users	1 (1.1%)
Source of money to buy glue	
Begging	59 (67.0%)
Stealing	3 (3.4%)
Working	26 (29.5%)
Frequency of glue sniffing	
Once or twice a week	11 (12.5%)
Two - four times a day	26 (29.5%)
Five times a day	51 (58.0%)
Reasons for glue sniffing	
Cope with tension	4 (4.5%)
Cope with hunger	14 (15.9%)
Gain enough strength to fight	6 (6.8%)
To belong to a group	13 (14.8%)
Addiction	33 (37.5%)
Feel pleasure	18 (20.5%)
Duration of psychoactive influence of glue	
30 minutes	76 (86.4%)
One hour	10 (11.4%)
Two hours	2 (2.3%)

In regards to the knowledge and different experiences of glue sniffing, 73 (82.9%) children said they knew about the negative health effects of glue sniffing. Moreover, majority of the children (64.8%) had known about glue sniffing two years prior to their first glue sniffing, while, 10 (11.4%) reported knowing about it a year before they sniffed for the first time. All of the children reported that their friends were their source of information about the glues. The children were also asked if they had experienced any health consequences due to glue sniffing. Majority of the children reported having experienced several health problems after six months of sniffing. Furthermore, they have also faced other consequences such as self-destruction, fighting, and getting arrested by police. In addition to glue sniffing these children also

reported being addicted to other substances such as cigarette smoking, tobacco, alcohol, marijuana, and dendrite. Despite their addiction, 52 (59.1%) children want to quit sniffing (Table 3).

Table 3. Knowledge and experience regarding glue sniffing

Attributes	Number (%)
Knowledge about health effects of sniffing glue	
Yes	73 (82.9%)
No	15 (17.1%)
Knowledge about glues before first sniffing	
One month	2 (2.3%)
Six months	5 (5.7%)
One year	10 (11.4%)
Two years	14 (15.9%)
More than two years	57 (64.8%)
Experience after glue sniffing	
Pleasure	72 (81.8%)
Sick	3 (3.4%)
Delusion	13 (14.8%)
Experienced health problems (multiple experiences)	
Headache	57 (78.08%)
Chest pain	25 (34.2%)
Stomachache	47 (64.4%)
Nausea	36 (49.3%)
Others	21 (28.8%)
Other problems (Multiple experiences)	
Self-destruction	88 (100%)
Fight	88 (100%)
Get arrested by police	81 (92%)
Other substances they feel addicted to (Multiple substances)	
Cigarette smoking	84 (95.5%)
Tobacco use	34 (38.6%)
Alcohol consumption	35 (39.8%)
Marijuana use	46 (52.3%)
Want to quit sniffing	
Yes	52 (59.1%)
No	36 (40.9%)

Discussion

It was noted that all the children had started sniffing glue before the age of 15 years and some had started even early at age of five and below. Similar finding was shared by a study from India where more than half of the homeless children i.e. 55 (67.8%) who used psychoactive substances had initiated substance abuse at the age below 15 years.¹⁸ This finding is also in line with another study conducted in Butwal Municipality of Nepal, where out of total glue-sniffing children, 40.4% were of age nine to 12 years and 92.3% were males.¹⁹

The children who participated in this study also expressed that they sniff glue because it is cheap and easily available. Majority of the children notified that they sniffed glue for the feeling of pleasure, to cope with hunger, and due to peer influence, or to protect their sense of belonging to the group. Similar to this, seeking enjoyment and experiencing peer pressure was also found to be higher contributing factors for sniffing among homeless children of India.¹⁸ Studies also suggest that glue sniffing is popular among street children because they are relatively cheap, easy and legal to access and their psychoactive effect is similar to that of alcohol intoxication.^{13,16} Considering this finding, controlling the easy access to volatile substances among this population group through certain legislations and public awareness can be a potential preventive approach to reduce the rate of glue sniffing among street children.

Most of these children picked rags, begged, or worked on the streets for their livelihood which is similar in context to Butwal Municipality, where 67.3% of the street children picked rags, 51.9% worked and 26.92% begged on the streets for more than a year as their livelihood.¹⁹

In this study 87 (98.9%) children knew about glue sniffing from their friends while 13 (14.8%) children sniffed glue because they felt a sense of belonging and felt secure while sniffing glue with them. The CWIN report on glue sniffing among street children in Kathmandu valley noted that 47 (77.0%) of the street children in Kathmandu sniffed dendrite due to peer influence while nine (14.6%) children sniffed glue due to peer pressure.¹⁶ A similar finding was observed among the street children of urban areas of Bangladesh where peer pressure was noted as the major reason to start sniffing glues by 70.0% of the sampled children and 84% children came to know about sniffing from their peers.¹³ We observed that 77 (87.5%) children sniffed glue on a daily basis, among which, 51 sniffed it more than five times a day. This proportion of heavy sniffing was also observed in Butwal Municipality, Nepal where 54.4% of the children sniffed glue more than five times a day.¹⁹

In this study, we noted that almost three-fourth (82.9%) of the children knew that sniffing glue has negative health effects which contradict with the studies from Butwal Municipality, Nepal where only 10.9% of the children were aware about the ill effect of glue-sniffing.¹⁹

In India, it was observed that the level of education of homeless children has no statistical relationship with psychoactive substance abuse.¹⁸ The contradiction existing in awareness of ill effect and existing sniffing practice could be due to the interplay of other factors. As in our study despite their addiction, more than half (59.1%) children want to quit sniffing but they were still hooked to it and 82.9% knew it is bad for them but still were continuing the habit. So just focusing on the awareness might not be proper measure to respond to this crisis.

In this study, almost all of the children had at least one health problem such as headache, nausea, stomachache, chest pain,

and other health-related problems while sniffing glue. These effects were also common among street children of Dharan Municipality, Nepal where dendrite (Glue sniffing) was the only drug used by the street children and the most shared health problem experienced by the children were headache, cut injuries, common cold, dental caries, underweight and abdominal pain.²⁰ However, this might be due to multiple factors as street children are a vulnerable population who are exposed to multiple health risks and hazards. The children in this study said that they have been through a lot of problems such as fights, destructive nature and even police arrest. The children still continue to use glues on a daily basis along with some other addictive substances. It has been noted that sniffing of glue and other volatile substance abuse increased the risk of addiction to other substances.^{21,22}

Though this is one of the few studies which tries to provide insight into the characteristics of street children who are engaged in glue sniffing and its health consequences, this study has its limitations. In this study, due to the use of snowball sampling, the data were collected from only a certain number of street children who were in a known circle, which restrain the generalizability of the findings of this study. Further analytical studies to identify the contributing factors of volatile substance abuse among this vulnerable group are needed to gain better insight into this problem.

Conclusions

It has been observed that majority of the street children are at increased risk of getting involved in glue sniffing. Its ill effects have resulted in different health effects, self-destruction and problematic behavior, fights and police arrest. Despite experiencing all of these problems, only half of the children want to quit glue-sniffing, while they continue to abuse other addictive substances. Initiating and getting addicted to a psychoactive substance at such a young age not only leads to several physical and mental health consequences but also highly impacts society and overall national integrity. This problem needs to be addressed properly by all concerned parties before it becomes more difficult to save and ensure the quality of life of these vulnerable children. Awareness among street children is vital as the continuous use of these volatile substances can also gradually attract them towards other addictive substances.

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