



African Journal of Biological Sciences



PREVALENCE OF GLUE SNIFFING IN SOUTHERN EAST DISTRICTS OF TELANGANA [SURYAPET, KHAMMAM]

R.lakshmi prasanna^{1*}, B.Nagaraju naik¹, S.Naveen¹, V.Rahul¹, M. Prasad²,
M. Chinnaeswaraiiah³

¹Pharm D vth year students, Department of Pharmacy Practice, Anurag Pharmacy College (Affiliated to JNTU Hyderabad), Ananthagiri, Kodad, Telangana, India.

²Assistant Professor, Department of Pharmacy Practice, Anurag Pharmacy College (Affiliated to JNTU Hyderabad), Ananthagiri, Kodad, Telangana, India.

³Professor and Principal, Department of Pharmacognosy, Anurag Pharmacy College (Affiliated to JNTU Hyderabad), Kodad, Telangana, India.

Correspondence: Miss. R.lakshmi prasanna

Department of Pharmacy Practice, Anurag Pharmacy College (Affiliated to JNTU Hyderabad),
Ananthagiri, Kodad, Telangana, INDIA.

E-mail: lakshmiprasannachoudary2001@gmail.com

Abstract:

Glue sniffing, often called Solvent Abuse, is the misuse of chemicals such as petrol, thinners and spray paints. Vapors inhaled have the potential to be neurotoxic, impacting both the central and peripheral neurological systems. Addiction to alcohol can exacerbate symptoms and make follow up difficult. AIM: The present work aims to provide base information on the effects of Glue Sniffing; this encompasses the frequency, context and pattern of sniffing by the community of street children as well as examination of the associated health problems.

In addition, the present work aims to create some information-based strategies against this threat.

Conclusion: Because glue is inexpensive and readily available, it poses serious health hazards. Adolescents and young adults are becoming more and more involved in glue sniffing. Early intervention and health education are essential tactics in the fight against this expanding issue.

Key words: Glue sniffing, solvent abuse, Addiction

Article History

Volume 6, Issue 5, Apr 2024

Received: 27 Apr 2024

Accepted: 04 May 2024

doi: [10.33472/AFJBS.6.5.2024.1589-1598](https://doi.org/10.33472/AFJBS.6.5.2024.1589-1598)

OBJECTIVES:

- Determining the prevalence of Glue sniffing among street children.
- To find out why people tend to sniff glue.
- Determining the consequences of glue sniffing.
- Creation of an information base for further campaign strategies against glue sniffing.
- To improve the knowledge in the people who are affected with addiction.

INTRODUCTION

Glue sniffing was first mentioned in the medical literature during the late 1950s, although the inhalation of volatile hydrocarbons for non-medical purposes had been known for over a century. The deliberate inhalation of volatile substances to achieve toxification, also known as "glue sniffing," "inhalant abuse," or "solvent abuse," has been reported from most parts of the world in recent years, primarily among adolescents, people living in remote communities, and users of other hypo sedatives. Small doses of these substances can cause "euphoria" and other behavioral disturbances akin to those caused by "ethanol," as well as delusions and hallucinations.

- ❖ Higher doses may also produce life-threatening effects such as convulsions and coma. [4]
- ❖ Similar to other sedatives, solvents or other volatile substances that are abused can have dose-related effects on the central nervous system (CNS).
- ❖ Death may occur indirectly after chronic abuse of toluene-containing products and of chlorinated solvents such as 1, 1, 1-trichloroethane [4] e.g. Can produce direct or indirect cardiac or CNS toxicity.
- ❖ Acute respiratory failure may be brought on by the use of glue and other inhalants, as well as by consuming large amounts of alcohol.
- ❖ In serious cases, chronic respiratory failure can lead to coma.

METHODOLOGY:

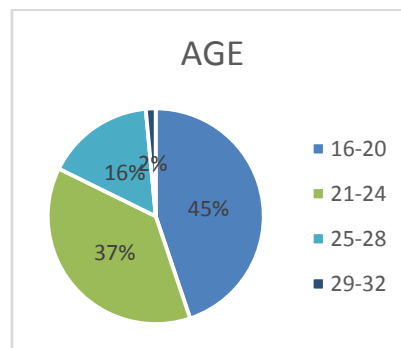
- A community-based comparative cross-sectional study was employed by collecting the data from the individuals. The study was conducted among street individuals in a community. Rehabilitation centers, railway station areas and Juvenile Homes. 200 Individuals. The statistical analysis was carried out by Microsoft office (MS word, MS excel and Graph pad prism)

RESULTS

Distribution based on age:

Out of 203 cases, it was found that the glue sniffer was maximum of the age group of 16-20 which includes 91 individuals (44.82%), followed by the age group of 21-24, which includes about 76 individuals (37.43%) and minimum in the age group of >30, which is about (1.47%).

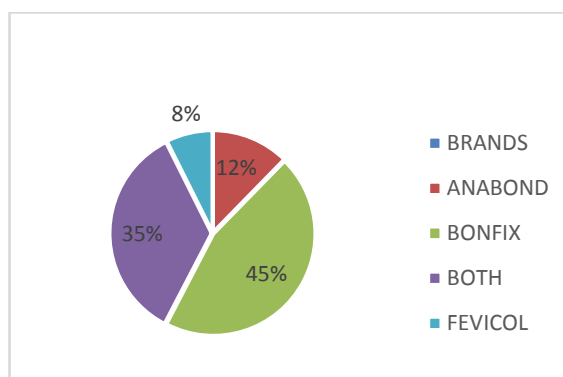
Age	Total	Percentage
16-20	91	44.82
21-24	76	37.43
25-28	33	16.25
29-32	3	1.47
TOTAL	203	100



Distribution of individuals according to glue abuse:

Based on glue type distribution out of 203 individuals, Bonfix type of glue about 92(45.32%) were mostly used for abuse. Both bonfix and Anabond type of glue about 71(34.97%) were abused by most of individuals in rural areas. And Anabond type of glue about 25(12.31%) were less abused by individuals and fevicol about 15(7.38%).

Glue type	Total	percentage
Anabond	25	12.31
Bonfix	92	45.32
Both	71	34.97
fevicol	15	7.38
Total	203	100



Glue-type abuse distribution by individuals

Distribution related to marital status:

Based on marital status out of 203 cases, 182(89.65%) are unmarried individuals who had been abusing the glue and individuals of 21(10.35%) are married who were abusing the glue.

Marital status	total	percentage
Married	21	10.35
Unmarried	182	89.65

total	203	100
--------------	-----	-----

Factor	Total	Percentage
Smoker	181	89.16
Non-smoker	22	10.84
Total	203	100

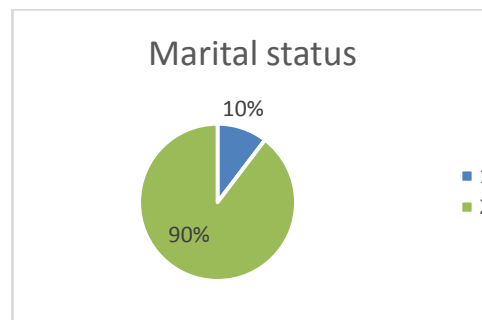


Table: Distribution based on marital status

Distribution based on Alcoholic and Non-alcoholic:

Based on distribution of alcoholic and non-alcoholic, individuals about 198(97.54%) were Alcoholic and being abusing the glue to get a recreational high. Individuals about 5(2.46%) were Non-alcoholic are abusing glue.

Factor	Total	percentage
alcoholic	198	97.54
Non-alcoholic	5	2.46
total	203	100

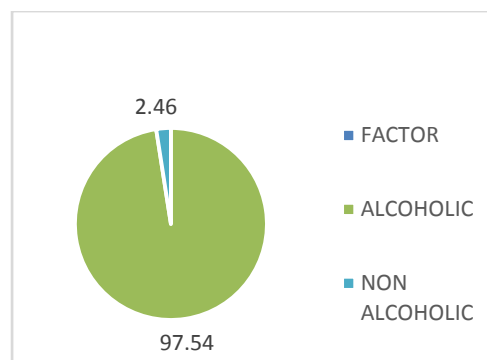


Table: Distribution based on alcoholic and non-alcoholic

Distribution based on Smoker and Non-smoker activity:

Based on distribution Smoker and Non-smoker, individual about 181(89.16%) were habituated to smoking along with glue. And individual about 22(10.84%) were non-smokers but abusing the glue

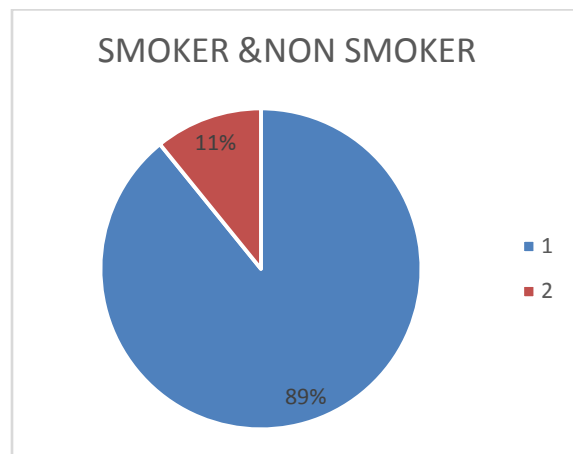


Table: distribution based on Smoker and Non-smoker factor

Data distribution based on location:

Based on distribution of location, the majority of subjects are reported in kodad about 82(40.39%) and about 59(29.06%) were recorded in Khammam. And about 37(18.22%) were reported in Suryapet and other communities 25(12.31%).

Location	Total	Percentage
Kodad	82	40.39
Suryapet	37	18.22
Khammam	59	29.06
Other(mncl)	25	12.31
Total	203	100

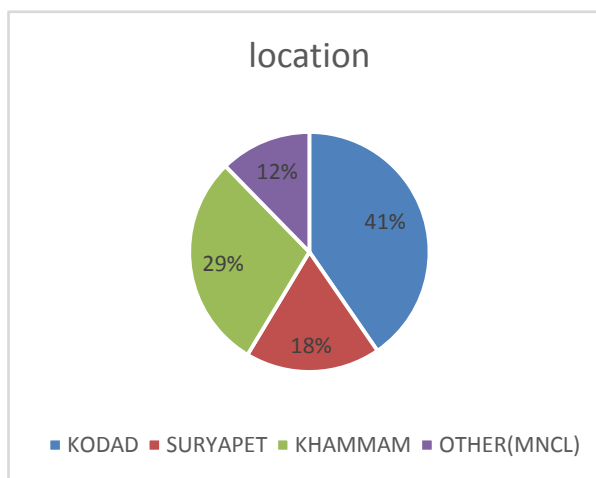


Table: distribution based on location wise

Distribution based on gender:

Based on distribution of gender, the incidence rate about 203(100%) were found to be males.

Gender	total	percentage

Male	203	100
female	0	0
total	203	100

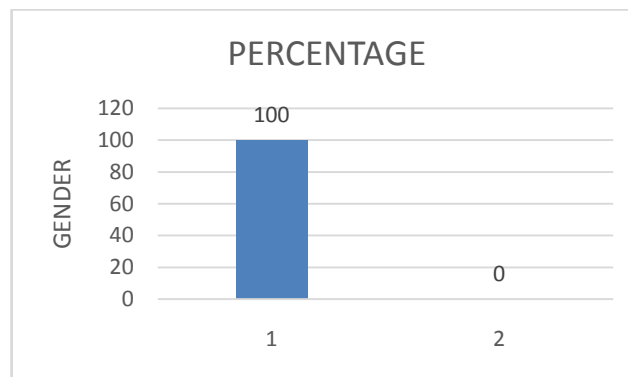


Table: distribution based on gender

Distribution based on profession:

Based on distribution of professional status, students are more tend to sniff glue about 121(59.60%), employed were about 50(24.63%)and illiterate about 10(4.92%).And graduate about 13(6.40%), other about 9(4.43%).

Profession	Total	Percentage
Student	121	59.60
employed	50	24.63
illiterate	10	4.92
graduate	13	6.40
other	9	4.43
total	203	100

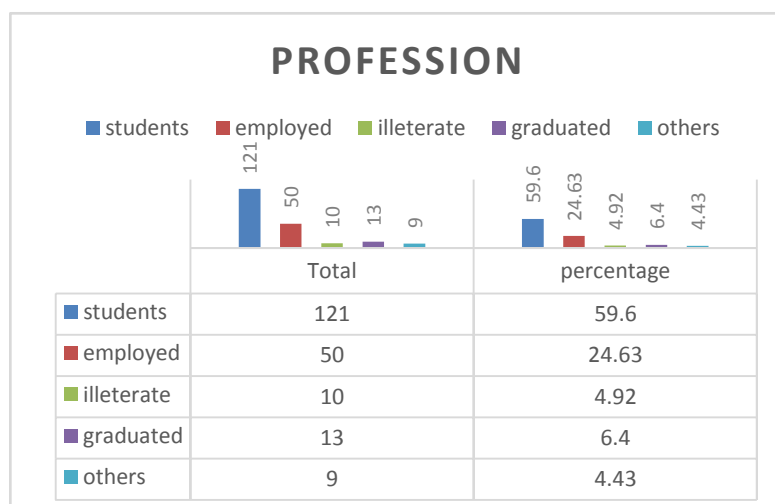


Table: distribution based on professional status

Distribution based on complication:

Based on distribution of complication, mostly this sniffer tends to get headache 125 as primary symptom, and also may cause shortness of breath 84, where the toluene causes acute respiratory failure and pneumonia 47 and hallucination, slurred speech, dizziness and chest pain 76.

Complication	Total
--------------	-------

Headache	125
Anxiety	126
Hallucination	30
Shortness of breath	84
Chest pain	76
Dizziness	48
Euphoria	70
Pneumonia	47
Slurred speech	65

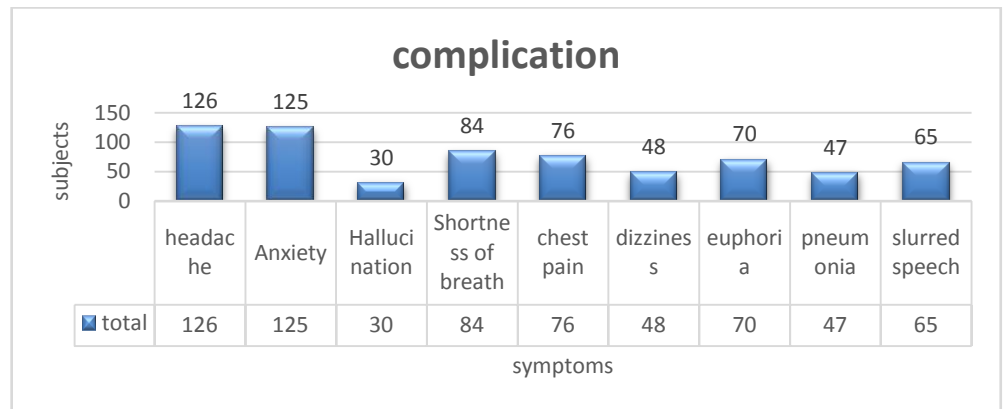


Table: distribution based on complication

DISCUSSIONS:

Solvent abuse, or glue sniffing, is a popular kind of inhalant misuse among young people, frequently because glue is easily accessible, affordable, and lawful. The high is only reached momentarily and then vanishes, making identification challenging. Adolescents frequently utilize solvent glue, aerosol sprays, and cleansers as less expensive substitutes for marijuana and other narcotics. According to the National Institute on Drug Abuse, younger kids use inhalants at a higher rate than older teens.

Not only is glue sniffing a social problem, but it can also result in long-term medical problems, major organ system failure, and even abrupt death. Prolonged use can have an impact on social, economic, and long-term health as an adult. Because it frequently precedes more potent medications, treatment and preventative strategies are essential. Preventing and treating this detrimental behavior requires addressing this issue.

As per our study, most of the individuals had the habit of solvents abuse are seen in the age groups of 16-20 years about 44.82%, so the subjects of age group 16-20 are more prone to this addiction, reason behind this abuse is lack of knowledge regarding the solvents.

The present study showed that the prevalence of glue sniffing in teen and adolescents in southern east districts of Telangana. 58.61% prevalence of glue sniffing in Suryapet district and Khammam about 29.06%, mean while other area about 12.31% was founded as per our study.

As per our study out of 203, about 92 [45.32%] subjects are tended to sniff Bonfix and Anabond about 34.97%. Glue was the most common solvent used by the respondents along with the other solvent. Reasons stated that for glue sniffing includes peer pressure, out of curiosity, for pleasure, coping the tension and overcoming family problems.

Furthermore, present study implicated 89.16% were involved in cigarette smoking and 97.54% are alcoholic.

According to our study only male is more prone to sniff glue to overcome with the conditions mentioned above.

Based on the data reported the respondents, majority of them are students about 59.6% of age group 16-20, employed of about 24.63%. As per our study, most of the respondents are lived with their families.

As per our present study, in addition to health complications, there are also short-term symptoms and consequences of sniffing glue are with headache 126, individual about 126 are tend to get anxiety after inhaling of glue. To get High, they tend to sniff glue or inhale other chemicals may cause a temporary sense of euphoria or hallucination were reported about 30. After inhaling glue, toluene mainly causes acute respiratory failure -shortness of breath about 84 and this leads to pneumonia 47.

Where exposure to the chemicals, mostly the glue can lead to an irregular heartbeat causing chest pain -76, palpitations i.e. cardiac arrhythmias. And some other complications reported in this study include slurred speech 63, dizziness 28 and shivering hand about 23.

Prevention

Adolescent drug abusers must be prevented from abusing inhalants since they have a greater chance of suffering serious physical, mental, and psychological harm as well as abusing other illegal substances in the future. The most effective preventive strategy is education, which should begin before the usual age-related experiments.

Chronic inhalant abuse and dependence are treated with counseling, strict abstinence, social support, and psychiatric intervention. Adolescents may be discouraged from abusing inhalants by factors like a nurturing home environment, self-esteem, good school performance, religious involvement, and personal mortality.

CONCLUSION:

Because glue is inexpensive and readily available, it poses serious health hazards. Adolescents and young adults are becoming more and more involved in glue sniffing. Doctors need to be aware of the impacts of this deadly kind of substance misuse because major health repercussions can be avoided by identifying and interacting with the drug early on. Early intervention and health education are essential tactics in the fight against this expanding issue.

- Enhancing the functions of philanthropic and governmental organizations that can assist the homeless.
- Encouraging organizations that teach families and parents how to care for their children.

Toxicologists should record and investigate incidents of hospital admissions resulting from glue sniffing, as well as develop appropriate control measures regarding the sale of these glues to minors. This information will aid in the better treatment and prevention of toxicity.

ACKNOWLEDGEMENT

The authors would like to thank the individuals for their participation. We would also like to M. Chinnaeswaraiah, Principal of Anurag Pharmacy College, Kodad, for his continuous support and guidance in completing the work.

ABBREVIATIONS

ABC- Airway, Breathing and Circulation, **AGNOR** -Argyrophilic nucleolar organizer region, **ALP** -Alkaline phosphatase, **CBT**-Cognitive behavioral therapy, **GABA** - Gama-amino butyric acid, **GGT**-Gamma-glutamyl transferase, **NMDA** -N-methyl D-aspartate, **Ppm** -parts per million, **SSDS** -Sudden sniffing death syndrome, **VAT**-Vestibular autorotation test, **VTA**- Ventral tegmental area, **OSHAPEL** - Occupational safety & health Act (OSHA) Permissible Exposure limit (PEL).

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FUNDING

None

References

1. Carol E. Blatherwick. Understanding glue sniffing .vol63, no 3(may/june1972), pp 272-276.
2. Deebya Raj Mishra ,Narendra Bhatta,Bidesh Bista,Puru koirala and Ramhari Ghimire .Air due to Glue ;spontaneous pneumothorax in a young adult with glue sniffing. 2018 march-April 6; 56(210); 621-624.
3. Medically reviewed by Smitha Bhandari, MD on November 28, 2022. Written by Teresa Dumain .What is substance abuse.
4. R J FLANAGAN, R J IVES National children Bureau, London. Volatile substance abuse sections .1994/01/01.
5. R J FLANAGAN, PJ streete, JD Ramsey. Practical guidelines for analytical investigations of suspected cases and interpretation of results .Volatile substance abuse.
6. Rakesh lal, Shridhar Sharma, National academy of medical sciences, 5India. Volatile substances misuse among street children in India; A Preliminary report .may 2011.substance use and misuse 46 suppl(suppl 1):46-9.
7. Sanjay kumar sah , Nira Neupane , Anupama pradhan (Thaiba), sabitha shah and Asha Sharma . Prevalence of glue sniffing among street children. 2020, Jan; 7(1):206-21.
8. Haresh Tulsidas, MBBS, MRCP (UK). Glue sniffing: A review. Proceedings of Singapore health care. Volume 19.Nov 4 2010.
9. Maria K Houtchens, in clinical neurotoxicology.Toluene (methylbenzene) 2009.

10. Nathanael J McKeown, Do, Sage w wiener, MD .Toluene toxicity: practice essentials, pathophysiology, etiology .april 11, 2022
11. Carlos.Rodrigo,Camara-Lemarroj, Rene Rodriguez-Gutiérrez,Roberto Monreal-Robles and Jose Gerardo Gonzalez-Gonzalez.Acute toluene intoxication-clinical presentation, Management and prognosis; A prospective observational study. BMC Emerg Med.2015; 15; 19.
12. Medically reviewed by Dan Brennan,MD.Writtenby WebMD editorial contributors. What to know about sniffing glue. November 27, 2021.
13. Medical management Guidelines for toluene.CAS 108-88-3;un 1294.
14. Reena kandyala,Sumanth phani c Raghavendra and Saraswathi T Rajashekarana. Xylene; An overview of its health hazard and preventive measures. J oral Maxillofac Pathol.2010 jan-jun;14(1);1-5
15. Madeline Hodgman –Korth. Dangers of snorting and sniffing drugs March 30,2023
16. Leah Miller,MHC. Inhalent Addiction; Signs effects and treatment.Oct 30, 2023.
17. Medically Reviewed by Karen Gill, M.D- by James. Roland. How sniffing glue affects your health. Aug 8, 2018.
18. Christopher M.Filley,MD,Willam Halliday , MD, B.K.Kleinschmidt-Demasters, MD. The effects of Toluene on the central Nervous system. Volume 63,issue 1,jan 2004.
19. Cleveland clinic medical. Inhalant abuse; signs, symptoms and treatment. 10/11/2019.
20. Isaak stotts,LP. Reviewed by Michael espelin APRN.Sniffing Glue; The Danger of abusing inhalants –feb 22, 2022