

Death due to poisoning in Chennai – A one year retrospective study

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Abstract

In India the suicidal deaths is 10.3% in total number of deaths. The suicide rate has increased by 43% in last 3 decades. But the male to female ratio has been stable at 1.4: 1. Majority of suicide in India are by individual below the age of 45 years which imposes a huge social, emotional and economic burden. India as an agriculture based country, there is increased and indiscriminate use of pesticides to enhance the agricultural yield, which has led its way to a steep rise in poisoning related deaths amongst the population, both accidental and deliberate. The present retrospective observational study was undertaken in the Department of Forensic Medicine and Toxicology, Govt. Kilpauk Medical College, Kilpauk, Chennai-10 between Jan 2012 to Dec 2012, with an objective to study the complete profile and mortality pattern in cases alleged history of poisoning thereby drawing attention of the policy makers of health to prevent casualties. Pattern of poisoning depends on variety of factors, such as socioeconomic status, religious and cultural influence, mental make-up of a person and availability of poisons. Out of 47 autopsied poisoning victims, 78.7% of cases were suicidal deaths. 29.8% victims were between 41-50 years of age, males constituted 66.0% of the total victims, the mode of ingestion of poison was by oral intake in all cases. Depression due to family problems were the root cause for 48.9% of the deaths. Organophosphorus was the most common poison consumed. This study emphasizes that interventions with policy support and good governance would help in reducing the rising suicidal poisoning rates.

Key words: Poison, suicidal, depression, family fight, organophosphorous.

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industrialized nations has shifted its paradigm into the developing countries. Deaths due to poisoning come next to road traffic accident death, among the unnatural deaths according to National crime record bureau India. Poisoning can be accidental exposure or intentional exposure. Many studies have shown that deliberate self-poisoning has a higher mortality than accidental poisoning. The rising incidences of Suicide poisoning with prevalence, prompted us to undertake this study to know the epidemiological aspects, patterns and other important features of deaths due to Suicidal poisoning and thereby drawing attention of the health policy makers to enhance the legislative measures and prevent such casualties.

INTRODUCTION

Poison can be defined as any substance (solid, liquid or gas) which if introduced in a living body or brought in contact with any part thereof will produced ill health or death by its constitutional or local effects or both.² Due to rapid development in the field of science and technology and vast growth in the industrial and agricultural sector, the poisoning is spreading like a wild fire.³ Poisoning is a major epidemic of non-communicable disease in the present century. It has been estimated that about 5-6 persons per lakh of population die due to poisoning every year. Suicide, a major problem posed earlier amongst the

METHODOLOGY

The study was carried out in govt. kilpauk medical college, kilpauk Chennai 10. All cases from jan2012 to Dec 2012 was included in the study. Required information for the study was gathered from Police inquest report, hospital treatment records and postmortem certificate in the department medical record department through proper channel. A standard proforma was

designed to ensure consistency for the whole samples in the study. The information thus collected, was statistical analyzed.

RESULTS

Table 1: Sex Distribution

Sex	No. of cases	%
Male	31	66.0%
Female	16	34.0%

Table 2: Age range

Age	No. of cases	%
11-20	4	8.5%
21-30	12	25.5%
31-40	5	10.6%
41-50	14	29.8%
51-60	6	12.8%
61-70	4	8.5%
71-80	2	4.3%

Table 3: Socio economic status

Socio economic status	No. of cases	%
Lower	37	78.7%
Middle	10	21.3%
High	0	0.0%

Table 4: Time of consumption

Time of consumption	No. of cases	%
6am - 12pm	10	21.3%
12pm - 6pm	14	29.8%
6pm - 12am	12	25.5%
12am - 6am	11	23.4%

Table 9: Duration of Survival

Duration of survival	No. of cases	%
Brought dead	10	21.3%
<6hrs	12	25.5%
6 - 12hrs	10	21.3%
12 - 24 hrs	5	10.6%
> 1 day	11	23.4%

Table 11: Poison consumed

Poison consumed	No. of cases	%
Organo phosphorous compound (opc)	19	40.4%
Unknown Tablet	11	23.4%
Acid	5	10.6%
Alcohol	3	6.4%
Phenol	2	4.3%
Copper Sulphate	2	4.3%
Turpentine	2	4.3%
Mosquito repellent	2	4.3%
Hair Dye	1	2.1%

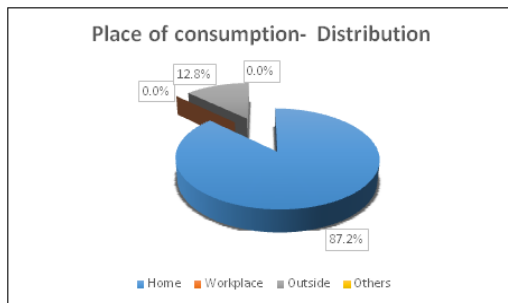


Figure 1

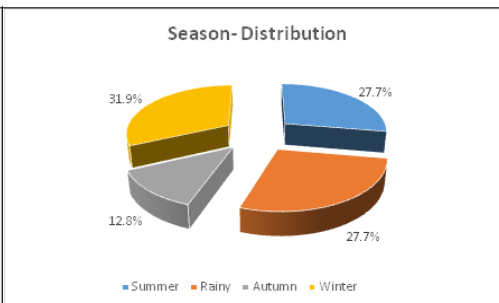


Figure 2

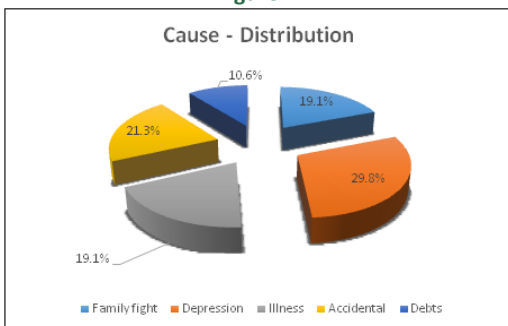


Figure 3

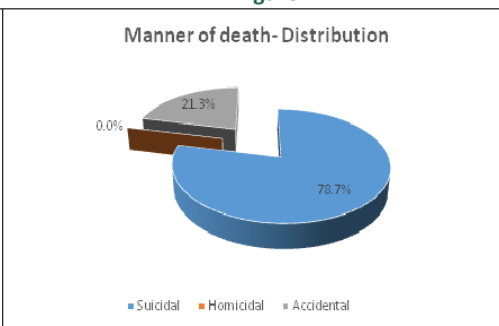


Figure 4

DISCUSSION

Self-poisoning with agricultural pesticides represents a major hidden public health problem accounting for approximately one-third of all suicides worldwide.⁴ In this study, males constituted 66% and females constituted

only 34% of the total victims. Males being the earning member in majority of family are exposed more frequently to outdoor work and lead a more stressful life than female due to family responsibilities. This explains the rising suicidal tendency amongst males. Similar

findings were observed in the studies conducted by S P Singh⁵, MizanurRahman⁶ Bharath⁷, Mrinal.⁸ Age between 41-50 years was found to be more vulnerable to suicidal poisoning. 41-50years age group undergo lot of stress due to family and financial problems. Our findings were in agreement with the study done by Margaret Warner and Shin.^{9, 10} The studies conducted by others^{9, 11} showed more occurrence in 21-30 years. Most of the victims were Hindus (89.4%). This may be due to the low percentage of Christians and Muslims in Chennai as well as their religious beliefs. More cases were found to be amongst lower socio economic status (78.7%). Raising demand for daily living leading to financial needs causes stress and depression among lower socio economic status population. Also due to inability to afford the standard of treatment after exposure. About 48.9 % cases were had depression due to family problems as the motive for suicide. 100% of cases consumed poison orally. This is because most of the poison were pesticides and oral intake is the easiest method. Analyzing the place and time of consumption of poison, most of the incidents (78.7%) took place in their home, because agricultural insecticides were available and in some cases immediately after an outburst of family fight. Most lethal period of poisoning found to be 12 PM TO 6 PM (45.54%), due to stressful and disappointed day. A greater number of suicidal poisoning cases 15 (31.9%) were in the winter. A possible reason to explain this could be that in these months, there is more availability of pesticides due to the active agricultural activities. These observations are consistent with a study conducted at Assam.⁸ Studying seasonality has an important implication in establishing public health policy.¹² In preventing suicides by poisonings, different strategies should be carried out according to different season patterns. Amongst the 47 victims of poisoning, 35 (74.5%) cases undergone treatment. It was also found that 10 (21.3%) were brought dead, however the maximum number of cases succumbed to death within 6 hrs of consumption of poison. This shows the better accessibility and apt management of medical aid could decrease the number of deaths. In This study, the most common poison consumed was Organophosphorus compounds (40.4%) Similar findings were observed in the studies conducted by Reddy NKS¹³ and RK Gorea.¹² It is not in accordance with studies by conducted by Adarsh Kumar.¹¹

CONCLUSION

The present study includes 47 cases of poisoning in our institute from Jan 2012 - Dec 2012 retrospectively. Pattern of poisoning in the study is more or less similar to the pattern observed in most of the other studies. Our

study revealed that most of the victims were male of lower socio-economic status who died due to self-ingestion of pesticide poison. Reducing deaths from self-poisoning require prevention strategies include treating the problems leading to suicidal behaviors involving pesticides; changing attitudes, knowledge, and beliefs about pesticides; controlling access to dangerous pesticides, including developing secure storage practices and improving the medical treatment of poisonings. More research is needed to better understand suicides involving pesticides in their cultural contexts. Evaluate the effectiveness of intervention programs. Which helps in improving the present health care policies and include new policies.

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