



DEMOGRAPHIC STUDY OF DEATHS DUE TO POISONING IN A TERTIARY CARE HOSPITAL IN MEWAT

Forensic Medicine

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ABSTRACT

According to World Health Organization, (WHO) poisoning occurs when people drink, eat, breathe, inject, or touch enough of a hazardous substance (poison) to cause illness or death. Deaths due to poisoning are most common and carry high rates of mortality and morbidity. The situation is the same all over the world involving individuals of all age groups, sex and all economic and ethnic groups. Poisoning deaths can be accidental or suicidal in manner. As the number of deaths by poisoning keeps on increasing day by day, this study was conducted to know the sociodemographic profile of such poisoning deaths which may help to implement strategies to reduce the burden of poisoning deaths in the society.

KEYWORDS

Poisoning, demographic profile

INTRODUCTION

According to World Health Organization, (WHO) poisoning occurs when people drink, eat, breathe, inject, or touch enough of a hazardous substance (poison) to cause illness or death.¹ Poison can be defined as a substance (solid, liquid or gas), which if introduced in a living body or brought into contact with any part thereof would produce disease or even death by its constitutional or local effects or both.²

Deaths due to poisoning are most common and carry high rates of mortality and morbidity. The situation is the same all over the world involving individuals of all age groups, sex and all economic and ethnic groups. Poisoning deaths can be accidental or suicidal in manner.³

The manner of poisoning is different in different age groups. In children poisoning is due to accidental consumption of harmful products which are readily available in house such as mothballs, cleaning solutions, nail polish removers and any drugs or tonics. In adolescents and adults, the poisoning is mostly intentional self-consumption of medications or drugs, cleaning products, insecticides, pesticides.⁴ Homicidal poisoning is also a common practice which can be achieved by high doses of analgesics, tranquillizers, and antidepressants.⁵

According to WHO data, in 2012 an estimated 193,460 people died worldwide from unintentional poisoning. Of these deaths, 84% occurred in low- and middle-income countries.^{5,6} In India, five to six persons per lakh of the population die due to poisoning every year. But the true burden of poisoning cases remains uncertain due to lack of proper reporting of cases.⁷

The crucial factors of poisoning which lead to increase in deaths are due to the continuous changes in way of life and social behavior, rapid industrialization, substantial pesticide use in agriculture, most of all is the easy and increased availability of drugs and chemical substances.⁸

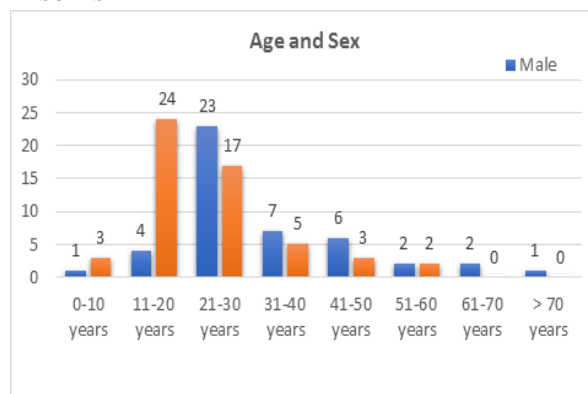
Hence the socio demographic profiling of victims of poisoning, toxic agents is necessary for knowing the impact of certain factors over poisoning and help in the development of regional or national poison policies.⁹

As the number of deaths by poisoning keeps on increasing day by day, this study was conducted to know the sociodemographic profile of such poisoning deaths which may help to implement strategies to reduce the burden of poisoning deaths in the society.

MATERIALS AND METHODS

This Retrospective study was carried out at Shaheed Hasan Khan Mewati government medical college, Nalhar, Nuh. Total of 100 cases of poisoning deaths from December 2018 to November 2020, which were brought for autopsy in the department of Forensic Medicine were taken for the study. The basic information like age, gender, address, occupation and marital status from individual postmortem reports were abstracted onto study proforma sheet. The data specific to the study was then transferred onto the coded master chart for eventual analysis. The information thus collected, was statistically analysed.

RESULTS

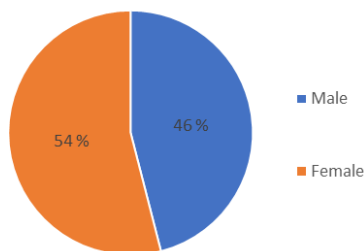


Bar Chart 1: Age and Sex Ratio

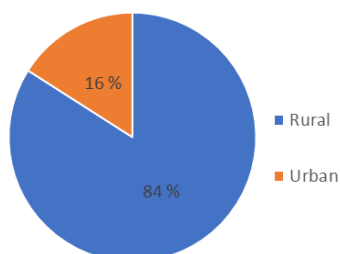
This study consisted of 100 cases, in which the age ranged from 4 years to 75 years, therefore the cases were grouped under various age group categories of 10 years interval (01-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70 and above 70) for analytical purpose.

It was observed that the maximum number of cases were from the age group of 21-30 years which comprised of 40% of the total cases this was followed by 11-20 years and 31-40 years age group which comprised 28 and 12% of the cases respectively. However there were only four cases in the age groups 01-10 years and only one case in above 70 years.

Of the 100 cases included in the study 46% were male and 54% were female. (Pie Chart 1: Sexual predominance) Maximum number of males (23) were in the age group of 21-30 years and majority of females (24) were in the age group of 11-20 years. No female cases were reported in the age group of 61-70 years and above 70 years.

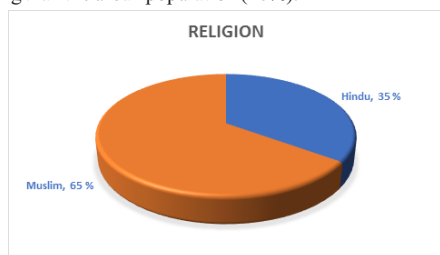


Pie Chart 1: Sexual predominance



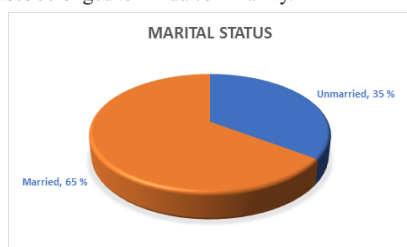
Pie Chart 2: Regional distribution

The incidents of poisoning was also classified based on regional distribution and it was found that rural population (84%) is more prone to poisoning than the urban population (16%).



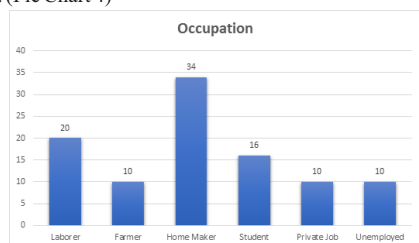
Pie Chart 3: Religious predominance

Majority of the cases (65%) belonged to the Muslim community and only 35% cases belonged to Hindu community.



Pie Chart 4: Marital Status of cases studied

Marital status wise distribution of our study population revealed that poisoning is more among married people when compared to unmarried people. Out of 100 cases, 65 cases were married and 35 cases were unmarried. (Pie Chart 4)



Bar Chart 2: Occupation wise distribution

Based on occupation most of the poisonings were among home makers (34%) followed by Laborer (20%), Students (16%). Farmers, Private job individuals and unemployed were 10% each.

DISCUSSION

Age specific pattern of this study resulted that most of the poisoning cases were from 20 to 31 years (40%) of age, similar to Bhandari B et al¹, Selvam GP et al¹⁰, Mugadlimath A et al¹¹ and Rajesh J et al¹². In a very few studies, like Kirubakaran J et al¹³, it was stated that 16 to 25 years is the primary age group in poisoning deaths. In our study females constituted the majority (54%) same as studies of Bhandari B et al and Rajesh J et al but males were found to be more in studies of Kirubakaran J et al, Selvam GP et al and Mugadlimath A et al.

In the present Study, since the population is of rural people, number of cases are of rural residents (84%) as is the case in studies of Kirubakaran J et al and Mugadlimath A et al. In our study Muslims are the most affected (65%) than any other religion which may be attributed the muslim majority community. In studies of Bhandari B et al, Selvam GP et al and Mugadlimath A et al most of the individuals affected were Hindus. Married people (65%) were more prone to poisoning compared to unmarried people (35%), our observation was similar to the study of Bhandari B et al, Kirubakaran J et al, Mugadlimath A et al and Rajesh J et al. This majority of poisoning cases in married might be due to the family stress and financial problems in the families.

In our study home makers were the individuals who succumbed to poisoning as is the case in studies of Kirubakaran J et al and Bhandari B et al. Most of the cases in our study came in the months of June, July and August but in the study of Rajesh J et al, majority of cases were in the months of March and April.

CONCLUSION

Demographic profile of the cases in Nuh district concluded that poisoning is more common in young adults (age group of 20 to 31 years) and most cases were married females which may be attributed to increasing stress and responsibility at younger age, sensitive nature of young population, economic problems, unemployment and mainly easy availability of poisonous and harmful substances. Thus to control deaths by poisoning, awareness programs should be conducted vigorously to educate and develop the character of young individuals. Strict rules and regulation should come into act to restrict the over the counter sales of deleterious and toxic agents. Providing of information on the retail products regarding the harmful side effects, fatal doses and indicating the preliminary treatment and precautions that should be taken in case of an accidental ingestion or contact with the toxins.

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