Socio-Demographic Study of Deaths Due to Poisoning in Autopsies Conducted at KIMS Hospital, Bangalore

Senthil Kumar V¹, A. Dominic Infant Raj², Naveen Kumar.T³

¹Assistant Professor, Department of Forensic Medicine, Government Medical College, Sivagangai, ²Assistant Professor, Department of Forensic Medicine, Trichy SRM Medical College and Research Centre, Irungatir Trichy, ³Associate Professor, ⁴Professor, Department of Forensic medicine, Kempegowda Institute of Medical Sciences, Bangalore

Abstract

Poisoning is a common day to day problem. Profile of poisoning in an area depends upon a variety of factors, ranging from access to and availability of poison, socio-economic status of the individual, cultural and religious influences, etc. A prospective study was carried out in the Department of Forensic medicine, Kempegowda Institute of Medical Sciences and Hospital Bangalore to study the socio-demographic profiling of deaths due to poisoning. Out of the 100 cases studied, incidence of poisoning was found to be more amongst the age group of 21 to 30 years in both sexes with mean age being 25.4 years and 25.4 years amongst males and females respectively. Poisoning is more in males (68%) as compared to females. In both the sexes, married (68%) outnumbered the unmarried in rural and urban community. This study shows that maximum number of poisoning cases were noticed among Upper Lower socio economic Class and in Nuclear families(61%). It was observed that majority of the victims were Graduate (28%). Financial constraints(22%) were the most common motive behind poisoning deaths.

Keywords: Poisoning Death, Autopsy, Socio-demographic profile, Motive

Introduction

Indiscriminate use of pesticides in agriculture, introduction of a variety of newer drugs for treatment, exposure to hazardous chemical products due to rapid industrialization, unhealthy dietary habits and increase in alcohol consumption have led to a wide spectrum of toxic products to which people are exposed nowadays. Profile of poisoning in an area depends upon a variety of factors, ranging from access to and availability of poison, socio-economic status of the individual, cultural and religious influences, etc.

Both suicidal and homicidal cases of poisoning are more common in India than in Western countries owing to the easy availability of poisonous substances on account of non stringent application of the laws of the land. Accidental poisoning is also on an increase because of the greater use of chemicals for agro industry and domestic purposes.

It is very difficult to draw a common report to say which kind of poisoning is more frequent as the nature of poisoning varies from one region to another depending upon the poison availability and the knowledge of local population regarding the properties of poisons. So this study has been aimed to determine the various parameters of poisoning such as mode of poisoning, type of poison, relation to occupation, marital status, religion status, motivation, vulnerable age group in South Bangalore.

Materials and Method

The present study has been carried out in the Department of Forensic medicine, Kempegowda Institute of Medical Sciences and Hospital Bangalore, during the period of Nov-2011 – May-2013. All the cases brought to the department for medicolegal autopsy with history of poisoning and cases that were diagnosed as poisoning after post mortem examination were selected. A sum total of 100 cases were selected by simple random sampling for this prospective study.

Ethical Clearance: Ethical clearance for the
present study was obtained from the institutions ethical committee, Kempegoweda Institute of Medical Sciences, Bangalore.

**Method of Collection of Data:**

All cases with history of Poisoning autopsied at Kempegoweda Institute of Medical Sciences and Research Centre (KIMS), Bangalore were included in the study.

Detailed information of the deceased pertaining to the case was collected from the concerned police and relatives of the deceased by a questionnaire, Post mortem findings were analyzed with the chemical analysis reports. In treated cases information was acquired by perusal of hospital records. In cases of allegations, information was supplemented by either visit to the scene of crime or from the photographs of the scene of crime.

**Results**

In our study, the maximum number of poisoning in the study population are seen in the age group of 21 to 30 years (43%). In males it amounted to (42.65%) followed by 31 to 40 years (26.47%). Least number was noticed in the age group of 0 to 10 years and 11 to 20 years, accounting to (1.47%) each. In females, maximum number of poisoning occurred in the age group of 21 to 30 years accounting to (43.75%) followed by 11 to 20 years and 51-60 years of age group (15.63%) each. Least number was noticed in the age group of 0 to 10 years and 71 to 80 years, accounting to (3.13%) each.

Males outnumbered the females in the study population. In males it amounted to 68% and in females 32%. Poisoning is seen more among married people (68%) as compared to unmarried (32%). It is observed that poisoning cases were predominantly seen in urban areas (92%) as compared to rural areas (8%).

According to Kuppuswamy’s Socio-Economic classification, it is observed that the maximum number of poisoning cases were noticed among Upper Lower Class, followed by Upper Middle Class. Least is seen among the Upper Class group. Majority of victims were Hindus (86%) (n = 86) followed by Muslim (10%) (n = 10) and Least were seen amongst the Christians (4%) (n=4). Incidence of poisoning is more among the Nuclear Family (61%) as compared to the Joint families (39%) in the present study population.

In the present study, it is observed that the incidence of poisoning were seen more amongst the Students comprising (25%), followed by House wives (16%), Domestic works (14%), Office work (13%), Professional (11), Unemployed and Salesperson (6%) each and Others (5%) who comprised of transport workers, retired persons and those whose profession were not clear. Least were seen amongst the Agriculture works (4%). It is also observed that majority of the victims were Graduate (28%) followed by High school certified (24%) and least were among profession (2%).

With respect to motive, most victims had financial constraints (22%) followed by Love Failures (15%), Ill Health (12%), Marital problems (10%), Educational problems and others comprised of (9%) each [others included death of dear ones, etc., Family problems (7%) and the least accounted for Unemployment problems (6%). In (10%) of cases motive could not be ascertained.

**Discussion**

In our study it is observed that maximum number of poisoning is seen in the age group of 21 to 30 years (43%). In males it amounted to 21 to 30 years (42.65%) followed by 31 to 40 years (26.47%). Least number was noticed in the age group of 0 to 10 years and 11 to 20 years, accounting to (1.47%) each. In females, maximum number of poisoning occurred in the age group of 21 to 30 years accounting to (43.75%) followed by 11 to 20 years and 51-60 years of age group (15.63%) each. Least number was noticed in the age group of 0 to 10 years and 71 to 80 years, accounting to (3.13%) each.

Similar findings were observed in the studies conducted by Adarsh Kumar1, Lan Zhou2, M. Shoaib Zaheer3, Kartik Prajapati4, Tejas prajapati5, J.Gargi6, Shetty AK7 and Murari Atul8. It is not in accordance with studies by conducted by Margaret Warner9 and Deepak Pokhrel10.

Sex wise distribution of cases in this study showed the maximum number of cases were among males. Males outnumbered the females in this study. In males it amounted to 68% and in females 32%. Males being the main breadwinner in the family and the burden of earning for a livelihood are on them and the male ratio being more than the female, are the reasons for the incidence of poisoning more in males. Similar findings were observed in the studies conducted by Adarsh Kumar1, Kiran N11, M. Shoaib Zaheer3, Margaret Warner9, Heethal Jaiprakash12, Kartik Prajapati4, Chataut J13, Mizanur Rahman14, Tejas prajapati5, J.Gargi6, Shetty
In the present study, poisoning is seen more among married people (68%) as compared to unmarried (32%). Similar findings were observed in the studies conducted by Kiran N, Heethal Jaiprakash and Kartik Prajapati.

In this study, it is observed that poisoning cases were predominantly seen in urban areas (92%) as compared to rural areas (8%). Similar findings were observed in the studies conducted by Kartik Prajapati and B. Maharani.

According to Kuppuswamy’s classification of Socio-Economic Status, this study shows that maximum number of poisoning cases were noticed among Upper Lower Class, followed by Upper Middle Class. Least is seen among the Upper Class group. Since the study involved the subjects residing more in urban setup, the annual income of the Upper Lower class could not suffice to meet the basic amenities resulting in disillusionment in life amongst them. Similar findings were observed in the studies conducted by Chataut J and Maharani. It is not in accordance with studies by conducted by Heethal Jaiprakash and Kartik Prajapati.

Incidence of poisoning is more among the Nuclear Family (61%) as compared to the Joint families (39%) in the present study. Similar findings were observed in the studies conducted by Kartik Prajapati.

In the present study, it is observed that incidence of poisoning were seen more amongst the Students comprising (25%), followed by House wives (16%), Domestic works (14%), Office work (13%), Professional (11), Unemployed and Salesperson (6%) each and Others (5%) who comprised of transport workers, retired persons and those whose profession were not clear. Least were seen amongst the Agriculture works (4%). Similar findings were observed in the studies conducted by Adarsh Kumar and Kartik Prajapati.

In the present study it is observed that majority of the victims were Graduate (28%) followed by High school graduate (24%) and least were among profession (2%). Similar findings were observed in the studies conducted by Adarsh Kumar and Kartik Prajapati. It is not in accordance with studies by conducted by Heethal Jaiprakash, Chataut J, Maharani and Tejas prajapati.

It is seen from the above study that financial constraints (22%) followed by Love Failures (15%), Ill Health (12%), Marital problems(10%) and Educational problems and others comprised of 9% each [others included death of dear ones, etc.]. Family problems (7%) and the least accounted for Unemployment problems (6%). In (10%) of cases motive could not be ascertained. Among financial constraints the reasons were excessive debts, poverty, not able to pay the loan, extravagant lifestyle, engaging in activities in an urge to achieve instant richness were the prominent financial causes noticed. Among the ill health, in majority of cases evidence of chronic illness like gastrointestinal disorders, bronchial asthma, tuberculosis, diabetes, hypertension, and gynecological problems as procured through the history and hospital records, on autopsy corroborated with autopsy finding. Similar findings were observed in the studies conducted by Adarsh Kumar.

**Conclusion**

- Incidence of poisoning is more among the age group of 21 to 30 years in both sexes with mean age being 25.4 years and 25.4 years amongst males and females respectively.
- Poisoning is more in males as compared to females.
- In both the sexes, married outnumbered the unmarried in rural and urban community.
- Majority of the victims were Graduates (28%).
- Socio economic status of the present study among the deceased belongs to upper lower class and the least is among upper class.

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**Ethical Clearance**: Ethical clearance from the Institutional Ethical Committee obtained for the study.

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