

Original article:

Socio-demographic characteristics of poisoning cases in a tertiary care level hospital of West Bengal

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Abstract

Introduction: WHO reports estimate poisoning as one of the most common cause of increased morbidity and mortality rate worldwide. In India, the exact incidence of poisoning cannot be defined as there is gross under reporting of cases of poisoning and due to lack of research in this area. The study was undertaken to study the socio-demographic profile of poisoning cases and to find out the factors affecting time interval between time of poisoning and first care seeking..

Methods: A descriptive study with cross-sectional design was conducted in Medicine ward of Burdwan Medical College and Hospital, West Bengal. The study was conducted during December 2013 to February 2014. Data were collected on two randomly selected days per week. Finally 222 cases were studied.

Observations and results: Majority of cases were Hindu, housewives, in 20-29 years age group, of general caste, from rural and nuclear families. 18.5% of cases were illiterate Majority belonged to lower or upper-lower socio-economic class. Only 28.8% of cases sought health care within 2 hours of poisoning. Caste and residence were significantly associated ($p < 0.05$) with the time interval between first care seeking and time of ingestion of poison. Organophosphorous was the most commonly used poison. Quarrel with spouse was the major reason for intake of poisons.

Conclusion: Awareness should be generated among people about the harmful effects of agro-chemicals. Psychological counselling of adolescents with problems is to be done. Women empowerment should be ensured.

Key words: Socio-demographic profile, Organophosphorous poisoning , Tertiary care hospital

Introduction:

The word poison means “a substance that causes injury, illness, or death, especially by chemical means”. WHO reports estimate poisoning as one of the most common causes of increased morbidity and mortality rate worldwide. This worldwide public

health problem is medical emergency. WHO conservatively estimates that the incidence of pesticide poisoning, which is high in developing countries, has doubled during the past 10 years.¹The number of poisoning cases was reported to be 30478 in 2012. Poisoning cases contributed to 8.3% of total

number of accidental deaths in India where West Bengal contributed maximum almost one-fifth of accidental deaths². However, in India, the exact incidence cannot be defined as there is gross under reporting of cases of poisoning and also due to lack of research in this area.

Poisoning is a medical emergency and a patient is always invariably rushed to the hospital at the earliest possible moment, irrespective of the amount and nature of poison ingested. All the cases of poisoning are admitted through emergency services where the safety of life of the patient is the main issue for the doctor. Acute pesticide poisoning is one of the most common causes of intentional deaths worldwide.³ High doses of analgesics, tranquilizers, and antidepressants are the commonly used agents for intentional poisoning in industrialized countries⁴. In spite of spectacular contribution of pesticides in agriculture they are used in Asian region for self poisoning particularly in rural areas. Studies have revealed that agrochemicals are the commonly used poisoning agents for intentional poisoning in India.^{5,6} As it is a medical emergency any delay in seeking health care may be disastrous. Thorough search could reveal a few literatures in this part of the country regarding socio-demographic profile of poisoning cases.

Aims and objectives: The study was undertaken to study the socio-demographic profile of poisoning cases and to find out the factors affecting time interval between time of poisoning and first care seeking

Materials and methods:

It was a descriptive study with cross-sectional design. The study was conducted in Medicine Emergency Indoor Ward of Burdwan Medical College and Hospital. It is situated in Burdwan town which is

about 100 Km from Kolkata, West Bengal. The town is surrounded by rural areas which are rich in agricultural practices. The study period was from December 2013 to May 2014. The study population was all cases of poisoning admitted in the hospital. Out of seven days in a week two days were selected randomly and they were Monday and Thursday. All such cases admitted during those two days in the study period were included in the study. 222 cases were studied. Ethical clearance was obtained from the Institutional Ethics Committee beforehand. Data were collected after obtaining informed consent from the patients or the patient party in case of seriously ill patients. A pre-tested and pre-designed schedule was used for data collection. Interview method was used in data collection. Variables used were age, sex, religion, caste, place of residence educational status, occupation, marital status, per capita monthly income, type of family, delay in seeking health care, time of ingestion of poison, type of poison and cause of poison intake. Data were entered in MS excel sheet and checked for accuracy. Data analysis was performed with the help of SPSS software version 20.0.

Observations and results: Out of 222 cases, 46.8% cases were in 21-30 years age group (Table 1). More than 70% of cases belonged to productive age group i.e. in 21-50 years age group. Males and females were found to be almost in equal proportion. Hindus were majority (74.3%) and cases of general caste contributed to slightly more than half of total cases. Almost 90% patients came from rural areas. 18.5% cases were illiterate. Two-third of the cases came from nuclear families. 37.4% cases were housewives followed by agricultural labourers while 23% were unemployed. Married people were majority (70.7%). 90% cases were contributed by people in lower and

upper-lower socio-economic status as per modified B G Prasad Scale.⁸91% of cases consumed poison during daytime i.e. from 6 a.m. to 6 p.m. Two-third of the cases sought medical care within 2 to 4 hours after ingestion of poison (Table 2). In nearly 60% cases organophosphorous was used as poison. In nearly half of the cases the cause was quarrel with spouse followed by quarrel with other family members or friends. Only 28.8% of cases sought health care within 2 hours of poisoning. Caste and residence were significantly associated ($p < 0.05$) with the time interval between first care seeking and time of ingestion of poison (Table 3).

Discussion: Poisoning being an important public health problem, socio-demographic factors behind it were assessed with an attempt to find out the factors responsible for delay in seeking care. Similar age distribution of cases was also found in different studies conducted at Western Maharashtra, Bijapur, Dehradun, Bangalore, Aligarh and Berhampur.⁹⁻¹³ People in productive age group attempt suicide by intake of poison probably due to increasing tension in life. Like the present study similar sex distribution was found in several studies.⁹⁻¹¹ Majority of cases were Hindu which was also found in a study at Aligarh.¹² Patients from rural area were majority in other studies also.⁹⁻¹³ Easy availability of agro-chemicals led to increased poisoning in rural areas. People of lower socio-economic class were victims in Bengaluru study.¹⁴ Probably they could not arrange for money for living. Married people outnumbered unmarried in other studies also.^{10,11} Marital

disharmony probably caused more poisoning cases in married people. Organophosphorous was used in majority of cases in various other studies.⁹⁻¹⁴ As Burdwan town is surrounded by rural areas rich in agriculture, so organophosphorous was easily available and accessible. This accounts for the majority of cases due to organophosphorous poisoning. Time of hospitalization was less as compared to study at Western Maharashtra.⁹ Caste was found to be statistically significant with the time interval between first care seeking and time of poison ingestion. This may be due to better educational status of general caste people. Residence also had statistically significant relationship with the time interval between first care seeking and time of poison ingestion. This may be due to easy accessibility of urban patients to hospital than rural cases.

The findings of the present study corroborates with the findings of other studies in the country. Younger age, low educational status, low socio-economic status, marital disharmony were found to be more among poisoning cases.

Conclusion: Organophosphorous was the most commonly used poison. These should be stored in a secured position in houses. Awareness should be generated among people about the harmful effects of agro-chemicals. Total literacy campaign should be properly implemented. Psychological counselling of adolescents with problems is to be done. Women empowerment should be ensured. In this way this growing public health problem may be controlled.

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Table 1: Distribution of cases according to socio-demographic characteristics. (n=222)

Socio-demographic characteristics	Number	Percentage
Age(in years)		
11-20	49	22.1
21-30	104	46.8
31-40	37	16.7
41-50	22	9.9
51-60	5	2.3
61-70	4	1.8
≥ 71	1	0.5
Sex		
Male	109	49.1
Female	113	50.9
Religion		
Hindu	165	74.3
Muslim	57	25.7
Caste		
General	122	55.0
Scheduled caste	73	32.9
Scheduled tribe	27	12.1
Residence		
Rural	199	89.6
Urban	23	10.4
Marital status		
Married ¹⁵⁷	70.7	
Unmarried	65	29.3
Literacy status		
Illiterate	41	18.5
Literate	181	81.5
Occupation		
Housewife	83	37.4
Business	7	3.1
Service	81	36.5
Unemployed	51	23.0

Type of family		
Nuclear	149	67.1
Joint	73	32.9
Socioeconomic class		
Class I	1	0.5
Class II	6	2.7
Class III	13	5.9
Class IV	41	18.5
Class V	161	72.5

Table 2: Distribution of cases according to features of poisoning. (n=222)

Features	Number	Percentage
Time interval before seeking care		
Within 2 hours	64	28.8
After 2 hours	158	71.2
Time of ingestion		
6am-6pm	202	91.0
6pm-6am	20	9.0
Type of poison		
Organophosphorous	131	59.0
Organochlorine	1	0.5
Drugs	28	12.6
Others	62	27.9
Cause		
Quarrel with spouse	106	47.7
Quarrel with others	68	30.6
Failure	21	9.5
Miscellaneous	3	1.4
Nil	24	10.8

Table 3: Distribution of cases according to factors influencing time interval before seeking care. (n=222)

Factors	Time interval	Time interval	Total	p value
	< 2 hours	> 2 hours		
Caste				
General	45(70.3)	77(48.8)	122	
Scheduled caste	14(21.9)	59(37.3)	73	<0.05
Scheduled tribe	5(7.8)	22(13.9)	27	
Residence				
Rural	50 (78.1)	149 (94.3)	199	<0.05
Urban	14 (21.9)	9 (5.7)	23	

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