Study of Pattern of Acute Poisoning Cases in Females at a Rural Tertiary Care Hospital in Ahmednagar, Maharashtra, India

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ABSTRACT

Background: Prevailing social and mental health status is reflected by suicidal pattern in a region. Female unnatural deaths have been attributed to existing cultural and socioeconomic factors of that region.

Objectives:

- To study the pattern of different poisoning cases in females admitted at a tertiary care center.
- To know the magnitude of suicidal poisoning cases in females admitted at a tertiary care center.
- To analyze the data to determine various associated causes and to improve patient care.

Study design: Present study is a record-based retrospective study conducted at the casualty of Dr. Vikhe Patil Memorial Hospital attached to Dr. Vithalrao Vikhe Patil Foundation’s Medical College, Ahmednagar, India, from January 1, 2014 to November 30, 2016.

Results: Our study analyzed 229 poisoning cases out of which females were 87 (37.99%). Female to male ratio was 1:1.63. Most of the female cases occurred in the age group of 21 to 30 years (28, 32.18%), followed by 41 to 50 years (22, 25.28%). Majority of cases comprised married females (72, 82.75%). The study also reveals maximum number of cases were housewives from rural area (65, 74.71%). The commonest poison consumed was pesticide (52, 59.77%), followed by unknown drugs (20, 22.98%). The present study reported suicide (54, 62.06%) as commonest manner of poisoning.

Keywords: Female suicide, Pesticide, Poisoning, Tertiary care center.

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INTRODUCTION

Poison has no legal definition. It can be defined as anything that when used internally or on body surface, in a dose, or in repeated doses, acts chemically and pathologically causing disturbances of body functions and leads to disease or death.1

According to the World Health Organization, three million acute poisoning cases with 220,000 deaths occur annually. Global suicide rate is estimated to be 14/100,000, with 18/100,000 for males and 11/100,000 for females.2 About 90% of these fatal poisoning cases are seen in developing countries, particularly among agricultural workforce.3 More than 50,000 people die every year from toxic exposure in India.4 Suicide ranks as the number one cause of mortality in young girls between the ages of 15 and 19 years globally.5 One of the frequent causes of casualty admissions is acute poisoning cases. Diversity of factors, such as socioeconomic status, cultural influences, and availability of drugs, contribute to form a pattern of poisoning in the locality. The precise incidence of poisoning in India is uncertain due to lack of data at central level and unreported cases. Approximately 5 to 6 persons per 100,000 of population die due to poisoning every year.6 It is imperative therefore, to recognize the management of poisoning cases and inform health policy decision makers about investment and management at different levels of the health-care system to optimize the use of resources.7

MATERIALS AND METHODS

Present study is a record-based retrospective study of acute poisoning cases of females registered in the medicolegal register in the casualty of Dr. Vikhe Patil Memorial Hospital, which is a tertiary care center attached to Dr. Vithalrao Vikhe Patil Foundation’s Medical College, situated in rural area near Ahmednagar, India, from January 1, 2014 to November 30, 2016. Inappropriate history and cases brought dead were excluded from the study. Related general data of the cases reported in casualty like age, marital status, type and manner of poisoning, employment status, time of arrival of poisoning cases in casualty were collected from medicolegal register. During this study period, a total of 229 (out of
which 87 were females) poisoning cases were registered in the casualty of Dr. Vikhe Patil Memorial Hospital. The data obtained were analyzed with Microsoft Excel and presented in tables, graphs, and pie charts by using various parameters and compared with other studies.

**OBSERVATIONS AND RESULTS**

Graph 1 shows female to male ratio as 1:1.63.

Table 1 shows maximum cases were between age group 21 and 30 years, followed by 41 and 50 years.

Graph 2 shows that majority cases were from married population.

Table 2 reveals that maximum cases reported were housewives, followed by students.

Graph 3 shows that most of the cases were of pesticide poisoning, followed by unknown drugs.

Table 3 reveals that majority of cases were suicides.

Table 4 shows that majority of the cases arrived between 6 pm and 12 am.

**DISCUSSION**

Our study revealed a total of 127 (out of which 87 were females) poisoning cases from the casualty of Dr. Vikhe Patil Memorial Hospital attached to Dr. Vithalrao Vikhe Patil Foundation's Medical College, Ahmednagar, India, from January 1, 2014 to November 30, 2016.
Present study showed that most of the cases were between age group 21 and 30 years (32.18%) which is similar with other study findings. Majority of the cases were between 21 and 30 years, as this age group was more active and majority of the marriages occur in this group, and so are involved more in stressful activities.

This study reveals that married subjects (82.75%) outnumbered unmarried subjects, which is consistent with the studies by other authors. This is because married population is more exposed to strain and stress of life like financial, social, and psychological problems and domestic violence.

The present study revealed farmers and housewives (48.81%) as the commonest victim. Most of the victims in our study are farmers and housewives living in rural areas. It may be due to the fact that farming is influenced by various factors, such as rain, seasonal irregularity, scarcity of fertilizers, and low economic status, which may precipitate in stress and domestic violence leading to suicidal ideation.

Easy availability of pesticides and consumption mainly during evening hours could be explained as people usually meet in homes after working hours and discuss about their problems and get frustrated, which result in them taking the extreme step. Chaudhury et al found that 66.70% of females used pesticide for self-harm in Sunderbans, India.

Suicide was the most common manner of poisoning (64.36%), followed by accident (33.33%). This study is consistent with studies by other authors. Suicidal tendencies are more common due to stress, frustration, family dispute, easy accessibility of poison, loss of income (crops) in the present study.

CONCLUSION

Most of the poisoning cases reported in the emergency department may be attributed due to easy availability of insecticides and other household poisons, and these usually resulted from self-inflicted action.

This study helps to interpret the manner of acute poisoning according to marital status and age. It is important to identify these trends in manner of acute poisoning and it will help the health policy makers for reduction of the mortality and morbidity due to acute poisoning. Suicidal poisonings by housewives can be prevented by proper psychological counseling, socioeconomic and technological support for better interpersonal relationship.

Such social education and awareness will change the attitude and mindset of society, judiciary, and most importantly woman, who, themselves can lower or prevent such poisoning cases.

Establishing a poison information center in this region with Clinical Toxicology Unit will facilitate in better management of poisoning cases in this region.

REFERENCES