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# Socio Demographic Profile of the Poisoning Cases in Kashmir Valley

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## ABSTRACT

**A retrospective study of poisoning cases admitted in ICU [Department of Anaesthesiology and Critical Care GMC Srinagar] from Jan 2006 to May 2014 was conducted to evaluate the socio demographic variables and type of poison consumed in these cases. Organophosphorous poisoning cases were predominant, amounting to 394 cases. Maximum cases (281) were in the age group of 18 to 35 years. Female predominance was seen in the study population. It was observed that unmarried people (294) had high incidence of poisoning as compared to married people (150). Most of the cases admitted in ICU were from south zone (204) which had a population of 2,328,950 as compared to central (129) and north (111) zones of Kashmir that had a population of 1,250,173 and 2,573,169 respectively.**

**Keywords**: Organophosphorous Poisoning, Socio Demographic Variables

## INTRODUCTION

Poisons are subtle and silent weapons that can be easily used without violence and often without arousing suspicion.[1] Organophosphate based pesticides are widely used and have emerged as the major contributors to ill health associated with pesticides worldwide. Organophosphate Poisoning (OPP) are the most common suicidal poison in developing countries and mortality continues to be high. Most of these poisons are usually ingested with a suicidal intent.[2] Because the organophosphorous compounds are readily available, relatively cheap and have a rapidly lethal action even in smaller doses, they are widely used as suicidal poisons.[3] The various factors that can be held responsible for self-poisoning are emotional disturbances, chronic diseases, loss in the business or failure in examination. While as accidental poisoning occurs mostly due to bites and stings and in children.[4,5]

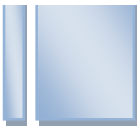
A study conducted in Kashmir valley from 1994-97 showed an increasing incidence of OPP in the valley particularly from areas having more apple orchards, females being more commonly affected than males.[6] Although extensive data is available regarding the pattern of poisoning in India, there is often little information regarding the victim profiles in Kashmir. This study aimed to analyse the socio demographic variables of poisoning cases in the valley.

## MATERIALS AND METHODS

The study was conducted in the Department of Anaesthesiology and Critical care SMHS Hospital Srinagar. Records of all the cases of poisoning admitted in ICU SMHS hospital from Jan 2006 - May 2014 were analysed. All the information was recorded on a specially prepared proforma, which included age, sex, marital status, residence and nature of poison consumed. Analysis was done in the form of percentages and proportions.

## RESULTS

In the study, a total of 444 cases were analysed in nine years from Jan 2006 to May 2014. It was observed that, out of 444 cases, 394 cases (88.78%)



were due to organophosphorus poisoning poisoning making it the predominant poison consumed.

**Table 1 Type of Poisoning from Year 2006 to May 2014**

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 (Jan. – May) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Organophosphorous (%) | 24 | 34 | 36 | 42 | 60 | 82 | 60 | 42 | 14 | 394(88.78) |
| Others (%) | 0 | 4 | 6 | 10 | 6 | 6 | 8 | 8 | 2 | 50(11.26) |
| *Total cases* | *24* | *38* | *42* | *52* | *66* | *88* | *68* | *50* | *16* | *444* |

Overall females (316) were more in number as compared to males (128). The female male ratio was 2.46:1. Unmarried (294) cases were more in number than married cases (150). Out of 444 cases female preponderance were more to males with a ratio of 2.46:1. Similarly unmarried to married cases had a ratio of 1.96:1.

**Table 2 Demographic Profile of Patients from Year 2006 to May 2014**

| Year | No. of cases | Males (%) | Females (%) | Married (%) | Unmarried (%) |
|---|---|---|---|---|---|
| 2006 | 24 | 10(41.67) | 14(58.33) | 10(41.17) | 14(58.33) |
| 2007 | 38 | 8(21.06) | 30(78.94) | 16(42.11) | 22(57.89) |
| 2008 | 42 | 8(19.05) | 34(80.95) | 10(23.81) | 32(76.19) |
| 2009 | 52 | 18(34.62) | 34(65.38) | 30(57.70) | 22(42.30) |
| 2010 | 66 | 18(27.28) | 48(72.72) | 14(21.22) | 52(78.78) |
| 2011 | 88 | 26(29.55) | 62(70.45) | 28(31.82) | 60(68.18) |
| 2012 | 68 | 20(29.42) | 48(70.58) | 24(35.30) | 44(64.70) |
| 2013 | 50 | 14(28.0) | 36(72.0) | 16(32.0) | 34(68.0) |
| 2014( Jan - May) | 16 | 6(37.5) | 10(62.5) | 2(12.5) | 14(87.5) |
| *Total No. of cases* | *444* | *128(28.83)* | *316(71.17)* | *150(33.79)* | *294(66.21)* |

Age group ranging from 18 years to 35 years showed the maximum cases (63.28%). Maximum cases belong to age group of 18 to 35 years and minimum cases belong to age group above 50 years.

**Table 3 Age Wise Distribution of Cases**

| Age Group | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 (Jan. –May) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| <18 | 4 | 10 | 12 | 6 | 14 | 22 | 18 | 2 | 3 | 91(20.45) |
| 18-35 | 16 | 22 | 26 | 38 | 36 | 54 | 39 | 40 | 10 | 281(63.28) |
| 35-50 | 4 | 6 | 2 | 4 | 10 | 8 | 7 | 6 | 2 | 49(11.03) |
| >50 | 0 | 0 | 2 | 4 | 6 | 4 | 4 | 2 | 1 | 23(0.51) |

Maximum number of cases was reported from south zone (204) as compared to other zones of the valley. Maximum cases were from the South zone of the Valley (45.9%) as compared to other zones of the valley.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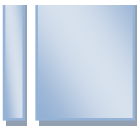

**Table 4 Zone Wise Distribution of Cases**

| Zone | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 (Jan. –May) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Central | 5 | 16 | 11 | 17 | 14 | 32 | 22 | 8 | 4 | 129(29) |
| South | 10 | 14 | 19 | 22 | 37 | 42 | 26 | 24 | 10 | 204(45.9) |
| North | 9 | 8 | 12 | 13 | 15 | 14 | 20 | 18 | 2 | 111(25) |

## DISCUSSION

Organophosphates are widely used in the household and in the agriculture as ours is an agriculturally based society. Intoxication with OPP is a worldwide problem and may cause severe morbidity and mortality.[7] Overall case fatality rate ranges from 10-20 %.[8,9] According to national crime records bureau India, every five minutes a person commits suicide and seven attempt to kill themselves, resulting in about 1,00,000 deaths per year.[10] Suicide rate was highest in the state of Kerala[11] and organophosphorous poison was the most common agent used for suicide purpose.[12]

A study conducted on 276 cases of OPP in Kashmir valley from 2000-2002 showed high incidence of suicidal poisoning in females (36.9%) and age group involved was 14-29years (60%). 63.7% were unmarried cases. OPP was most common & pattern of poisoning was suicidal in majority of the cases.[13]

A study conducted among 164 patients in Kashmir valley observed that poisoning was more common in females (69.51%) and majority of patients (74.39%) consumed the poison for suicidal intentions, mainly due to strained social relations.70% of cases belonged to the districts having largest areas of apple orchards.[6]

Our present study of poisoning cases admitted in SMHS hospital Srinagar over a vast period of nine years and analysing these cases have helped us to draw some important conclusions:

(1) Most of the cases of poisoning reported from south zone of Kashmir as compared to other zones.
(2) OPP was most common type of poisoning as compared to other poisons.
(3) Females showed a highest incidence of poisoning as compared to males
(4) 18 to 35 years age group was highly affected.

Most of the cases were unmarried.

The reasons for above conclusions are as follows:

(1) The contribution in the field of agriculture in Kashmir is predominantly from south zone that can be the reason why poisoning cases were reported to be on higher side from this zone.
(2) As already discussed above, organophosphorous agents are widely used in the households and in the agriculture as compared to other pesticides that is why organophosphorous poisoning was the most common type of poisoning found.
(3) One of the reasons for higher incidence of poisoning in females is that females are emotionally more labile than the males.[14,15]
(4) Majority of victims were in the age group of 18 to 35 years, the reason being that this age group is the most active age group whether physically, mentally or socially and people in this age group are more prone to stress.
(5) Single and unmarried individuals are more responsive to psychological stress than married individuals, a finding consistent with a growing body of evidence showing that marriage and social support can buffer against stress. It has been found that marriage and committed relationships


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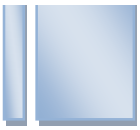

reduce production of stress hormones hence decreasing stress.

Kashmir is one of the major fruit growing and agricultural states in India. Rural population of this region is mostly dependent on their agriculture. The Organophosphorus agents which are used in the agricultural industry in Kashmir are readily available as over the counter drugs in village shops and are easily accessible in the village households hence they act as common agents for suicidal purposes following trivial day to day stresses. Present study highlights the problem of organophosphorous poisoning in this region. It is essential to establish strict policies against the sale and availability of insecticides and pesticides and their safer storage at village households to prevent both suicidal and accidental poisoning.

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