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**A REPORT
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**A COMPARATIVE STUDY OF CHANGING TRENDS OF ACUTE
POISONING CASES ADMITTED IN THE INTERNAL
MEDICINE DEPARTMENT OF TUTH AND BHARATPUR
DISTRICT HOSPITAL, BETWEEN 1990-1992 AND 2000-2002.**

Association No 148



**SUBMITTED TO
NEPAL HEALTH RESEARCH COUNCIL
2003**

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ACKNOWLEDGEMENT

First and foremost our sincere thank goes to NHRC for providing us with the necessary grant to conduct our research. One of the person to whom we are greatly indebted to is Mr Shyam lohani who always inspired us and showed us the appropriate way right from the time of proposal writing.

Similarly we are grateful to Prof. Dr Gopal Prasad Acharya, Dr Anand Ballav Joshi, Mr. Sitaram Khakurel and Dr. Shiva lal Acharya for helping us to make this research a success.

And thanks to all who helped us get access to the file reports of poisonings in TUTH and BDH.

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LIST OF THE ABBREVIATIONS:

BDH- Bharatpur District Hospital
BHC- Benzene hexa chloride
BPKHIS – B.P. Koirala Institute of Health Sciences
DDT- Dichloro diphenyl trichloroethane
H/W-Housewife
IOM- Institute of Medicine
JNMA - Journal of Nepal Medical Association.
LAMA- Leave against Medical Advice
NA- Not Available
NM- Not Mentioned
NHRC- Nepal Health Research Council
OP- organophosphates
TUTH - Tribhuvan University Teaching Hospital
WHO- World Health organization

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EXECUTIVE SUMMARY

The study was retrospective type of descriptive study. The study included a total of 102 during 1990-1992 and 150 during 2000-2002 poisoning cases at TUTH and 308 at BDH during 2000-2002.

Though we observed that majority of poisoning cases admitted at TUTH consisted of female in both the period of time, the number of male cases is increasing. In both the period more than 65% of cases were of age group 16-25. The study revealed that most of the cases were admitted during the month of Bhadra and Ashwin and majority of them were from valley. However the cases referred from outside the valley are increasing. OP is the predominantly used poison found in both the period of time (>45%). The use of drug as poison has been increasing as indicated by the rising percentage of cases using drug from 18.61% during 1990-1992 to 30.66% during 2000-2002. In both the period of time most of the cases got recovered. But there is relative increase in the number of death cases during 2000-2002.

On comparing the poisoning cases admitted in BDH and TUTH during 2000-2002, we found female as the predominant cases in both the hospitals. In BDH most of the admitted cases were of the under 15 age group whereas in TUTH 16-25 remains the predominant age group. In contrast to that of TUTH where OP poisoning cases were maximum, rodenticide use was at the top among the cases at BDH. The use of drug as poison however is more at TUTH (30.66%) than that of BDH (2.92%). In both the centers most of the cases got recovered however at TUTH more cases of death disability and LAMA were found.

STATEMENT OF THE PROBLEM

According to WHO suicide by acute poisoning is one of the leading causes of death. Acute poisoning is a common and a medical emergency in all developed and many developing countries of the world. Several studies conducted in different parts of the world have shown that since 1960 the suicide rate due to acute poisoning for young adults has increased and among the elderly similar trends are appearing. In Britain it accounts for 15-20% of all acute medical emergency admissions to hospital.

It has also been found that the number of cases also increases as the country gets developed. Therefore it is gradually emerging as one of the major medical problems in a developing country like Nepal. According to "A study of poison cases recorded in Bir Hospital for four year from 1981-82 to 1984-85" done by Nita Pokhrel and Chitra Kumar Gurung acute poisoning cases are increasing every year in Nepal. A Similar study titled "Poisoning cases at TUTH emergency: a one year (1997) review" done by Dr. Pratap N. Prasad and Dr. Prakash Karki figured out that the acute poisoning cases accounts for 1.1% of the total cases presented at the casualty department. Likewise Dr. GP Rauniar and et al from BPKIHS Dharan after analyzing the cases of acute poisoning from 1994 to 1997 came to a conclusion that admissions due to acute poisoning account for 0.6% of the total hospital admissions. Though the gravity of the poisoning problem has been increasing day by day very few studies have been conducted as regards acute poisoning.

OBJECTIVES

GENERAL

- a) To study the changing trends of acute poisoning cases recorded at internal medicine department of TUTH between 1990-1992 AD and 2000-2002 AD and study the poisoning cases recorded at BDH during 2000-2002 and compare with that of TUTH in the same period.

SPECIFIC

- a) To find out the total number of cases of acute poisoning recorded at internal medicine department of TUTH between 1990-1992 AD and 2000-2002, Bharatpur hospital during 2000-2002 AD.
- b) To describe the acute poisoning cases by age group, sex, marital status, occupation.
- c) To find out the reasons for the acute poisoning.
- d) To find out the type of acute poisoning on the basis of type of poison taken like-pesticides, drugs, rodenticides etc
- e) To find out the nature of acute poisoning cases like accidental or intentional (may be homicidal or suicidal)
- f) To find out the outcome of the treatment of the acute poisoning cases like mortality or disability or recovery.
- g) To find out the monthly variation of acute poisoning cases.
- h) To compare all the study variables over the 1990-1992 AD and 2000-2002 AD of TUTH to show the changing trends of the acute poisoning cases presented at TUTH.
- i) Comparison of variables found at TUTH and BDH during 2000

KEY WORDS:

Poisoning, TUTH, BDH, drugs, homicidal, recovery, disability, pesticides, rodenticides, suicidal, accidental etc

METHODOLOGY:

Our study was a retrospective type of descriptive study. During the course of study we looked for all the poisoning cases admitted in the internal medicine department of TUTH and BDH during 1990-1992 and 2000-2002. For this purpose first of all we listed the file numbers of the poisoning cases admitted in the internal medicine department of TUTH and BDH during 1990-1992 and 2000-2002 from the discharge register then we took out the files of those cases and then record the data in the checklist.

The data recorded in the checklist was then entered in to their respective dummy tables. Finally a master table was prepared and the result was analyzed and compared with each other. The analysis and comparison are presented in the report in the form of graphs and tables.

DEFINITIONS:

Acute poisoning: Acute poisoning is a morbid condition produced by the ingestion of pesticides, drugs, rodenticides, potassium cyanide, heavy metal and other substances that can produce negative effects in the body. The substance resulting in to poisoning may be swallowed, inhaled, injected or spilled or otherwise brought in to contact with skin.

Cases: Individuals admitted to the internal medicine department of TUTH and BDH diagnosed as poisoning.

FINDING OF THE POISONING CASES ADMITTED IN THE INTERNAL MEDICINE DEPARTMENT OF TUTH DURING 1990-1992

SEX:

Male	Female	Total
32	70	102
31.37%	69.63%	100%

AGE:

<15	16-25	26-35	36-45	>45
3	67	20	8	4
2.94%	65.68%	19.60%	7.84%	3.92%

MONTHS:

Baisakh	Jesth	Ashad	Shrawan	Bhadra	Asoj	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra
11	10	6	9	10	11	9	7	11	6	2	10
10.78%	9.8%	5.88%	8.82%	9.8%	10.78%	8.82%	6.86%	10.78%	5.88%	1.96%	9.8%

TYPES OF POISON:

Pesticide(OP)	Rodenticide	Mushroom	Drugs	Kerosene	Others	N.M.
54	17	-	19	-	9	3
52.94%	16.67%	-	18.62%	-	8.82%	2.94%

Drugs

Diazepam	Paracetamol	Others
8	3	8
42.1%	15.8%	42.1%

OUTCOME OF TREATMENT:

Recovery	Death	Disability
95	6	1
93.14%	5.88%	0.98%

ADDRESS:

Within Valley	Outside Valley
91	11
89.22%	10.78%

**FINDINGS OF THE POISONING CASES ADMITTED IN THE
INTERNAL MEDICINE DEPARTMENT OF TUTH DURING
2000 – 2002**

SEX:

Male	Female	Total
64	86	150
42.66%	57.34%	100%

AGE GROUP:

<15	16-25	26-35	36-45	>45
1	101	24	18	6
0.66%	67.34%	16.00%	12.00%	4.00%

MARITAL STATUS:

Married	Single	Divorced
72	77	1
48%	51.34%	0.66%

OCCUPATION:

Student	H/W	Labor	Service	Farmer	Business	Others	N.M
56	39	15	18	6	10	4	4
37.34%	26%	10%	12%	4%	6.6%	2.66%	2.66%

ADDRESS:

Outside Valley	Valley
30	120
20%	80%

VALLEY

Kathmandu	Lalitpur	Bhaktapur
108	9	3
92%	6%	2%

MONTHS:

Baisakh	Jestha	Ashad	Shrawan	Bhadra	Asoj	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra
10	18	10	10	21	24	11	7	6	16	10	7
6.66%	12%	6.66%	6.66%	14%	16%	7.34%	4.66%	4%	10.67%	6.66%	4.66%

TYPES OF POISON:

Pesticides(OP)	Rodenticides	Mushroom	Drugs	Kerosene	Others	N.M.
70	19	3	46	2	8	2
46.67%	12.67%	2%	30.66%	1.33%	5.34%	1.33%

Drugs

Diazepam	Paracetamol	Others	Carbamazepine
20	13	9	4
43.47%	28.26%	19.56%	8.7%

NATURE OF POISONING:

Accidental	Suicidal	Homicidal
11	137	2
7.34%	91.34%	1.33%

REASONS FOR POISONING:

Family Conflict	Marital Conflict	Mental illness	Impulsive	Others	N.M.
31	12	24	4	8	71
20.67%	8%	16%	2.67%	5.33%	47.34%

OUTCOME OF TREATMENT:

Death	Recovery	Disability	LAMA
21	121	3	5
14%	80.67%	2%	3.33%

FINDING OF THE POISONING CASES ADMITTED IN THE INTERNAL MEDICINE DEPARTMENT OF THE BDH DURING 2000-2002

SEX:

Male	Female	Total
146	162	308
47.40%	52.60%	100%

AGE:

<15	16-25	26-35	36-45	>45
104	77	52	40	35
33.76%	25%	16.88%	12.98%	11.36%

MONTHS:

Baisakh	Jestha	Ashad	Shrawan	Bhadra	Ashwin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra
17	31	24	29	34	31	45	20	20	13	19	25
5.52%	10.06%	7.79%	9.42%	11.03%	10.06%	14.61%	6.49%	6.49%	4.22%	6.17%	8.12%

TYPES OF POISON:

Pesticide(OP)	Rodenticide	Mushroom	Drugs	Kerosene	Others	N.M
97	107	3	9	56	10	26
31.49%	34.74%	0.97%	2.92%	18.18%	3.25%	8.44%

OUTCOME OF TREATMENT:

Recovery	Death	Disability
298	10	NA
96.75%	3.25%	

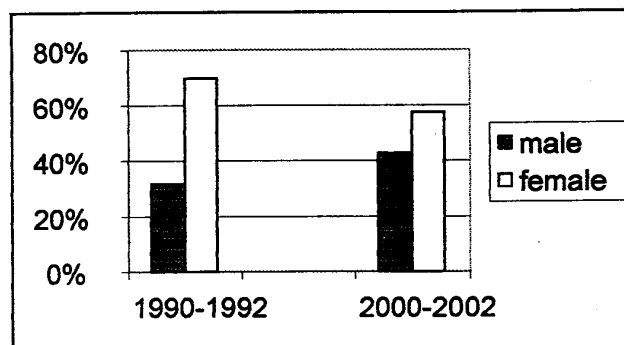
COMPARATIVE STUDY OF POISONING CASES ADMITTED IN THE INTERNAL MEDICINE DEPARTMENT OF TUTH BETWEEN 1990-1992 AND 2000-2001

TOTAL NUMBER OF CASES:

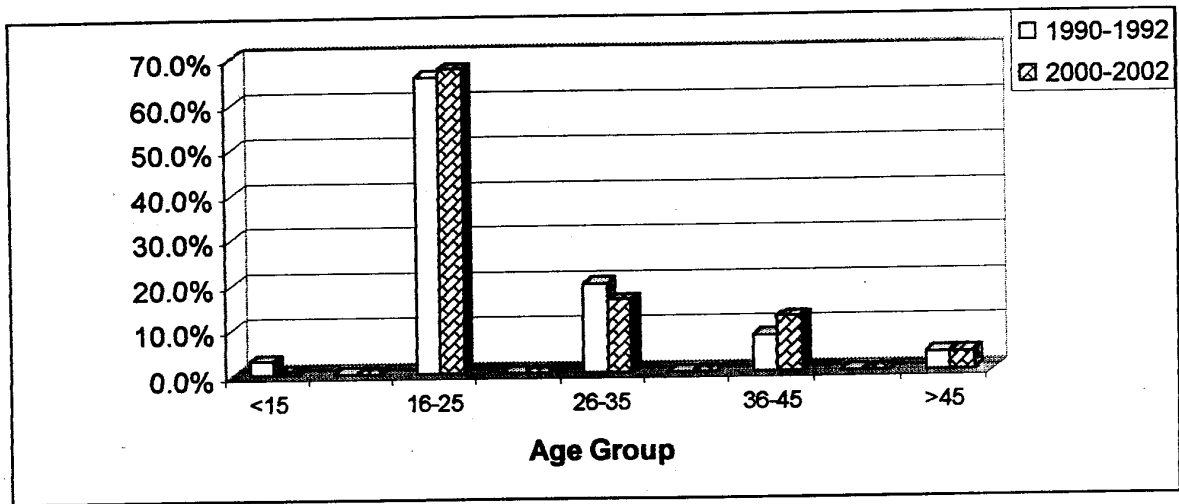
Total number of poisoning cases admitted in the internal medicine department of TUTH during 1990-1992 was 102, while it was 150 during 2000-2002. The increase in number of cases may be due to increase in population within the valley and increase in the tendency of people to commit suicide due to life being more stressful these days.

AGE AND SEX DISTRIBUTION:

The study shows increase in percentage of male poisoning cases over 2000-2002 period. This may be due to life being more stressful and male being/feeling socially more responsible.

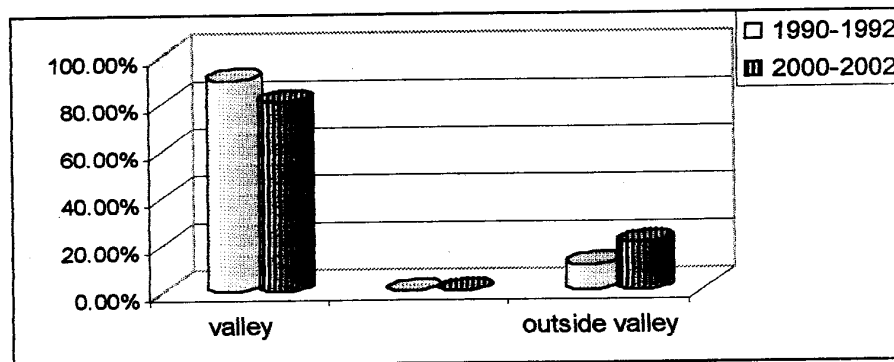


Majority of the cases were of the age group 16-25 over both the period of time. There have been no significant changes in the age composition of the poisoning cases during 1990-1992 and 2000-2002. In below 15 year group the percentage of cases has reduced probably due to increased awareness among the people in keeping the poisoning material out of reach of children and proper disposal.



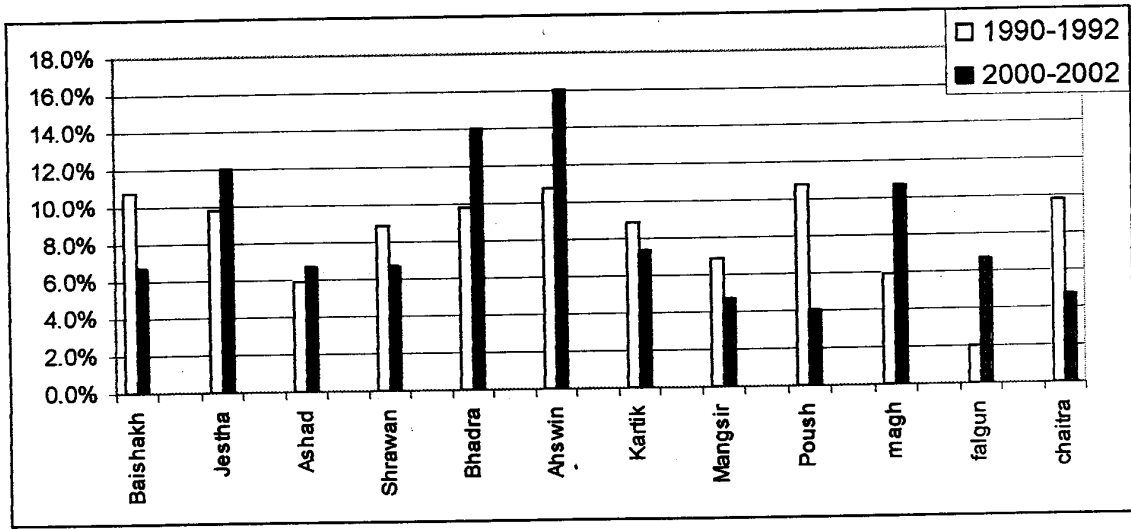
ADDRESS:

The study shows that the numbers of poisoning cases from outside the valley are increasing. It may be due to increased referral or simply be due to increased migration into the valley and people reporting their original address.



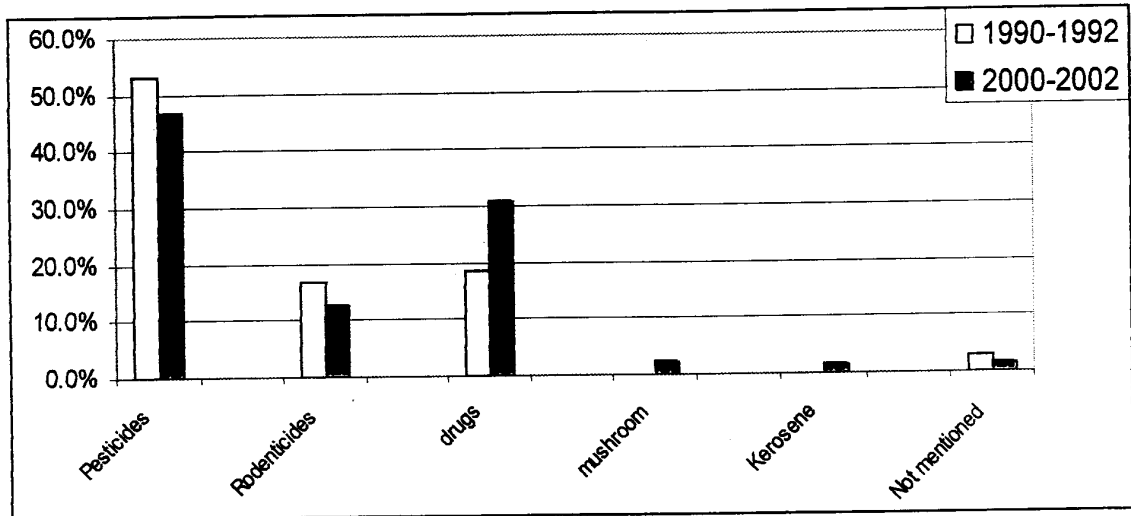
MONTHLY VARIATION:

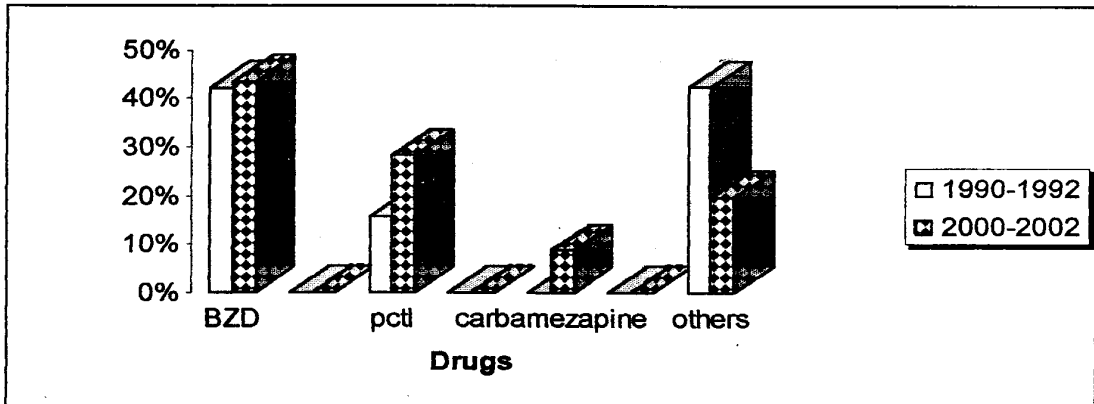
In both the periods maximum number of cases were admitted in the months of Bhadra and Ashwin. So the month wise variations among the poisoning cases were not significant.



TYPES OF POISONING:

Pesticides, especially organophosphates remain the most used poison over both the periods. The use of drugs as poison has increased significantly leading to relative decline in the use of pesticides and rodenticides. Increase in the use of drugs as poison may be related to the increasing trend of over the counter sale and knowledge of people about the toxicities of drugs.



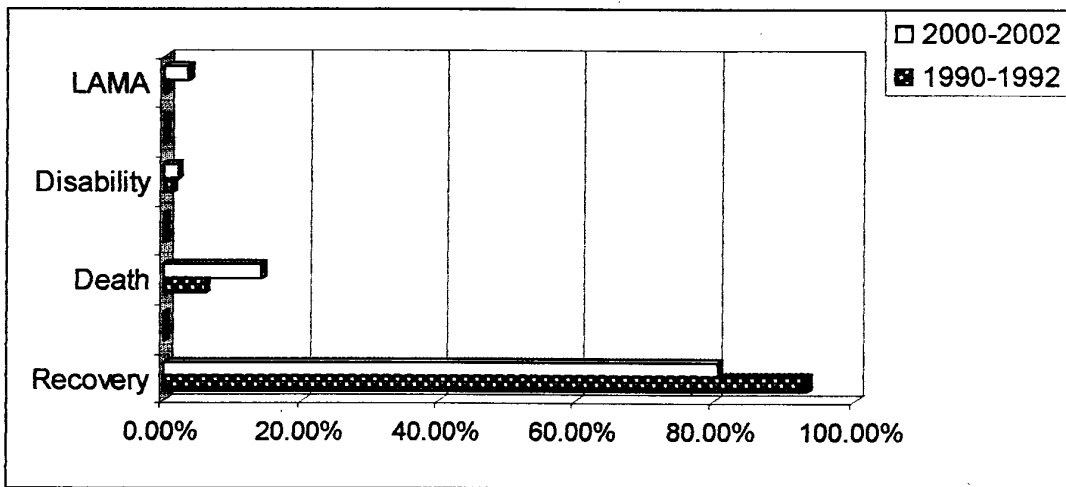


*pctl= paracetamol

Among the drugs the use of paracetamol as poison has markedly increased from 15.8% to 28.26%.

OUTCOME OF THE TREATMENT:

The death toll in poisoning cases has increased from 5.88% to 14%. This may be due to the knowledge of people about the lethal dose of the poisons and change in the purpose of taking poison from threatening to suicidal intention. We think that increase in no of cases in spite of improving health care system is a spurious association and doesn't imply the failure of the health care system.



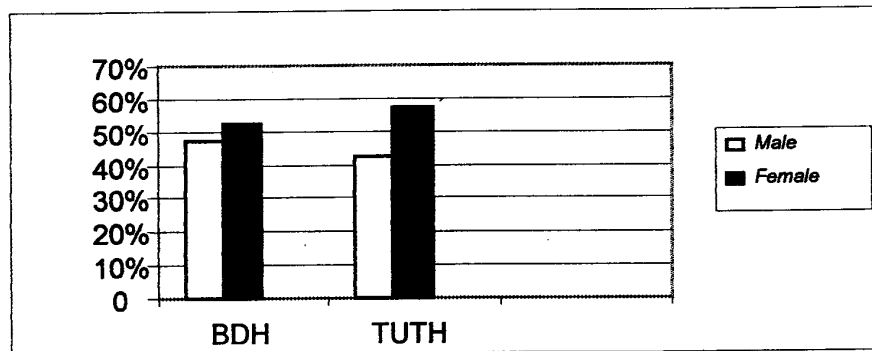
COMPARATIVE STUDY OF THE POISONING CASES ADMITTED IN THE INTERNAL MEDICINE DEPARTMENT OF BDH AND TUTH BETWEEN 2000 AND 2002

Total Number of cases:

Total number of poisoning cases admitted in the internal medicine department of TUTH during 2000-2002 was 150, while it was 308 in BDH in the same duration.

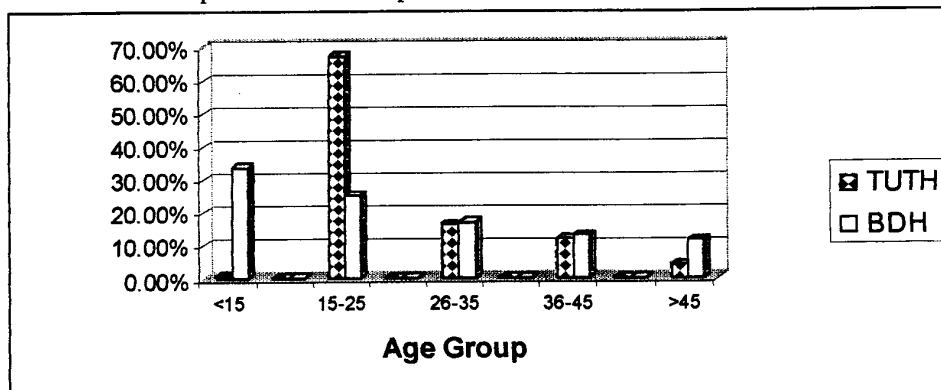
Age and Sex wise distribution of the cases:

Of the total number of poisoning cases recorded by our study in TUTH and BDH predominant cases were female.



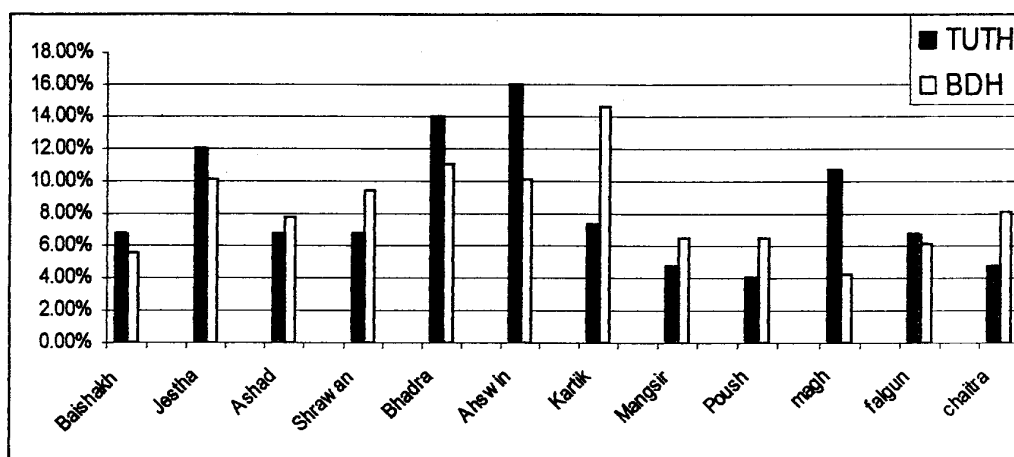
The cases of children under 15 year of age comprise the majority of the cases in BDH in sharp contrast to that of TUTH where the age group of 16-25 occupies the highest percentage of cases. The high number of reported cases of <15 children in BDH may be attributed to:

- Accidental exposure to poisons.
- Inappropriate storage and disposal of poisonous materials.
- Inadequate attention of parents to their children.



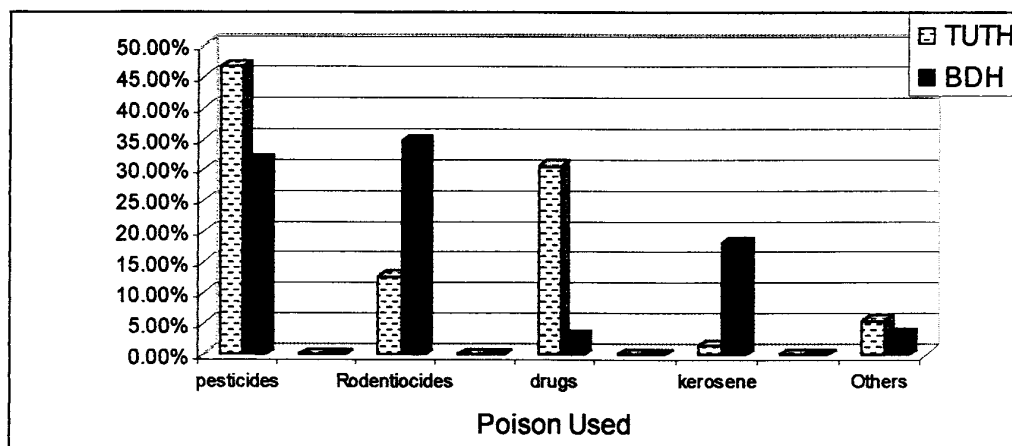
Monthly variation:

In both the centers the maximum numbers of cases were admitted during the months of Bhadra and Ashwin. There was no significant difference in distribution of the cases regarding the months of the year between the two centers except that percentage of cases was more during kartik in BDH and during magh in TUTH.



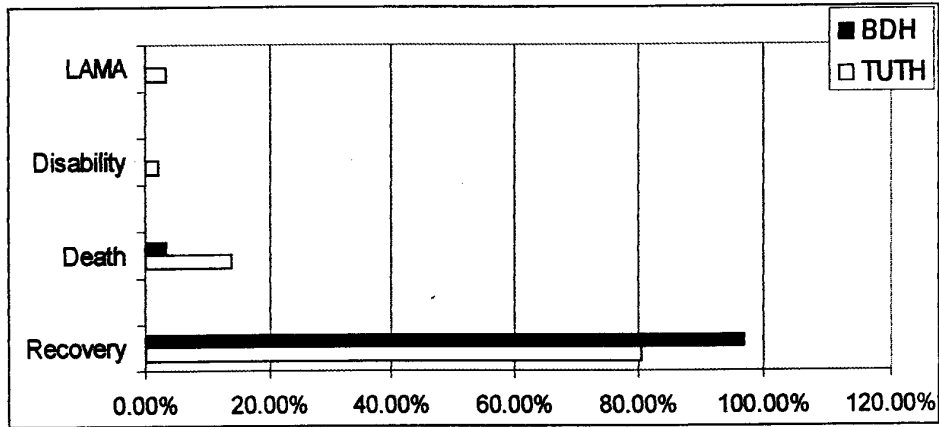
Types of poison used:

The study shows that Pesticides is the most frequently used poison in the cases admitted in TUTH while the use of rodenticides predominates among the cases in BDH. In sharp contrast to 30.66% of drug poisonings cases seen in TUTH only 2.92% of cases were found in BDH during the same period.

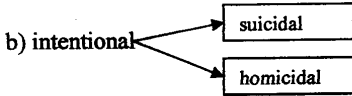


Outcome of the treatment:

Death among cases attending the TUTH for treatment was found to be higher than that of BDH. It may be due to difference in the nature and severity of the cases. This sounds very justifiable on the account of getting poisonings cases which are mostly of accidental nature.



Checklist/Proforma

- 1) Sex:-
- 2) Age:-
- 3) Address: -
- 4) Marital status:-
- 5) Occupation:-
- 6) Month on which the poison was taken:-
- 7) Type of poison:-
 - a) Pesticides b) Drugs c) Rodenticides d) mushrooms c) not mentioned d) others
- 8) Nature of poisoning:-
 - a. Accidental
 - b) intentional 

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graph LR; A[b) intentional] --> B[suicidal]; A --> C[homicidal];
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- 9) Reason for poisoning if suicidal intention:
 - a) Family conflict b) Mental illness c) Marital conflict d) not mentioned
 - e) Others (failure in exam, illegitimate pregnancy, rape, broken love affair)
- 10) Outcome of treatment:-
 - a) Death b) recovery c) disability

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