

Prevalence of Unnatural Death among Reproductive Aged Females in Varanasi Area India

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Abstract: Introduction: In our presenting study we consider reproductive age of women 15 to 45 year. Prevalence of unnatural death among reproductive aged females significantly affects community. Aim of the study: By presenting study to aware about status of prevalence of unnatural death in reproductive aged group of women to upgrade autopsy center, improve education in rural area, health delivery system. Material & method: The present retrospective study has been conducted for the period of 5 consecutive years i.e. 2009 to 2013, based on medico legal autopsy record of the unnatural death cases resulting from prevalence of unnatural deaths. Result: The year-wise distribution of deaths in women of reproductive age shows an increasing trend from 2009 to 2012 i.e. 19.23%, 21.90%, 23.04%, 24.17% respectively and in 2013 little decreases to 22.73%. Most common cause of death is burn (58 %). Predominant methods of accidental death were caused by road traffic accident (67%). Rural habitats are most common locality. Discussion Death among women of reproductive age has a marked effect on resources and management outcomes in the family and community. Conclusion: Analysis of data for retrospective study suggests that age, sex, habitat, marital status, religion and manner of death significantly affect community.

Keywords: reproductive age group, forensic autopsy, woman, medico legal case, unnatural death

1. Introduction

A woman's reproductive period is roughly from 15 to 45 years, a period of 30 years and gives birth to 15 children's, but this maximum is rarely achieved. In India, women of the child bearing age contribute 22.2%.¹The study of biologic difference between sex has emerged as a distinct scientific discipline. The integration of woman's health into internal medicines and other specialties has been accompanied by novel approaches to health care delivery, including greater attention to patient education and involvement in disease prevention and medical decision making². Women in the reproductive age group (range 12–49 years) comprise a vulnerable section of our society as they are confronted with menstrual and pregnancy-related stress factors in addition to the stressors prevalent in the general population³. WHO: Demographic definitions of infertility - an inability of those of reproductive age (15-49 years) to become or remain pregnant within five years of exposure to pregnancy⁴. Over 600000 maternal deaths occur each year worldwide. In India, many women dies due to pregnancy-related complications and those who survive suffer from severe maternal morbidity. Review of autopsy reports can prove to be one of the useful sources to identify pregnancy-related deaths and elucidating the emerging trends⁵. Pregnancy and childbirth-related complications are the leading cause of disability and death among women of reproductive age in developing countries. The death of a woman in childbirth can threaten the survival of her entire family. Many women shoulder a double burden of helping to support the family by working outside the home and taking full responsibility for household duties and child care. Yet, despite this vital role played by women in society, the high level of maternal mortality in many poor countries is strong evidence of the neglect of the health needs of women. The number of women who die each year as a result of being pregnant is not precisely known. Underreporting and misclassification

of maternal deaths are universal. A large proportion of those who die are poor and live in remote, rural areas and, thus, their deaths go unreported. In regions of the world with the highest rates of maternal mortality, deaths and their causes are rarely recorded. Although hospital data indicate high rates of mortality, most of the available information is incomplete and unreliable. To decide whether the death of a woman is a maternal death, the timing of the death in relation to the woman's pregnancy status, along with the cause of death, must be known. Often, this information is not readily available. Reported rates of maternal mortality underestimate the true magnitude of the problem by as much as 70%. Special efforts have to be made to obtain reliable data on maternal mortality. In the past, demographic studies focused generally on the socioeconomic determinants of maternal health, and epidemiologic surveys tended to concentrate on the biological processes of mortality and morbidity. By studying maternal deaths, we can begin to understand what actions need to be taken at the community level, within the formal health care system, and in other social sectors to improve prevention strategies for reducing maternal morbidity and mortality. Measures of maternal health should not focus solely on mortality. Because the factors that cause maternal deaths clearly overlap with those that cause maternal morbidity, interventions aimed at reducing maternal mortality will, in the process, reduce maternal morbidity as well⁶.

2. Aims of the Study

- 1) By presenting study to aware about status of prevalence of unnatural death in reproductive aged group of women to upgrade autopsy center, improve education in rural area, health delivery system.
- 2) To analyses the socio-epidemiological and medico legal factors involved and suggest preventive measures.

- 3) To study the pattern of unnatural deaths in women of reproductive age and to analyse the relevant factors for the same.

3. Literature Survey

Our presenting study is related to forensic medicine with epidemiological factor associated with unnatural death.

4. Material and Methods

Present study is carried out at forensic medicine department, Institute Of Medical Sciences, Banaras Hindu University, Varanasi. Relevant information and subjective data like age, sex, habitat, marital status and manner of death among reproductive age group of victims have been collected from medico legal autopsy register. Data are analyzed retrospective for periods of five consecutive years. Cases were included in death among reproductive age group on the basis of confirmation by investigating officer and corroborative finding at medico legal examination.

5. Result

The present study was undertaken from 1st January 2009 to 31st December 2013; during this period total autopsy conducted 10195 at autopsy center Varanasi. **Table 1:** Show that total unnatural deaths among reproductive age group at 15 to 45 year were 2268 cases and are 22.25% of total autopsy conducted in 5 consecutive years from 2009 to 2013. The year-wise distribution of deaths in women of reproductive age shows an progressive increasing trend from 2009 to 2012 i.e. 19.23%, 21.90%, 23.04%, 24.17% respectively and in 2013 little decreases to 22.73%. **Table 2:** Show that different cause of death among reproductive age group in decreasing order the most common cause is burn (58 %) , followed by 2nd most common is road traffic accident (13 %) and rare causes of deaths are i.e. bomb blast injury, hypothermia, infected wound, lightning, surgical alleged medical negligence, snake bite of each one case and cover total 6 case. **Table 3:** The distribution of reproductive age group of women by marital status show that 79.6% are married, 15.4% are unmarried and 4.8 % are unknown cases for which marital status not known. Most death is among 15 to 25 year married age group are 44% followed by progressive decrease with increasing age. 15 to 25 year age group also common among unmarried group followed by cases are progressively decreased with age. **Table 4:** Distribution of manner of death by death among reproductive age group of women showed that among 17% accidental victims 40% were in the 15- 25 year age group and rest are in 26 to 45 year age group. 8% suicidal victims 61% were in the 15 to 25 year and remaining suicidal victims are in 26 to 45 year. Victims are homicidal 2%. Death in 85(3.7%) cases was natural mannered with a disease being the cause of death. Unknown cases are 70% in which manner of death cannot be ascertained but most of the death victim are in 15 to 25 year age group. **Table 5:** Manner of death distribution by marital status showed that 139(75%) of suicidal victims were married, 42(23%) of the suicidal victims were unmarried and 5(3%) of the suicidal victims were unknown marital status. **Table 6:** The

predominant method of accidental death were caused by road traffic accident (67%) followed by railways accident (19%). The preponderant method of suicide was by hanging 177 cases (95%) followed by railway track 7 cases (4%). Unknown manner of death mostly comprises burn victim 1308 (83%) followed by poisoning 213 (13%) in which manner of death can't be differentiated. **Table 7:** The distribution of death among reproductive age group of women in 5 years with habitat rural habitat are most common locality 2039 (89%) followed by urban locality 140 (6.2%) and unknown habitat cover 89 (3.9%). **Table 8:** Distribution of death among reproductive age group of women in 5 years with religions in which Hindu victims are 2122 (93.6%), Muslim victims are 58 (2.6%), Christians are 2 (0.1%) and 86 (3.8%) victims in which religion not differentiated.

6. Discussion

6.1 Prevalence of deaths

Prevalence of deaths among reproductive age groups of women in 5 year our presenting study were 22.25% but other study^{3, 7} show that it is comparatively low 14.8%. The year-wise distribution of deaths in women of reproductive age shows an increasing trend from 2009 through 2012 and in 2013 little decreases.

6.2 Cause of death

The leading cause of unnatural death among reproductive age group of women in 5 years study in this regions in decreasing order of frequency were burn, road traffic accident, poisoning, hanging these are the major cause of unnatural deaths and are also proved by other study³. Natural cause of death were uncommon forming 4% of the study and included lung infection (pulmonary tuberculosis, pneumonia), cardiac disease, septicemia. Other study show that the less number of transport accidents caused deaths (8.5%) among these reproductive-age women, making it the leading external cause of death⁸.

6.3 Reproductive age and marital status

The distribution of reproductive age group of women by marital status show that married women are much more common than unmarried women Early marriage and lesser decision- making capacity in marriage matter, early motherhood, repeated pregnancies, lack of accessibility to family planning services, affect a woman's health and even life expectancy.

6.4 Manner of death

The most common manner of death in our study is unknown in which manner of death cannot be ascertained followed by accident, suicide, natural and homicides was relatively less common. Other study contrast in this regard that most common manner is suicide³. This finding implicates that the potential strategies for improving the use of advanced autopsy technique, trained in forensic medicine expert and upgrading autopsy center, Safety education and prevention of accident, Health of women must focus on understanding and addressing the suicidal behavior.

6.5 Habitat

The distribution of death among reproductive age group of women in 5 years inhabiting rural are most common followed by urban locality and these unknown habitat it is may be due to low level of education, dowry death, poor health facility. On the basis of this study, interventions such as improving education changing the health care referral structure or ensuring the presence of a trained birth attendant may have strong influences in reducing maternal mortality in this setting.

6.6 Religious

In our study religion basis distribution in which Hindu victims are most affected followed by Muslim victims are then Christians are 2 (0.1%) and 86(3.8%) victims in which religion not differentiated. This significant difference may be due to more population of Hindu than of other religion is an area. Hinduism is more ambiguous regarding suicide: whilst ostensibly condemning self-harming behavior, it may be sanctioned for religious purposes (Vijaya Kumar et al 2008)⁹.

7. Conclusion

- Unnatural deaths among reproductive age group at 15 to 45 year were 22.25% of total autopsy.
- Most common cause is burn (58 %), 2nd most common is road traffic accident (13 %).
- Marital status shows that 79.6% are married, 15.4% are unmarried.
- Accidental manner of death victims (40%) were most common and is in the 15- 25 year are most common age group.
- Manner of death distribution by marital status showed that 139(75%) of suicidal victims were married.
- The predominant method of accidental death were caused by road traffic accident (67%) followed by railways accident (19%).
- Rural habitat are most common locality 2039 (89%) followed by urban locality 140 (6.2%).
- Hindu victims are 2122 (93.6%), Muslim victims are 58 (2.6%).

8. Acknowledgement

Author would like to thank faculty and staff of department of Forensic Medicine IMS, BHU Varanasi for their valuable support and full help in data collection from autopsied cases.

9. Conflict of Interest

Nil

10. Source of Funding

This research was not financially supported by any funding agencies.

11. Ethical Clearance

The present study was approved by “Institutional Ethical Committee” of Institute of Medical Sciences, Banaras Hindu

University Varanasi. All the information has been taken under consideration of medical ethical committee.

12. Future Prospects of Study or Future Scope

Burn, road traffic accident, poisoning, hanging are the major cause of unnatural death, regarding these need make planning and implementation. New methods for measuring maternal outcomes and assessing services can be useful in emergencies and help to guide prevention efforts. By using study to aware about status of prevalence of unnatural death in reproductive aged group of women to upgrade autopsy center, improve education in rural area, health delivery system. This information may be useful to humanitarian organizations implementing health services and psychosocial education.

13. Tables

Table1: Prevalence of deaths among reproductive age group of women

Total no. Of autopsy conducted in 5 year 2009 to 2013	Total number of autopsy	Number of autopsy of reproductive aged female	% of deaths among reproductive age
2009	1986	382	19.23%
2010	2025	444	21.90%
2011	1974	455	23.04%
2012	2081	503	24.17%
2013	2129	484	22.73%
Total	10195	2268	22.25%

Table 2: Various cause of death among reproductive age group of women in 5years

S.N	Cause	Total No.	%
1	Burn	1316	58%
2	Road Traffic Accident	288	13%
3	Poisoning	216	10%
4	Hanging	178	8%
5	Natural	83	4%
6	Railways accident	78	3%
7	Drowning	38	2%
8	Traumatic Asphyxia	11	<1%
9	Electrocution	11	<1%
10	Fall From Height	9	<1%
11	Neck Injury	7	<1%
12	Strangulation	6	<1%
13	Firearm Injury	5	<1%
14	Medical Negligence	4	<1%
15	Other(bomb blast injury, hypothermia, infected wound, lightning, surgical alleged medical negligence, snake bite)	6	<1%
16	Unknown	12	1%
	Total	2268	100%

Table 3: Reproductive age group of women by marital status

Age group	married	%	unmarried	%	Un known	%	Total	%
15-25	792	44%	337	96%	32	29%	1161	51%
26-35	723	40%	9	3%	40	36%	772	34%
36-45	292	16%	4	1%	39	35%	335	15%
total	1807	79.6%	350	15.4%	111	4.8%	2268	100%

Table 4: Distribution of manner of death by death among reproductive age group of women

Age group	A	%	S	%	H	%	N	%	U	%	T	%
15-25	151	40%	114	61%	18	41%	29	34%	849	54%	1161	51.19
26-35	106	28%	55	30%	14	32%	28	33%	569	36%	772	34.04
36-45	116	31%	17	9%	12	27%	28	33%	162	10%	335	14.77
total	373	17%	186	8%	44	2%	85	3.7%	1580	70%	2268	100

Note: (A- Accidentals; S – Suicidal; H-Homicidal; N-Natural; U-Unknown-Total)

Table 5: Distribution of manner of death by marital status in reproductive age group of women in 5 years

MS	A	%	H	%	N	%	S	%	U	%
1.MR	262	70%	33	75%	51	60%	139	75%	1322	84%
2.UM	79	21%	7	16%	7	8%	42	23%	215	14%
3.UN	32	9%	4	9%	27	32%	5	3%	43	3%
TOTAL	373	100%	44	100%	85	100%	186	100%	1580	100%

Table 6: Distribution of manner of death by cause of death among reproductive age group of women in 5 years

S.N.	Cause	A	%	H	%	N	%	S	%	U	%	T	%
1.	Burn	8	2%	0	0%	0	0%	0	0%	1308	83%	1316	58%
2.	Road Traffic Accident	252	67%	27	63%	0	0%	0	0%	9	1%	288	13%
3.	Poisoning	1	0%	0	0%	0	0%	2	1%	213	13%	216	10%
4.	Hanging	1	0%	0	0%	0	0%	177	95%	0	0%	178	8%
5.	Natural	0	0%	0	0%	83	98%	0	0%	0	0%	83	4%
6.	Railways	71	19%	0	0%	0	0%	7	4%	0	0%	78	3%
7.	Drowning	2	1%	0	0%	0	0%	0	0%	36	2%	38	2%
8.	Traumatic Asphyxia	11	3%	0	0%	0	0%	0	0%	0	0%	11	<1%
9.	Electrocution	11	3%	0	0%	0	0%	0	0%	0	0%	11	<1%
10.	Fall From Height	9	2%	0	0%	0	0%	0	0%	0	0%	9	<1%
11.	Neck Injury	0	0%	6	14%	0	0%	0	0%	1	0%	7	<1%
12.	Strangulation	1	0%	5	12%	0	0%	0	0%	0	0%	6	<1%
13.	Firearm Injury	0	0%	5	12%	0	0%	0	0%	0	0%	5	<1%
14.	Medical Negligence	2	1%	0	0%	2	2%	0	0%	0	0%	4	<1%
15.	Other	5	1%	0	0%	0	0%	0	0%	1	0%	6	<1%
16.	Unknown	0	0%	0	0%	0	0%	0	0%	12	1%	12	1%
	Total	373	100%	44	100%	85	100%	186	100%	1580	100%	2268	100%

Table 7: Distribution of death among reproductive age group of women in 5 years with habitat

S.N	Habitat	Frequency	%
1.	Rural	2039	89.9
2.	Urban	140	6.2
3.	Unknown	89	3.9
	total	2268	100

Table 8: Distribution of death among reproductive age group of women in 5 years with religions

S.N	Religions	Frequency	%
1.	Christian	2	0.1
2.	Hindu	2122	93.6
3.	Muslim	58	2.6
4.	Unknown	86	3.8
	total	2268	100

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