

Investigation of causes of death in the rural people of Medak district under DRDA insurance scheme: A retrospective analysis

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Abstract

Background: Verbal autopsy is the one of the best scientific method to investigate the causes of death where cause of death is unpredictable. The investigation of causes of death helps to have proper planning of preventive measures to minimize the mortality. DRDA- IKP insurance scheme for rural landless people register the deaths and its possible cause of death. **Objective:** To investigate causes of deaths among rural insured Persons under DRDA-IKP scheme. **Methodology:** The DRDA-IKP Sangareddy district entrusted MNR Medical College, Department of Community Medicine, to investigate and verify the causes of deaths of insured members during the years 2012 to 2013. Out of the 46 mandals 30 were selected on the basis of 30 cluster sampling technique. Effective sample size turned out to be 210. Pre-designed and pre tested questionnaire modified from WHO verbal autopsy questionnaire was used. The adult person preferably 1st degree relative in the household of the diseased was interviewed to answer the questionnaire. Collected data were analyzed with statistical method. **Results:** Out of total 210 insured persons 73.81% were male and 26.19% were female. The highest numbers of deaths 26.67% were reported in the age group 41-50. The major causes of deaths were circulatory diseases (41.43%) and parasitic diseases (16.67%) **Conclusion:** Hence, we conclude that non communicable disease was major cause of death among rural people with lower economic status.

Keywords: Cause of Death, SERP, DRDA-IKP, Insured, Verbal Autopsy, Bima Mitra.

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INTRODUCTION

India is experiencing rapid health transition with a rising burden of non-communicable diseases causing significant morbidity and mortality both in urban and rural population with considerable loss in potentially productive years of life.¹ The SERP (Society for Elimination of rural poverty) has implemented community run insurance covering one crore individuals

consisting of 70 lakh households under various insurance schemes for the poor and also informed that on average 70,000 deaths are registered per annum and requested to find out cause of death so that government can get detailed insight into various major killer diseases and can put in place preventive measures.² The Government of Andhra Pradesh envisioned that the poorest of the poor, particularly the Landless Agricultural Labourers, men and women, deserve access to relevant and affordable insurance and be protected from risks of death and disability. Andhra Pradesh Rural Poverty Reduction Project (APRPRP) by name INDIRA KRANTHI PATHAM (IKP) project was launched on 4th September 2002 in Medak District. The names of the schemes are Aam Admi Bima Yojana (AABY), Janashree Bima Yojana (JBY), Other Group Insurance (OGI) and Credit Insurance (CI). Estimation of disease burden in a population provides a basis for setting up priorities in health programmes. The causes of death statistics is therefore essential for a meaningful planning of health

care and allocation of resources. In developing countries, where four-fifth of world's deaths occurs, estimation of causes of death is difficult due to insufficient coverage of vital registration and low reliability of the cause of death in the death certificate. The reason for such low reliability is primarily due to the non-attendance of majority of deaths by qualified medical practitioners and also tendency to assign deaths to unclassifiable categories.^{2,3} Thus the present study was undertaken on investigation of cause of death among people with AABY and ABH insurance policy holders by request from DRDA Medak District.

MATERIAL AND METHODS

The study was an observational study among insured persons in rural areas of Medak district was carried out in Department of Community Medicine, MNR Medical College, Sangareddy, (TS) during November 2013 to February 2014. Necessary information regarding the person insured under AABY (Aam Admi Bima Yojana) and ABH (Abhaya Hastham) schemes in the district and the number of these insured who died during the April 2012-March 2013 was obtained from the DRDA project office. It was found that the district has 46 Mandals. A total of 2121 people between age group 18 to 60 years died under the various scheme during year 2012-13. As per the terms of reference we are required to survey minimum 10% of the total deaths that occurred among the insured persons under AABY, ABH and EGS scheme. The mandal and village wise lists of insured persons were prepared with the help of the nodal agency. Out of the 46 mandals, 30 were selected on the basis of 30 cluster sampling technique. Totally 210 insured people; 7 from each mandal (140 deaths under AABY, 45 deaths under ABH and 25 deaths under EGS) were taken as study sample. In all 210 cases, a responsible adult person preferably 1st degree relative in the households of the insured death was interviewed using questionnaires. The additional information was obtained from the Bima Mitra (grass root level worker for DRDA), neighbors/village heads/members of self help groups of the villages for confirming the data. The team (one faculty and one assistant doctor) visited household of the insured for interviewing. The questionnaires used in this project were based on the validated verbal autopsy tools used by WHO with modifications made to suit local terminology. The cause of death was classified according to ICD-10. The collected data were analyzed with proper statistical methods.

RESULTS

Table 1: Distribution of the Deceased according to their age and sex

Age (Years)	Male (%)	Female (%)	Total (%)
18-30	18 (11.61)	02 (03.64)	20 (09.52)
31-40	41(26.45)	10 (18.18)	51 (24.29)
41-50	61 (39.36)	22 (40.00)	83 (39.52)
51-60	35 (22.58)	21 (38.18)	56 (26.67)
Total	155 (100)	55 (100)	210 (100)

In table above, out of 210 insured person's highest numbers of deaths 39.52% were reported in the age group of 41-50 years followed by 26.67% in 51-60 years. Among the deaths 155 persons were male and 55 persons were female.

Table 2: Distribution according to demographic profile

Variable	No. of Deceased (n=210)	Percentage
Education	Illiterate	78.57
	Primary	09.05
	High school	08.10
	Intermediate	02.38
	Graduate and Above	01.90
Occupation	Employed	01.90
	Self employed	09.05
	Semi skilled	10.00
	Skilled labor	03.34
	Manual labor	71.43
	Housewife	01.90
	Unemployed	01.43
Caste	Others	00.95
	ST	06.67
	SC	48.09
	BC	21.91
	OC	03.33
Socioeconomic Status	OBC	20.00
	Class IV	16.19
	Class V	83.81

The table above describes demographic profile of the death persons. Majority of the persons were illiterate (78.57%). The majority of the persons were engaged as manual labourer (71.43%). The persons were belonging to SC (48.09%) followed by BC (21.91%) category. About 176 persons (83.81%) belonged to lower (V) class and 34(16.19%) belonged to upper lower (IV).

Table 3: Distribution of Deceased according to Mode of Death

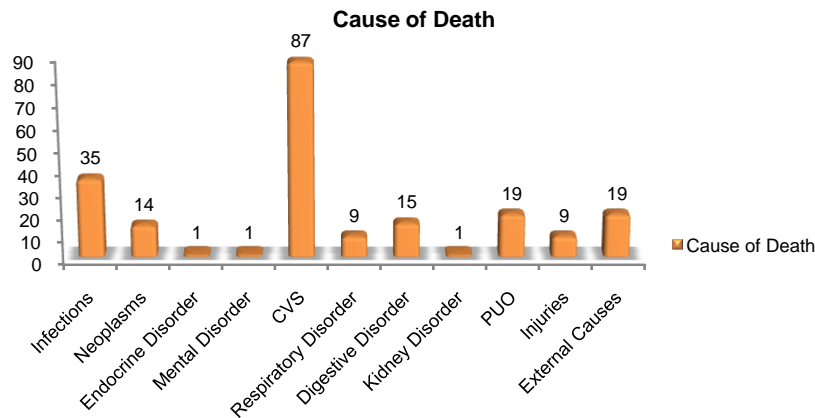
Sr. No.	Mode of Death	Frequency	Percent
1.	Natural	180	85.71
2.	Accident	30	14.29
	Total	210	100

In the study among 210 deaths, majority of deaths 180 (85.71%) were natural while 30 (14.29%) deaths were accidental.

Table 4: Distribution of Deceased according to Cause of Death

Sr. No	Cause of Death	No. of Deceased	Percentage
1	Certain Infectious and Parasitic Disease (A00-B99)	35	16.67%
2	Neoplasm's (C00-D48)	14	06.67%
3	Endocrine, Nutritional and Metabolic Diseases (E00-E90)	01	00.47%
4	Mental and Behavioral Disorders (F00-F99)	01	00.47%
5	Diseases of the Circulatory System (I00-I99)	87	41.43%
6	Diseases of the Respiratory System(J00-J99)	09	04.29%
7	Diseases of the Digestive System (K00-K93)	15	07.14%
8	Diseases of the Genitourinary System (N00-N99)	01	00.47%
9	Symptoms, Signs and Abnormal Clinical and Laboratory Finding, not Elsewhere Classified (R00-R99)	19	09.05%
10	Injuries, Poisoning and Certain Other Consequences of External Causes (S00-T98)	09	04.29%
11	External Causes of Morbidity and Mortality (V01-Y98)	19	09.05%
	Total	210	100%

The above table shows that majority of deaths occurred due to circulatory system (41.43%) followed by infectious diseases (16.67%).



DISCUSSION

The present observational study was conducted among insured persons in rural areas of Medak district by Department of Community Medicine, MNR Medical College, Sangareddy, (TS). Out of the 46 mandals, 30 were selected on the basis of 30 cluster sampling technique. A total of 210 insured death people; 7 from each mandal (140 deaths under AABY, 45 deaths under ABH and 25 deaths under EGS) were taken as study sample. In the study, out of 210 insured person's highest numbers of deaths 39.52% were reported in the age group of 41-50 years followed by 26.67% in 51-60 years. Among the deaths 155 (73.81%) persons were male while 55 (26.19%) were female. Similarly in study conducted by Palanivel⁴ *et al.* the causes of death in rural adult population of North India using verbal autopsy tool revealed 61% of deaths occurred among males and 59% occurred among those aged ≥ 60 years. In the study majority of the persons were illiterate (78.57%). The majority of the persons were engaged as manual labourer (71.43%). The persons were belonging to SC (48.09%)

followed by BC (21.91%) category. About 176 persons (83.81%) belonged to lower (V) class and 34(16.19%) belonged to upper lower (IV). In the study among 210 deaths, majority of deaths 180 (85.71%) were natural while 30 (14.29%) deaths were accidental. In the study it was observed that majority of deaths occurred due to circulatory system (41.43%) followed by infectious diseases (16.67%). These findings were relatively similar with our study. In a similar kind of study conducted by Bathula⁵ *et al.* by verbal autopsy showed predominance of lifestyle diseases (52%) followed by infectious diseases (35%) and accidental deaths (12%). In a similar kind of study done by Joshi⁶ *et al.* in Andhra Pradesh revealed that diseases of the circulatory system were the leading causes of mortality (32%). Health is a consequence of an individual's lifestyle and the factors in determining it. A healthy lifestyle requires a good health promotion. In recent years non-communicable diseases were on rise in leading cause of deaths in rural India where the risk of illness and death linked with poor sanitation, nutrition, personal hygiene, elementary human

habits, customs and cultural patterns. The implications of these study results are substantial. The individuals living in rural India are probably now at much greater risk of death from chronic or non-communicable conditions than from communicable diseases. The primary healthcare system in rural India appears to have been very effective in dealing with the problems of infectious diseases and maternal and child health, it is less well equipped to deliver care and prevention for chronic diseases. An urgent reorientation of the health delivery system is required to enable the implementation of evidence-based strategies that can address this new challenge of non-communicable conditions.

CONCLUSION

The impact of non communicable diseases on the lives of people is serious when measured in terms of loss of life, disablement, family hardship and poverty. The major causes of death were due to circulatory diseases in rural people belonging to low socio-economic class.

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