REVIEW OF RESEARCH
IMPACT FACTOR : 5.7631(UIF) UGC APPROVED JOURNAL NO. 48514 ISSN: 2249-894X
VOLUME - 8 | ISSUE - 5 | FEBRUARY - 2019

DETERMINANTS OF INFANT MORTALITY IN SAIHA TOWN, MIZORAM

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ABSTRACT :

This paper presents the situational analysis of infant mortality and mothers' health during pregnancy in Saiha town, Mizoram. Saiha town is in Saiha district which has the highest infant mortality rate among the eight (8) districts of Mizoram. Set of indicators such as contraceptive, birth interval, vaccination, Iron Folic Acid (IFA) in-take and nutrition were used to study their impact on infant mortality and mothers' health. This paper also takes into account the symptoms developed by infants at birth, treatments and diseases that caused infant mortality. In this study, the household and individual level factors associated with infant mortality in Saiha Town were examined.

KEYWORDS : *Infant mortality, health, symptoms, diseases, measures.*

INTRODUCTION:

The term infant is typically applied to young children between the ages of 1 month and 12 months. Infant mortality is the number of deaths of infants under one year old per 1000 live births. Infants are defined in demography as exact age group, namely , age 'Zero' , or those children in the first year of life, who have not yet reached age one.

This study highlights the severity of infant mortality in Saiha town, Mizoram and suggests measures for the reduction of infant mortality in the study area in particular and for Mizoram as a whole.

SIGNIFICANCE AND SCOPE OF THE STUDY

Significance

India's performance in reducing infant mortality rates is rather poor. Though the long term reduction is noteworthy, the concern is that it is declining at a slower pace during the recent years. A wide inter -state variations exists in infant mortality where weaker states have IMR higher than the national average. The infant mortality rate is affected by a large number of socio-demography and economic factors. These factors were analysed in the study to have a better insight of the IMR in the study area.

Scope of the Study

The area of study is Saiha town which is in Saiha District, the 8th district of Mizoram, India. It is the third most populous district in Mizoram with a population of 56,574 where males constitute 28,594 of the population and female 27,980 according to the town-wise population of Mizoram. According to Census 2011, Saiha District has an average literacy rate of 90.01%, male literacy is 92.64%, and female literacy is 87.34%. In Saiha district, 16% of the population is under 6 years of age. The district has the highest IMR in the state.

There has been a strong need for the situational analysis of infant mortality rate in Saiha District, Mizoram. It has recorded the highest numbers of IMR consecutively for many years in all the districts of Mizoram and the reason of this high rate is remain mostly unknown. Positive outcome oriented interventions has not been fruitful in the area. To achieve the Goals of MDG and to reduce the IMR there is a need to do specific intervention and their better implementation at grass root level. The study, therefore, was done to determine the factors causing this mortality and also suggest remedial measures for policy implications.

OBJECTIVES OF THE STUDY

1. To examine set of indicators causing the infant mortality in the study area.
2. To suggest measures for the reduction of infant mortality within the study area.

RESEARCH QUESTIONS

1. Is lack of availability of medical care a contributing factor to infant mortality?
2. Does the state government adopt any measures for the reduction of the causes of infant mortality in the study area?

METHODOLOGY

A case study on Saiha town was collected through structured questionnaire. The study covered a period of 6 years i.e, 2011-2016 and a total number of 57 samples were drawn from Saiha town among mothers whose infant died during these years. A set of indicators such as contraceptive, birth interval, vaccination, Iron Folic Acid (IFA) in-take and nutrition were used to study their impact on infant mortality. Data was also collected on the symptoms developed by infants at birth, treatments and diseases that caused infant mortality. In this study, the household and individual level factors associated with infant mortality in Saiha District was examined.

DATA ANALYSIS

- ***Use of Contraceptives and Birth Interval***

In the past years, a revolution has transformed women's health care. One of the revolutions is the development of contraceptives for women to have spaces in giving births. These contraceptives are of different types and the common ones are oral pills, injections and vaginal insert contraceptives.

The contraceptive practices of the respondents is shown in table 1, where 48 respondents said that they did not adopt any types of contraceptives and 6 respondents said they used oral pills.

Table No. 1: Adoption of Contraception Practice

	2011	2012	2013	2014	2015	2016	Total
Yes	1	2	1	1	1		6
No	9	7	8	9	8	7	48
Can't say	-	1	1	-	-	-	2

Source: Field Survey

Different studies on women's health have stated that prolonged use of contraceptives often leads to breast cancer, deformity and prematurity of infants and infant's death. As seen in the table, maximum numbers of our respondents do not adopt any types of contraceptives therefore, it can be concluded that using contraceptives is not a contributing factor to infant mortality in Saiha Town.

Pregnancies starting less than two years after a previous birth are more likely to result in birth before the expected date, low birth weight and infant mortality. Adequate birth spacing is required for

mothers' to recover from the physical impacts of pregnancy and giving birth. To show the birth space interval table no. 2 is presented.

Table No. 2: Birth Space Interval

Years	2011	2012	2013	2014	2015	2016	Total
0-1	1	4	2	2	5	1	15
1-2	9	4	6	6	1	2	28
Above 3 or more	-	-	2	2		3	7

Source: Field Survey

The study shows that space interval of less than 2 years is practiced the most within the study period from 2011-16, which is followed by less than 1 year spacing practice. Health practitioners are of the views that having less than 2 years birth interval is harmful for both the mother and the child, especially with lack of health care facilities. Therefore, it can be concluded that narrow gaps in birth intervals is a contributing factor to IMR in Saiha Town.

- ***Ante- Natal Care***

There are many factors contributing to infant mortality, one important factor is the condition of the mother during her pregnancy which needed care and medical treatments. If ante-natal care is not taken by a mother there can be several negative impacts on the health of not the mother but also of the child. Table no.3 shows the care received by the respondents during pregnancy (i.e, for 9 months) at the institutions.

Table No.3: Ante-natal Care (Institution)

Institutions	2011	2012	2013	2014	2015	2016	Total
HSC	9	10	10	10	10	7	56
PHC	1	1	-	-	2	-	4
CHC	1	1	-	-	2	-	4
ASHA	8	7	10	7	9	5	46

Source: Field Survey

The institutions included in the survey were Health Sub-Centers (HSC), Primary Health Centers (PHC), Community Health Centers (CHC) and Accredited Social Health Activist (ASHAs). 56 respondents visited Sub-Centers and 46 visited ASHA during their pregnancy for consultation and examining their conditions. Therefore, all the respondents took ante natal measures during their pregnancy.

- ***Vaccination Status of Mothers during Pregnancy***

Vaccination protect pregnant women and their babies against serious diseases, this means that vaccination is a must during pregnancy. There are vaccines such as measles, mumps, rubella vaccines which should be given a month or more before pregnancy. Other types of vaccines, like Tdap vaccines should be taken during pregnancy. The following table no. 4 deals with the immunization status of mothers during pregnancy.

Table No. 4: Vaccination Status of Mothers during Pregnancy

Status	2011	2012	2013	2014	2015	2016	Total
Immunized	10	10	10	10	10	7	57
Full dose	10	10	10	10	8	6	54

Source: Field Survey

From this table, it can be seen that 57 out of 57 respondents were vaccination. However, 3 respondents did not complete the full dose of immunization process. From this finding, we can say that lack of vaccination is not one of the causes of infant mortality in the study area.

- ***Intake of Iron Folic Acid (IFA) Tablets by Pregnant Women***

Daily oral iron and folic acid supplementation is recommended as part of the antenatal care to reduce the risk of low birth weight, maternal anaemia and iron deficiency which may also cause death of infants especially during the first trimester.

Table No. 5: Intake of IFA Tablets by Mother

Intakes	2011	2012	2013	2014	2015	2016	Total
IFA tablets given	10	10	10	10	10	7	57
Full dose of 100 tablets	8	8	9	8	4	3	40

Source: Field Survey

In table no.5, the intake of Iron Folic Acid Tablets by the respondents is shown, 57 respondents received the full dose of IFA tablets but only 40 of them actually consumed the full dose. Therefore, it can be concluded that lack of IFA intake is an attributing factor contributing to infant mortality in Saiha Town.

- ***Supplementary Nutrition from Integrated Child Development Services (ICDS)***

Not less than 300 extra calories are needed daily during pregnancy. These calories should come from balanced diets of proteins, fruits, vegetables, and whole grains, with sweets and fats kept to the minimum. In India, Integrated Child Development Services (ICDS) schemes provide supplementary nutrition for pregnant and lactating women to improve the capability of the mother to maintain a balanced diet during pregnancy.

Table No.6: Supplementary Nutrition from ICDS

Status	2011	2012	2013	2014	2015	2016	Total
Supplement given	4	3	5	6	5	5	28
Supplement not given	6	7	5	4	5	2	29
Advised for proper Nutrition	6	3	5	6	5	5	30
Not Advised	4	6	4	4	3	2	23

Source: Field Survey

28 mothers received nutrition while 29 mothers did not receive supplementary nutrition provided by ICDS in their respective areas. Out of these 57 respondents, only 30 were advised properly for proper

nutrition and 23 mothers were not. Therefore, it can be said that supply of nutrition is inadequate and proper advice on how to consume these supplements were not given. Proper advice by experts in taking proper care of infants and advices on how to breastfeed the child, to keep them warm and cleanliness is vital for healthy child.

- **Symptoms Developed by Infant After Birth & Treatments**

As for the mother and families, there are also some signs for the newborn to be identified and respond to. They have to be advised to seek care immediately if the baby developed difficulty in breathing, fever, bleeding, not feeding etc. A baby who had difficulties in breathing at the time of birth should be carefully monitored over the next 24 hours. Mothers who are very young; who involved in hard work during pregnancy; or who are over- or underweight, or have suffered infections and diseases during pregnancy are at a greater risk of giving birth to a low birth weight baby. All these symptoms have to be carefully watched over immediately after birth of the infant, which is more crucial in the first few weeks.

Table No.7: Symptoms Developed after Birth

Symptoms developed after birth	2011	2012	2013	2014	2015	2016	Total
Yes	3	3	4	5	3	-	18
No	7	7	6	4	7	5	36
Type of Symptoms							
Fever	1	1	2	5	1	-	10
Not Crying	1	1	1	1	-	-	4
Rigidity	-	-	-	-	-	-	-
Drowsiness	-	-	-	-	-	-	-
Not taking feed	1	2	1	1	1	-	6
Others	1		1		1	-	3
Places of Care							
Home	-	1	-	1	-	-	2
Hospital	3	2	4	4	3	-	16

Source: Field Survey

Table no.7 reveals the various symptoms of illness developed by infants and place where these symptoms were treated. There are 36 responding mothers who said that their infants did not develop any symptoms of illness after birth and 18 mothers claimed that their infant developed some symptoms. Among these 10 infants developed fever, 4 infants did not cry after birth, 6 infants are not taking feeds. The study also showed that only 2 infants were treated at home and 16 infants were taken care of at the local hospital. Thus, our study shows that many infants developed illness in the first few weeks and these symptoms were mostly treated in the hospital. From the empirical analysis, it can be said that just over 33 % infants developed illness after birth and these infants were treated in the Saiha hospital. Even though they were treated in the hospital, these infants could not survive. Thus, we concluded that facilities provided and the treatment procedures are not satisfactory.

Immediate attention is required to treat infants who developed any of the above symptoms, especially by experts. Neglect in this area could proof fatal to infants. Table no.8 shows treatment of sick infants by experts.

Table No.8: Treatment of Sick Infant

Medical Practitioners	2011	2012	2013	2014	2015	2016	Total
Doctor	2	2	3	6	2	1	16
ANM	-	1	-	1	-	-	2
ASHA	-	-	-	-	-	-	-
RMP	-	-	-	-	-	-	-

Source: Field Survey

The infants were treated by Doctors, Auxiliary Nurse Midwifery (ANM), Accredited Social Health Activist (ASHA) or Registered Medical Practitioner (RMP). From the table, it can be seen that out of the 57 infants only 16 sick infants were attended by doctors and 2 by Auxiliary Nurse Midwife. Therefore, from this finding, it can be concluded that medical care provided by the institution in Saiha town is not satisfactory for treatment of infants and also there are only few numbers of paediatricians to care for sick infants.

- ***Diseases that Caused Infants Death***

The three major causes that accounts for all neonatal deaths in India are prematurity and low birth weight, neonatal infections and birth asphyxia. Most infant deaths in India are not medically endorsed since majority of the deaths took place at home in villages and without prior attention by a medical worker. The various diseases that caused infant deaths in the study area are birth asphyxia, low birth weight, infections, hypothermia, septicemia etc. as presented in the table no.9.

Table No.9: Diseases of Infants

Causes of Death	2011	2012	2013	2014	2015	2016	Total
Birth Asphyxia	-	-	-	-	1	-	1
Low Birth Weight	1	1	-	2	-	-	4
Infection	2	3	3	3	2	1	14
Hypothermia	-	1	-	-	-	1	2
Septicemia	3	1	1	2	1	1	9
Pneumonia	-	1	1	1	2	-	5
Fever	-	1	-	-	-	-	1
Unknown	3	2	5	2	4	3	19
Others	1	-	-	-	-	1	2

Source: Field Survey

Findings from the survey reveals the various causes of infant deaths from 2011 to 2016 (June) shown in the table above which includes birth asphyxia, Low Birth Weight, Infections, Hypothermia, Septicemia, pneumonia etc,. The unknown reason claimed the highest fatality among infant deaths followed by infections and septicemia. This is based on knowledge of mothers on the conditions of their infants. Some responding mothers knew the exact cause of their infant's death while some did not. This finding also shows the lack of medical practitioners in the study area.

RESULTS:

Indicators were selected such as contraceptive use, birth interval, vaccination and supplementary nutrition to examine whether they are a factor that causes infant mortality in Saiha Town. The results are as follows:

- Contraceptives use by mothers is not a contributing factor to infant mortality in Saiha Town.
- Narrow gap in birth intervals is one of the reasons that causes continual rise in IMR in Saiha Town.

- Lack of vaccination is not one of the causes of infant mortality in the study area.
- Lack of Iron Folic Acid (IFA) intakes of mothers during pregnancy is an attributing factor contributing that causes infant mortality in Saiha Town.
- The supply of nutrition by ICDS is inadequate in the study area and proper advice on how to consume these supplements were not given to pregnant women.
- Over 33 % infants developed illness after birth and these infants were treated in the hospitals of Saiha Town. Even though they were treated in the hospital, these infants could not survive. Thus, we concluded that medical care provided by the institution in Saiha town is not satisfactory for treatment of infants and also there are only few numbers of pediatricians to care for sick infants. *This finding placated our first research question whether lack of availability of medical care is a contributing factor to infant mortality in Saiha.*
- An unidentified cause claimed the highest fatality among infant deaths followed by infections and septicemia. There is no specific measure adopted so far by the government to eliminate these diseases. *This finding supported our second research question about the two main diseases that caused infant mortality in Saiha District and whether the State government adopted any measures to reduce these two diseases.*

DISCUSSION AND SUGGESTIONS:

- It is important to assess women's perception and awareness of the effect of birth interval of mothers. Optimal birth interval is to be at least 3 years or more for healthy outcome of both the mother and infant. This information can be provided from health facilities, mass media, family members and friends. There is need for in depth education on the benefits of appropriate birth spacing to be included in outreach programs on maternal and child health.
- Aspect of prenatal care information are most effectively encouraged and monitored through meetings with a skilled health worker before, during and after pregnancy. The implementation of law of minimum age for marriage, easy access to health facilities must be initiated for the improvement of prenatal care.
- To provide for paediatric specialists requirements there is need to set up paediatric hospital to care for the children. There is also need for up gradation of existing Saiha hospital infrastructure for infant care.
- There is a need for more specialists in child care to offer preventive health maintenance and medical care to reduce infant mortality and healthy lifestyles for the mothers. Steps should be taken to attract these specialists in our study area such as attractive incentives, improving working conditions of paediatricians, good environment of work.
- The study area observed high number of infant deaths below three months. More initiatives are required to bring this number down by providing better care at home and in health facilities. More outreach programs are to be initiated among families about the importance of providing good environment for mother and child during pre and post natal period.
- Supplementary nutrition provided through ICDS to be monitored more closely and vigilantly by authorities and NGOs. Awareness among beneficial families must be raised. Mothers must be educated more on importance of having proper nutrition during and after pregnancy. Home visits by health workers to be more frequent and nutritional intakes should be carefully monitored throughout the pregnancy process.

CONCLUSION

Based on the findings from the empirical study, there is an urgent need for a comprehensive approach to reduce Infant Mortality Rate in Saiha Town. Consciousness among women about antenatal and post natal care should be promoted at full scale to reach every corner of the district. Awareness programmes on health and healthcare facilities should be launched for the households in general and women in particular. Proper implementation of all these measures is hoped to reduce IMR not only in Saiha but also in

Mizoram as a whole. Lack of basic socio-economic infrastructure supporting infant survival in the study area is the main factor that increases the trend of infant mortality in Saiha. More efforts on the part of the Government of Mizoram and various agencies as well as its people in general are requisite so as to reduce infant deaths in the district. The findings and suggestions is hoped to have some policy implications for the policy makers for reducing infant mortality in Saiha District as well as the state of Mizoram.

REFERENCES:

Chandrakant et.al (2010), 'Burden, Differential and Cause of Child Deaths in India', *Indian Journal of Paediatrics*, 77(11): pp1312.

Dwivedi, S.N, Begum S, Dwivedi, A.K, Pandey, A (2013),'Determinants of Infant Mortality in Rural India: A Three-Level Model,' *Journal of Health,* 5: pp1742-1749.

Hobcraft, J(1993),'Women's Education, Child Welfare and Child Survival: A Review of Evidence', *Health Transition Review ,* 3(2): pp 159-175.

Mathews, T.J, MacDorman, M.F (2010),' *Infant Mortality Statistics from the 2006 Period Linked Birth/ Infant Death Data Set,*' National Vital Statistics Report, 62, Number 8 ,30;58(17): pp1-31.

Millennium Development Goals (MDGs) (2015), '*India Country Report 2015',* Government of India, Ministry of Statistics and Programme Implementation. New Delhi.

Million Death Study Collaborators (2010), 'Causes of Neonatal and Child Mortality in India: A Nationally Representative Mortality Survey,' *Lancet,* 376: pp 1853-1856.

Norton, M (2005),'New Evidence on Birth Spacing: Promising Findings for Improving Newborn, Infant, Child, and Maternal Health', *International Journal of Gynecology and Obstetrics*, 89: pp S1-S6.