Original Article

A Study On The Child Mortality Rate In Udalguri District Of Assam

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Abstract

The child mortality rate is thought to be a sensitive measure of a nation's health and well-being. International organizations and national governments have acknowledged the need to emphasize their efforts to increase child survival. Inequality in child health in India is seen on a number of levels. In India, there is evidence of inequality in a number of areas related to child health, according to several sources. Data on children who have ever been born and kids who have ever survived were collected from India's 2011 census. In the majority of Assam districts, child mortality rates significantly decreased. The districts of Udalguri, Kokrajhar, Dhubri, Hailakandi, and Darrang are still very distant. Tinsukia and Dibrugarh have demonstrated improvements above their prior performance. Situation in rural areas is better than it was five years ago. In order to achieve the right fix by various developmental goals, more effort should be put forward to lower the child death rate.

Keywords: mortality, child, death.

Introduction

Assam is an economically underdeveloped state, and its child mortality rate is greater than that of several other economically developed Indian states. In order to determine the various socio-demographic parameters influencing the child mortality rate in the Udalguri district of Assam, an attempt has been undertaken. This paper will analyze the child mortality rate in Udalguri district of Assam and emphasize the many variables influencing it. In addition, the child mortality trend during the previous several years in the Udalguri district of Assam will be examined. As a result, an effort has been made to identify the various socio-demographic and economic factors influencing the child mortality rate in the Udalguri district of Assam. Additionally, some modest recommendations have been made to lessen the severity of the factors affecting the child mortality in order to reduce child mortality in the district to a certain extent. Children are viewed as one of a country's most significant resources. Therefore, every government or nation with a goal of success ought to safeguard and take good care of the children. Child mortality is one of several factors that determine a country's living standards, making it an important sensitive indicator. According to UNICEF[19], 8.1 million children worldwide who passed away in 2009 before turning five years old resided in underdeveloped countries and died from a sickness or a combination of diseases that might have easily been avoided or cured. Additionally, it was revealed that only five countries—India, Nigeria, the Democratic Republic of the Congo, Pakistan, and China—were responsible for half of these fatalities, with India and Nigeria jointly responsible for one-third of all fatalities among children under the age of five globally. The high newborn and child mortality rates are caused by a variety of biological and socio-cultural causes. The economically developed nations were able to lower their mortality rates to under 10 per thousand people in large part by giving their citizens access to enough and healthy food, clean drinking water, improved medical facilities, better sewage disposal, and effective disease control methods.

When babies and young children are inadequately prepared to handle illness, their environment has a direct impact on their chance of dying. The other reasons include inadequate nourishment and a lack of fundamental cleanliness. The mother's health and nutrition, age, previous births number, spacing between them, and prenatal care, among other factors, all have a significant impact on the baby's survival while it is in the mother's womb. Poor delivery care, insufficient or nonexistent vaccination, insufficient or nonexistent breastfeeding, and poor supplement feeding methods all increase the risk to the kid. Thus, different social, cultural,

demographic, and health-care considerations have a different impact on the parameters that determine a child's chance of survival. In light of the background information provided above, an effort has been made to examine the primary causes of child fatalities as well as numerous contributing variables in this study.

Table 1: Distribution of child mortality according to age

Categories	Live birth	Surviving children	No. of death			Mortality rate (per 1000 live birth)
			Male	Female	Total	
Below 1 year	85	75	4	6	10	117.65
1–5 year	168	150	8	10	18	107.14
5–14 year	351	337	8	6	14	39.89`
(0–14 years)	604	562	20	22	42	69.54

Table 2: Causes of death according to age

Categories	Causes of death	Male	Female	Total	Percentage
0–1 years	Birth asphyxia	1	1	2	20.00
	Low birth weight	0	3	3	30.00
	Neonatal infection	1	0	1	10.00
	Pneumonia	1	1	2	20.00
	Diarrhea	1	1	2	20.00
	Sub-total	4	6	10	100
1–5 years	Birth asphyxia	0	1	1	5.56
	Diarrhea	3	5	8	44.44
	Jaundice	1	1	2	11.11
	Respiratory problem	0	1	1	5.56
	Pneumonia	3	1	4	22.22
	Fever, unspecified	1	1	2	11.11
	Sub-total	8	10	18	100
5–14 years	Animal bite	1	0	1	7.14
	Diarrhea	2	1	3	21.43
	Dysentery	0	1	1	7.14
	Fever, unspecified	4	2	6	42.86
	Jaundice	1	2	3	21.43
	Sub-total	8	6	14	100

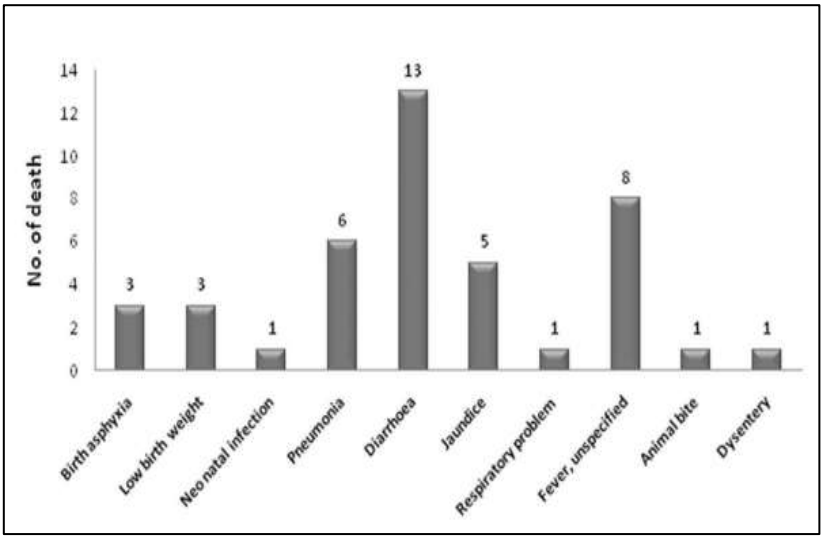

Figure 1

Table 3: Factor influencing child mortality, percentage, and results of χ^2 tests

Factors	Child survival			χ^2	*p*-value
	Live birth	Alive	Death		
Mothers' age at first child birth					
>19	218	196 (89.91)	22 (10.09)		
20–23	227	220 (96.92)	7 (3.08)	8.94	0.011450*
>24	159	146 (91.82)	13 (8.18)		
Birth order					
1	250	243 (97.20)	7 (2.80)		
2–3	309	286 (92.56)	23 (7.44)	33.81	0.000001*
4+	45	33 (73.33)	12 (26.67)		
Place of delivery					
Hospital	454	434 (95.59)	20 (4.41)	18.35	0.000019*
Home	150	128 (85.33)	22 (14.67)		
Attendant at the time of delivery					
Doctor	450	433 (96.22)	17 (3.78)		
Trained midwife	139	117 (84.17)	22 (15.83)	27.88	0.000001*
Untrained midwife	15	12 (80.00)	3 (20.00)		
Status of immunization					
Still continuing	138	116 (84.06)	22 (15.94)		
Half-done	340	324 (95.29)	16 (4.71)	31.52	0.000001*
Completely immunized	120	118 (98.33)	2 (1.67)		
Not done	6	4 (66.67)	2 (33.33)		
Mothers' education					
No education	328	296 (90.24)	32 (9.76)		
Primary	142	134 (94.37)	8 (5.63)	10.54	0.005143*
Secondary and above	134	132 (98.51)	2 (1.49)		
Fathers' education					
No education	194	180 (92.78)	14 (7.22)		
Primary	193	174 (90.16)	19 (9.84)	5.16	0.076543
Secondary and above	217	208 (95.85)	9 (4.15)		
Fathers' occupation					
Business	109	102 (93.58)	7 (6.42)		
Cultivator	272	256 (94.12)	16 (5.88)		
Service	19	18 (94.74)	1 (5.26)	1.86	0.761834
Unskilled labor	176	160 (90.91)	16 (9.09)		
Skilled labor	28	26 (92.86)	2 (7.14)		

*p-value <0.05 significant.

Materials and Methods

Data for the current study were gathered from five Rabha tribe-inhabited villages in the Udalguri PHC district of Assam. To gather information on child mortality, 250 suitable couples with children ages 0 to 14 were chosen and their mothers were questioned. The usual spoken autopsy method was used to determine the reasons of fatalities. Based on interviews with the deceased's relatives or other caretakers, a verbal autopsy is a technique for determining the reasons of death. When in doubt, the medical officer of Udalguri PHC was consulted to determine the cause of death. The main approach for collecting data was an interview with a scheduled timetable. Cross-tabulation analysis has been used to examine the relationships between child mortality and other factors. The first stage in examining the association between mortality and other factors is the cross-tabulation analysis. The odds ratios for the various independent variables affecting child mortality were estimated using the logistic regression model. Only the factors that cross-tabulation analysis determined to be significant were taken into account in this study.

Result

Out of 604 live births throughout the research period, 42 child deaths were documented. Infant (0–1 year), 1–5 year, and 5–14 year death rates are 117.65, 107.14, and 39.89 per 1000 live births, respectively. According to Table 1, the overall child mortality rate is 69.54 (0–14 years). Male child mortality is shown to be lower)**(45 vs 55 %)** than female child death.)**(Figure 1)** Low birth weight (30%), birth asphyxia (20%), pneumonia (20%), diarrhea (20%), and neonatal infection (10%) are the leading causes of infant mortality. Diarrhea (44.44%) is the leading cause of mortality in children aged 1 to 5 years, followed by pneumonia (22.22%), jaundice (11.11%), nonspecific fever (11.11%), birth asphyxia (5.56%), and respiratory issue (5.56%). When it comes to children between the ages of 5 and 14, fever unspecified (42.86%) is the leading cause of mortality, followed by jaundice (21.43%), diarrhea (21.43%), animal bites (7.14%), and dysentery (7.14%). [Table 2]. In this investigation, it was discovered that diarrhea was the leading cause of death in children [Figure 2]. **Table 3** displays the distribution of child mortality by several factors. According to the table, child mortality is substantially correlated with mothers' age at first childbirth, birth order, site of delivery, presence of an attendant at the time of delivery, vaccination status, and level of education. While the chi-square test found no statistically significant correlation between,fathers' education and infant mortality,education and fathers' occupation. Mothers' age at first child birth plays a very significant role in child mortality. Child mortality is found to be the highest, i.e., 10.09% among those mothers whose age at first child birth is below 19 years while it is the lowest, i.e., 3.08% where mothers' age at first child birth is between 20 and 23 years. Birth order also plays a very vital role in child mortality. Child mortality is found to be 2.80% in those mothers who had given single birth; while it is 7.44% to the mothers having 2–3 children. It is 26.67% for those mothers who had given birth to more than 4 children. It is said that children born in institutions are likely to have lower risk of mortality as compared to those children born in home.

Extreme mother ages (30 years) were shown in several studies conducted in India to be risk factors for infant death. [6,8] Data from the WFS Surveys were used to analyze the factors affecting infant and child mortality variations in Jordan, Yemen, Egypt, and Tunisia. The results showed that mortality risk was higher for infants born to very young and very old mothers with short prior birth orders and where prior infants had died. [1] The current findings therefore appear to be consistent with the findings indicated above. In this study, it was discovered that when moms have more conceptions, there is a higher rate of child death. It should be noted that Rutstein [18] and Islam & Islam[12] found that moms who have more pregnancies also had higher child death rates. Higher birth orders are more likely to be delivered by older moms, and these kids could have to compete with other kids for resources like food and healthcare. Children born in institutions often have a lower chance of dying than children born at home because of the high health hygiene and care provided at the moment of delivery. The current findings are consistent with Chowdhury's[9] study, which looked at the factors influencing under-five mortality in Bangladesh. He discovered that home births had a greater risk of infant death than deliveries in hospitals. The current conclusions are supported by several additional investigations. [16,17]

It is commonly believed that when a skilled health professional attends the birth, the child's probability of survival is better. In this study, it was discovered that when a doctor attended the births, child mortality was at its lowest. Khongsai[15] discovered that when births were supported by old people rather than qualified medical workers, baby and child mortality among the KhongsaiKukis of Imphal town and Saikul subdivision was greater. An essential component of India's child health care system is the vaccination of children against six dangerous but avoidable diseases: TB, diphtheria, pertussis, tetanus, poliomyelitis, and measles. Only 43.5% of children in India and 31.4% of children in Assam, according to NFHS-3[11] statistics, are immunized against the six terrible illnesses. Child mortality and vaccination status are revealed to have a substantial, statistically significant association. According to this study, children who receive no vaccinations at all had the greatest rates of child death. Similar results are revealed by the results of NFHS-3[11], which show that children who have not had any vaccinations at all are most at risk of dying young. The present findings are also supported by the investigations of Kabir et al.,[14], Kabir and Long,[13], and Agarwal et al.[2]. Another significant aspect determining child mortality is maternal education. Since there is a significant correlation between female education and infant survival, children of illiterate mothers are more likely to die in infancy than children of literate mothers. [4,7,10] The same conclusion is drawn for mothers' educational levels and infant mortality in the Rabhas. The current conclusion is consistent with Alam'sstudy[4], which discovered that child mortality was the greatest across all labour groups. According to Bajkhaif and Mahadevan[5], infant mortality is quite high among people in lower occupational categories and very low among those in higher occupational categories.

Conclusion

The results indicate that a number of factors, including (1) bio-demographic ones like mothers' age at first childbirth and birth order, (2) socio-economic ones like mothers' education, and (3) health-care ones like the location of delivery, the presence of a delivery attendant, and the children's immunization status, have been found to have statistically significant associations with child mortality. As a result of this study, it is possible to infer that raising the age at which women have their first child, improving mothers' educational levels, properly utilizing healthcare services like hospital deliveries, and ensuring that all children are fully immunized may reduce infant and child mortality among the Rabhas.

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