CHAPTER VI

DISCUSSION
DISCUSSION

In the previous chapters, the findings of the present study have been presented in an elaborate manner. Here in this chapter, it has been tried to discuss the present findings in the light of the results of the studies of same nature in Assam and elsewhere in India.

Health, Morbidity and Mortality are inter-related. World Health Organization (WHO) has defined health as a 'State of Complete physical, mental and social well being and not merely the absence of infirmity or diseases (WHO : 1948). For every difficult faced by our body, there are some reasons behind it and these reasons are mainly biological, cultural and environmental or may be the combined effect of all. Many countries have improved the mortality-declining situation through several means. Some researches called this as a health transition (Caldwell : 1986). Health transition denotes the declining mortality rates and continuation of morbidity leading to better health conditions. Morbidity represents the present state of health of a community.

In the present study, an attempt has been made to study the health conditions, patterns of morbidity and mortality of the 0-14 years aged children of the Tiwa tribe of Morigaon district of Assam. It has already been mentioned that health and disease cannot be isolated as a biological
paradox because, it is intersectoral and very much related to socio-economic, cultural and environmental life of a community.

Population Bulletin (2003) highlights the relationship of population, health and environment. Environment related issues that affect the health have been found as one of the important triggers affecting health of the Tiwas. The health of Tiwa people are influenced by the impact of climatic variability. The flood as well as drought trigger disasters. Drinking water and sanitation facilities are two important criteria that directly affect health and morbidity. It was found in the study area that less priority was given in the sectors like drinking water supply and sanitation. 45.5% families used tube well water for drinking, 22.5% families collected drinking water from nearby streams or ponds, 19% had kucha well and only 9.5 families had pucca well. Most of the villagers (50%) used drinking water without any purification like boiling or filtering. Villagers were no at all aware of purification of drinking water.

Sanitary facilities were poor in the Tiwa villages. 54.25% families had kutcha latrines with unhygienic surroundings; 32.5% families used open field, hillside, and agriculture land for nature’s call. Only 13.25% families had sanitary latrines. Agarwal and Maiti (2005) studied the safe drinking water and sanitation facilities in the state of Andhra Pradesh and found that 25.9% people used filtered water and 55.2% households had
flush toilet. A completely different picture is noticed in the present study. Only 9.5% families had pucca well and 13.25% families had sanitary latrines.

The village children suffered from many water related diseases like diarrhoea and dysentery; water based diseases like infestation of worm and water related vector diseases like malaria etc.

The diseases associated with contaminated water remain as the most serious public health problems for much of the world’s population. The availability of safe drinking water and sanitary measures has a direct bearing on the working conditions and health of the people and their capacity for optimum production. There exists a cause and effect relationship between water, health and development (Shukla : 1988).

Socio-economic condition of the people determines their health status in terms of longevity, infant mortality and morbidity. People low on socio-economic ladder are not only more vulnerable to infection and respiratory diseases but also had lower access to health services (WHO : 1998). In general, people of below poverty line, children, aged and displaced ones suffer more from health problems than other strata of the society.

Bhattacharjee (2008) studied the socio-economic impact on health among the Rajbanshi stone crushers and found 80% of families were
dependant either on uncovered well or on river water for the drinking purpose. They consume the water without any sort of purification. The findings of the present study also reflect the same fact. As most of the Tiwa people earned their livelihood as rikshaw pullers (23.75%), hand cart pullers (13.75%) and waged labours (18.75%), it was not possible for them to have their own well protected drinking water facilities and good sanitation facilities.

The multi sector approach defines health as a complex web of environmental, social, economic and individual factors, which are interrelated to each other. (Dalal and Ray: 2005)

Health is a relative and discernible matter of the concerned person. It may very by virtue of different biological and socio-cultural variables like age, sex, food habit, education, economy, community, environment, place of habitants, communication and culture. (Tarafdar: 2005)

From the household level investigation, various types of diseases among the Tiwa children were revealed. In <1 year age group, the highest percentage i.e 24.44% suffered from fever (males 11.11%, females 13.33%); the other diseases were common cough 16.11%; worm infestation 14.44%; measles 12.22%; diarrhoea and dysentery 11.11%; skin disease 8.33%; flu 7.77% and asthma 5.55%. 

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In the age group of 1-4 years the morbidity pattern was: worm > dysentery > anemia > skin disease > common cough > fever > measles > pneumonia > flu > mumps > malaria and asthma.

In the age of 5-14 years, the morbidity pattern was: Worm > dysentery > common cough > skin disease > fever > anemia and measles > pneumonia > flu > asthma > mumps > malaria.

Morigaon is a flood prone district. It was observed that Tiwa children were easily and frequently attacked by water borne diseases like diarrhoea and dysentery. The village experienced flood almost every year, but water based disease’s like malaria was less prevalent in the area. Only 1.02% malaria affected children were found. It may be due to the fact that the villagers regularly spray DDT etc. to get rid of mosquito bites, but it is worth mentioning that the Tiwa people of Morigaon think that due to the use of dry fish the prevalence of malaria is less in the district. Domestication of animals like cows, goats, pigs, ducks, pigeons was seen almost in every household. No doubt, it gave some financial relief to the families but the disturbing point was that the owners were not at all aware of the fact that these animals, if not kept away from the main house and not reared in a hygienic manner may cause health hazards not only to the children, but also the adults. Infestation of different types of worms like thread worm and round worm was very common among the children. In
school going children and pre-school age children, the percentages were 18.43 and 18.92 respectively. It is worth mentioning that large number of infants (24.44%) were infested by worms, which clearly showed the lack of hygienic sense of the mothers. Bhatia in 1981 reported that inadequate knowledge on proper hygiene and sanitation makes both mother and child extremely vulnerable to infection. Merrick (1983) and Victoria et al. (1926) also mentioned that the risk factor associated with the diseases are lack of piped water, over crowding, poor sanitation, contaminated food and poor hygiene.

The infectious diseases like fever, pneumonia, measles, mumps and flu were found among the children of 0-14 years of age group. Due to damp surroundings, house with damp floor, stagnant water in the surroundings, the children might be suffering from infectious diseases. Allergic disorders like asthma, cough also frequently occurred among the children. Smoke filled ‘Chula’, damp house, unclean cloth, dirty mattresses and pillows may be one of the causes of allergic disorders which were common in the Tiwa children. 49.27% children were suffering from various diseases caused by air pollution. 66.25% families were using unsafe water for drinking purpose and their children were found suffering from various water related diseases. 46.25% diseased children were from
the families having kaccha latrine or without having any latrine facility and worm infestation was clearly noticed among the children of those families.

The common diseases like conjunctivitis, running nose, ear pain, bad smell of mouth, gum infection were also found among the Tiwa children. In <1 year age group, running nose and ear pain were the most common diseases. In case of school children, eye ailment like conjunctivitis was also noticed. Running nose was common in the children of both the age group i.e. 1-4 years and 5-14 years. During the field visit it was noticed that most of the small children were kept naked; the mothers never thought that their children might in the grip of cold.

Continuous flu may cause the ear pain due to the infection. In most cases, the Tiwa mothers were not aware of their children’s health. They were seen ignoring the diseases like cough, flu, fever, skin diseases which could lead to infection.

In most cases, the proper oral hygiene of the children was not maintained at all and it led to oral infection.

Livestock may also sometimes cause some diseases. The Tiwa people were used to domesticate pigs, cows, goats, ducks, hens, pigeons etc. Pig rearing families showed 28.47% of diseased children.
Pigs were seen making the house surrounding quite dirty. Sometimes the children had to take care of domestic animals and it was frequently observed that without washing their hands, they used to take food. Ducks and pigeons were seen making the houses dirty and unhealthy to live in.

In all the age groups, the female children were found to be more affected by diseases than the male ones. In <1 year age group the percentage of diseased female infants is 53.33%; in 1-4 years age group it was 50.25%; in 5-14 years it was 50.09%. The mothers were more conscious about the health of the male children than the females. They paid less interest in the health of a girl child. The female children became gradually immune to various types of diseases and the result was observed in the female children of 5-14 years age group.

Health and morbidity are very much related to nutritional status. It is often seen that poor nutrition leads to health problems. Children with poor nutritional status are easily attacked by various types of diseases in comparison to children with good nutrition. Though the Tiwa children of 0-14 years were suffering from various types of diseases; the BMI results showed that the general health status of the children was not so poor.

It was observed that 100% Tiwa infants were completely breast fed upto six months of age. After the completion of six months almost all the
mothers gave supplementary food along with breast milk to their babies. Three types of food were mainly noticed.

(a) A home made food item called “Luthuri” prepared by mixing rice powder, cow milk and giant banana.

(b) Smashed rice and dal.

(c) Tin food available in the market.

It may be due to complete breast feeding or home made nutritious supplementary food that most of the infants were spared from malnutrition. The Pre School going children of 1-4 years age and school going children of 5-14 years age used to take three non-vegetarian meals a day. Due to their depressed economic condition, it was not possible to provide them animal protein and milk protein regularly but from the estimation of height for age, weight for age and BMI, it has been found that no severely malnourished children were there among the 0-14 years age group children. Thus it can be said that they used to get the minimum nutrition from their regular diet.

It is clear from the above findings that breast fed infants were less below normal weight than school going children. The pre-school going or school going children took billed rice as a staple food three times a day. They used to take mixed curry with rice. Non-vegetarian food items like milk or milk products were rarely taken by them. For school going
children, the provision of mid-day meal was found in every school, but many of the school authorities distributed the raw rice, dal and potatoes to school children in every Saturday instead of prepared meal.

Due to the poor knowledge of the mothers about quality of food and due to poor economic condition, the children were deprived to the nutritional diet. Parents’ education is very much related to child health. Some food taboos also play a negative role in consumption and health of the children. The World Bank is now giving greater emphasis to social sector approaches, which are child centered. School based and nutritional programmes contribute to the new approach. This entire new programme in the field of health and nutrition of children will become failure if the school authorities ignore it, which was noticed in the study area.

Parents illiteracy is another important factor, which affects the health of children. American Jewish World Service, (AJWS) found in 1985, supports and implements small scale international programme were promoting literacy, numeracy, girls education are the prime goals. UNFPA along with WHO, convented a study on programming for adolescent health in 1995. This includes educational programme like school education, sexuality education and parents education.

In the study area if parents literacy is increased, it can be hoped that health hazards of the Tiwa children will be decreased step by step.
Occupational patterns of the parents are also related to health of the children. Due to low income of the families, the parents were not able to give proper nutritious diet to the children. Many of Tiwa families were of poor economic condition.

In a study on the dietary and feeding habits of infants in various socio-economic groups in Bhopal, Bhandari and Patel (1973) observed that the primary etiological factors in severe malnutrition were poverty, non-availability of suitable foodstuff, superstition and faulty food habits. Both the food taboos and poverty were found among Tiwa people, which may be the causes of malnutrition of the children that ultimately leads to various types of diseases.

Garg et al. (1997) studied the nutritional status of 1-6 years age group slum children of Ghaziabad city and observed that, nearly 58.2% children were showing signs of malnourishment. In this regard they summarized that regular nutritional supplementation along with adequate nutrition education would reduce the nutritional deficiency disorders.

Ghai (1996) pointed out the prevailing dietary practices and cultural taboos on consumption of certain type of food are the other conditioning factors leading to malnutrition. In the study area also the prevailing food practices and food prohibition might lead to the malnutrition of the Tiwa children. In diarrhoea and dysentery of the breast fed infants the mothers
were not allowed to take liquid food. They were not allowed to breast feed
their babies also.

Visweswara Rao. L., et al. (1994) observed that quantitative foods
like milk and milk products, pulses, vegetables, flesh foods and energy
giving foods like sugar, oil and fats were found to increase with better
socio-economic status. The same facts were found in the present study
also.

Gomez (1956) from American data and Krishna (1993) from Indian
data observed that the relevance of under nutrition is higher in girls than in
boys, and also the relevance of mortality rate is higher in girls than boys.
The findings of present study also show relevance to the observations of
Gomez and Krishna. In the present study under-nutrition was higher in
female children of all the age groups than males. Mortality rates were also
higher in female children of all age groups than male children.

In North east India, Begum and Choudhury (1996) studied the
nutritional surveillance among the Assamese Muslims of Kamrup district
of Assam and reported that the prevalence of malnutrition is higher in girls
(45.39%) than boys (42.07%).
Devi (2006) studied the Gastronomy and nutritional status of Tarao Tribe of Manipur and observed that more of the females in the population suffered from malnutrition as compared to their male counterparts.

Among the Tiwa people a discrepancy in the distribution of food and food items among the children of two sexes was observed and less priority was given to the female children.

Inadequate intake, infection and poor nutritional status are intimately linked with child death. Immunization, hospital care and proper medical treatment are necessary for child survival. (Ashworth, et al. : 2007) In the area of folk society, Josheph (1958) has described the practices of supernatural power of Hutterites in the pediatrics fields.

In February 2000, Government adopted a national population policy, for achieving population stabilization in the country by 2045. The main goal of this policy is to reduce infant mortality rate to 30 per 1000 live births by the year 2010 (Kumar : 2008).

India is facing with an unparalleled child survival and health challenge. The country contributes 2.1 million of global burdens of 9.7 million under five deaths annually. One million deaths occur in the neonatal period alone, mainly by malnutrition, respiratory and diarrhoeal diseases. Malaria and HIV contribute the rest (Kumar : 2008).
Among the Tiwa children the total mortality rate (0-14 years) is 42.14 per 1000 live births. Under five mortality rate is 50.19; for 5-14 years age group the mortality rate is 26.94.

The sex wise mortality rates of different age groups per 1000 live births are

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 year</td>
<td>28.04</td>
<td>42.05</td>
<td>70.09</td>
</tr>
<tr>
<td>2-4 years</td>
<td>21.24</td>
<td>28.96</td>
<td>50.19</td>
</tr>
<tr>
<td>5-14 years</td>
<td>11.98</td>
<td>14.97</td>
<td>26.94</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17.86</strong></td>
<td><strong>24.28</strong></td>
<td><strong>42.14</strong></td>
</tr>
</tbody>
</table>

As per recently released state of world’s children 2008, world’s average under five mortality rates has fallen from 93 in 1990 to 72 in 2006. (Shah : 2009) The present study reveals that 50.19 is the U5MR of the Tiwas, which is quite low in comparison to world’s mortality rate.

The infant mortality rate has declined significantly in India from 129 in 1970 to 68 in the 2000 (Kumar : 2008). From the present study it is revealed that infant mortality rate is higher (70.09) among the Tiwas than the Indian context. Inadequate diet of pregnant women, unhygienic living condition, food prohibition, improper drinking water, lack of hygiene related behavior etc. might be the major cause for high infant mortality rate.
Acute respiratory infection (ARI) and lower respiratory tract infection (Pneumonia) are the two major causes of death in children (Kumar : 2008). As per WHO (2007) figure, India is one of the leading countries as far as pneumonia deaths are concerned.

The findings of Civil Hospital, Morigaon in the year 2006-2007 show that highest percentage of infant’s death has occurred due to ARI or Pneumonia (36%). 29% deaths occurred due to diarrhea and dysentery. In case of children (1-14 years), diarrhea and dysentery is the highest (34%). killer disease. Pneumonia is enlisted as the second highest cause of death i.e 31%.

In present study also the highest cause of mortality among the infants was found to be fever and pneumonia and the percentage is 32.71 (14.03% males and 18.69 females).

Shah (2009) estimated that pneumonia contributes nearly 29% of under five death. He classified pneumonia as a “forgotten killer”. Pneumonia stands out as the number one cause of death for less than five years aged children. Among the Tiwas, the under five death is 46.22% (infants 32.71 and 1-4 years 13.51%), which also stands as the highest cause of death.

Diarrhoea and dysentery is the second highest of mortality. More than 20% children death occurs due to diarrhoea and dysentery (Ashworth
In the study area 17.37% in 1-4 years and 10.40% in 5-14 years aged children died in diarrhoea and dysentery, which was found as the second highest cause of mortality among the Tiwa children.

Recent WHO estimates on the global burden of disease show that 24% of the diseases and 23% of all deaths may be related to environmental influences and can account for over 1/3 of the disease and 36% of death in the 0-14 years children. (Ashworth et al. 2007)

Smith, et al. (1999) from university of California, found that at least 20% of overall mortality in India is attributed to environmental factors, if these, foul indoor air and dirty water alone cause about 80% of death.

Infant mortality of Andhra Pradesh revealed that some socio-cultural factors like type of family, childbirth practice, infant feeding practice and preference for sons in giving medical attention have significant impact (Sandhya :1986).

Agarwala (1988) commented that providing the adequate and wholesome food, drinking water, better hospital facilities, better sewage disposal can reduce the death rate.

Environmental and socio-economic causes like damp house condition, stagnant surrounding water, smoke filled ‘Chula’, inappropriate diet, lack of pure drinking water, unhealthy living condition, lack of knowledge about prevention of diseases, lack of knowledge about hygiene,
lack of importance about maternal health, delivery with unskilled attendance were found to be the direct and indirect cause of infant and child mortality among the Tiwas of the present study.

Health is a common theme in every society and they have its own beliefs and practices regarding health, disease and treatment. From the time immemorial man has been trying to control disease. The medicine man, the priest, the herbalist and the magician undertake various ways to cure disease and to bring relief to the patient, (Bhattacharjee : 2008)

Deforrest (1959) has noted the strong belief of the tribals in invisible power, which helps in controlling an epidemic and curing ailing persons.

The Tiwa people of present study also strongly believed in supernatural being, herbal medicine man called ‘kabiraj’ and magico-religious practitioner called ‘oja’. The knowledge about the preparation of herbal medicine was widespread throughout the community. Magico-religious performances occupy a prominent place in the treatment of disease. They sacrificed several objects in the name of deities. They preferred the use of talisman and sacred thread to protect themselves from various diseases.

Apart from herbal medicinal use and supernatural beliefs the Tiwas practice certain others forms of treatment like medicated bath, massage, fumigation, purification etc. They used modern medicine when a patient is
in serious condition. Poverty, deplorable condition of roads high transportation cost, improper communication and faith on ethno medicine were the causes of preference of ethno medicine rather than modern health care system.

Now-a-days due to the supervision and teaching of ASHA health workers many mothers are getting conscious about health and hygiene. The pregnant women immunized themselves with vaccines and it was found that immunization practice of the Tiwa was satisfactory. They are now realizing the good effect of hospital delivery, but previously most of the deliveries were done with the unskilled dhai at home.

There is a proverb that 'prevention is better than cure' Tiwa people were not accustomed to take any preventive measure. For example, a measles affected child was not isolated from other children and it was found that the mothers used to carry the ill child to her working place outside the home. They did not take any prevention for water related diseases. Their unhygienic surroundings, improper diet, unhealthy sanitation facilities, improper drinking water were the factors for ill health of the children. They were poor in knowledge about health related behaviors. Cleanliness was lacking among them. Regular brushing the teeth, regular washing of hands and regular bathing were rarely noticed.
The women were seen working hard and for longer hours than men. Their work patterns were more prone to health hazards. They spent long hours indoors with smoke filled kitchen, besides doing their daily duties like collection of water, fire wood and fodder; animal rearing and other household works. It might be one of the causes for giving less interest in the children because they became tired with the excessive burden of their daily work.