# CHAPTER VII

FINDINGS AND CONCLUSION

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CHAPTER VII

FINDINGS AND CONCLUSION

7.1 Introduction:

The present study entitled “Study of Child Mortality and Malnutrition of Tribal Area: A Case Study of Akole Tehsil, District Ahmednagar (Maharashtra)” is an attempt to evaluate malnutrition and mortality among children of tribal area. In previous chapters malnutrition and mortality among children were assessed and health and hygienic status of both tribes have been discussed. In this chapter major findings and conclusions of this study are presented.

Children are the prime future asset for any society and being tribal they are not exception to this. Malnutrition in children swell the threat of ailments and risk of mortality among them. This not only hampers physical growth and psychological development of children but also boosts morbidity and decreases efficiency of future work force of the country. In this study population characteristics of tribal people, their socio-economic condition, health and hygienic environment to tribals were assessed in relation to malnutrition and child mortality.

For this purpose 375 tribal children from zero to six age group have been selected from villages of Akole tehsil. In this regard following findings were observed.

7.2 Major Findings:

1. Population characteristics of tribal people were definitely found different from that of non tribal people. Majority of tribal population is concentrated in western hilly tract of tehsil. Most of the tribal population settled in villages. Mahadev Kolies and Thakar are dominant tribes in this area; Mahadev Koli are significantly large in number than Thakars. Population growth in this area was found predominantly lower than non tribal population. Density of Akole tehsil is 93 persons per sq.km near half of national density.

2. Sex ratio of Akole Tehsil is larger than state and national average. Tribal region of Akole tehsil shows the largest number of females per 1000
males. According to 2011 Census, this is larger than any other tehsil in district. Dominance of women in society and male migration up to certain scale are the basic reasons of high sex ratio in tribal area.

3. It has been observed that majority of tribals (96.55 percent) reside in rural area and remaining very small number of tribals (3.44 percent) reside in single town of tehsil, Rajur.

4. It is concluded that migration is a major strategy of tribal mass to combat against poverty. Though migration can solve economic crisis of tribal up to some extent but mostly migration of parents was noticed in tribal area. Then children were under care of grandparents or sometime with parents. All this affects and hampers physical growth of tribal children.

5. Housing pattern of tribal is eco friendly and most of them have used natural elements for preparing shelter. Because of poverty the largest part of tribals reside in kutcha houses but most of kutcha houses are moist. This provide favourable habitat to insects and mosquitoes. Earthen flooring accelerates attack of tape and hookworms in children.

6. Transport and communication network is not easily available in tribal area. Transport facilities were detected very scanty in this area which affects education attainment, literacy, health and overall development of area. In western area, villages like Ghatghar, Phophsandi, Ambit and Pachnai have very low accessibility. Many villages like Pimperkan, Digmbar, and Ratanwadi used ferry for transport. Southern and western area of tehsil has no adequate mobile signals. Therefore tribal people have to depend upon traditional communication system which indirectly affects the level of malnutrition among children.

7. Low literacy rate is main characteristic of tribal sector which becomes barrier between betterment of tribal inhabitants. Educational attainment among parents is also chief determinant of level of malnutrition among tribal children. Education gives excellent vision to mothers for good health and nutritional status. It also helps to boost healthy and hygienic habits to keep babies fit and keeps them away from various ailments. But unfortunately spread of education
is not at all satisfactory in tribals. This is the main constraint in reducing malnutrition in tribal zone.

8. Occupation pattern and malnutrition level are closely associated to each other. It was found that 78.28 percent children in Severe Acute Malnutrition were found families in agricultural occupation. Majority of tribals were engaged in primary activities. 75 percent population depended upon agriculture and that is too sedentary activities. Some considerable amount of tribal population is engaged in agricultural labourer and minor forest product collection.

9. Even though very small proportion of tribals was landless but near about 86 percent tribal farmers are in range of marginal to small landholding. It was noticed that out of 46 Severe Acute Malnourished children 33 were from marginal landholding family. Most of land was barren and useful for seasonal crops only. Therefore tribals have to depend upon a numbers of occupations and in summer season they face acute water and food shortage; this situation enhances malnutrition and ailment pattern.

10. It has been noticed that in tribal area 42 percent mothers were in agricultural activities and domestic work. Therefore these mothers could not spend enough time to nurture their children. This also resulted in higher level of malnutrition.

11. On the basis of annual income of tribal family, it has been observed that 41 out of 46 Severe Acute Malnourished children were from below poverty level families. It is seen that 88 percent families in study area were below poverty line, only 12 percent tribal families were above poverty line. It has been found that average annual income of tribal person is 24361.13 rupees per annum. Annual income of 70 percent population is below 20 thousand rupees. Income level of tribal families determines expenditure on food and medicines. Low income group spend less amount of money on health and supplements of babies.
7.2.1 Malnutrition:

Weight for Age:
It has been found that 80 percent tribal children have lower body weight than the required weight for their age. Out of them 57 percent were in Severe Acute Malnutrition group and 22.6 percent were in Moderate Acute Malnutrition grade. Unfortunately only 19.46 percent children were in mild to normal range.

Height for Age:
It has been noticed that 80.53 percent tribal babies do not have adequate height according to their age.56 percent children are included in Severe Acute Malnutrition grade and 23.73 percent tribal children are found in Moderate Acute Malnutrition grade.

Body Mass Index:
It has been noted that 43.73 percent tribal children have inadequate body mass index and 27 percent children are included in Severe Acute Malnutrition grade and 16.80 percent tribal children are in Moderate Acute Malnutrition grade and 42 percent children ranges between Mild Malnutrition to Mild Over Nutrition means quite normal in nutritional status.

Mid Upper Arm Circumference:
It shows 47.80 percent tribal children are malnourished out of them 16.80 percent are in Severe Acute Malnutrition grade and 31 percent children include in Moderate Acute Malnutrition grade.

Head Circumference:
It shows 50 percent tribal children are malnourished out of them 20 percent children are found in Severe Acute Malnutrition and 30 percent children are in Moderate Acute Malnutrition.

Aggregate Malnutrition:
It is reported that 12.0 percent children include in Severe Acute Malnutrition category. In Moderate Acute Malnutrition grade 48 percent children detected in this grade. 27 percent in Mild Malnutrition group and 10 percent children are found in Normal group and only 1.06 percent children observed in Mild Over nourished children.
Gender wise Malnutrition:

It shows that 54 percent boys are in malnourished and 46 percent boys normal in case of girls 63 percent girls are malnourished. Tribe wise proportion of malnutrition detected that 53 percent Thakar malnourished and 63 percent Mahadev Kolis are malnourished.

Medical Checkup in Pregnancy:

It was noticed that in tribal area 56 percent mothers have susseccfully completed medical chek up during pregnancy. Whereas 44 percent mothers have niether visited any doctor nor done chek up. In Thakar tribe 46 percent mothers have completed medical checkup and this amount is 58 percent in Mahdev Koli tribe.

Place of Delivery:

Only 32 percent deliveries took place in institutional and under the guidance of trained doctors and majority 68 percent of deliveries took place at houses and were done by experienced women.Considareble number of deliveries were performed by relatives in both tribes. 38 percent deliveries were performed by relatives in tribes. 35 percent deliveries were performed by PHC doctors in both tribe.

Breastfeeding:

All mothers breastfeed their children but 71 percent mothers breastfed their babies immediately after birth, 9 percent were after 2 to 3 hours after birth, 5 percent after 12 to 24 hours after delivery and 14 percent after 2 to 3 days.

16 percent mothers have exclusively breastfeed their babies up to 6 month, 41 percent mothers breastfeed their children up to one year. 19 percent mother give breast milk to their babies up to one and half year. 17 percent tribal mothers fed their children up to two year and 8 percent mothers exclusively breastfed their children more than 3 years. It is observed that out of 45 Severe Acute Malnourished Children 19 are observed from families children get medium to very low nutritive value food. Another important observation is realized that malnutrition is high in children who receive breastfeeding less than one year. More than half of the Severe Acute Malnourished children did get breast feeding up to one
year only. Very few tribal mothers give milk by bottle to babies up to one year. Still there is close association between malnutrition and habit of bottle milking among children.

**Supplementary Food:**

82 percent families provide supplementary food to their babies. It is observed that 11.32 percent found Severe Acute Malnourished in children get supplementary food and 15.15 percent children in the same group did not get supplementary food. Nagali soup, rice and gram semi solid food, in rare case Ceralac and Farex are provided as supplementary food for children. Out of these 43 percent children are given rice and green gram soup or semi solid food. And lowest children 13 percent were fed by Ceralac and Farex as additional supplementary food from market. About duration. It may be said that only 5 percent mothers feed their babies for 4 to 5 weeks, and 24 percent mothers have feed their children up to two years.

**Disease Pattern:**

It is observed that in Severe Acute Malnourished children 35 percent children are suffer from fever. Maximum children 35 percent in study area infected by fever. 14 percent children infected by fever and diarrhea. 9 percent children were found victim of dysentery. 2 percent children were infected from Pneumonia. In study area 3 percent children were observed victim of waterborne diseases. It was found that 27 percent children not infected by any disease.

**Vaccination and Medical Treatment:**

It is observed that 95 percent families did vaccinate their babies for various immunizations and 5 percent families did not vaccinate their babies at all. Polio triple doses were given to 19 percent children. 37 percent children were given antidose of measles. Only 12 percent children were secured from cholera. Very few children 1 percent took BCG and hepatitis B dose.

It is observed that 13 percent families in study area trusted domestic treatment. 2 percent families depended upon Bhagat of Village (magico-religious practitioner). 4 percent households depended upon Vaidya.
(herbalist). 46 percent of patients prefered private hospitals, where as only 20 percent tribal people gave preference to Primary Health Care centers.

It was obseerved that only 11 percent families have access to PHCs within less than 1km. 55 percent families have to walk from 1 to 5 kms for PHC. for 14 percent families Primary Health Centre is located beyond 5 to10 km. More than 11 percent families live 10 to 15 km away from nearby Primary Health Centers. And near about 4 percent families live 15 to 20 km away from Primary health centers.

**Addiction:**
There is a meaningful association between addiction in family and children malnutrition. It was found that out of 45 Severe Acute Malnourished Children 73.33 percent children belonged to addicted families. 24 percent families had the habit of chewing tobacco. Next to tobacco, masher is popular with females, particularly, 21 percent families are addicted to Masher. Whereas proportion of Tobacco and Masher addicted families is observed 17 percent. Smoking is also found in these tribes, mostly bidi and cigar smoker 3 percent families have this habit. 29 8 percent are addicted to chewing Gutkha. 2 percent families were addicted to liquor.

About healthy habits, it is obseerved that more than one fourth mothers wash vegetables before preparing food and wash their hands before handling food and remaining women do not wash vegetables prior cooking and not wash their hands before preparing food. It is observed that more than one fifth children from tribal families do not take regular bath. And one third children from tribal area do not brush or clean teeth regularly. 20 percent children do not wash their hands before eating and 80 percent children wash hands before eating. 81 percent families clean their front yard of house. 19 percent tribal families are unaware of cleaning of yard and so they do not use to clean it regularly. 85 percent families clean their houses, regularly. 15 percent families not do it.
Drinking Water:

59 percent tribal families have to travel from 200 mt to more than 2 km to fetch water and 56 percent tribal families use traditional method for water purification viz. cloth filtering and covering pot.

It was observed that there is meaningful association between safety measures are taken for drinking water and malnutrition level. 37 percent Severe Acute Malnourished children are found from families who do not purify water anyway. And 28 percent malnourished children are found from family who use simple and traditional cloth for water filtering. It is observed that most of families 41 percent depend on open wells. Only 10 percent tribal families were depending on springs and small ponds and river water for drinking.

Toilet Blocks:

In this area only 29 percent families have build and use toilet blocks. It is observed that 71 percent tribal population have neither build toilet blocks nor used it. Malnutrition is undoubtedly high among non toilet using families and it is surprisingly low among toilet using families. It was found that out of total malnourished children 80 percent Severe Acute Malnourished children are observed from non toilet using families and only 20 percent Severe Acute Malnourished children were observed in toilet using families.

7.2.2. Child Mortality:

Type of Mortality

High infant and child mortality is observed in tribal area. 67 cases of infant and child mortality are found in tribal area. Most shocking fact in this area is that out of total deaths, 66 percent deaths are of infant who were less than year old. There are two subtypes of infant mortality. First Neo natal infant mortality is 48 percent deaths of total child deaths and 18 deaths are detected during post natal infant mortality. 27 percent deaths are of children between age of 0 to 5 and only 2 percent deaths are detected post child deaths.

Causes of Mortality:

Lack of timely diagnosis of illness was responsible for 28 percent infant and child death. 27 percent infant and child deaths occurred due to premature
delivery. On third rank in child mortality various illnesses are account for 18 percent child deaths. Failure in making safe delivery is thecause of 15 percent child deaths. These unscientific reasons account for 4 percent child deaths. Data shows 4 percent children die due to malnutrition. Infant and child mortality is very closely associated with malnutrition. Other reasons like ignorance about diet, poverty, inaccessibility of medical facilities are also responsible for 4 percent child death.

**Migration:**

There is positive relationship between migration and child mortality. In tribal area natural resources are rich but maximum resources have been acquired by non tribal people. Therefore maximum tribals migrate to surrounding areas for their livelihood. It has been observed that, 53.73 percent children’s death are found in regularly migrating families. On the other hand non migrating families show 46.27 percent children death in both tribes.

**Mother’s Age at Marriage:**

Mother’s age at marriage and infant mortality are closely associated with each other. It is very clear in both the tribes child mortality is observed in the mothers who are married in low age. About 83.58 percent childrens death observed in mothers who get married before 19 years. In Mahadev Koli tribe 84.21 percent child death are observed in the mothers who married before 19 years of their age. In case of Thakar 80 percent child death are noticed in the mothers who are married before 19 years of age.

**Education Status of Parents:**

It is clearly observed infant and child mortality is much higher in illiterate mothers. In 35.62 percent deaths are observed in illiterate tribal mother in both tribes. Child mortality decreases with educational attainment among mothers. Very few child deaths are observed in families whose education is above higher secondary level. About child deaths and fathers education it was noticed that 37.31 percent deaths were occurred in the family where fathers are illiterate.
Means of Communication:

Means of communication and child deaths were assessed in tribal area and it was observed that, 71.64 percent death are recorded in the family that they don’t use radio, television, newspaper and internet in both Mahadev Koli and Thakar. In families that used radio for information and entertainment, the number of deaths was only 5.26 percent, in newspaper readers 17.54 percent and only 1.75 percent in those who used internet.

Annual Income and Landholdings:

It is observed that families with low annual income show high child and infant mortality and families with high income show quite low infant deaths. In Mahadev Koli tribe 85.96 percent out of total infant and child deaths occurred in families below poverty line. The fact is more pathetic about Thakar tribe, cent percent infant and child deaths in this tribe occurred in families below poverty line. It is noteworthy that Mahadev Koli indicates 35 percent child deaths in family with average annual income below 15 thousand. About Thakar 50 percent infant and child deaths noticed in same income group. Only 14.03 percent child deaths are detected in high income group, that too only in Mahadev Koli tribe.

It is very dreadful that on an average 50 percent child deaths were found in marginal farmers. 26.86 percent children death is observed among small farmer in both tribal groups. In semi medium group of land holders negligible amount 1.57 percent of child death is recorded. It is really shocking that not a single case of child death is observed in medium and large farmers.

7.3. Conclusion:

The findings from analyses mentioned above point out that the objectives taken for this study is satisfied. Even though malnutrition is the result of several factors but it is strongly determined and controlled by social educational and economic level of society and dietary habits of people. In Akole tehsil, vast ranges of physiographic features are observed. Physical barriers like river valleys, hill ranges and forests play significant role in development of humans.
being and this is reflected in their social and economic status. Due to remote locations in tribal area, social and economic development comes with slow pace.

7.3.1. **Demographic Factors: Malnutrition and Child Mortality:**

Two factors that are closely associated with child mortality and malnutrition among tribal families are age at marriage and migration. Infant and child mortality were occurred in families which were migrate regularly. In same way infant and child mortality is very high in families where the girls are married at an early age. Similarly child mortality decreases with increasing mother’s age at marriage and vice versa. Malnutrition and infant mortality rate are higher among families which migrate regularly.

7.3.2. **Socio-Economic Factors: Malnutrition and Child Mortality:**

On the basis of above findings it may be concluded that social factors are closely associated with malnutrition and child mortality. Education attainment of parents have become as major determinant. There is significant association between educational attainment of mother and malnutrition level of children. Severe Acute Malnourished (SAM) children are more in whose mothers are illiterate. On the other hand very less Severe Acute Malnourished (SAM) children are in educated mother. Like malnutrition, high proportion of child mortality are in illiterate mothers against ot this child mortality decreases with increasing educational attainment among mothers. Vast range of malnourished children are in families where communication means were not available. More than one fourth child deaths occur in families where no communication means are available. In Likewise total literacy, male literacy, female literacy, type structure of house also remain vital in determine malnutrition and child mortality.

Economic condition of tribal is much poor it replicates in standard of living. Thus it can be say that social and economic backwardness show big footprints on the nutritional status of children. There is significant association between average annual income of family and malnutrition level. Children from below poverty line family are malnourished more than 75 percent. Occupation wise, children of (farmers) fathers and (housewives) mothers are mostly
malnourished. In this concern size of landholding, status of irrigation, number of occupations become vital in determining malnutrition level and child mortality.

There is significant relationship between economic condition and child mortality. Near about cent percent child death occur in landless, marginal and small landholder farmers. It is observed that cent percent and 91 percent child mortality occurred in Thakar and Mahadev Koli families which are below small landholding.

**7.3.3. Dietary Habits: Malnutrition and Child Mortality:**

Dietary habits are vital element in controlling malnutrition and child mortality. Diet is direct element which controls malnutrition which varies over time and space. There is significant relationship between breastfeeding, diet and malnutrition. Children that are breastfeeded only 6 month to one year is found mostly malnourished. Malnutrition decreases with increasing duration of breastfeeding. In case of diet of children it is observed that on an average 45 percent tribal children were Severe to Moderate malnourished because of they get medium low to very low quality diet.

Sanitary habits and malnutrition were closely associated, number of malnourished children is significantly low in those families who have built and operate toilet. Out of total Severe Acute Malnourished children 80 percent are from those families where toilet are not built and operated. Only 20 percent families are observed in tribal area where toilets available.

Child mortality is considerably high 61.19 percent among those families where toilets are not built and operated. Tribe wise 61 percent and 60 percent child deaths are recorded in families without toilets in Mahdev Koli and Thakar respectively.

Therefore it can be concluded in that the reasonable relationship between malnutrition and child mortality and socio economic elements of tribal and dietary practice among them. The present study comes with the fact that social factors and economic status of family have immense significance in child malnutrition and mortality. Especially mothers should give adequate breastfeeding to baby and essential supplementary foods should be provided
within time in adequate proportion. To combat the malnutrition and child mortality, hygienic habits and sanitation improvement should be carried on individual level.

7.4. Suggestions
The study has given the suggestion for the betterment and welfare of tribal people. Based on the findings and conclusion of study here are some suggestions for betterment and welfare of tribal people:

1. Many cases of malnutrition and child mortality are observed due to low weight at birth and it is the result of premature deliveries which are caused by early age marriages. Age for marriage should be strictly followed according to law which can lead to better health of children in future. During gestation period, mothers should be provide adequate diet and extra medical facilities in remote area through mobile ambulance van be given. Government and NGOs should motivate people for institutional deliveries which will reduce Infant mortality.

2. Providing nutritious meal to satisfy daily needs of family especially of children, infants, mothers is very important. Generally malnutrition is responsible for majority of diseases and this can be prevented by providing nutritional food to children. Dietary habits of parents and children are also responsible for malnutrition. Therefore, the need for square meal should be recognized. In this concern Integrated Child Development Service (ICDS) schemes should be rejuvenated by qualitative means and not merely quantitatively.

3. ‘Today’s girls are mothers of tomorrow’ with this judgement tribal girls should be provided attractive school packages to encourage their education. Early age of marriages is the major obstacle in girl’s education. It should be strictly restricted. Many tribal children work part time in agriculture and collect minor forest product. It becomes major hindrance in their school education and Ashram schools are not able to attract tribal children. It increases
drop out ratio in schools. Increase in educational attainment is a longlife remedy for reducing child mortality and malnutrition.

4. Migration is an important strategy of tribal people to gain earning and economic stability. But migration leads to malnutrition and child mortality. Many time tribal culture is encroached upon by external people. Hence there should be strong action against such by government. This will protect their original culture.

5. Defecation in the open area contaminates air, surface water, groundwater. This leads to many diseases and infections in small babies which causes child malnutrition and mortality. To avoid this, defecation in open area should be prohibited and toilets should be used regularly. If due to some inconvenience causes open defecation could not be stopped, human excreta should be covered by soil, and make unreachable for flies and animals.

6. At last, only government schemes cannot change this pathetic scenario related to malnutrition and child mortality. Therefore, the governmental schemes should be sketched according to the needs and feasibility of local people and schemes and services should become more attractive which can increase the participation of society.