

# Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Lucknow Slums

**Thesis**

SUBMITTED TO THE  
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY  
LUCKNOW

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**2019**

## DECLARATION

I, **Preeti Yadav**, declare that the work embodied in this thesis entitled “**Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Lucknow Slums**” has been carried out by me, under supervision of Prof. Birendra Narain Dubey, Head, Department of Sociology, Babasaheb Bhimrao Ambedkar (A Central University), Lucknow.

The work included in this thesis has not been submitted for any other degree and unless otherwise stated, is all original. I have duly acknowledged all the sources used by me in the preparation of this thesis.

Lucknow

Date: 26-08-2019

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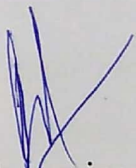
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## CERTIFICATE

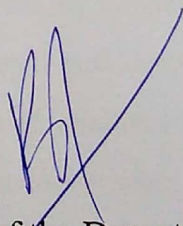
This is to certify that the thesis “**Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Lucknow Slums**” submitted by **Preeti Yadav** is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

This thesis submitted to Babasaheb Bhimrao Ambedkar University Lucknow satisfies all the requirements as stipulated in the *Doctor of Philosophy (Ph.D.) regulations – 1999 as amended in 2008/2010/2013* and it is fit for submission and evaluation for the award of the degree of Doctor of Philosophy of the University.



Supervisor

Date: 26.08.2019



Head of the Department

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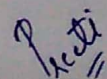
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Place: Lucknow

Date: 26-08-2019



Preeti Yadav

## **PREFACE**

One of the marked features of Indian demography is rapid and unplanned urbanization. India's urban population comprises of 31.16 per cent of the total population (Census of India, 2011). The process of urbanization is a propitious sign of transition, however unplanned and rapid urbanization leads to large scale migration of population to cities which often results in the mushrooming and agglomeration of slums characterized by the inhuman and dilapidated living conditions (Davis, 2006). Besides, urbanization is also intricately linked with the number of socio-economic problems. Some of these major problems are unemployment, poverty, overcrowding, congestion, housing shortage, inadequate civic amenities such as lack of safe drinking water, toilet facilities, sanitation, sewage, etc. These problems are directly associated with the health and the availability of quality health facilities in urban areas. However, poverty and lack of adequate housing conditions are the most basic and primary by-product of unplanned urbanization. In cities the most visible dimension of poverty is lack of proper housing and living conditions. Due to increasing employment avenues and opportunities in the cities, there is huge influx of population to the urban areas. Consequently, the people of lower economic strata in cities i.e. urban poor are forced to accommodate themselves in the substandard housing, squatter settlements and slums. Therefore, one of the integral components of urbanization in India is the development of slums.

The unhygienic and insanitary living conditions in slums are considered to be highly detrimental for the physical, social, mental and moral well-being of its inhabitants. Substandard housing and lack of basic services along with poor purchasing power and low nutritional intake increases the frequency of infections which add to the episodes of morbidities with acute respiratory and diarrhoeal diseases being the most common (Gracey, 2002). Ultimately, such a scenario is bound to have an adverse impact on the health and nutritional status of the slum inhabitants particularly on the women of reproductive age and their children. Poverty, lack of resources, economic constraints and frequent episodes of diseases add to their misery. WHO (1999) has rightly stressed out that lack of infrastructure and other services in urban slums and squatter settlements makes their environment life-threatening. Even

the occurrence of common infection and diseases in slums can often become catastrophic to the population inhabiting there.

Malnutrition is the unsatisfactory form of nutrition which often results in poor health. It is an outcome of imbalance of nutrients which occur due to lack or excess intake of nutrients in the diet. It could be of two types either undernutrition or overnutrition. Undernutrition refers to inadequate intake of essential nutrients in the human body whereas overnutrition is a state of excessive supply of one or more nutrients which stresses the bodily reserves. Malnutrition causes the impairment of physical and mental development and it also hinders the cognitive and intellectual ability of an individual.

Women not only play a crucial role in determining the health of their family members but also the health of the community as they are the health care givers as well as recipients at the same time. Therefore, the women's health must be placed at highest priority and special attention should be given in understanding the health needs of the women. There are number of factors which influence the health of the population. These factors are the socio-economic status and demographic features of the community, access and availability of health services, health practices, medical advancement and technology, quality of health care providers, knowledge concerning health and hygiene, awareness and utilization of the available health services, etc. The need to provide health care services exclusively to women has been felt at the global level. The health and nutritional status of women is inevitably associated with the socio-economic as well as cultural factors and these factors continue to affect them throughout their lives. Moreover, these consequences not only had an impact on well-being of women but also on the health of their children, allocation and distribution of resources and the functioning of the households.

Toady malnutrition is not merely viewed as an outcome of food deficiency, but it is considered as a multidimensional problem resulting from interplay of various factors. The problem of malnutrition among children has its foundational roots in the mother's womb. Previous studies have shown clear-cut evidences to prove that maternal nutrition and socio-economic indicators such as family size, mother's educational level, financial resources, purchasing power, etc. are closely related with the physical and mental growth of the children. Yet, maternal nutrition is the most

common factor responsible for underweight, stunting, wasting, increased risk of infections and impairment of mental growth among children. Rao et. al. (2010) attributed that malnourished women are more likely to deliver an underweight baby. Low birth-weight makes infants vulnerable to infections and morbidities which often prove to be life-threatening for them. Malnutrition is one of the important causes of premature diseases and deaths. Globally, it is a major contributor to the burden of diseases (WHO, 2008).

The present study entitled as “Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Luknow Slums” is organised in eight chapters, each dealing with the different aspects of the study. This study is an attempt to assess the health and nutrition status of women and their children living in the urban slums of Lukcnow city. The study also endeavoured to examine the awareness and utilization of some of the health care programmes among the slum inhabitants. With ever increasing population and large scale migration to the cities for better living and employment opportunities, the mushrooming of slums has become a common urban phenomenon. Lucknow being the capital of Uttar Pradesh attracts people from the adjacent districts and states and thus the city experiences a large influx of people. Due to lack of resources and poor socio-economic condition, this expanding population is forced to live in substandard housing. The poor living and housing conditions, lack of basic civic amenities and sanitation, unhygienic and faulty food habits coupled with poverty and deprivation makes the slum dwellers particularly women and children highly vulnerable to malnutrition and subsequently to number of morbidities. Nutritional deficiencies and frequent episodes of illnesses act as a barrier in leading a healthy normal life.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

ANM	Auxiliary Nurse Midwifery
ANP	Applied Nutrition Programme
ARI	Acute Respiratory Infection
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
BMI	Body Mass Index
CHW	Community Health Workers
DUDA	District Urban Development Agency
ECI	Economic Condition Index
FAO	Food and Agriculture Organization
F-IMNCI	Facility Based Integrated Management of Neonatal and Childhood Illness
GBV	Gender Based Violence
GOI	Government of India
HCI	Health Condition Index
HDI	Human Development Index
HDS	Household Deprivation Score
HECI	Household Environmental Condition Index
IAP	Indian Academy of Paediatrics
ICDS	Integrated Child Development Services
IDDs	Iodine Deficiency Disorders
IMR	Infant Mortality Rate
IYCF	Infant and Young Child Feeding
JSSK	Janani Shishu Suraksha Karyakram
JSY	Janani Suraksha Yojana
LUA	Lucknow Urban Agglomeration
MDGs	Millennium Development Goals
MMR	Maternal Mortality Rate
MUAC	Mid Upper Arm Circumference
NFHS	National Family Health Survey
NGCP	National Goitre Control Programme

NGO	Non-governmental Organization
NHP	National Health Policy
NNMB	National Nutrition Monitoring Bureau
NRC	Nutritional Rehabilitation Centres
NUHM	National Urban Health Mission
OBCs	Other Backward Castes
RDA	Recommended Dietary Allowance
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
RSBY	Rashtriya Swasthya Bima Yojana
SC	Scheduled Castes
SCI	Slum Condition Index
SDGs	Sustainable Development Goals
SLA	Sustainable Livelihood Approach
SNP	Special Nutrition Programme
ST	Scheduled Tribes
SUDA	State Urban Development Agency
TFR	Total Fertility Rate
UHI	Urban Health Initiative
UNCHS	United Nation Centre for Human Settlement
UNDP	United Nation Development Programme
USAID	United States Agency for International Development
USHA	Urban Social Health Activist
UNICEF	United Nations International Children's Education Fund
VAD	Vitamin A Deficiency
WHO	World Health Organization



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*Chapter-I*  
*Introduction*

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# Chapter I

## Introduction

### 1.1 Background of the Study

Health is one of the most fundamental human needs and it is aspired universally. Health is the balanced development of physical, mental and social capacities of an individual. It is a positive state of well being which is essential for the fulfilment of rich and full life. Health is thus crucial for the integrated and concurrent development of an individual and community as well as for the socio-economic prosperity of a country. WHO (Bickenbach, 2017) has defined health as “a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.” This definition suggests health is not just only the absence of diseases but it is the optimal functioning of human body and mind. Health is one of the foremost indicators for determining the quality of human life and social development in a country. Moreover, quality health care is regarded as one of the most basic human rights and it is indispensable for the preservation as well as the promotion of good health.

One of the marked features of Indian demography is rapid and unplanned urbanization. India’s urban population comprises of 31.16 per cent of the total population (Census of India, 2011). The process of urbanization is a propitious sign of transition, however unplanned and rapid urbanization leads to large scale migration of population to cities which often results in the mushrooming and agglomeration of slums characterized by the inhuman and dilapidated living conditions (Davis, 2006). Besides, urbanization is also intricately linked with the number of socio-economic problems. Some of these major problems are unemployment, poverty, overcrowding, congestion, housing shortage, inadequate civic amenities such as lack of safe drinking water, toilet facilities, sanitation, sewage, etc. These problems are directly associated with the health and the availability of quality health facilities in urban areas. However, poverty and lack of adequate housing conditions are the most basic and primary by-product of unplanned urbanization. In cities the most visible dimension of poverty is lack of proper housing and living conditions. Due to increasing employment avenues and opportunities in the cities, there is huge influx of population to the urban areas. Consequently, the people of lower economic strata in cities i.e.

urban poor are forced to accommodate themselves in the substandard housing, squatter settlements and slums. Therefore, one of the integral components of urbanization in India is the development of slums.

A slum is usually considered as a habitat unit which is characterized by defective and faulty social, economic, physical, housing and living conditions. UN-Habitat Report (2003) has defined a household in slum as “a group of individuals who live under the same roof and lack one or more basic necessities such as access to safe drinking water, toilet facilities and sanitation, adequate space and housing area, and security of tenure.” The definition and concept of slums and squatter settlements vary from country to country depending on the basis of the socio-economic and environmental conditions prevalent in each society. The Government of India (Chandramouli, 2003) has highlighted some of the basic characteristics of slums and these features are dilapidated housing, inadequate lighting and poor ventilation, acute overcrowding and congestion, paucity of safe water and toilet facilities, absence of sanitation and non-availability of social services.

An in-depth analysis depicts that slum has its own social way of life with a peculiar character. It has its own set of values, norms and sanctions which are reflected in their substandard housing, health practices, insanitary conditions, poverty, social isolation, deviant behaviour and vices. Generally, a slum lacks access to basic civic services such as water supply, drainage, sewerage, roads, etc. and even if they had them, these services would be poor and inadequate resulting in poor hygiene and sanitation.

The unhygienic and insanitary living conditions in slums are considered to be highly detrimental for the physical, social, mental and moral well-being of its inhabitants. Substandard housing and lack of basic services along with poor purchasing power and low nutritional intake increases the frequency of infections which add to the episodes of morbidities with acute respiratory and diarrhoeal diseases being the most common (Gracey, 2002). Ultimately, such a scenario is bound to have an adverse impact on the health and nutritional status of the slum inhabitants particularly on the women of reproductive age and their children. Poverty, lack of resources, economic constraints and frequent episodes of diseases add to their misery. WHO (1999) has rightly stressed out that lack of infrastructure and other services in

urban slums and squatter settlements makes their environment life-threatening. Even the occurrence of common infection and diseases in slums can often become catastrophic to the population inhabiting there.

Fry et. al. (2002) has pointed out that the mortality rates especially of children are significantly higher among the urban poor in comparison to the national averages. The untimely death of children in slums is a matter of serious concern. In urban slum dwellings, every year one out of ten children is likely to die before completing five years of age and one out of 15 children is not able to live up to their fifth birthday. These incidences are particularly higher in less developed states such as Uttar Pradesh, Bihar, Madhya Pradesh and Odisha. In the urban slums the infant mortality rate are 1.6 times higher than the national average and those who survive find it difficult to attain the normal growth and development (Arnold, Parasuraman, Arokiasamy and Kothari, 2009).

### **Nutritional Status of Women and Children in Slums**

Nutrition is one of the important indicators for determining good health. It is the cornerstone that affects the health of all be it rich or poor. Nutrition is essential not only for the physical development but also for the mental growth of the individuals. It paves the way for effective development, growth, work, and resistance towards the infections. It helps individuals to attain their fullest potential which would be instrumental for the realization of their goals. Adequate nutrition is the need of all age groups especially for women of reproductive age and children. The appropriate nutritional intake strengthens the immunity system and lowers the probability of illness resulting in good health (WHO, 2008).

Malnutrition is the unsatisfactory form of nutrition which often results in poor health. It is an outcome of imbalance of nutrients which occur due to lack or excess intake of nutrients in the diet. It could be of two types either undernutrition or overnutrition. Undernutrition refers to inadequate intake of essential nutrients in the human body whereas overnutrition is a state of excessive supply of one or more nutrients which stresses the bodily reserves. Malnutrition causes the impairment of physical and mental development and it also hinders the cognitive and intellectual ability of an individual.

Women not only play a crucial role in determining the health of their family members but also the health of the community as they are the health care givers as well as recipients at the same time. Therefore, the women's health must be placed at highest priority and special attention should be given in understanding the health needs of the women. There are number of factors which influence the health of the population. These factors are the socio-economic status and demographic features of the community, access and availability of health services, health practices, medical advancement and technology, quality of health care providers, knowledge concerning health and hygiene, awareness and utilization of the available health services, etc. The need to provide health care services exclusively to women has been felt at the global level. The health and nutritional status of women is inevitably associated with the socio-economic as well as cultural factors and these factors continue to affect them throughout their lives. Moreover, these consequences not only had an impact on well-being of women but also on the health of their children, allocation and distribution of resources and the functioning of the households.

Toady malnutrition is not merely viewed as an outcome of food deficiency, but it is considered as a multidimensional problem resulting from interplay of various factors. The problem of malnutrition among children has its foundational roots in the mother's womb. Previous studies have shown clear-cut evidences to prove that maternal nutrition and socio-economic indicators such as family size, mother's educational level, financial resources, purchasing power, etc. are closely related with the physical and mental growth of the children. Yet, maternal nutrition is the most common factor responsible for underweight, stunting, wasting, increased risk of infections and impairment of mental growth among children. Rao et. al. (2010) attributed that malnourished women are more likely to deliver an underweight baby. Low birth-weight makes infants vulnerable to infections and morbidities which often prove to be life-threatening for them. Malnutrition is one of the important causes of premature diseases and deaths. Globally, it is a major contributor to the burden of diseases (WHO, 2008).

The most prominent form of nutritional deficiencies prevalent among women are chronic energy deficiency, poor BMI, anaemia, etc. There are number of factors responsible for nutritional problems among women in slums. Living environment is an important factor which plays a significant role in this context. Women in urban

slums are bound to live in inhuman housing conditions coupled with lack of basic services and financial resources which make their situation worse. Women living in urban slums experience a transition in their lifestyle, from wife and a mother to being members of the labour force. Their participation in occupational activities demands a lot of compromise in their familial and child bearing and rearing practices. Sometimes in order to financially support their families women engage themselves in highly labour intensive work and it creates gruesome situation especially for those women who have delivered recently. They fail to get sufficient time to recuperate from delivery and this further stresses their health and nutritional status. Consequently, it adversely affects their bodily reserves which in turn reduce the lactation of mothers (Rode, 2009). This leads to the early introduction of the weaning food and inadequate supplementation of essential nutrients.

Women in urban slums engage themselves in number of menial jobs to earn money. They are bound to leave their young children at home to be looked after by other care givers. These care givers are often older siblings or relatives. This affects the diet of the young children and they are sometimes fed insufficient number of times by the other care givers. Mother's involvement in the unorganized sector hinders them from optimum utilization of available health care facilities such as pre and postnatal care, immunization, family planning, etc. Ultimately, the young children in urban slums remain deprived from the maternal care particularly when they need it the most.

Various health care policies and programmes have been launched in the country to address the health problems. However these programmes are macro in nature and they fail to penetrate at the micro-level. These policies and programmes lack special provisions for the socially marginalized and deprived sections of the society. There is need to formulate target specific strategies to cater the needs of this socially excluded population. The policy makers have largely focused their attention on the rural areas and the problems of urban poor are by and large ignored. Although few interventions have been made to tackle their health problems, but more such steps are needed to be taken. ICDS, *Janani Suraksha Yojana*, *Janani Shishu Suraksha Karyakram* are some of the schemes which have been operating for women and children in the urban areas. However, proper monitoring of these programmes is required for optimal utilization by the urban poor. Nutritional programmes focusing on urban poor should also be launched to address the problem of malnutrition. Health

programmes specifically targeting the urban slum population should be formulated and implemented to improve their health scenario.

It is imperative to implement some target specific interventions and strategies in order to improve the nutritional and health profile of women and children in slums. With ever increasing population and large influx of population to cities, there is urgency to implement such an approach for tackling the increasing health issues in urban poor. For evolving feasible strategies to alleviate health and nutritional problems of slum population an essential prerequisite is baseline information. The present study conducted in slums of Lucknow would make an attempt in this direction.

## **1.2 Statement of the Problem**

The rapid growth in the number of slums is one of the major concerns of Lucknow city. Slums or the vulnerable sections of the population are scattered throughout the city. Rapid and unprecedented urbanization has led to the large scale migration of population to the cities for better employment opportunities. This huge influx of population finds it difficult to live in decent housing conditions due to economic constraints. Thus, they are forced to live in inhuman and insanitary conditions in substandard housing and squatter settlements. This leads to the mushrooming of slums in the urban areas. Slums are characterised by lack of basic facilities like adequate housing and space, safe drinking water, toilet facilities, sanitation, proper ventilation and sunlight, social security, secure tenure, apathy, crime, etc. The living and environmental conditions in slums are not very conducive for the health of the inhabitants. Lack of infrastructural and other facilities make slums one of the most life-threatening environments. Unhygienic conditions coupled with low purchasing power and inadequate dietary intake results in frequent episodes of illnesses particularly among women of reproductive age and their children. Women residing in slums face the double burden of poverty and gender discrimination.

The health and nutritional status of women is directly associated with that of their children. Due to poor socio-economic conditions, women living in slums had to compromise in every dimension. Lack of appropriate pre and postnatal care stress the bodily reserves of the mothers. Inadequate and poor child rearing practices in slums is a common phenomenon. During early childhood faulty feeding practices results in

malnutrition which affect the physical, mental and social development of children in slums. Malnutrition is one of the most prevalent health problems among children. Lack of awareness about health care programmes and other health facilities among slum dwellers further worsens the situation. Thus, this study proposes to address and contribute to the existing knowledge of health and nutritional status of women and children living in slums. Health and good nutrition are critically connected with each other. Strategies focusing on health invariably promote good nutrition and interventions implemented in nutrition promote good health. Therefore, it is imperative to address the health and nutritional problems of slum dwellers for multidimensional growth and development of the country.

Hence the research is titled as “Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Lucknow Slums”.

### **1.3 Objectives of the Study**

The specific objectives of the present study are as follows:

1. To understand the health care policies and programmes in India.
2. To analyze the socio-economic status, housing conditions and health practices of families in the slums of Lucknow.
3. To assess the nutritional status of women and their children in the slums.
4. To examine the impact of maternal factors on the nutritional and health status of children.
5. To explore the extent to which health care facilities are being utilized by the women living in slums.

### **1.4 Hypotheses of the Study**

On the basis of above objectives following hypotheses have been formulated:

1. Health care policies and programmes in India are operationalized at macro level.
2. The socio-economic status and housing conditions of families in slums is poor.
3. The nutritional and health status of women and their children in slums is below the normal level.
4. The maternal factors are associated with the nutritional and health status of children.

5. The access and utilization of health care services is lower among women and children living in slums.

### **1.5 Need of the Study**

The rapid growth in the agglomeration of slums in the urban areas depicts increase in the number of urban poor which pose a challenge to the local health authorities and this deserves an intensive and exhaustive investigation. With the ever increasing population of Lucknow, the repercussion of poor living on the urban population has now become a matter of growing concern. So, it is of paramount importance that the authorities should endeavour to provide quality health care services to the rapidly increasing number of urban dwellers, especially to those who are residing in urban slum areas. It is imperative that the formal health sector must address the wide spectrum of health problems that are being faced by the neglected and marginalized slum population. The present study is an attempt to assess the health and nutritional problems of the women and their children living in the slums of Lucknow district of Uttar Pradesh. The study would focus on the entire spectrum of health and nutritional problems in slums and this would facilitate useful knowledge to the policy makers for formulation of special programmes with emphasis on the slum dwellers. As not much concrete work has been done earlier in context to the health and nutritional status of women and children living in slums of Lucknow, the present study would provide a new dimension in understanding their nutritional status and this would contribute significantly in the existing knowledge.

Most of the health care programmes are formulated with the focus on rural population. The nature of health problems in urban areas is different from the rural and requires special attention. The slum dwellers usually get neglected and failed to receive importance in the health care schemes. The present study would also help in drawing the attention of the policy makers towards the problems of the slum dwellers and formulating policy and programmes for these resourceless people. The present study would develop a better understanding of nutritional problems of women and children in slums and the local authorities would be benefitted in launching various schemes and programmes at local level in order to improve health and nutritional status of these socially excluded and deprived people. The present study would also prove beneficial to the Non-Governmental Organizations (NGOs) which are working

in slum areas and would help them in understanding what more could be done to improve the health and nutritional status of women and children in slums.

## 1.6 Area of the Study

The district of Lucknow is selected as the study area of the present research work. It is the capital city of the state of Uttar Pradesh. It is situated in the Awadh (Oudh) region and located almost 500 kilometres South-East of New Delhi. Lucknow city is situated in the heart of the Gangetic plain. Lucknow covers a total area of around 2528 square kilometres. The geographical location of the capital city is between 26.50° North and 80.50° East. The Lucknow city is divided into six zones and further it is subdivided into 110 administrative wards. The city is surrounded by various rural towns and villages such as Malihabad, Kakori, Mohanlal ganj, Gosainganj, Chinhath, Itaunja. On the eastern side of Lucknow, Barabanki district is located, whereas on the western side lies the Unnao district. Raebareli district lies on the southern side and on the northern side the Sitapur and Hardoi districts are located. The famous river Gomti flows from North-West to South-East through the heart of the city and the river divides Lucknow city into two major regions: Cis-Gomti and Trans-Gomti regions (Lucknow Municipal Corporation, 2015).

Looking at the history of the city, it is revealed that the city derives its nomenclature from the name of Lakshman. He was the younger brother of Lord Rama and was also known as Lakhan. However, according to the Muslim minority the city was known as Nucklau. Over the period of time, the city came to be known as Lakhnau. With the advent of British in the city, the name was anglicised and the city received its modern name Lucknow. In 1857, Lucknow was one of the important centres of Indian rebellion against the British Empire. With the passage of time, Lucknow emerged as one of the important cities of North India. After independence, Lucknow became the capital of Uttar Pradesh (Srivastava, 2015).

One of the popularly known names of Lucknow is the city of Nawabs. It has always been known as the multicultural city. The city is famous for its culturally rich heritage and therefore it is also referred as the Golden city of the East and *Shiraz-i-Hind*. During the era of 18<sup>th</sup> and 19<sup>th</sup> centuries, the city prospered and rose as a cultural and artistic capital of North India. Nowadays, Lucknow is emerging as one of the fastest growing cities of India and rapidly emerging as the commercial and

retailing hub. Lucknow is also the seat of governance and the trading hub for nearby towns. Hindi is the official language of Uttar Pradesh, however, the city is considered to be the origin point of the Urdu language. Lucknow is a fascinating amalgam of scenic beauty, old historic city, modern urban planning, culture, fine cuisine, tourism and music. It is one of the most flourishing and biggest cities of Uttar Pradesh. It is the second largest metro of North and Central India after Delhi. There are various famous places in the city to visit and they make it one of the attractive and unique cities of the world like Asafi Imambara or Bara Imambara, Hussainabad Imambara or Chotta Imambara, Baradari, Rumi Darwaza, British Residency, Ambedkar memorial, Dr. Bhimrao Ambedkar Samajik Parivartan Sthal, Dr. Bhimrao Ambedkar Gomti Budhha Vihar, Smriti Upvan, Ram Krishna Math, Planetarium, and museum etc.

### **Demographic Features**

As reported by the Census 2011, the total population of Lucknow is 4,589,838 and out of which 2,394,476 are males and 2,195,362 are females. The urban population of Lucknow district is 3,038,996, which is over 6.8 per cent of the total population of the state. In 2001, the population of Lucknow was 3,645,509 and it has been estimated that the decadal growth between 2001-2011 was 25.82 per cent. As per the Census 2011, the density of population of Lucknow city is 1,816 sq. km., whereas in 2001 it was 1,443 persons per sq. km. The highest proportion of its population is of Hindus (67 per cent) and then it is followed by Muslims (30 per cent), Jains (0.3 per cent) and others (2.3 per cent). Further, as per Census 2011, the sex ratio of the Lucknow district is 917 females per 1000 males, whereas the urban sex ratio is 923. However, the sex ratio of the city is much less than the sex ratio of the country, which is 940 females per 1000 males. According to the Census report of 2011, the overall literacy rate of Lucknow district is 77.3 per cent, where male literacy rate is 82.6 per cent and female literacy rate is 71.5 per cent. However, the literacy rate of Lucknow urban is 81.9 per cent. The literacy rate of Lucknow is higher than the overall literary rate of Uttar Pradesh (67.7 per cent) (Census of India 2011, 2014).

**Table 1.1: Lucknow District and Lucknow Urban in Census 2011**

<b>Description</b>	<b>Lucknow District 2011</b>	<b>Lucknow Urban 2011</b>
<b>Actual Population</b>	4,588,455	3,038,996
<b>Male</b>	2,394,476	1,580,724
<b>Female</b>	2,195,362	1,458,272
<b>Population Decadal Growth Rate</b>	25.8	30.9
<b>Density/km<sup>2</sup></b>	1,816	6,456
<b>Sex Ratio (per 1000)</b>	917	923
<b>Child Sex Ratio (0-6 Age)</b>	915	905
<b>Average Literacy (%)</b>	77.3	81.9
<b>Male Literacy (%)</b>	82.6	85.6
<b>Female Literacy (%)</b>	71.5	77.9

*Source: Census of India 2011*

### **Lucknow Urban Agglomeration**

In the year 1981, Lucknow Urban Agglomeration (LUA) was included in the list of million-plus city. Lucknow city is among one of the six million plus cities in Uttar Pradesh. Apart from the areas which are under the jurisdiction of the Lucknow Municipal Corporation (LMC), the urban agglomeration also consists of the Lucknow Cantonment (Government of Uttar Pradesh, 2006). The decadal growth of the population of Lucknow Urban Agglomeration and Lucknow Municipal Corporation has been shown in the table 1.2. From the table it is evident that the population of Lucknow Urban Agglomeration, which includes the population of Lucknow Municipal Corporation as well as Lucknow Cantonment, has increased gradually from 10.07 lakh (1981) to 29.01 lakh (2011). In the Lucknow City Development Plan (Government of Uttar Pradesh, 2006), it has been reported that the population of Lucknow city grew faster than any of the other cities of the state. The expansion in the jurisdiction of the Lucknow Municipal Corporation from 14,594 hectares in 1981 to 33,750 hectares in 1991 is considered to be one of the major reasons for this population growth.

**Table 1.2: Decadal Growth of Population in Lucknow Urban Agglomeration and Lucknow Municipal Corporation (in lakhs) (1981-2011)**

Year	Lucknow Urban Agglomeration			Lucknow Municipal Corporation			Lucknow Cantonment		
	Growth			Growth			Growth		
	Population	Decadal Growth	%	Population	Decadal Growth	%	Population	Decadal Growth	%
1981	10,07,604	193,622	23.7	947,990	173,346	22.5	59,614	20,276	51.54
1991	16,69,204	661,600	65.7	16,19,116	671,125	70.8	50,089	-9,525	-15.98
2001	22,45,509	576,305	34.5	21,85,927	566,811	35	59,582	9,493	18.95
2011	29,01,474	980,491	43.7	2,815,601	980,073	44.8	60,000	418	0.70

*Source: Lucknow City Development Plan 2006, Census 2011*

### **Slums in Lucknow**

The rapid growth in the number of slums is one of the major concerns of Lucknow city. Slums or the vulnerable sections of the population are scattered throughout the city. The major spots where the clusters of slums are rapidly mushrooming are on the sides of the river Gomti, in the vicinity of railway tracks and specifically in the fringe areas of the city. There are great variations in the definitions of slums and corresponding estimates of numbers of slums and population of slums dwellers in Lucknow and consequently, this hampers the planning and execution of various schemes and investments. Regardless of this, it is a commonly agreed fact that a large proportion of Lucknow's population is constituted by poor people, majority of whom resides in urban slums.

On the basis of definition, the estimates of slum population vary significantly and it varied so much so that the Census 2011 initially did not reported any slums in Lucknow city. However, the findings were revised and central statistics office reported that there were 610 notified slums and 104 non-notified slums and it was identified that a total of 10, 97, 110 slum dwellers were residing in the Lucknow city (Census of India 2011, 2013). In 2005-06, Vigyan Foundation conducted a survey and mapped that city had a total of 787 slum settlements with the slum population of about 11 lakh. The people dwelling in slums have to face several problems, particularly related to proper housing facilities and lack of basic civic amenities.

Almost 40 per cent of the slum population have sanitation problem. Very few households in slums are connected with informal sewers and these sewers discharge into nearby open drains, which makes the situation worse. This shows the decaying condition of sanitation in the city (Actionaid, 2014).

**Table 1.3: Demographic Profile of Slums in Lucknow**

Slum Population (in lakhs)	10,97,110	Source: RSAC
Slum Population as percentage of urban population	40.20%	
Number of notified slums	610	Source: DUDA
Number of slums not notified	104	Source: RSAC
Number of slum households	2,26,400	Source: RSAC
Number of slums having a primary school	610	Source: BSA Deptt.
Number of slums having AWC	386	Source: ICDS Lucknow and BSUP
Number of slums having primary health care facility	NA	-

In one of the surveys conducted in 2005 by Oxfam, it was revealed that a large proportion of Lucknow city's population lives in slums. Majority of slum dwellers build their hutment on illegally occupied lands, on the sides of railways, near residential colonies of the society as well as commercial areas, in the fringe and peri-urban areas. The organisation also reported that there are various factors responsible for growth of slums and poverty in the Lucknow city such as large scale rural-urban migration, problems of unemployment and underemployment, high concentration of labour, low wage and irregular job, city growth in unplanned and unorganised manner, inadequate accessibility and availability of basic services etc. (Srivastava, 2015). The findings of Oxfam survey also asserted that slum dwellers are directly or indirectly linked with majority of criminal activities and this fact has been clearly proved by city's crime record. The poor people residing in these slum settlements have several vices and have strong habits of smoking, drinking, gambling, etc. and this lead them towards anti-social activities and malpractices. In their houses, female members play a significant role in managing the household expenditures. Their children are the worst affected, as they suffer from several hardships and foremost

being the lack of parental care. The environmental condition of slums impairs the adequate physical and social development of the children. Generally, children living in slums are involved in child labour and work in hotels, motels, dhabas and are often involved in rag picking activities (Government of Uttar Pradesh, 2006).

According to Uttar Pradesh Slum Areas (Improvement and Clearance) Act 1962, “an area is considered as a slum when the majority of buildings in that area are dilapidated, deteriorated, over-crowded and have faulty arrangement of buildings and streets, lack adequate ventilation, light, basic civic amenities or sanitation facilities, and are precarious for the social safety, security and health of the people inhabiting in that area” (Government of Uttar Pradesh, 2006). Although, in different official records the number of slums and population of slum dwellers in the city are varied, but on the basis of all available estimates there can be a united conclusion that the status of availability of services and infrastructure facilities in these settlements are grave.

In the table 1.4, the total population of Lucknow city and the population of slum dwellers between the years 1981-2011 have been represented. The sources of this table are different official records such as Census of India, District Urban Development Agency (DUDA), State Urban Development Agency (SUDA)/United Nation Centre for Human Settlement (UNCHS) and Oxfam. The table clearly illustrated that with the report of different organisations, the population of slum dwellers varied. Therefore, it is clear that comprehensive examination of the existing situation of slum dwellers is quite difficult. However, it is evident from the data mentioned in the table that the growth in the total population of the city is followed by the increase in the number of slums and population of slum dwellers from 1981 to 2011. The rapid growth in the number of slum settlements is indicative of growth of poverty in the Lucknow city.

**Table 1.4: Total Population and Slum Population of Lucknow since 1981-2011 (in lakhs)**

Reports	1981		1991		2001		2011	
	Total Population	Slum Population	Total Population	Slum Population	Total Population	Slum Population	Total Population	Slum Population
Census	9.47	2.85	16.19	6.97	21.85		45.8	10.97
SUDA/U NCHS	-	-	-	-	21.85	11.00	-	-
Oxfam	-	-	-	-	21.85	10.18	31.66	11.00
DUDA	-	-	-	-	21.85	6.70	31.66	7.83

Source: Various as cited in table

According to the Oxfam report of 2005, there are total 787 poor slum settlements in the Lucknow city, which includes both authorised as well as unauthorised slums. As per region, these poor settlements are categorised into five different regions i.e. East, West, North, South and Central region. The eastern region of the city covers Indranagar, Gomtinagar and Chinhat. This region is divided into 10 wards with a total of 67 slums settlements. In the West region, Alamnagar, Haidarganj, Balaji and Rajajipuram are situated and this region has a total of 87 slums colonies which is divided into 13 wards. The third region of the city is North and it constitutes of Aliganj, Vikasnagar, Kursi road and Sitapur road. The north end of the city has a total of 147 slum colonies, which is divided into 20 wards. In the southern region of the city, Alambagh, Amausi and Telibagh are situated. This region is divided into 18 wards with 168 slum colonies. The last region is 'central region' and it covers a large major portion of the city. In this region, Chawk, Aminabad and Charbagh are situated and it constitutes the highest number of slums i.e. 318, which is divided into 49 wards. In total, there are 787 slums in the city which have been divided into 110 wards (Srivastava, 2015).

**Table 1.5: Region-wise Distribution of Slums in the Lucknow City**

Regions	East	West	North	South	Central	Total
Number of Wards	10	13	20	18	49	110
Number of Slums	67	87	147	168	318	787

Source: Oxfam Survey Report 2005 in Lucknow City Development Plan 2006

In 2005, DUDA conducted a survey to investigate about the conditions of slums in the Lucknow city. In the table 1.6, the data of several indicators are presented which explains the situation of slums in the city. The table illustrated that about 38.6 per cent houses of the total slum households are *pucca* and it is followed by 36.2 per cent semi-*pucca* houses, 13.4 per cent *kaccha* houses and there are about 9.8 per cent *Jhopadis*. From the data it is evident that majority of the houses in slum settlements are of *pucca* and semi-*pucca* nature. The table shows that almost half of the houses surveyed by DUDA have their own individual taps and 38.8 per cent were using community taps. Similarly, it is revealed that half of the households have toilet facilities in their houses, whereas 20.9 per cent are using community toilet and the rest are practising open defecation. Further, the DUDA survey showed that head of majority of the households (81.9 per cent) are self-employed and it is followed by 9.6 per cent of them being employed and 7.9 per cent being unemployed (Government of Uttar Pradesh, 2006).

**Table 1.6: Selected Indicators of Slum Conditions in Lucknow**

Characteristic	Percentage of Slum Families
<b>1. Housing</b>	
<i>Pucca</i> houses	38.5
Semi- <i>pucca</i>	36.2
<i>Kaccha</i>	13.4
<i>Jhopadi</i>	9.8
Others	1.05
<b>2. Water Supply Facilities</b>	
Individual tap	48.7
Community tap	38.8
Others	6.1
<b>3. Sanitation</b>	
Individual toilet facility	50.1
Community toilet facility	20.9
Open defecation	28.3
<b>4. Employment</b>	
Employed	9.7

Unemployed	7.9
Self-employed	81.9
<b>5. Monthly household income</b>	
0-500	10.4
501-1000	31.1
1001-2000	36.6
2001-3000	14.9
3001-4000	5.8

*Source: DUDA Survey 2005 in Lucknow City Development Plan 2006*

## 1.7 Research Methodology

Research is a careful, systematic and exhaustive investigation conducted to attain knowledge with the aim to establish facts and principles. In common parlance, research is often referred to as search for knowledge. In fact, research is regarded as the method of obtaining information in scientific manner. It is a systematic and scientific tool to obtain pertinent information on a particular topic. Research is not just only the collection of data without purpose or presenting facts without interpretation, rather it is something where study is conducted to unravel the new facts and data is collected and analysed to achieve the purpose of the study (Walliman, 2005).

Research methodology consists of series of well planned and systematically executed steps for finding solutions to the research problems (Sekaran and Bougie, 2010). It may be understood as a means of systematically and scientifically solving the specific research problem. It is an art of doing research in a scientific manner. While undertaking research a researcher adopts a number of steps with an underlying rationale. It is a process of defining the research problem, formulating hypothesis, collecting, classifying, interpreting and analyzing data and finally arriving at conclusions. As Lundberg (1951) has stated research is a scientific method basically involving three steps: systematic collection and observation, classification and evaluation of data. These scientific steps not only verify the data but also validate the conclusion. Research is scientific contribution to the existing knowledge. The logical considerations in the research process determine the pursuit of truth. In short, research provides solution of the concerned problem and reaches at generalizations and formulation of a theory.

## **1.8 Nature of the Study and Research Design**

Research design provides blueprint of the research. It is a systematic planning and outlining of the research work to be done. It is the process of making deliberate anticipation and carrying out these decisions when the situation arises (Acoff, 1953). A specific research design is needed for a particular research problem, research objectives and questions. It addresses the issues pertaining to a research work such as locale of the study, need of the study, nature of the study, time span and unit of analysis (Sekaran and Bougie, 2010).

In the present study, descriptive research design has been used. The present work required in depth investigation in order to attain the objectives of the study. The present study is aimed at assessing the health and nutritional status of women and their children residing in the slums of Lucknow city. Further, this study also endeavoured to understand the health care policies and programmes launched by the Government of India and to explore the extent to which these programmes are being utilised by the slum dwellers. For the study, socio-economic status, housing conditions and hygienic practices of families in the slums are observed and assessed. Therefore, descriptive research design has been adopted and the study is focused at grass-root level. Mixed method approach i.e. both quantitative and qualitative approach has been adopted to conduct the present study.

## **1.9 Sampling Techniques**

In the present study, the area of universe is all slums of Lucknow. It is not feasible to conduct study in all the slums, therefore, a sampling technique is essential to have proper representation of the universe. The simple random sampling is used to select the slums for conducting the research work. The Lucknow Municipal Corporation has 5 regions and four slums from four different regions of the Lucknow were selected using simple random sampling technique. Broadly, two old slums (Pre-1990s) i.e. Sikandarnagar slum, Chinhata bazaar slum and two new slums Rajajipuram slum and Vikasnagar slum have been selected for the study. Moreover, only those slums were kept into consideration which had slum population over 1000. Thus, the research study is conducted in four slums of Lucknow city namely Chinhata Bazaar slum, Sikander Nagar slum, Rajajipuram slum and Vikas Nagar slum. The sample size of the present study is 200 respondents and 50 respondents have been selected from each

of the four slums. The sample consisted of women between 15-45 years having children between six months to five years of age. The respondents have been selected by using purposive sampling. The unit of the study is single household.

### **1.10 Selection of Variables**

In the present study, the variables have been broadly divided into three categories: socio-economic variables, intermediate variables and proximal variables. Socio-economic variables include religion, caste, type of family, parent's educational status, parent's employment status, household deprivation status, etc. Intermediate variables are further divided into sub-categories: environmental factors, maternal factors, health and medical factors and household food security. Environmental factors consist of type of housing, source of water, type of toilet facility, garbage disposal facility, etc. Maternal factors include mother's age at marriage, mother's age at first delivery, place of delivery, type of delivery, health illnesses and ailments, pre and post-natal care, mother's nutritional status (BMI, anaemia), mother's knowledge about nutrition, child feeding practices, personal hygiene, etc. Health and medical factors encompasses access and availability of health care services, type of hospitals/practitioners visited for treatment, awareness and utilisation of health care programmes, ICDS beneficiary, etc. Household food security is one of the essential variables of nutritional status and it is determined by 24 hours dietary recall method, dietary diversity score and food frequency table.

The proximal variables (individual variables) consist of child's weight at birth, birth order, stunting (height-for-age), wasting (weight-for-height), under-weight (weight-for-age), Mid Upper Arm Circumference (MUAC), initiation of breastfeeding, cholostrum feed, duration of exclusive breastfeeding, complementary feeding, immunisation, childhood diseases, etc. The socio-economic variables directly or indirectly affect the other two groups of risk factors and these two groups of variables, in turn, affect the nutritional status of women and their children.

### **1.11 Sources of Data**

In the present study, both primary as well as secondary sources of data collection have been used. Primary data basically consisted of information obtained from the respondents and secondary data constitute the information gathered from the existing literature pertaining to the research work such as research journals, SUDA and DUDA

documents, annual reports of various international organizations, governmental departments and NGOs, census report, health policy and programme documents, health records from AWCs, etc.

### **1.12 Tools and Techniques of Data Collection**

There are number of ways for collecting data and these methods are different from one another in terms of available money, time and other resources. In a research work data can be gathered through face-to-face interview, questionnaire, observation, survey, etc (Cooper and Schindler, 2003). In the present study, interview schedule, non-participant observation and focused group discussion methods have been used for collection of data. The interview schedule for the present research work aimed at eliciting the information related to socio-economic status, health and nutritional profile, health awareness, availability and utilisation of health facilities. Non-participant observation method has been used for collecting data relating to housing conditions and sanitation. It has also been observed how the people from slums are treated in the health centres and AWCs and are they being provided equal health facilities like non-slum people. Focused group discussion was conducted in order to gather information about hygiene practices, health awareness and utilization of health care facilities by the women in slums.

Interview schedule consists of questions which the researcher fills after gathering the required information from the respondents. This tool is used to maintain the objectivity of the study and data collected is classified, tabulated and analysed for reaching at the conclusion. In the present study, interview schedule has been developed after consulting number of scales and previous interview schedules of the researchers for developing a better understanding. The preliminary interview schedule was administered to the respondents to check whether they were able to understand the meaning of the questions. This was also done to verify the applicability of the questions in the research field.

The preliminary interview schedule constituted of questions related to socio-economic and housing conditions, basic facilities, health and nutritional profile, anthropometric and dietary assessment, utilization of health care programmes, etc. Various aspects of health and nutritional status were covered under it. The demographic details of the respondents were also included. Information related to age,

religion, caste, occupation of the respondent, income of the respondent and family, educational qualification, type of family, migration point, etc. were also essential part of the interview schedule. After the testing of the preliminary interview schedule in the field, some questions were added or removed and then the final interview schedule was prepared. Closed-ended interview schedule has been formulated for the study as respondents find it easy and desirable to answer such questions. In the appendix section, the final interview schedule has been provided.

The interview schedule consists of nine parts and each part deals with different aspects of the study. A brief description of interview schedule is as follows:

**Part I: General Information-** This part mainly deals with the demographic details of the respondents and their families. The questions were related to the respondent's age, educational level, duration of stay in slums and cause of migration, present employment, income, type of family and head of family. The questions pertaining to family members were also included in this part.

**Part II: Socio-Economic Background and Housing Conditions-** This part of the interview schedule is dedicated to the questions concerning the respondent's socio-economic status and housing conditions. Questions related to respondent's religion, caste and marital status were included in this part. Besides, questions on housing conditions such as type of housing, number of rooms and windows, separate kitchen, ownership of house, availability of basic civic facilities such as drinking water, toilet facility, electricity, ownership of durables, etc. were also dealt in this part.

**Part III: Availability and Use of Essential Services and Facilities-** In this part of the interview schedule, questions mainly deals with the availability of services such as schools, market, public utility services, saving account in banks, facility of waste disposal, recreation activities, etc.

**Part IV: Hygiene-** Part IV of the interview schedule aims to gather information on the hygiene practices of the household. Questions on personal hygiene, food and water hygiene, domestic hygiene, housing cleanliness and use of preventive measures were included in this part. Each option was coded to assess the level of hygiene.

**Part V: Medical Facilities-** This part had questions to elicit information related to the medical facilities available to respondents and their family. This part contains

questions concerning the type of hospital visited, selection of doctors, source of medicine, health camps, etc. These questions facilitated information about the availability of health facilities to slum dwellers.

**Part VI: Diet Survey-** This section of the interview schedules focuses on the dietary practices and habits of the respondents and their children. Questions related to food purchase, storage, serving, food selection criteria, food frequency, food consumption pattern, 24 hour dietary recall method, etc. were included in this part.

**Part VII: Nutrition Survey-** In this part of the interview schedule the questions on physical clinical sign were incorporated. The questions on physical appearance, skin, teeth, lips, etc. have been included in this section.

**Part VIII: Health and Nutritional Assessment of Children-** This segment of the interview schedule focuses on the health and nutritional assessment of the children. Questions on anthropometric measurements such as weight, height, MUAC are in this part. Besides, questions on haemoglobin level, immunization, breastfeeding and child feeding practices, weaning food, number of meals, incidences of diseases, beneficiary of ICDS, etc. are also included.

**Part IX: Health and Nutritional Assessment of Women-** In the last part of the interview schedule, the questions aim to obtain information on women's health and nutritional profile. Questions on anthropometric measurements, haemoglobin, number of children, spacing between children, age at marriage and first delivery, place and type of delivery, pre and postnatal care and occurrence of diseases have been included in this part.

### **Pilot Survey**

In the research work, pilot survey is one of the essential steps to check the reliability and validity of the tools prepared for collecting the data. For the present study a pilot survey was conducted in the research area in November 2016 to test the validity and reliability of the interview schedule. The preliminary interview schedule was conducted on 10 per cent of the respondents and on the basis of field experiences modifications were done in the interview schedule. The pilot survey also facilitated information on the sample frame for the study.

### **Final Survey**

Conducting research in the study area is always an uphill task considering the number of behavioural and attitude problems which are beset in the field. Most of the times the respondents attempt to avoid the researcher by giving excuses. Making respondents agreeing to cooperate with the scholar requires a lot of patience and efforts. Interviewing individuals belonging to various fields is itself a difficult and challenging task. Moreover, the money and time constraints are always intervening factors.

In the present study, the field survey was conducted in the study area to collect the primary data with the help of personal interview of the respondents. During the research work in field the researcher interacted with the respondents to convince them for the interview, however some of the women in the study area refused to participate in the study despite several attempts. After completion of the field survey 200 respondents were interviewed, 50 from each slum. The field survey was completed in a period of five months spanning from December 2016 to April 2017.

### **1.13 Processing of Data**

The collected data need to be complete and accurate in order to fulfil the purpose of the study. After completing the data collection, the data is processed so that it is in line with the objectives of the research work. During the research plan an outline of the study is formulated and the data is processed as per this outline. Processing of data involves editing, coding, classification and tabulation of the collected data.

- (a) **Editing:** The process of editing involves evaluation of the collected data for checking errors and omitting them wherever possible. In the present study, the completely filled interview schedules were scrutinized to check the consistency and accuracy of data. It would prove to be helpful in the coding and tabulation of data.
- (b) **Coding:** The coding of data is a process where the answers of the respondents are assigned a particular number so that they could be categorized. The process of coding is exhaustive and exclusive which implies that specific answers need to be place in one category.

- (c) **Classification:** In the process of classification data having similar characteristics are put together in one group so that relationship could be established between various groups of data.
- (d) **Tabulation:** After classification of data, the data is arranged in logical order and this process is known as tabulation. Summarizing data in concise and concrete form helps in comparison and statistical analysis.

### **1.14 Analysis of Data**

After tabulation of data, the next step is the logical and statistical analysis of data. The intellectual base to the available data is provided by the logical analysis, whereas statistical analysis summarizes the collected data which makes it more compact, concrete and intelligible. In the present study, the analysis of data facilitated the reliability of results and established correlation between various variables. The inferences drawn from the analysis of data helped in arriving at generalizations. WHO classification has been used for the analysing of anthropometric measurements and various other related variables. Frequency and percentage distributions have been implied for categorizing data in statistical manner. Appropriate graphs have also been used to establish interrelationship between various variables.

### **1.15 Preparation of the Report**

After collection and tabulation of data, the researcher had performed various operations for doing the analysis of data. These operations helped in reaching at verifiable and reliable results. With the help of these results conclusion of the present study was formulated and generalizations were derived. Moreover, the researcher had also recommended some of the suggestions that are formulated after doing this exhaustive study. The present study has been carried out with utmost care and the report has been prepared in accordance with the prescribed outline of the research.

### **1.16 Limitations of the Study**

1. The study is limited to the slums of Lucknow city only.
2. The respondents of the study are only female.
3. The research is conducted in only four slums of Lucknow city.
4. Only anthropometric and dietary assessments are used for assessing the nutritional status of the respondents and their children.

## **1.17 Chapter Plan**

The present study has been organized into eight chapters dealing with the different aspect of the study. A consolidated list of various books, journal and reports referred for the study has been given in bibliography at the end.

The first chapter of the present study is Introduction which discusses the background of the study and also highlights the interlinkages between the health and nutritional status with the living and environmental conditions in slums. This chapter also discusses statement of the problem, objectives, hypotheses, need of the study and area. Research methodology comprising the research design, sampling, source of data collection, tools and techniques of data collection are also described in this chapter.

The second chapter of the thesis is Review of Literature which deals with the previous studies on slum, health care programmes and nutritional status. In this chapter an extensive review of the available literature and theories has been provided.

The third chapter titled as Theoretical and Conceptual Framework provide details of various theories and concepts that have been used in the study. This chapter encompasses the conceptual framework and contemporary theoretical underpinnings of health and nutritional status given by various theorists.

The fourth chapter entitled as Health Care Policies and Programmes in India provides an extensive detail of various health care policies and programmes that have been launched so far. This chapter also presents a critical view on the implementation and monitoring of the programmes and how they are lagging behind in catering the needs of the people.

In the fifth chapter, which is entitled as Socio-Economic Status and Housing Conditions in Slums, detail related to demographic indicators as well as the socio-economic conditions of the respondents have been presented. Moreover, the description of housing and living conditions in the study area has also been provided in this chapter. In short, this chapter deals with the various dimensions of socio-economic and housing conditions of the respondents.

The sixth chapter entitled as Health and Nutritional Status of Women in Slums provides analysis of data related to the health and nutritional profile of the

women residing in slums. The information gathered after anthropometric and dietary assessment of the respondents has also been presented in this chapter. This chapter also shows interlinkages between the socio-economic indicators and health and nutritional status of the women.

In the seventh chapter entitled as Health and Nutritional Status of Children in Slums, details related to the health and nutritional status of the children have been provided. The information on anthropometric assessment and child feeding practices has been presented. This chapter also discusses the impact of maternal factors on the health and nutritional status of the children.

Finally, the last chapter of the thesis is Summary and Conclusion which provides the summary of the major findings and conclusion on the basis of these results. The testing of hypotheses is also done in this chapter. Some suggestions have also been provided at the end of this chapter.



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*Chapter-II*  
*Review of Literature*

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## **Chapter II**

### **Review of Literature**

The purpose of present chapter is to review literature concerning the socio-economic status, housing conditions and health practices of the slum dwellers, nutritional status of women and their children residing in slums, their awareness about the health care programmes and utilisation of health care services by them. The literature pertaining to health care programmes and nutritional status of women and children in slums has been documented under the following headings:

- 2.1 Socio-economic status and housing conditions in slums
- 2.2 Nutritional status of women and children in slums
- 2.3 Health care programmes for women and children

#### **2.1 Socio-Economic Status and Housing Conditions in Slums**

Anderson (1960, pp. 58) in his book “Urban Community” opined that slums are characterised by four basic components namely appearance, economic status, overcrowding and population and he defined these components in context to slums. He considered that slum looks neglected with disorderly buildings and lack of access to basic civic amenities. Poverty and overcrowding constitute the most essential features of slum with poor people residing there. Slum is characterised by heterogeneous population, as people migrate to cities in search of job and as a result of poverty and low income they have no other option but to live in slums.

Venkatarayappa (1972, pp. 4) in the book “Slums: A study in urban problem” characterised slums as overcrowded, dilapidated with insanitary housing conditions which endanger the health safety and moral of the inhabitants. He perceived that majority of the slum dwellers belong to low income group and they are socially maladjusted. He further argued that delinquency, crime and vices are found in abundance and most men are drunkards and suffer from poverty and ignorance. Privacy is almost non-existent in slums. They are deprived of good neighbourhood, adequate medical and educational amenities and are struck with poverty, frustration and despair.

K. R. Rao and M.S.A. Rao (1991, pp. 315-316) in “Cities, slums and urban development: A case study of a slum in the city of Vijayawada” pointed at three

aspects while analysing the characteristics of slums. First, a slum not only refers to an isolated building, but it can also constitute a situation or an area. Secondly, several physical factors are responsible for the identification of a slum area and not any single factor. Thirdly, the manifestation of physical factors in any slum area differs significantly and there is considerable variation. The main physical conditions of a slum area are: informal settlement, high density of population and congestion, dilapidation, overcrowding, unhygienic conditions, absence of basic civic amenities like safe drinking water, drainage, sewerage and disposal of garbage. In identifying a slum area these physical attributes are almost universal, but social characteristics such as vices, ownership rights in houses and legality or otherwise of the areas, are not essential attributes in identifying a slum area. These features either contribute to the slumming conditions or appear as likely consequences.

Tabassum (2011, pp. 43-46) in her book “Slums in India” explored about the socio-economic status and housing conditions of slum dwellers in urban slums of Pratapgarh district in Uttar Pradesh. This study revealed that the overall literacy rate was 56 per cent with male literacy rate (65 per cent) higher than female literacy rate (46 per cent). Further it was found that about 24.14 per cent of the slum dwellers were working, however 60 per cent among these were unaware about nature of day’s work. The housing conditions were very poor and majority of the slum dwellers were facing housing problems. Almost 46.34 per cent were katcha houses made up of mud, plastic and bamboo. The slum dwellers lacked access to safe drinking water and toilets. Only 20 per cent of the households had toilet facilities and rest of the households were practicing open defecation. There was no adequate facility for garbage disposal as a result of which children suffered from viral infections, boils, fever, etc. Quarrel among the family members and with the neighbours was quite common. The practice of gambling and liquor was also very common. The study suggested that poverty of slum dwellers was due to illiteracy and lack of will power to improve their condition. Further, programmes launched by government for improving the condition of slum dwellers were executed half heartedly.

Mundu (2011) in his book “Characteristics of Slum Population in India: Special Reference to Mumbai” attempted to study the characteristics of slum dwellers in all the states/union territories and 35 million plus cities in India. He asserted that Millennium Development Goals (MDGs) which were targeted towards reducing the

proportion of population by half achieving a significant amelioration in the lives of at least 100 million slum dwellers without any sustainable and adequate access to safe drinking water and basic sanitation facilities by 2015. This study revealed that slum dwellers have better sex ratio and work participation rate as compared to the non-slum urban area. Few million plus cities have reported about half of its city population living in slums i.e. Faridabad, Greater Mumbai and Meerut. The present study also attempts to understand the living conditions of slum dwellers in Mumbai. In spite of many slums got notified by the government, they are still lacking basic necessities of life. In spite of several government policies there is a need to improve the life of slum dwellers through the community participation.

Shekhar (2011) in his book “Living environment in slum and non-slum areas of India: A Study of Women and Children Morbidities” tried to explore the living conditions in the slum and non-slum areas and attempted to do a comparative analysis of both the areas of India. In the contemporary world, on the basis of structural quality of housing and sanitation the urban areas are mainly categorized as slum and non-slum areas. In this book not only a comparative picture of living conditions of slum and non-slum areas is provided, but a compared analysis of distinct morbidity in both the areas of India is also being done. Previously, no such type of study has been conducted in all the major cities of India and this work is unique in this sense. The study showed that the prevalence of different diseases among women and children is comparatively high in small cities. In addition to this, the study also revealed that the availability of sanitation facilities and household environment is significant contributor for different diseases.

Baral (2009) in his book “The slum dwellers in Bhubaneswar, India: From a sustainable livelihoods perspective” attempted to assess the livelihoods of slum dwellers in order to find out the presence of sustainable characteristics and recommend strategic interventions to set up and promote livelihood flexibility, which would make it sustainable. In this study the Sustainable Livelihood Approach (SLA) is applied for analysing the livelihoods of the people residing in a selected slum community of Bhubaneswar. This is one of the very few studies around the world that used SLA in an urban context. Majority of the slum dwellers were engaged in the informal sector and the income uncertainty, natural disasters, low asset base make them highly vulnerable. This study revealed a close association between poverty,

occupation and living conditions. Suggestions were made on the basis of the conducted analysis and empirical results to take essential steps that would bring about more sustainable features into their occupation.

Prasad (1995, pp. 89-96) in the book “Urban Slums: Health education and development” assessed the socio-economic status and housing conditions of slum dwellers in urban slums of Hyderabad. In the study majority of the household were Hindus (83.5 per cent) followed by Muslims (15.4 per cent) and Christians (1.1 per cent). About 29 per cent of the inhabitants were migrants and high cost of living forced them to reside in slums. It was revealed that the female population was higher compared to male population. Most of the employed persons were engaged in unskilled and manual labours like construction labourers, sweepers, sanitary workers, rickshaw pullers, etc. In the self-employment sector, almost two-third of the employed persons were engaged in jobs requiring artisan work. Thus, 90 per cent of the employed persons were engaged in unskilled private jobs and self-employment and 10 per cent in government sector, but in low-paid jobs. 42 per cent of the slum dwellers were living in pucca houses, while 58 per cent were living in katcha houses. Nearly 45.9 per cent of the inhabitants were residing in their own houses and the rest were living in rented houses. Mainly people belonging to Other Backward Castes (OBCs) were living in own pucca houses.

Caroline and Yatzimirsky (2013) in their book “Dharavi: From mega-slum to urban paradigm” brought together 20 years of painstaking fieldwork and revealed the social, economic, political, and urban complexities that define Dharavi. This book provided a rare account of the slum’s history, with a special emphasis on the original populace of leather workers- who form the backbone of its urban informal economy- their work, organisation and increasing political awareness. Dominated by a population of ex-‘untouchables’, who have been conventionally stigmatised by poverty and low status, Dharavi explained how traditional caste-based occupational divisions still continues to be strong and affect the political governance and economic structure. It also serve as an evidence for the intimate encounter with liberalisation, consumerism and technological innovations, and its resultant cultural globalisation under the impact of media, advertising and cinema transmitted by the city of Mumbai. This book traces the mega-slum’s gradual transformation into a thriving trade centre,

through an informal economy's successful adaptation to global markets, which in turn establishes an urban paradigm.

Shukla, Agarwal, Rehman, Yadav and Imchen (2016, pp. 1153) in their article "Housing and sanitary conditions in slums of Lucknow, capital of Uttar Pradesh" assessed the housing and sanitation conditions in the urban slums of Lucknow. They carried out a community-based cross-sectional study and observed that nearly 77.1 per cent of the households were situated in congested locality with 47.3 per cent and 25.0 per cent of the households having insufficient ventilation and light respectively. About 74.5 per cent of the households lacked access to safe water storage facility. The practice of washing hand before cooking and eating was reported from 77.9 per cent and 52.6 per cent households respectively. Almost 51.1 per cent of the households lacked access to sanitary toilets and practice open defecation. Congested housing, inadequate ventilation and lighting, poor water storage facility and open field defecation directly affect the health of the people residing in slums and results in various pathological problems, transmission of infectious diseases, respiratory problems and several other health issues. This study suggests that there is a need to develop a comprehensive and effective package of housing, sanitation, water and garbage disposal facilities.

Chattopadhyay, Mukherjee and Sudha (2016) in their study "Prevailing basic facilities in slums of Greater Mumbai" assessed the quality of basic facilities in the slums of Greater Mumbai (i.e. Mumbai city and Mumbai suburbs). Their study revealed that nearly 71 per cent of the households were engaged in informal sector for their livelihood. The slums in Mumbai are focal point of small manufacturing units. As setting up a business requires finances and space which slum dwellers lack, therefore, they continue their work from home at a small scale with less profit. About 80 per cent of the slum dwellers had pucca house out of which 71 per cent had ownership of the house and the rest were staying in rented houses. However, the houses were poorly ventilated and lacked adequate lighting. The slum dwellers were quite reluctant and apprehensive about slum rehabilitation programmes due to the involvement of middle-men and political complicity. Almost 91 per cent of the people residing in slums were using public toilets. However, 58 per cent of the households in Mumbai slums disposed of child's stool in open drains. Further, the public toilets were not perceived to be safe in nights and regular water supply in public toilet was

also a matter of serious concern. About 84 per cent of the slum dwellers had drinking water facility at or within the close proximity of their houses. However, due to restricted timing of water it often becomes difficult for women to get engage in gainful activities. As slum dwellers are generally involved in labour intensive tasks, this makes them highly vulnerable to several physical and biological risks. This study showed that most common health problems were respiratory tract infections, digestive problems, body ache and pain, etc. This study suggested that some innovative policies, both long and short term, are required to improve the condition of slum dwellers.

Prajapati, Benker, Solania, Talsania, Mukherjee and Trivedi (2011, pp. 385) in their article “A study on availability of basic civic facilities in urban slum area of Bhuj, Gujarat, India” analysed the availability of basic civic facilities in slums. Their study revealed that nearly half of the houses (50.4 per cent) were permanent and the remaining houses were temporary made up of plastic sheets. Availability of safe drinking water was a major problem in this area, as only 5.5 per cent families had municipal water connection and remaining families were getting water from neighbouring families or from private tankers. Majority of the houses (60 per cent) practiced open defecation as they did not have toilet facility. Further, 75 per cent families did not have bathroom facilities and they took bath in open. Nearly 58 per cent of the households had electricity connection. None of the households had gutter connection and there was no facility for dumping garbage which resulted in several diseases and illnesses in the area. This study pointed out at the lack of basic infrastructural facilities and inadequate implementation of town planning strategy.

Chandrasekhar (2005) in one of his paper “Growth of slums, availability of infrastructure and demographic outcomes in slums: Evidence from India” presented a picture of varying conditions in the slums of India and gave a comparative analysis of conditions prevailing in slums, non-slum urban areas and rural areas. This study showed that in the states where female literacy rate was high (Kerala, Goa, Delhi), the literacy in rural areas was higher than the slums. But in the poorer states like Bihar, Madhya Pradesh, Rajasthan, Odisha and Uttar Pradesh, the literacy rate was higher in slums as compared to the rural areas. This suggested that in highly literate states the illiterates migrated from rural to urban areas and in low literacy states the migrants to urban areas were rural illiterates. Whereas, it was found that sex ratio was higher in

slums than in rural areas. Further, the availability of electricity was higher in slums than in rural areas. The rural areas and non-notified slums were similar in terms of availability of water, toilet and drainage facilities. Thus, the study suggested that rural areas and slums were similar in some aspects and dissimilar in some other aspects.

Goswami and Manna (2013) in their article “Urban poor living in slums: A case study of Raipur city in India” studied the living conditions and quality of life in urban slums of Raipur city. They asserted that urban poor are threatened due to ever increasing population, poor and unhygienic living conditions and deterioration in quality of life. The unprecedented growth in number slums is by-product of urbanisation and urban poverty. There is clear link between poverty and deterioration of physical environment. Urban poor depends on natural resources for fulfilling their needs because they do not have access to other resources and as result they deplete natural resources faster. Health remains one of the most important issues of concern for slum dwellers. The unhygienic living conditions in slums causes number of diseases which in turn results in economic loss, particularly in case of prolonged treatment and this vicious cycle continues. The health of women in slums is worst affected, as they are the most neglected ones in spite of major role in household activities. Lack of access to adequate housing, water, sanitation and health care services makes the situation worse for women in slums. The quality of food consumed in slums is also a serious issue. Due to poor economic status the intake of nutritious food is quite low among slum dwellers, especially among women and children. The incidence of malnutrition is particularly high among children residing in slums. Despite of several efforts the scenario in slums is not improving. There is an urgent need that more specific programmes should be formulated for targeting slum population.

Letsch (2001, pp. 158) in his work “Poor women in a Bangalore slum habitat: A perspective” conducted a study to assess the status of poor women residing in urban slums of Bangalore. She held the view that living conditions in India’s urban slums are clearly related to the general poverty of the slum inhabitants, inequality on the basis of caste and the backward position of women. She further argued that urban poor woman’s major problem is not that she has no toilet to go to, or only one hand-pump in her area where she has to fetch water many times a day. This is just a part of reality and a very important part, but the crux of the problem is that she is living in an

environment where it is accepted that she has sub-human life, and where this affects her more because she is a woman. This insight needs to be more powerfully integrated into development planning policies aimed at improving living conditions in India's low-income urban environment.

Kher, Aggarwal and Punhani (2015, pp. 15) in their article "Vulnerability of poor urban women to climate-linked water insecurities at the household level: A case study of slums in Delhi" analysed the susceptibility of women to water related problems and insecurities in the urban slums of Delhi. They argued that due to rapid growth of slums and little change in the pattern of distribution of domestic responsibilities, women in slums are likely to spend hours in fetching water and fulfilling their practical gender needs of water. Women are being ignored in imparting education, skill development and income generating activities resulting in gender gap in various fields. They suggested that overall adaptive capacity of women in slums needs to be enhanced and this would empower them in facing the challenges of rapid urbanisation.

Bapat and Agarwal (2003, pp. 71) in their work "Our needs, our priorities; women and men from the slums in Mumbai and Pune talk about their needs for water and sanitation" interviewed women in the slums of Mumbai and Pune and discussed with them water and sanitation related needs. There was an inadequate distribution of water and sanitation related responsibilities in the households and mainly women shouldered these responsibilities. Typically women collected water after standing in long queues, walking long distance and carrying heavy water containers to perform daily household activities. This side of water burden cannot be ignored. Under various slum improvement programmes drinking water, public toilets and drain sewerage facilities were provided, however these facilities were largely inadequate and poorly maintained.

Sheikh (2008) in his article "Public toilets in Delhi: An emphasis on the facilities for women in slum/resettlement areas" assessed and analysed the problems faced by women while using public toilets in urban slums of Delhi. This study showed that there were community toilet complex which had the facility of separate toilets for children and women, however toilets meant for children were also used by women. These community toilets were largely run and maintained by NGOs and

private contractors. Families had to pay for using these public toilets which in turn add burden on them considering their low income. While women who were living in slums were capable of paying for public toilets as majority of them were engaged in some work and had a source of income, however women who had moved to resettlement colonies lost their jobs and found it difficult to get employment in nearby areas and as a result they were incapable of paying for public toilets. The study also reported that many women lacked the knowledge about how to use a public toilet and hence the condition of public toilets was very poor. Women who cannot afford to pay for public toilets were practicing open defecation and often they had to face sexual harassment. This study suggests that issue of public toilets for women in slums is a matter of grave concern and hence there is need for urgent action to improve the situation in slums.

Schenk and Sandbergen (2001, pp. 194-198) in their work “Women, water and sanitation in the slums of Bangalore: A case study of action research” conducted a study to explore the affect of water and sanitation problem on women in urban slums of Bangalore city. They asserted that in India scant attention has been paid to the gender-specific environmental and habitat problems regarding water and sanitation in slums. This study revealed that the consequences of water scarcity for women in slums were evident. The households in slums lacked access to safe drinking water and they relied on wells and hand-pumps for fetching water, as majority of the households did not have drinking water facility within the premises. Women had to walk more than 1.5 km to fetch water during summers. This prevented them from engaging in other meaningful activities and also had an adverse affect on their health. Further, the toilet facilities in slums were absolutely appalling. Majority of the households did not have toilet facility within the premises and as result they used public toilets or practiced open defecation. However for women the situation was even worse, as they quite often face harassment in particular from drunken men while going for defecation in open. Thus, the study suggested that women in slums have to face great hardships due to lack of adequate water and sanitation facility.

Sajjad (2014, pp. 54) in his article “Living standards and health problems of lesser fortunate slum dwellers: Evidence from an Indian city” assessed the relative living condition status and health status of individuals residing in slums by using slum condition index (Slum CI) of notified and non-notified slums of Meerut city. The four

components- household environmental condition index (HECI), economic condition index (ECI), social condition index (SCI) and health condition index (HCI) together constitute the Slum CI. Slum CI act as an effective tool in not only identifying slums that require special attention, but also in prioritising the demand required for development of clean and healthy city. Analysis based on Slum CI showed that wide inequalities exist in its four components. Analysis revealed that non-notified slums demanded higher propriety in social, economic and health conditions over household environmental condition. The study suggested that approach based on slum condition index could be utilised for assessing living condition status in slums and accordingly developing holistic framework for healthy city.

Marimuthu, Kanmani and Sowmya (2016, pp. 129) in their article “Effect of socio-economic differentials on growth and development of children in five metropolitan cities of India” held the view that parent’s socio-economic status plays a key role in child’s growth and development. They compared the growth pattern of children dwelling in slums with that of children residing in non-slum areas in five metropolitan cities (Delhi, Mumbai, Kolkata, Chennai and Hyderabad) of India using NFHS-3 data. They used socio-economic variables like standard of living and place of residence to estimate their influence on child’s anthropometric status, growth and development. They found that almost 75 per cent of the slum dwellers were in the category of low standard of living, whereas 69 per cent of the non-slum population fall in the category of high standard of living. Statistical analysis revealed that there were significant differences in the anthropometric status of children residing in slums as compared to children living in non-slum areas on the basis of standard of living. Thus, they concluded that parent’s socio-economic status significantly affects the children’s growth and development and the place of residence has no significant role.

Satopathy (2014) in his article “Safe drinking water in slums: From water coverage to water quality” analysed the water, sanitation and hygiene condition in urban slum households and argued that census data on availability of piped water in slum households shows great variation. Census data revealed that 74 per cent households in slums have access to tap water, however only 54 per cent slum households have access to piped water within the premises while remaining 16 per cent households walk 100 metres or more to collect water. It is often evident that slums which are non-notified do not have access to tap water. There is a need for shift

from availability of infrastructure to quality water distribution and delivery of service outcome. In an intermittent water system the water quality is affected by open defecation. 34 per cent of the households in urban slums do not have toilet facilities in their premises and this result in widespread open defecation which makes slum dwellers highly vulnerable to faecally-transmitted diseases. A comprehensive and planned intervention is needed for improving the water, sanitation and hygiene situation in slums.

Pati, Kadam and Chauhan (2014, pp. 67-68) in their article “Hand hygiene behaviour among urban slum children and their care takers in Odisha, India” investigated about the knowledge and practice of hand washing among them. They conducted a cross-sectional study among mother and children in an urban slum of Bhubaneswar and it was found that nearly 70 per cent of the mothers practice hand washing by soap after defecation. However, about 80 per cent mothers washed hand before cooking food and 77 per cent practice hand washing before serving food, which is quite encouraging. Though 81 per cent children were reported to wash hand before taking food, but only 17.5 per cent children washed their hands with soap. Further, 76 per cent children revealed that they were informed about sanitation and hand washing by their teachers in the class. Although only 15 per cent of the children told that soap was available for washing hands in the schools. More than half of the children (56 per cent) were unaware about the critical timings of hand washing. Lack of proper knowledge about the practice of hand washing is a matter of concern and this issue can be addressed through the integration of hygiene education in schools by modifying curriculum.

Joshi, Prasad, Kasav, Segan and Singh (2014, pp. 28-31) in their work “Water and sanitation hygiene knowledge attitude practice in urban slum settings” carried out a pilot cross-sectional study in urban slums of South Delhi for assessing the water and sanitation related attitude and practices of slum dwellers. They observed that majority of the participants (78 per cent) opined that the available water was safe for drinking and 75 per cent of the participants did not used any method for purifying water. Nearly 83 per cent of the participants perceived that consuming unsafe drinking water could cause gastro-intestinal tract infection. All the participants considered that it is essential to wash hands before handling food. Whereas 88 per cent of the participants perceived that hands should be washed after defecation. The study further revealed

that largely females (93 per cent) were responsible for collecting water from water sources. Almost 53 per cent of the drinking water samples showed bacteriological contamination. Less than half of the participants (45 per cent) had access to toilet facilities within their household, while the rest were using community toilets. This study suggested that there is a need to develop and implement family oriented educational programmes that would enhance awareness among slum dwellers about safe drinking water, sanitation and hygiene.

Swaminathan and Mukherji (2012, pp. 1334) in their article “Slums and malnourishment: Evidence from women in India” analysed the relationship between the slum residence and nutritional status of women residing in slums of India. They found that undernutrition was a grave problem in slums and whatever may be the type of slum, the danger of undernutrition was higher among people living in a below poverty line household. They also found that the relationship between education and undernutrition was stronger than the relation between slum residence and undernutrition. They argued that the relationship between slum residence and nutritional status is nuanced and it depends on how one defines a slum. They suggested that interventions should be formulated in such a manner that these interventions not only remain confined to official definitions, but should also consider current living conditions in slums so that this vulnerable section of society can be reached effectively.

Marimuthu, Meitei and Shharma (2009, pp. 338) in their article “General morbidity prevalence in the Delhi slums” conducted a cross-sectional study to examine the prevalence of morbidity among slum population in Delhi with reference to socio-economic and demographic factors. They found that overall prevalence rate in slums was 15.4 per cent. They reported that the prevalence of higher morbidity and illiteracy status were positively correlated. The prevalence rate of respiratory system diseases was very high among slum dwellers. They concluded that the number of years spent in slum, presence of separate kitchen, types of housing, types of toilet were the important environmental factors for the prevalence of higher morbidity in urban slum areas.

Chinnakali, Upadhyay, Shokeen, Singh, Kaur, Singh, Goswami, Yadav and Pandav (2014, pp. 227) in their article “Effect of socio-economic differentials on

growth and development of children in five metropolitan cities of India” conducted a study in an urban resettlement colony of South Delhi to assess the prevalence of food insecurity in the households and factors influencing the existence of food security in slum. They found that almost 77.2 per cent of the households were food-insecure, out of which 9.2 per cent households were severely food-insecure. They observed that higher the education level of women handling food and higher the number of earning members in the household lesser were the chances of household being food-insecure. This study showed that the pervasiveness of food insecurity was remarkably high in the vulnerable sections of the society.

Chatterjee, Fernandes and Hernandez (2012, pp. 619) in their article “Food insecurity in urban poor households in Mumbai, India” carried out a survey to assess the level of food insecurity in urban slum household of Mumbai. It was revealed that large numbers of household in slum were food-insecure. It was found that almost 59.7 per cent of the households were severely food-insecure, 16.6 per cent were mildly to moderately food-insecure and 23.7 per cent were food secured. Statistical analysis showed that factors such as lower socio-economic status, poor monthly household income and less expense on food items were significantly associated with food insecurity. Further it was revealed that households where woman were the main earner and had low educational level were severely food-insecure. This study highlights that there is an urgent need to implement food security policy more effectively and priority needs to be given to vulnerable sections.

Agarwal, Sethi, Gupta, Jha, Agnihotri and Nord (2009, pp. 239) in their article “Experiential household food insecurity in an urban undeserved slum of North India” analysed the determinants of food insecurity in the households of urban slums in Delhi. It was found that the prevalence of food insecurity was very high and almost half (51 per cent) of the households were food insecure. Statistical analysis revealed that factors like low standard of living, number of unemployed members in households and low household income were significantly related with the prevalence of food insecurity. This study suggested that for improving the food security among slum dwellers it is essential to link food security programmes with employment schemes for enhancing their purchasing power.

Vlahov, Freudenberg, Proietti, Ompad, Quinn, Nandi and Galea (2007, pp. i16) in their article “Urban as a determinant of health” discussed the impact of rapid urbanisation on the health and argued that rising trend of inequities exist across various social and health dimensions in both developed and developing countries. They opined that a new analytical framework is required to improve the health of slum dwellers and suggested socio-determinants approach. For shaping the health socio-determinants approach should be adopted, which emphasises the role of factors operating at global, national and municipal level. Improving the living conditions such as housing, quality of living environment, education, employment and health services are detrimental in improving the health of urban community. Alleviating living conditions in the cities can prove to be effective in reducing mortality, morbidity, inequities in health and enhancing the well being and quality of life

Gupta and Guin (2015, pp. 245) in their article “Health status and access to health services in Indian slums” analysed the health status and access to health services among the slum dwellers in the four cities (Jaipur, Ludhiana, Mathura and Ujjain) of India using the data of project National Strategy for the Urban Poor conducted in 2006. This study revealed that facilities and services were lacking in government hospitals and public hospitals were unable to cater the needs of urban poor. Further urban poor gave more preference to private health facilities in spite of the fact that private hospitals charges high fee in comparison to public hospital, as because they have a conception that better health facilities are provided in private hospitals. An analysis of socio-economic status shows that slum dwellers lacked access to basic civic facilities like safe drinking water, sanitary facilities, garbage disposal and this resulted in occurrence of several illnesses. Inadequate government health facilities coupled with poor access to basic amenities increased the vulnerability of slum dwellers. This study suggests that government should take urgent actions to improve the facilities in government hospitals and to make the health services accessible to the urban poor.

Kulkarni, Khan and Chandrasekar (2012, pp. 81) in their article “Self medication practices among urban slum dwellers in south Indian city” carried out a study to explore knowledge and perception about the self-medication practices in an urban slum community of Hyderabad. The study reported that about 30.5 per cent of the slum dwellers practiced self-medication. Majority of the slum dwellers (77.7 per

cent) used allopathic drugs for self-medication. It was revealed that slum dwellers practiced self-medication mainly because of high consultation fees of private doctors. About 90 per cent of the slum dwellers were unaware about the medicine given to them by pharmacist and almost 96 per cent were ignorant about the antibiotic drugs. The study suggested that there is an urgent need to educate urban slum community about discontinuing the practice of self-medication, as it could have serious repercussions on their health.

## **2.2 Nutritional Status of Women and Children in Slums**

Snell-Rood (2015) in her book “No one will let her live: Women’s struggle for well-being in a Delhi slums”, which was based on fourteen months of intensive and exhaustive fieldwork with ten families in a Delhi slum, argued that women have faith in moral strategies to confront and deal with the poverty and unstable relationships that pose a threat and danger to their well-being. The health of women living in Delhi’s urban slums has been chronically affected and they have become highly vulnerable due to the inequalities that structure relationships in the slums. Yet majority of the women who are residing in slums have no other option but to depend on someone else for their survival and fulfilling basic needs. Snell-Rood breaks new ground by exploring and discussing the complex ways in which women extend boundaries, develop a nuanced sense of selfhood and maintain their independence that draws on endurance, mobility, asceticism and citizenship.

Pal, Bharati, Ghosh and Vasulu (2009) in their book “Gender and discrimination: Health, nutritional status and role of women in India” provided an inclusive and in-depth analysis of issues of gender discrimination and also examined the status of women from critical viewpoint at different spheres of life. In this book it has been investigated that how the gender differences get transferred to the children and how the decision-making powers of the women tend to affect the well-being of their children. It portrayed a complex association between gender, poverty and HIV transmission. Further, it explored the reasons for gender discrimination at the different stages of life. This book provided a unique combination of empirical findings with the theoretical aspects of gender equality and inequality. At the same time, it also throws light on some of the measures adopted by United Nation Development Programme

(UNDP) such as Human Development Index (HDI), Gender Related Development Index (GDI) and Gender Empowerment Measure (GEM).

Agarwal and Sethi (2013, pp. 531) in their article “Nutritional disparities among women in urban India” did an analysis of wealth quartile of the urban subset and revealed the intra-urban nutritional disparities among women. They found that maternal thinness and moderate anaemia was 1.5-1.8 times higher in lowest urban quartile as compared to the rest of the urban population. Pre- and post-natal nutrition, consumption of iron folic acid and health education was found to be low in all urban quartiles. Nearly 24.5 per cent households in poorest urban quartile consumed non-iodised salt, which was 2.8 times more than the remaining urban population. They highlighted that interventions should be formulated using poor specific data and suggested that in outreach programmes routine assessment of maternal nutritional status should be carried out. Further, subsidised food, subsidised iodised salt and alternative iron supplements should be provided to the urban poor.

Hassan and Shukla (2013, pp. 87) in their work “Nutritional status of women living in slums of Allahabad city, Uttar Pradesh, India” carried out a cross-sectional epidemiological study to assess and examine the nutritional status of women in urban slums of Allahabad city. They found that the prevalence of thinness (31.7 per cent) and anaemia (71.2) among married women in slums was very high. They argued that the dietary habits directly affect the anaemia status among women. The prevalence of dental caries was quite common among women in slums. They observed that in slums malnutrition and anaemia were serious health problems and effective nutrition intervention strategy needed to be implemented to improve the nutritional status in slums.

Chopra, Chheda, Kehoe, Taskar, Brown, Shivshankaran, Subbulakshmi, Rao, Gandhi, Lotankar, Potadar, Margetss and Fall (2012, pp. 3-4) in their article “Dietary habits of female urban slum-dwellers in Mumbai” studied the association between consumption of micro-nutrient rich food and socio-demographic variables among women of child-bearing age residing in slums of Mumbai. They found that nearly 43 per cent and 30 per cent of women consumed fruits and green leafy vegetables daily. Besides milk in tea, very few women consumed milk in large servings every day. Women who were educated till tertiary level consumed fruits and milk almost daily.

This showed a strong relation between education and frequency of milk and fruit consumption. Nearly 16 per cent of the women never consumed non-vegetarian food. They observed that women who were involved in unskilled occupation and those women whose husbands were engaged in skilled and professional jobs consumed green leafy vegetables more frequently. This revealed that there was positive correlation between the household income and frequency of green leafy vegetable consumption.

Khan, Mehnaz, Siddiqui, Ansari, Khalil and Sachdeva (2012, pp. 50-51) in their work “All slums are not equal: Maternal health conditions among two urban slum dwellers” conducted a cross-sectional study in two slums of Aligarh city to examine whether hazardous maternal care practices were being practiced and whether differences exist in utilisation of health care services in two different slums. In their study they observed that hazardous health care practices were still quite common in the slums. They found nearly half of the women (52 per cent) accepted at least one ante-natal care visit, but majority of the women (79.5 per cent) delivered at home under highly unsafe conditions. They recognised economic constraints, family traditions and rude behaviour of health personnel as barriers towards the utilisation of health care services and these barriers differ significantly between two different slums.

Goswami (2014, pp. 201) in their “A study on women’s healthcare practice in urban slums: Indian scenario” investigated the factors that affect the health practices of women living in urban slums of Raipur. The study revealed that the healthcare practice and behaviour of women in slums were determined together by social, economic, cultural and spatial factors. The study showed that nearly 31.33 per cent of the women breastfed their children one day after delivery, whereas 31 per cent of the women purchased medicines from the local unrecognised shops. Infant mortality rate was reported to be 6.67 per cent. The study suggested that clean, decent and habitable living conditions could positively impact the health and healthcare practice among women dwelling in slums.

Kaviarasu and Xavier (2015, pp.14473) in their article “Status of women’s health in urban sub-standard settlements of Chennai, Tamil Nadu state, India” examined the status of women’s health in two urban slums of Chennai. The study

revealed that women in slums were not only socially and economically backward, but also marginalised and the most neglected section of the urban society. The unhygienic living conditions in slums coupled with lack of basic amenities greatly affect the health of slum dwellers, particularly the women. Inadequate intake of nutritional food badly affected the health of women in slums. It was also revealed that women who were married at an early age had a poor health status due to early pregnancy. Majority of young women did not received proper pre- and postnatal care which adversely affected their health. However, all the women delivered at government or private hospitals, which was quite encouraging.

Miracle, Ruth, Glory and Johnson (2015, pp. 17264) in their article “Women in slums their health, economy and environmental aspects” analysed the impact of socio-economic conditions on the health status of women in an urban slum of Hyderabad. This study revealed that women had 40 per cent contribution in the overall income of the families. Majority of the women were living in thatched, overcrowded houses and had joint families. Further most of them lacked access to separate kitchen, safe drinking water, toilet facility and drainage system. All these factors had an adverse affect on the health of women, as they played key role in performing household activities. This exposed women to different levels of stress, both physically and mentally, as they performed the dual role of production and reproduction which poses hazard to their health.

Kiranmai, Saritha, Mallika and Vara (2012, pp. 222) in their article “Assessment of health status of women in urban slum” carried out a study in urban slums of Vishakhapatnam to assess the health status of women. This study revealed that majority (70 per cent) of the women were educated till primary and also most (85 per cent) of the women were engaged in private organisations. It was reported that at workplace 40 per cent of the women were exposed to pollutants that were hazardous for their health. Majority of women lived in congested and poorly ventilated houses. Further, nearly 50 per cent of the women used kerosene and wood for cooking which was the major cause of respiratory related problems among women. Only 20 per cent of the women were consuming appropriate content of protein in their daily food. In this study it was found that women were suffering from 16 different types of illnesses, but only 1 per cent of them were under medication because they consider it is quite expensive for them to visit doctor for treatment.

Banerjee (2012, 49) in his work “Status of health among slum dwelling women- A case study on Dankuni municipality, Hooghly” assessed the health status of women in urban slums of Hooghly and asserted that women were not only socio-economically backward but were also the most vulnerable section of the society. It was revealed that water-borne diseases were quite rampant. The physical conditions in slums were adversely affecting the health of women, but there were several other factors that were responsible for poor health status of women. Statistical analysis revealed that factors like early age of marriage, conceiving at a younger age, less gap between successive pregnancies, poor pre and post-natal care, poor intake of food were significantly associated with the health status of women in slums. It was also found that majority of the women delivered at home under unsafe and unhygienic conditions. Further, most of the women were less educated which in turn resulted in low awareness level about health and hygiene practices.

Kapil, Pathak, Tandon, Singh, Pradhan and Dwivedi (1999, pp. 983) in their article “Micronutrient deficiency disorders amongst pregnant women in three urban slum communities of Delhi” conducted a study to examine and assess the prevalence of micro-nutrient deficiency among pregnant women in three urban slum community of Delhi. They found that the prevalence of anaemia, Iodine deficiency disorders (IDD) and Vitamin A deficiency (VAD) was 78.8 per cent, 22.9 per cent and 4.8 per cent respectively and various morbidity conditions were found in almost 40 per cent of the pregnant women. The dietary intake result of pregnant women revealed that 18 per cent, 34 per cent, 85 per cent and 57 per cent were consuming less than 50 per cent of calories, proteins, iron and b-carotene. Thus, the study suggested that the prevalence of micro-nutrient deficiency among pregnant women in urban slums was high.

Rahman and Medhi (2017, pp. 129) in their article “Utilisation of antenatal services in urban slums of Jorhat municipality, Assam, India and the socio-demographic factors affecting it” conducted a study in urban slums of Assam to assess the utilisation of antenatal care services and analyse the socio-demographic factors affecting it in slums. They found that 74.2 per cent of the women did not adequately utilise the antenatal care services. About 87.2 per cent of the women consumed iron and folic acid tablets, whereas 74.2 per cent of the women at least had one dose of tetanus toxoid vaccine. 37.5 per cent of the illiterate women did not utilise

the antenatal care services, however this proportion was only 5.7 per cent among literate women. This suggested that education played a key role in utilisation of antenatal care services. 4.8 per cent of the women in joint families did not have any antenatal care services as compared to 19.2 per cent in nuclear families. They concluded that age, religion, caste of the women and parity did have any major role in utilisation of antenatal care services.

Khan, Khalique, Siddiqui and Amir (2013, pp. 28) in their article “Newborn care practices among slum dwellers in Aligarh city, Uttar Pradesh” conducted a study in an urban slum of Aligarh city to examine awareness level of slum dwellers regarding new-born care practices. The study revealed that majority of the slum dwellers lacked the knowledge and awareness about new-born care practices. Further, it was found that nearly 91.5 per cent of the pregnant women delivered at home and these deliveries were performed by untrained *dais*. All the deliveries were conducted in unclean and unhygienic conditions. Only 16.1 per cent of the mothers initiated breastfeeding within an hour of delivery. Less than half (41 per cent) of the mothers gave colostrums to their babies. While only 20 per cent of the mothers exclusively breastfed their children, 80 per cent of the mothers started pre-lacteal feeding. Mothers lacked the adequate knowledge about hypothermia and were unaware about the requirement of medical consultation when the baby showed dangerous signs.

Gaur, Keshri and Joe (2013, pp. 137) in their article “Does living in slums or non-slums influence women’s nutritional status? Evidence from Indian mega-cities” compared the nutritional status of women residing in slums with that of non-slum women in eight megacities using NFHS-3 data. This study revealed nearly half of the women in megacities are malnourished. The prevalence of undernutrition among women living in slums is quite high, whereas women in non-slum areas show a high prevalence of overnutrition. Women in the cities of Central India had high incidence rate of underweight, whereas the proportion of overweight was quite high in the cities of South India in both slum and non-slum areas. The income-inequalities in underweight outcome were significantly higher among women residing in non-slum areas, whereas the income related inequalities in overweight was greater among women in slums. Statistical analysis revealed that there was no significant association between area of residence and nutritional status of women. This study suggested that

there is need to implement an urban nutritional programme focussing on the dietary pattern in both slum and non-slum areas to address the issue of malnutrition.

Aggarwal and Srivastava (2017, pp. 1253) in their work “Nutritional status and its correlates in under five children of labour population in urban slums of Lucknow” conducted a study to assess the prevalence of malnutrition and explore the breastfeeding and weaning practices, immunisation coverage and illnesses among under-five children in urban slums of Lucknow. This study showed that 58.8 per cent, 34.4 per cent and 17.6 per cent of the children were stunted, underweight and wasted respectively. Further, it was reported that 17.6 per cent of the newborns were exclusively breastfed for the six months, 42.0 per cent were given colostrums and 20 per cent of the children were given complementary feeding at the appropriate time. Maternal education and feeding practices were found to be significantly related with the three anthropometric parameters. Almost 55.6 per cent of the children were fully immunised. The prevalence of illnesses like worm infestation, acute respiratory infection, vitamin A deficiency and diarrhoea was very high. The study revealed that undernutrition, poor feeding practices and low immunisation coverage resulted in the prevalence of several morbidities among children.

Mamulwar, Rathod, Jethani, Dhone, Bakshi, Lanjewar, Jadhav & Bhawalkar (2014, pp. 247, 251) in their article “Nutritional status of under-five children in urban slums of Pune” carried out a nutritional survey to assess the nutritional status of under-five children in urban slums of Pune. They found that 34.3 per cent, 58.7 per cent and 16.9 per cent of the children were under under-weight, stunted and wasted respectively. They observed that the prevalence of under-weight and stunting was more in girls whereas wasting was more in boys. The mother’s education was an important factor influencing the nutritional status of child. With the increase in mother’s educational level all the three anthropometric parameters showed improvement. They opined that home based activities should be encouraged to improve the child’s nutritional status.

A. Srivastava, Mahmood, P. M. Srivastava, Shrotiya and Kumar (2012, pp. 1) in their article “Nutritional status of school-age children in: A scenario of urban slums in India” carried out a cross sectional study to assess the nutritional status of school-age slum children and explore the factors associated with malnutrition in urban slums

of Bareilly. They found that most of the school-age slum children had a poor nutritional status. All the illnesses were more common among girls than in boys and this gender difference was particularly significant in anaemia and rickets. Children living in joint families and those children whose mother were educated less than 6<sup>th</sup> standard were at higher risk of malnutrition. They recommended that to improve the nutritional status of children skill-based nutrition education, effective infection control and fortification of food items should be implemented.

Das, Bapat, More, Alcock, Fernandez and Osrin (2012) in their work “Nutritional status of young children in Mumbai slums: A follow-up anthropometric study” used anthropometric data of children followed up from birth to study the maternal and child health in urban slums of Mumbai. They revealed that nearly 22 per cent of the infants were born with low birth-weight and the factors like poverty, younger maternal age, low educational level, low intake of nutritional food and iron supplements during pregnancy were positively associated with low birth-weight. At follow-up, 35 per cent, 17 per cent and 47 per cent of the children were found to be under-weight, wasted and stunted respectively. This suggested that focus should be more on the younger age-group rather than the children over the age of three.

Panigrahi and Das (2014) in their article “Undernutrition and its correlates among children of 3-9 years of age residing in slum areas of Bhubaneswar, India” undertook a study to examine the prevalence of stunting, wasting and under-weight and to determine the factors associated with these anthropometric parameters among children 3-9 years of age in urban slums of Bhubaneswar city. They found that 23.3 per cent of children were wasted, 57.4 per cent stunted and 45.4 per cent under-weight. They observed that the variables like period of initiation of breastfeeding, birth order of child, level of mother’s education were strongly associated with wasting, whereas safe storage of drinking water and availability of toilet facility were significantly related with stunting. They suggested that multipronged strategy should be adopted to improve the educational level in slums, spreading awareness about early initiation of breastfeeding, safe storage of drinking water and availability of toilet facility in households, which could prove detrimental in ameliorating the nutritional status of children in slums.

Dhok and Thakre (2016) in their work “Chronic undernutrition amongst under-five in an urban slum of Central India” carried out a study to estimate the prevalence of stunting and analyse its determinants among under-five children in an urban slum of Nagpur city. They argued that stunting still continues to remain a major problem in slums and revealed that nearly 34.77 per cent of the children were found to be stunted. They observed that determinants like socio-economic status, low educational level of mother, working status of mother, separated or widowed mother, lack of exclusive breastfeeding for 6 months, duration of breastfeeding less than 2 years, incomplete immunisation were significantly associated with stunting. Efforts are required to promote maternal education, create awareness regarding appropriate infant & young child feeding practices and immunisation to combat stunting as these factors are significantly associated with stunting.

Dhone, Chitnis, Bhawalkar and Jadhav (2012, pp. 110) in their article “Epidemiological study of under nutrition among under five years children in an urban slum” performed a cross-sectional study in urban slums of Pune to estimate the prevalence of undernutrition and determine its factors among children. This study revealed that more than half (65.2 per cent) of the children were undernourished. The prevalence of undernutrition was more in boys (74.1 per cent) as compared to girls (55.6 per cent). Further, children in the age group of 49-60 months were more at risk of undernutrition. Statistical analysis revealed that the level of maternal education was significantly associated with the prevalence of undernutrition. The overall prevalence rate of morbidities among children in slums was about 43.4 per cent. This study showed that undernutrition still continues to be a severe health problem particularly among children residing in slums.

Sharma, Kumar, Mittal and Goel (2011, pp. 38) in their article “Status of child undernutrition: Some socio-demographic concerns in Allahabad, Uttar Pradesh” conducted a study to assess the prevalence of undernutrition and determine its association with socio-economic factors among under-five children in urban slums of Allahabad city. They found that nearly 75 percent of the children were suffering from any form of undernutrition and 22.4 per cent were severely malnourished. The study demonstrated that slum dwellers were at higher risk of getting lesser than recommended dietary intake of nutrients. The standard of living index was strongly correlated with the undernutrition. The study suggested that an integrated and multi-

sectorial strategy should be developed and introduced to raise the living standard of slum dwellers and consequently improving their nutritional status.

Badami, Diwanji, Vijaykrishna, Bhandarkar, Chinagudi, Herur, Shashikala, Patil and Ankad (2012, pp. 28) in their work “Nutritional status of under-five children in urban slums of Bagalkot” undertook a study to estimate the prevalence of malnutrition among children in urban slums of Bagalkot. They observed that the prevalence of chronic malnutrition was very high, whereas the prevalence of acute malnutrition was relatively low. Nearly 72.65 per cent, 65.49 per cent and 32.05 per cent of the children were stunted, wasted and under-weight respectively. The study demonstrated that the prevalence of malnourishment was found to be high in the age group of 7-12 months and 55-60 months. This study suggested that optimal infant breastfeeding and weaning practices, timely immunisation of child and proper treatment of the diseases in children are needed to be introduced. Further, child welfare programmes should be formulated in such a way that priorities should be allocated to under-five children.

Ghane and Kumar (2017, pp. 3190) in their article “Nutritional status of under-five children of Mumbai suburban region” conducted a cross-sectional study to examine the nutritional status of under-five children and analyse the correlation of nutritional status with determinants like socio-economic status, birth-weight, period of breastfeeding, maternal education and immunisation status in suburban region of Mumbai. This study revealed that under-weight was the most common form of malnutrition among children and this was followed by wasting and stunting. They observed that the prevalence of malnutrition was highest in the age group of 12-24 months. Statistical analysis showed that socio-economic status and socio-demographic factors were significantly associated with the malnutrition. They opined that providing quality antenatal care and improving socio-economic conditions could prove effective in reducing under-weight among children.

Mittal, Singh and Ahluwalia (2007, pp. 264) in their article “Effect of maternal factors on nutritional status of 1-5-year-old children in urban slum population” performed a cross-sectional study to analyse the impact of maternal factors on nutritional status of under-five children in urban slums of Patiala. This showed that nearly 38.38 per cent of the children were underweight and 46.08 per

cent of them were stunted. The prevalence of undernutrition was higher in females as compared to males. The chances of undernutrition were higher when mother's age was less than 20 years. The educational status of mothers was significantly associated with the nutritional status and prevalence of undernutrition. This study revealed that maternal factors had a significant impact on the nutritional status of the children. Thus improving the socio-economic status of women could play a crucial role in reducing undernutrition among children.

Mitra (2007, pp. 92) in the article "A study of dietary intake and nutritional status of under five children in slums of Kolkata city" conducted a study in urban slums of Kolkata to assess the dietary intake and nutritional status of children. The study found that almost 61.1 per cent of the children were malnourished. Majority (81 per cent) of the children had calorie intake below the 50 per cent of recommended dietary allowance (RDA) and 68 per cent of them had protein consumption less than 70 per cent of the RDA. Nearly 80 per cent of the children were consuming iron less than 50 per cent of RDA. This indicated poor dietary intake in slums which resulted in high prevalence of malnutrition among children. This shows that specific nutrition programmes should be developed to target slum population.

Kavitha (2014, pp.124) in the work "Are slum children at higher risk of under nutrition, anaemia and childhood morbidity? Evidence from India" analysed the impact of slum dwellings on infant mortality, child morbidity, child malnutrition, low birth-weight and anaemia and compared it with the non-slum population. It was revealed that the socio-economic strata of slum children were lower than the children of non-slum areas. Statistical analysis revealed that children living in slums had higher chances of low birth-weight and anaemia as compared to non-slum children. The chances of diarrhoea, cough and fever were 1.3 times, 1.2 times, 1.5 times respectively higher among children living in slums as compared to the children living in non-slum areas. Thus, children dwelling in slums were at higher risk of morbidity, low birth-weight and anaemia.

Kumar and Singh (2013) in their article "Decomposing the gap in childhood undernutrition between poor and non-poor in urban India, 2005-2006" tried to quantify the factors that contributed to poor and non-poor gap in stunting, wasting and under-weight among under-five children in urban India. They revealed that there was

sheer gap in undernutrition between poor and non-poor in urban India. The prevalence of under-weight (33 per cent), stunting (40 per cent) and wasting (70 per cent) was considerably high among urban children. They considered that factors responsible for high prevalence of these anthropometric parameters were inadequate utilisation of health care services, lower maternal education and poor body mass index of the mothers. They recommended that ameliorating public health services and maternal literacy level could reduce the effect of poverty on childhood malnourishment.

Hatekar and Rode (2003, pp. 4606) in their article “Truth about hunger and disease in Mumbai: Malnourishment among slum children” studied the prevalence of malnutrition among under-five children in the urban slums of Mumbai and compared it with that of Jawahar tehsil of Thane, known for high rate of malnourishment. They observed that socio-economic barriers like female illiteracy and poor economic status severely affected the nutritional status of children in slums. The study revealed that severe malnourishment was higher in Mumbai than in Jawahar. The study demonstrated that the incidence of seasonal wasting was higher in girls. Low income of the household coupled with poor coverage of basic facilities and health care services resulted in higher incidence of malnourishment. Although the situation of girls was better in urban areas as compared to rural areas, the incidence of malnutrition among slum dwellers was significantly high. The study showed that the prevalence of malnutrition among children in urban slums of Mumbai was very close to that of Jawahar tehsil.

Gupta and Pandey (2007, pp. 89) in their article “Status of children in Delhi Slums: Care during delivery, immunisation and occurrence of some acute diseases” assessed the health status of children in urban slums and resettlement colonies of East Delhi. This study reported high prevalence of diarrhoeal diseases among children as result of poor housing conditions and unhygienic practices. The occurrence of diarrhoeal diseases was higher among boys than girls and the prevalence of the diseases decreases with the increase in age. Further it was reported that nearly 66 per cent of the newborns were delivered at hospitals and 80 per cent of the children were fully immunised. This study suggested that more concerted efforts are required to improve the living conditions in slums which in turn would reduce the risk of various diseases. Further, awareness programmes should be organised at community level for improving the knowledge of slum dwellers about health care practices.

Gupta, V. K. Srivastava, Kumar, Jain, Masood, Ahmad and J. P. Srivastava (2010, pp. 82) in their article “New born care practices in urban slums of Lucknow city, UP” assessed knowledge about the new-born care practices in urban slums of Lucknow. It was found that about half (51.7 per cent) of the deliveries were conducted at home under unhygienic conditions. Most (77.1 per cent) of the women considered that new-borns should be bathed with warm water and dried with clean cloth. Only 36.6 per cent and 30.2 per cent of the mothers started breastfeeding within 1 hour and 24 hours of delivery respectively. Only 43.5 per cent of the mother gave colostrum to their children and the main reason for discarding colostrum was customs. This study revealed that majority of the women lacked correct knowledge about the new-born care.

Black. Allen, Bhutta, Caulfield, Onis, Ezzati, Mathers, Rivera (2008, pp. 243) in their article “Maternal and child undernutrition: global and regional exposures and health consequences” held the view that prevalence of maternal and child undernutrition is highest in poor-income countries, which in turn is responsible for global increase in morbidity and mortality. They analysed the effects of undernutrition and inadequate breastfeeding practices on morbidity and mortality. They revealed that about 2.2 million under-five year children died due to stunting, wasting and intrauterine growth. Further, they estimated that nearly 0.6 million and 0.4 million children died due to vitamin A and zinc deficiency respectively. Deficiency of iodine and iron were responsible for smaller disease burden among children. However, in the case of maternal deaths iron deficiency was a major contributor. They found that inappropriate breastfeeding practices resulted in the death of 1.4 million children. They suggested that there is an urgent need to implement interventions specifically targeted towards these nutritional problems to reduce the overall mortality rate and disease burden.

### **Anaemia**

Gomber, Bhawana, Madan, Lal and Kela (2003, 167) in their article “Prevalence & etiology of nutritional anaemia among school children of urban slums” conducted a study to assess the prevalence of anaemia among children in urban slums of Delhi. They revealed that nutritional anaemia still continues to be a severe health problem among children especially in slums with 41.8 per cent of the children having

haemoglobin below the values recommended by WHO. They reported that the most common form of anaemia was iron deficiency which was followed by deficiency of vitamin B 12 and iron folic acid. The high prevalence of nutritional anaemia among children was attributed to poor dietary intake and several other nutritional deficiencies.

Jain, Chopra, Garg, Bhatnagar, and Singh (2000, pp.19) in their article “Anaemia among children: Early iron supplementation” conducted a study to estimate the prevalence of nutritional anaemia and to explore the factor responsible for it among children in urban slums of Meerut city. The study revealed that nearly 59.9 per cent of the children were anaemic. Statistical analysis showed that factors such as socio-economic status, maternal education, birth-weight, birth order and type of complementary food did not have any significant association with the prevalence of anaemia among children. However, exclusive breastfeeding for six months, timing of introducing complementary food, nutritional status and early supplementation of iron were found to have positive correlation with prevalence of anaemia.

Noronha, Bhaduri and Bhat (2008, pp. 31) in their article “Prevalence of anaemia among pregnant women: A community based study in Udupi district” conducted a study to evaluate the prevalence of anaemia and to determine the factors affecting it among pregnant women in urban slums of Udupi. The study revealed that more than half (50.14 per cent) of the pregnant women were found to be anaemic. Further, it was reported that factors such as age of the women, socio-economic status, poor nutrition, body mass index, pregnancy gaps and gender parity were significantly associated with the prevalence of anaemia. The study suggested that preventive strategies such as monitoring of antenatal care visits, iron and folic acid supplementation should be implemented. Further, the factors responsible for prevalence of anaemia should be identified and included as indicators in health policy.

Panigrahi and Sahoo (2017, pp. 317) in their article “Nutritional anaemia and its epidemiological correlates among women of reproductive age in an urban slum of Bhubaneswar” conducted a study to assess the prevalence of nutritional anaemia and explore its epidemiological correlates among women of reproductive age in urban slums of Bhubaneswar. The study revealed that nearly 60.8 per cent of the women were anaemic with 39.6 percent being mildly anaemic, 20.0 per cent moderately

anaemic and 1.2 per cent severely anaemic. The study showed that epidemiological factors such as women of younger age, low literacy status, low socio-economic status, inappropriate consumption of green leafy vegetables and protein rich food, excessive menstrual bleeding were significantly associated with nutritional anaemia among women. It was suggested that specific strategies should be implemented to impart nutritional education particularly among women to reduce the burden of nutritional anaemia.

Lilare and Sahoo (2017, pp. 2841) in their article “Prevalence of anaemia and its epidemiological correlates among women of reproductive age group in an urban slum of Mumbai” conducted a study in an urban slum of Mumbai to assess the prevalence of anaemia among women and its determinants. This study revealed that 37.1 per cent, 9.5 per cent and 2.9 per cent of the women were suffering mild, moderate and severe anaemia respectively. Statistical analysis revealed that factors such as socio-economic status, literacy, iron intake and gap between pregnancies were significantly associated with the prevalence of anaemia and affected the haemoglobin levels among women of reproductive age. Sending girls to schools would help in increasing educational level among women which in turn would help in enhancing awareness about health and consequently reducing prevalence of anaemia.

Dasgupta, Sarkar, Chowdhury, Ray and Shahbabu (2016, pp. 276-277) in their article “Anaemia and its determinants among women of reproductive age of a slum in Kolkata: A focus group discussion among health workers in a slum of Kolkata” conducted a study to explore the determinants responsible for anaemia among women of reproductive age in urban slums of Kolkata. This study showed that socio-economic factors such as low educational level, poverty, low income, social negligence, poor dietary habits, improper hygiene practices, worm infestation were significantly associated with the prevalence of anaemia among women. This situation was further worsened by the poor health delivery system, lack of iron supplementation and inadequate training of health personnel. The study suggested that improving the knowledge and capacity of health workers as well as adequate supplementation of iron and folic acid tablets along with raising women’s awareness related to food security and appropriate dietary intake could play key role in minimising the burden of anaemia.

Kapur, Sharma and Agarwal (2003, pp. 1131) in their article “Effectiveness of nutrition education, iron supplementation or both on iron status in children” carried out a study in an urban slum of Delhi to examine the effects of nutritional education and weekly iron supplementation on the iron status of children. Statistical analysis revealed that at eight week the effect of nutrition education, iron supplementation and education with supplementation on haemoglobin level was 2.9 per cent, 1.9 per cent and 3.8 per cent respectively and at sixteenth week it was 2.9 per cent, -1.9 per cent and 0 per cent respectively. After a period of sixteen weeks, nutrition education showed positive effect on the knowledge and awareness level of mothers related to dietary intake of green leafy vegetables and other iron rich diets. This study showed that nutrition education and iron status are positively correlated.

Kapoor, Agarwal, Sharma, Kela and Kaur (2002, pp. 136) in their article “Iron status of children aged 9-36 months in an urban slum Integrated Child Development Services project in Delhi” conducted a study to assess the prevalence of anaemia and its determinant factors among children in an ICDS slum of Delhi. The study revealed that about 64 per cent of the children were anaemic, out of which 44 per cent were mildly anaemic, 12.2 moderately anaemic and 7.8 per cent severely anaemic. 56 per cent and 64 per cent of the children had energy and iron intake respectively as per Recommended Dietary Allowances (RDA). The prevalence of anaemia along with vitamin B 12 and iron folic acid deficiency in an ICDS slum is a matter of great concern.

Verma, Rawal, Kedia, Kumar and Chauhan (2004, pp. 25) in their article “Factors influencing anaemia among girls of school going age (6-18 years) from the slums of Ahmedabad city” conducted a study to assess the prevalence of anaemia among girls and determine the socio-demographic variables associated with it in urban slums of Ahmedabad. The study showed that the majority (81.8 per cent) of the girls were anaemic. Further, it was revealed that socio-demographic factors like occupational status of father, intake of green leafy vegetables, consumption of tea/coffee after meal, body mass index were significantly associated with the prevalence of anaemia. High percentage of anaemia among girls is quite alarming and requires special attention. Interventions such as iron and folic acid supplementation and improving dietary intake could help in reducing the prevalence of anaemia.

**Iodine Deficiency Disorder**

Sethy, Bulliyya, Mallick, Swain and Kar (2007, pp. 917) in their article “Iodine deficiency in urban slums of Bhubaneswar” performed a cross-sectional study to assess the prevalence of goitre and iodine deficiency among children in urban slums of Bhubaneswar. The study found that the prevalence rate of goitre among children was 23.6 per cent, however there was no significant gender variation. The prevalence of goitre was found to be significantly higher among children in the age group of 10-12 years and scheduled castes and tribes. About 85.7 per cent children were having urine iodine concentration value less than 100 µg/l, indicating iodine deficiency. About 52 per cent of the children were consuming adequately iodised salt. Despite the implementation of salt iodisation programme, the study showed prevalence of moderate iodine deficiency. There is need to rigorously implement and monitor salt iodisation programme for improving the quality of iodised salt and imparting awareness among people about consuming iodised salt, which in turn would help in preventing iodine deficiency.

Pradhan and Choudhry (2003, pp. 406) in their article “Assessment of iodine deficiency disorders in urban areas of Udaipur district, Rajasthan” conducted a study in urban areas of Udaipur to assess the prevalence of iodine deficiency disorders among children. This study reported that the prevalence of goitre was 8.2 per cent and biochemical deficiency was about 8 per cent, however the median iodine level among the children was about 20 mcg/dL. Most of the salt samples (85 per cent) collected from their beneficiaries had adequate level of iodine. This study suggests that adequate implementation and monitoring of salt iodisation programme has made the population in urban areas from iodine deficient to iodine sufficient.

Majumdar, Jaiswal and Chatterjee (2014, pp. 486) in their article “Prevalence of iodine deficiency among pregnant and lactating women: Experience in Kolkata” performed a cross-sectional study in urban slums of Kolkata to measure the iodine status of pregnant and lactating women. The study revealed that 37 per cent of the pregnant women and 33 per cent of the lactating women were iodine deficient. This study reported that 32.2 per cent infants of the iodine deficient women had respiratory problems at the time of birth. This study concluded that although salt iodisation programme is adequate for rest of the population, but for pregnant and lactating

women more concerted efforts are required to address the issue of iodine deficiency. Interventions like iodine supplementation specifically targeting pregnant and lactating women should be implemented for improving iodine status among them.

### **Vitamin A Deficiency**

Khan and Mahmood (2012, pp. 188) in their article “Vitamin A deficiency among school children of Bareilly: Crucial role of nutrition education” conducted a study to evaluate the prevalence of vitamin A deficiency among children in urban slums of Bareilly. This study showed that the prevalence of vitamin A deficiency among children was 6.37 per cent. The prevalence of vitamin A deficiency was found to be highest among the children in the age group of 11-12 years. The study revealed that prevalence of vitamin A deficiency was comparatively higher in boys. The lower socio-economic status was significantly associated with the prevalence of vitamin A deficiency. Almost one-fourth of the children were reported to be anaemic and around 48.5 per cent were under-weight. This study suggested that people residing in slums should be given nutritional education and motivated to increase the consumption of green leafy vegetables and fruits to reduce the prevalence of vitamin A deficiency.

Chuahan, Trivedi, Khan and Talsania (2011, pp. 1627) in their article “Prevalence of clinical vitamin A deficiency among primary school children in urban slums of Ahmedabad: A cross sectional study” performed a cross-sectional study to assess the prevalence of xerophthalmia and examine the association between socio-demographic factors and vitamin A deficiency among children in urban slums of Ahmedabad city. This study reported a high prevalence of vitamin A deficiency among girls as compared to boys. Further, the study showed that nearly 0.5 per cent, 1.4 per cent and 2.1 per cent of the children were suffering from night blindness, conjunctival xerosis and Bitot’s spot respectively. The socio-demographic factors like type of family, poor socio-economic status, low educational status of parents and poor intake of green leafy vegetables and fruits were found to be significantly related with the prevalence of vitamin A deficiency. This study highlighted the severity of vitamin A deficiency among children whom policy makers generally do not consider at risk.

Sachdeva, Alam, Beig, Khan and Khaliq (2011, pp. 861) in their work “Determinants of vitamin A deficiency amongst children in Aligarh district, Uttar Pradesh” conducted a study in rural and peri-urban areas of Aligarh district to assess

the prevalence of xerophthalmia and explore its determinants among children. It was reported that the prevalence rate of xerophthalmia was 9.1 per cent. Night blindness, bitot's spot and corneal xerophthalmia were positively correlated with age. Statistical analysis revealed that socio-demographic factors like type of housing, socio-economic status, maternal education and poor intake of protein and green leafy vegetables were significantly associated with vitamin A deficiency. Co-morbidities like wasting and measles were also determinants of vitamin A deficiency. This study showed that vitamin A deficiency continues to be a health problem in Aligarh and severity of the problem demands rigorous implementation of prophylactic measures.

Swami, Thakur, Bhatia and Ahuja (2001, pp. 719) in their article "Improving environmental conditions of a slum in Chandigarh by an awareness campaign" conducted a study to assess the prevalence of vitamin A deficiency among children in urban slums of Chandigarh on the national immunisation day. This study revealed that the prevalence of vitamin A deficiency among slum children was 24.6 per cent with 23.7 per cent of them suffering from conjunctival xerosis, 0.6 per cent from bitot's spot and 0.2 per cent from corneal xerosis. Majority (98.7 per cent) of the children had no major problem and were given vitamin A solution. This study showed that conducting survey and administering vitamin A supplementation on national immunisation day was quite successful and similar initiatives should be launched for reducing the prevalence of vitamin A deficiency.

### **Infant Breastfeeding and Weaning Practices**

Noor, Rajesh and Babu (2013) in their article "A study on breast feeding practices in among mothers of urban slums of Rourkela" conducted a study to evaluate the level of knowledge and awareness about breastfeeding practices among women in urban slums of Rourkela. The study revealed that the knowledge among women regarding breastfeeding was well below satisfactory levels. Almost half of the women (57 per cent) had early initiation of the breastfeeding, but only 28 per cent exclusively breastfed their children for the period of six months. The reasons identified for the delay in early initiation of breastfeeding were pain, caesarean section, but local beliefs did not have much role in delay of initiation of breastfeeding. Although 77 per cent of the women gave colostrums to their children, only 29 per cent of them were aware about the nutritive value of colostrums. The study suggested that during antenatal

visits pregnant women should be given information about the advantages of colostrum and exclusive breastfeeding and its impact on the health of growing infant.

Velusamy, Premkumar and Kanga (2017, pp. 1) in their article “Exclusive breastfeeding practices among mothers in urban slum settlements: Pooled analysis from three prospective birth cohort studies in South India” assessed the practice of exclusive breastfeeding for the first six months after delivery among women in the urban slums of Vellore and evaluated the factors associated with early cessation of breastfeeding. The study revealed that only 11.4 per cent of the women exclusively breastfed their infants for the first six months. The study showed that factors such as maternal education, joint family structure, pucca houses, more than two children in the family and birth during summer were significantly associated with the early cessation of exclusive breastfeeding. The study suggested that educational interventions should be carried out to impart information regarding breastfeeding practices to women and other family members for improving the infant feeding practices.

Patel, Bansal, A. G. Nimbalkar, Phatak, S. M. Nimbalkar, Desai (2015, pp.1) in their article “Breastfeeding practices, demographic variables, and their association with morbidities in children” conducted a study to assess the breastfeeding practices among mothers of under-five year children in Anand district of Gujarat. The study revealed that breastfeeding within an hour of delivery was practiced by nearly 57.5 per cent of the mothers and 55.9 per cent exclusively breastfed their children for first six months. However, 89.1 per cent of the mothers stopped breastfeeding in less than two years. The study demonstrated that mothers who started breastfeeding within an hour of delivery followed the practice of exclusive breastfeeding their children for the first six months and practiced breastfeeding for longer period. Statistical analysis revealed that initiation of breastfeeding after an hour of delivery, discontinuing the practice of exclusive breastfeeding before six months, low level of maternal education, having more than two children and complementary food provided by other family members increased the rate of morbidity. Thus, the study suggested that mothers were practicing breastfeeding in an inappropriate manner and interventions were needed to ameliorate these practices.

Thakur and Kumar (2010) in their article “Breastfeeding practices among the Ganda women of Raipur slums” analysed the practice of breastfeeding and pre-lacteal feeding among mothers of Ganda community in urban slums of Raipur city and examined the factors affecting. This study revealed that 82.5 per cent and 61.87 per cent of the mothers gave colostrum to their new born and started breastfeeding within two hours of birth respectively. While 32.5 per cent of the mothers practiced exclusive breastfeeding for the period of first six months, nearly 36.25 per cent of the mothers gave pre-lacteal food to their infants. 25 per cent of the mothers were reported of giving complementary food to their children prior to the recommended age of six months, whereas 11.25 per cent introduced it after the recommended age. Maternal education and introduction of pre-lacteal food were found to be significantly associated. This suggested that mothers in Raipur slums were practicing inadequate infant feeding practices.

Bagul and Supare (2012, pp. 1525) in their article “The infant feeding practices in an urban slum of Nagpur, India” studied the infant feeding practices in an urban slum of Nagpur and tried to examine the factors influencing it. This study showed that nearly 21.83 per cent of the mothers initiated breastfeeding within one hour of birth. While only 21.38 per cent of the mothers were reported to give colostrum to their infants, nearly 36.84 per cent mother exclusively breastfed their infants for the period of first six months. Factors such as maternal education, employment status of mother, sex of the child, number of antenatal care visits, knowledge of the mother regarding breastfeeding and weaning were found to be significantly associated. This study revealed that the mothers in slums lacked the proper knowledge about breastfeeding and weaning practices.

Sethi, Kashyap, Seth and Agarwal (2003, pp. 164) in their article “Encouraging appropriate infant feeding practices in slums: A positive deviance approach” carried out a study to analyse the role of nutritionally positive deviant (PD) infant’s mothers as counsellors to advocate and encourage adequate infant breastfeeding and weaning practices in urban slums of Delhi. In this study, three infants were identified as PD infants and a PD investigation was carried out in these three families to understand the practices and behaviours adopted by them. Two of the three PD mothers elaborated the advantages of PD behaviour with other families. For a period of four weeks in-group discussion was carried out to promote PD behaviour

with other families and it was observed that families started following PD behaviours. This study concluded that PD mothers can play an effective role in encouraging others to adopt adequate infant feeding practices.

Rajesh and Bhawna (2016, pp. 350) in their article “A study on infant feeding practices in urban slums: A cross-sectional study” conducted a study to assess the infant feeding practices among children and analyse the knowledge of mothers related to breastfeeding and complementary feeding practices in urban slums of Bellary city. This study showed that only 22 per cent of the children received exclusive breastfeeding for first six months. Nearly 60.7 per cent of the children were given complementary food at the recommended age. However, the prevalence rate of overall optimal breastfeeding and complementary feeding was only 18.7 per cent. This study suggested that breastfeeding and complementary feeding programmes and interventions should be strengthened to impart knowledge to mothers and bridge the socio-economic gaps in the urban slums.

Lohia and Udipi (2014) in their article “Infant and child feeding index reflects feeding practices, nutritional status of urban slum children” performed a study in urban slums of Mumbai to assess the infant feeding practices and identify the relationship between feeding practices and nutritional status using infant and child feeding index. Infant and child feeding index is a composite index of five components namely breastfeeding, use of bottle for feeding, diet diversity score, food group frequency score and feeding frequency score. This study revealed that infant and child feeding index could prove to be detrimental in identifying those factor which influence the child feeding practices and their nutritional status.

Gupta, V. K. Srivastava, Kumar and J. P. Srivasatva (2012) in their work “Pre-lacteal feeding among newborn in urban slums of Lucknow city UP, India” conducted a study to assess the pre-lacteal feeding practices among infants in urban slums of Lucknow. This study showed that more than half (50.6 per cent) of the mothers followed the practice pre-lacteal feeding. Socio-economic status and educational level of parents were significantly associated with the practice of pre-lacteal feeding. This study revealed that mother’s knowledge and awareness regarding appropriate infant feeding practices plays a major role in proper growth and development of the new-

born. Therefore, it is essential that nutritional programmes should focus on providing education to mothers regarding health and nutrition.

Roy, Dasgupta and Pal (2009, pp. 362) in their article “Feeding practices of children in an urban slum of Kolkata” conducted a study to assess the child feeding practices in an urban slum of Kolkata. The study showed that majority (93.3 per cent) of the children were delivered at hospital and nearly 29.9 per cent of them were given pre-lacteal feed. While 76.67 per cent were breastfed within 24 hours of delivery, only 28.33 per cent were exclusively breastfed for six months. However, 90 per cent of the infants were given colostrums. The most common reason for discontinuing the practice of breastfeeding was insufficient milk production in mothers. Statistical analysis showed that maternal literacy was significantly associated with feeding practices. Further, socio-economic status and individual’s knowledge and beliefs also had an impact on infant feeding practices.

Tiwari, Mahajan and Lahariya (2008, pp. 49) in their work “The determinants of exclusive breast feeding in urban slums: A community based study” performed a cross-sectional study to explore the prevalence and determinants of exclusive breastfeeding in urban slums of Gwalior. The study showed that very few (3.8 per cent) mothers had knowledge that exclusive breastfeeding should be practiced for the first six months after delivery and only 7.8 per cent practiced it. While 26.2 per cent of the mothers did not give colostrum to their newborns, 63.8 per cent of the infants received pre-lacteal feeds and 76.0 per cent of the infants were given post-lacteal feeds. Statistical analysis revealed that factors such as early initiation of exclusive breastfeeding, antenatal care visits, maternal education, immunisation status were found to be significantly related with the practice of early initiation of exclusive breastfeeding. There were many misconceptions about breastfeeding among the slum dwellers. Women who visited health centres for antenatal checkups had more knowledge about correct breastfeeding practices. This study showed that prevalence of myths about breastfeeding was quite high in slums and therefore, mother’s visit to health care facilities should be utilised for promoting appropriate infant feeding practices.

Chaturvedi, Nandan and Gupta (2007, pp. 27) in their work “Rapid assessment of infant-feeding practices in Agra district” carried out a rapid assessment of infant

feeding practices in urban slum areas of Agra. It was reported that only 18.3 per cent of the children were exclusively breastfed for the first six months. Only 3.0 per cent of the children were breastfed within 1 hour of the delivery and 81.7 per cent of them were given pre-lacteal feeds. Nearly half (50.8 per cent) of the mothers started complementary feeding before the recommended age and only 20 per cent of the children received complementary feeding at the correct age. This study showed a high percentage of faulty feeding practices in slums. This situation can be improved through IEC activities and training health workers for promoting appropriate child feeding practices.

Kulkarni, Anjenaya and Gujar (2004, pp. 179) in their article “Breastfeeding practices in an urban community of Kalamboli, Navi Mumbai” performed a cross-sectional study to assess the infant feeding practices and analyse the impact of education and cultural factors on the breastfeeding practices in urban slums of Navi-Mumbai. This study reported nearly 70.2 per cent of the mothers exclusively breastfed their children for six months. However, 36.1 per cent and 7.4 per cent of the mother started pre-lacteal feeding and bottle-feeding before the recommended time period. Statistical analysis revealed that place of delivery and introduction of pre-lacteal feed were significantly associated. Further, it was found that 25 per cent of the illiterate mothers did not give colostrum to their children, whereas only 1.9 per cent of the educated mother discarded colostrum. This depicts that maternal literacy had an impact on infant feeding practices. Cultural practices of rejecting colostrums, pre-lacteal feeding and inadequate breastfeeding practices were found to be still prevalent among mothers in slums and there is an urgent need to discourage these practices by educating women about appropriate child rearing practices at community level.

### **2.3 Health Care Programmes**

Vijver, Oti, Oduor, Ezeh, Lange, Agyemang and Kyobutungi (2015, pp. 2114-2115) in their article “Challenges of health programmes in slums” opined that complex settings in slums pose several challenges in the implementation of health care programmes. An evident gap exists between the ever increasing population of slums dwellers and number of health care programmes operating in slums. This problem is not only confined to health sector, but is also evident in other sectors such as infrastructure, education, employment and environment which directly or directly

bear effects on health sector. Absence of adequate health care centres in slums results in the growth of private actors which may range from quacks, traditional healers to non-governmental organisations, faith based organisation. For effective working of health care system public private partnership is needed to be introduced in slums. Higher physical insecurity in slums is also a matter of concern which sometimes acts as barrier in accessing health services. Another major problem in slums is the floating population. Majority of the slum dwellers are daily labourers and in search of jobs they keep on moving from one place to other which makes it difficult to identify them and provide proper follow up. Multipronged approach is requires to ameliorate the health status of slum dwellers.

Kumari and Thomas (2013, pp. 1) in their article “A comparative study of health profile of children (0-6 years) in ICDS vs. Non-ICDS urban slums of Hyderabad; A.P” compared the health profile of children living in ICDS covered areas and non-ICDS areas in urban slums of Hyderabad city. In this study determinants like nutritional status, immunisation coverage and morbidity profile of children were used for comparison between ICDS slums and non-ICDS slums. It was revealed that nutritional, immunisation and health status of ICDS beneficiaries was better than non-ICDS beneficiaries. However, the overall health of the children was poor in both ICDS and non-ICDS slums. Therefore, there is an urgent need that ICDS centres should be expanded and strengthened to achieve the targets and improve the health status of the children in slums.

Meena, Verma and Kumar (2017, pp. 3443) in their article “Evaluation of integrated childhood development services (ICDS) program implementation in an urban slum of Delhi, India” performed a descriptive case study in an urban slum of Delhi to evaluate the implementation of ICDS programme. In this study the mean coverage of all ICDS services was reported to be only 58.3 per cent with maximum coverage of supplementary nutrition and minimum coverage of child and maternal health. Although the coverage of services such as supplementary nutrition to pregnant women and children, non-formal pre-school education, adolescent health education, immunisation coverage, growth monitoring of children was satisfactory, however the coverage of nutrition and health education to pregnant and lactating women was poor. The maternal and child health services were also inadequate. The community members were highly dissatisfied with the functioning of ICDS. Thus, this case study

revealed inadequate infrastructure facilities, poor coverage of services and dissatisfaction of slum dwellers towards the ICDS.

Bhatnagar and Bhadra (2015, pp. 13) in their article “Paradox in justice: Integrated Child Development Services (ICDS) scheme as a marginalised service” conducted a study in Meerut city to evaluate the quality and distribution of services provided by Anganwadi workers and the involvement of women who were sending their children for pre-school education in the Anganwadi centres by comparing ICDS scheme in urban slums with rural areas. This study revealed that majority of the Anganwadi workers and mothers were from low income families and had low educational level as a result of which this programme was viewed as a low status programme that signify it as systematic marginalisation. The lack of proper infrastructure, facilities and equipments were responsible for structural deprivation. The study suggested that there is an urgent need to develop and introduce new strategy so that problems of maternal death, infant mortality, malnutrition, child dropout can be dealt effectively. The lack of awareness among mothers regarding the objectives of ICDS was one of the main barriers responsible for inadequate implementation of the programme. The community participation was considered important for proper execution of the programme. The Anganwadi workers were not satisfied with their jobs which had a direct impact on their efficiency. Thus, it is quite evident from the study that operational changes are needed for proper functioning of the programme.

Prinja, Verma and Lal (2007, pp. 1) in their article “Role of ICDS program in delivery of nutritional services and functional integration between anganwadi and health worker in north India” carried out a study to assess the nutritional status and dietary habits of under-five children in the ICDS covered areas across 60 Anganwadi centres in Rohtak. The study showed that 48.7 per cent of the children were under-weight. Further, only 19.8 per cent of the children had adequate intake of calories. The participation of mothers was very poor and only 48.9 per cent of the pregnant and lactating women received information about appropriate breastfeeding and weaning practices. This revealed that lack of maternal education and awareness affected that nutritional status of the children. The functional integration of the programme with the health sector was adequate. This study suggested that a holistic and multipronged approach was required to address the issue of child development.

Kumar and Banerjee (2015, pp. 94) in their work “Integrated child development services (ICDS) programme in the context of urban poor and slum dwellers in India: Exploring Challenges and opportunities” analysed the challenges and issues associated with the proper implementation and execution of ICDS programmes in urban slums of India. They found that Angawanwadi centres in slums face several problems ranging from poor infrastructural facilities to unrecognised slums and informal settlements, increasing migration and floating population, higher rate of dropout, difficulty in mapping and identifying migrants, lack of basic amenities, poor coordination between health departments and local municipal bodies, lack of knowledge and awareness among community members, lack of capacity and knowledge among Anganwadi workers, inadequate health care system and issues of gender parity. They also observed a huge gap between the intentions of the ICDS programme and its implementation in actual and suggested several recommendations for the proper execution of the programme. They suggested for the establishment of day care centres and mobile crèche in slums for helping working women, reallocation of non-notified slums, providing safe drinking water and access to toilet facilities and providing proper infrastructure for Anganwadi centres. Moreover, they suggested for enhancing the capacity and knowledge of Anganwadi workers, increasing participation of community members in Anganwadi centre activities and managing partnership with NGOs to carry out child nutrition and health programmes more efficiently.

Sinha (2017, pp. 31-33) in his book “Rapid assessment of integrated child development scheme in Delhi” conducted a study to analyse the functioning of ICDS and explore the gaps in services provided by the ICDS across 16 Anganwadi centres in urban slums and semi-rural areas of Delhi. This study showed that people residing in slums lacked access to basic civic amenities and due to poor sanitation and hygiene, the women and children participating in ICDS programme could avail the maximum benefit of ICDS. Another problem was the limited utilisation of the ICDS, as maximum households were enrolled but majority of them did not regularly visited the Anganwadi centres. In this study, it was also revealed that parents expressed to send their children in private schools. They considered that private schools could provide their children better education and environment as compared to Anganwadi centres. The study also raised concern regarding supplementary nutrition programme.

Further, the SABLA programme was also not implemented effectively. This study suggested several recommendations related to child malnutrition, lack of basic civic amenities, working conditions of Anganwadi workers, childhood care and education and resource allocation.

Sreedevi (2015, pp. 5) in the article “An overview of the development and status of national nutritional programs in India” assessed the impact of various nutritional programmes and asserted that undernutrition continues to be a major problem in the country. Macro and micronutrient deficiency continue to plague a large proportion of the population. Children, pregnant and lactating women are the worst affected with the retardation of cognitive and physical growth and are susceptible to various infections which ultimately affect the productivity of the country. The government has launched several programmes like ICDS, National iron + initiative, National iodine deficiency disorder control programme, etc. However, in spite of all these programmes the household food security is still a matter of serious concern, which requires a more holistic approach. More concerted efforts are required so that all the programmes should be formulated to address the issue of gender equity. More attention should be given to young children especially the girl child as well as to pregnant and lactating women.

Alcock, More, Patil, Porel, Viadya and Osrin (2009, pp. 963) in their article “Community based health programmes: Role perceptions and experiences of female peer facilitators in Mumbai’s urban slums” explored the behaviour and attitude of female health facilitators engaged in maternal and child care intervention organised at community level in urban slum areas of Mumbai. They analysed the role perceptions, daily activities, role negotiations of women health facilitators and found that female peer facilitators enacted their role as friends, community mobilisers, brokers of health information. These female facilitators performed their roles at different levels such as by developing friendship, discussing health issues, interacting with community members and encouraging them for participation. Developing friendship with the community members played an important role in exchanging information about health issues. This study revealed that the confidence, communication skills, knowledge about health issues and social status of health facilitators had improved through participation in health intervention.

Garg, Khewar and Rizu (2016, pp. A13-A14) in their article “Improving access to health in urban slums through the rollout of NUHM and expansion of community processes: The experience of Chhattisgarh” conducted an extensive study across the urban slums of 11 cities in Chhattisgarh to assess the socio-economic status, estimate the utilisation of health care services, analyse the role of Community Health Workers (CHW) and auxiliary nurse midwives (ANM) and explore the impact of State Urban Health Programme launched under the scheme of NUHM. While the literacy rate, access to toilets, child malnutrition, infections among children, institutional delivery was better in urban slums as compared to rural areas, the utilisation of health care services, immunisation and exclusive breastfeeding was lower than the rural areas. The increase in numbers of CHWs and ANMs in urban slums ameliorated the health status. They were able to convince slum dwellers to visit public health centres. CHWs and ANMs provided community based care to pregnant and lactating women and their children. This study suggested that NUHM could play an important role in providing adequate health services to slum dwellers.

A. Davey, S. Davey and Datta (2008, pp. 48) in their article “Role of reorientation training in enhancement of the knowledge regarding growth activities by anganwadi workers in urban slums of Delhi” conducted a study in ICDS operating slums of Delhi to assess the knowledge of anganwadi workers about the growth monitoring and influence of reorientation training on them. Majority of the anganwadi workers had the prescribed educational level needed for selection and most of them had received reorientation training. Further, most of the anganwadi workers had knowledge about growth chart and follow-up method. However, only few of them had knowledge about how to follow-up undernourished children. The frequency of reorientation training was found to be significantly associated with the knowledge of anganwadi workers.

Banerjee, Bhawalkar, Jadhav, Rathod and Khedkar (2012, pp. 20) in their article “Access to health services among slum dwellers among industrial township and surrounding rural areas: A rapid epidemiological assessment” conducted a study to evaluate the access and utilisation of health care services in an urban slum of Pune. This study reported that almost half of the slum dwellers (50 per cent) were living in unhygienic squatter settlements and lacked access to safe drinking water and toilet facilities. Almost 60 per cent of the slum dwellers visited private doctor for the

treatment of diseases, as private doctors were easily accessible than doctors in government hospitals. It was found that 30.88 per cent of the slum dwellers who visited government hospitals were not satisfied with the services, while 18.31 per cent were not satisfied with the services provided in private hospitals. This showed that dissatisfaction level was higher among government hospital visitors. Long waiting queue in hospitals, behaviour of health personals, poor quality of facilities and health care were found to be main hindrances in accessing health services. This study revealed that urban poor in India still lacked access to basic facilities of healthy life as well as to health services form government sector.

Agarwal, Taneja and Patra (2005) in their paper “Health vulnerability assessment of slums: A tool for better planning of health programs in urban areas” analysed the various dimensions of slums for understanding the difficulties faced by slum dwellers and developing equitable health programmes. They examined socio-economic, cultural, behavioural and environmental factors along with bio-medical factors for framing a comprehensive and effective strategy. They found that a large number of slums remained unlisted by the government. Further, they observed that slums vary from one other in terms of needs and hence multifaceted approach is required to cater them differently. It was also revealed that vulnerability of slum dwellers was result of combination of factors including social, economic, cultural, behavioural, etc. Thus, for proper delivery of health services it is essential to identify the nature of problems faced by slum dwellers.

Vikram, Sharma and Kannan (2013, pp. 340) in their article “Beneficiary level factors influencing *Janani Suraksha Yojana* utilisation in urban slum population of trans-Yamuna area of Delhi” conducted a study to explore the beneficiary factors for utilisation of *Janani Suraksha Yojana* (JSY) in slums of trans-Yamuna area of Delhi. The study revealed that about 71 per cent of the mothers had institutional delivery. However, 23.7 per cent of the mothers benefited from JSY scheme and only 14.5 per cent of them received cash amount from JSY scheme. Having more than six antenatal care checkups was found to be the beneficial factor for availing the advantages of JSY scheme. This study suggests that slum dwellers are needed to be made aware about the JSY scheme and they should be encouraged to avail maximum benefit of the scheme.

Mohapatra, Kar and Kumari (2017, pp. 15859) in their article “A study on utilisation of *Janani Suraksha Yojana* (JSY) services in an urban slum in Bhubaneswar, Odisha” conducted a study to examine the awareness level of women about the JSY scheme and analyse the various components of the scheme in an urban slum of Bhubaneswar. This study revealed that majority (97 per cent) of the pregnant women receives antenatal care checkups. The most common service provided under antenatal care was the distribution of iron and folic acid tablets. Majority (95 per cent) of the women were counselled by ASHA for institutional delivery, however they were not counselled appropriately about dietary intake, postnatal care and family planning. About 53 per cent of the pregnant women were registered by the end of their first trimester. Majority (91 per cent) of the women delivered at government hospitals and 81 per cent of them arranged the transportation at their own cost. Only three-fourth of the mothers visited hospitals for postnatal checkups. This study suggested that facility of transportation under JSY scheme needs to be improved and more emphasis should be given on counselling women about diet and family planning.

Santra, Biswas and Shrivastava (2015, pp. 225) in their article “Utilisation of maternal health care services with special emphasis on *Janani Suraksha Yojana* in a slum of Kolkata, West Bengal” carried out a study to analyse the utilisation of health care services during pregnancy and awareness about JSY scheme among women in an urban slum of Kolkata. About 75 per cent of the pregnant women had heard about the JSY scheme, however only 47.2 per cent of them got benefitted from the scheme. The reasons behind not getting benefitted from the scheme were the lack of appropriate documents and ignorance. Nearly 76 per cent of the pregnant women got themselves registered during first trimester. Almost all the women (99 per cent) had institutional deliveries, but only 33.3 per cent of the mothers’ breastfed their infants within one hour of birth. About 77 per cent of the women received postnatal checkups at least once. This study showed an evident gap between the awareness and utilisation of JSY scheme in slum dwellers.

Sharma, Srivastava, Vyas, Kishore and Semwal (2012, pp. 187) in their article “Is *Janani Suraksha Yojana*’s (JSY) awareness a reflection of healthy pregnancy outcome? Differences in rural areas and urban slums” conducted a study to compare the awareness level of women about JSY scheme in urban slums and rural areas of Dehradun. This study found that women in rural areas (79.27 per cent) were more

aware about JSY scheme than women in urban slums (59.38 per cent). In rural areas ASHA was the main source of information, whereas in urban slums friends and neighbours were largely responsible for giving information about JSY scheme. Statistical analysis revealed that the factors such as age, socio-economic status, education, employment, type of housing were significantly associated with the awareness level. In this study it was documented that Information Education Communication (IEC) activities should be prioritised to increase the awareness about JSY scheme.

Tripathi, Kumari and Shankar (2014, pp. 475) in their article “Impact of *Janani Shishu Suraksha Karyakram* on out-of-pocket expenditure among urban slum dwellers in Northern India” conducted a study to evaluate the impact of *Janani Shishu Suraksha Karyakram* (JSSK) on the expenditure during perinatal period among slum dwellers in Chandigarh. This study showed that there was a significant reduction in out-of-pocket expenditure from Rs. 5342 to Rs. 3565 on delivery before and after the introduction of JSSK scheme in government hospitals. However, there was no significant reduction in indirect cost for antenatal care and neonatal care which was not included in the scheme. Further, the out-of-pocket expenditure on medicines and radiological investigation was still persistent due to inadequate availability of drugs and non-availability of radiological investigation in public health sector. This suggested that the JSSK scheme has attributed towards the reduction in out-of-pocket expenditure on institutional delivery in public hospitals. However, the overall out-of-pocket expenditure was still high and therefore, more rigorous and careful implementation of JSSK was required to reduce the financial burden on slum dwellers.

Sudhinaraset, Beyeler, Barge and Smith (2016) in their article “Decision-making for delivery location and quality of care among slum-dwellers: A qualitative study in Uttar Pradesh, India” conducted a study in two urban slums of Lucknow to highlight and analyse the experiences of slum dwellers related to maternal and child health care services. This study revealed that there were several factors which determined the location of seeking antenatal care services and delivery. Factors such as making joint decision with families, quality of care and financial condition of the families played a significant role in decision making. Women believed that better health care facilities were being provided in private hospitals as compared to public

hospitals, however, they also perceived that private hospitals were expensive and beyond their reach. Rude behaviour of health personals, giving bribes for better facilities and financial burden were quite common among slum dwellers. This study highlighted several recommendations in health programmes especially for slum dwellers. More focus should be given on launching programmes for health education and making urban poor aware about their rights in various public health programmes being launched by the government.

Jagadish (2014, pp. 6) in his article “National urban health mission: Providing adequate urban public health delivery system for the urban poor” analysed the National Urban Health Mission (NUHM) launched by government to improve the health status of urban population, particularly the urban poor and vulnerable sections. Rapid and unprecedented urbanisation led to growth in number of slums and ultimately posing threat to the health of urban poor. NUHM was launched to facilitate urban poor with equitable access to health services through reworking public health system, involving municipal bodies and partnering with private sector and NGOs. It is being expected that NUHM should be implemented and executed successfully to provide urban poor with adequate and quality health care services.

Yadav, Nikhil and Pandav (2011, pp. 3) in their article “Urbanisation and health challenges: Need to fast track the launch of the National Urban Health Mission” analysed the role of NUHM in improving the health status and health practices of slum dwellers. NUHM is focused at providing access to equitable health care services to urban poor, especially slum dwellers and other vulnerable sections of the urban society through revamping health system. The main features of NUHM constitutes of locating and mapping slum population and reaching out to them. Further, it focuses on utilising the existing manpower and resource for bridging the gaps and partnering with private organisations and NGOs for ameliorating access to quality health care services by organising regular health check-up camps. Under this mission the Urban Social Health Activist (USHA) and *Mahila Arogya Samitis* (MAS) are envisioned to enhance the quality of health services provided to slum dwellers at community level and making them aware about adequate health practices. However, NUHM is in its initial years and results of its implementation are yet to be seen.

Sreejini (2016) formulated a conceptual framework of urban health determinants to assess the NUHM. She used multidimensional and multilevel determinant approach to examine the activities incorporated under NUHM. This study highlighted that NUHM addressed the issues of physical and social environment determinants, but failed to cater the issues of economic and occupational determinants. The activities under NUHM focused on the community participation, but its implementation at the ground level is still questionable. While the NUHM activities are operational at local level, it failed to address the issues at global or national arena. The role of governance has been recognised in NUHM framework, but it failed to recognise the importance of market and civil society in addressing health issues.

Achyut, Benson, Calhoun, Corroon, Guikey, Kebede, Lance, Mishra, Nanda, Hara, Sengupta, Speizer, Stewart and Winston (2016, pp. 525) in their paper “Impact evaluation of the Urban Health Initiative in urban Uttar Pradesh, India” assessed the impact of Urban Health Initiative (UHI) on the urban poor in six cities of Uttar Pradesh. UHI was launched in 2009 for complementing the government’s strategy to impart knowledge on family planning among urban poor. This study revealed that exposing women to various programmes under UHI showed significant results. It was found that women who were exposed to posters, brochures and family planning on television had more chances of using modern contraceptive methods. Further, counselling by community health workers and visiting public or private health facilities where UHI activities were performed had positive impact on the women. This study suggested that UHI had significant impact on the family planning practices among urban poor.

Nandi, Dasgupta, Garg, Sinha, Sahu and Mahobe (2016, pp. 62-63) in their article “Uncovering coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by women in slums of Raipur” conducted a study to assess the coverage and utilisation of health care services provided under the Universal Health Insurance Scheme (UHS) in the urban slums of Raipur, Chhattisgarh. The study specifically focused on the health conditions of women and the experiences of women who were enrolled under this scheme. This study reported an increase in enrolment (57 per cent) under the UHS, however a large proportion of urban slum population was still not covered under this scheme. Most of the families (90 per cent) in urban slums were

aware about the scheme, however many families were able to enrol and avail the benefits of the scheme due to problems in enrolment process. Only one-third of the women whose families were insured, were able to use it. Despite the high concentration of empanelled facilities in Raipur, the overall utilisation of the scheme was very low. It was revealed that the UHIS was utilised more for the non-gynaecological conditions. Further, the scheme was used more for caesarean deliveries than for normal deliveries. It was also observed that out-of-pocket expenditure was more in private hospitals than in public hospitals. Thus, the study showed that there were loopholes in the implementation and the execution of the UHIS, as urban poor were not able to avail maximum benefit from the scheme.

Swami, Thakur, Gupta and Bhatia (2004, pp. 252) in their article “Improving environmental conditions of a slum in Chandigarh by an awareness campaign” conducted an awareness campaign as an intervention project in an urban slum of Chandigarh. This study revealed that awareness campaign had a significant impact on the day-to-day practices of slum dwellers. There was a significant increase in the percentage of storing water in covered utensils from 14.3 per cent to 35.2 per cent. Further the habit of using community bins also improved from 8.4 per cent to 22.2 per cent. The practice of open defecation was also decreased and the use of public toilets increased significantly. The knowledge of using unsafe water, practicing open defecation and open garbage disposal as hazard to health improved among the slum dwellers. This study indicated that awareness programmes could play an instrumental role in improving and changing the behavioural practices among slum dwellers and more such interventions should be launched in other slums of the country.

Panigrahi, Mishra and Mohapatra (2009, pp. 145) in their article “Status of iodised salt coverage in urban slums of Cuttak city, Orissa” conducted a study to examine the consumption level of iodised salt in the households of urban slums in Cuttak. This study revealed that only 60 per cent of the households were consuming iodised salt. The sample salts collected from katcha houses showed higher deficiency of iodine as compared to sample salts from pucca houses. Households with poor economic status were consuming non-iodised or inadequately salt. All the retailers sold refined and crystalline salt and about 48.5 per cent of the sample salts collected from shops were adequately iodised. This study showed that retailers in urban slums

were selling inadequately iodised salt which could be a barrier in elimination of iodine deficiency disorders.

Kadri, Singh, Jain, Mahajan and Trivedi (2010, pp. 50) in their article “Study of immunisation coverage in urban slums of Ahmedabad city” conducted a study to evaluate the coverage of immunisation among children in the urban slums of Ahmedabad city. While the coverage of BCG, DPT-1, OPV-1 was found to be highest among children, the coverage of measles was lowest. Further, it was revealed that only 47.8 per cent of the children received vitamin A supplementation at the time of measles vaccine. The overall coverage of vaccine was found to be higher among males as compared to females, however the difference was statistically insignificant. This study highlighted that the coverage and utilisation of vitamin A and measles vaccines was low among the children residing in urban slums. Thus, the study showed that instead of implementation of Universal Immunisation Programme, the overall immunisation coverage among poor children has yet to be achieved.

Angadi, Jose, Udgiri, Masali and Sorganvi (2013, pp. 2803) in their article “A study of knowledge, attitude and practices on immunisation of children in urban slums of Bijapur city, Karnataka, India” performed a community based cross-sectional study to assess the knowledge and determine the attitude and practices among parents of children aged 12-23 months related to immunisation in urban slums of Bijapur, Karnataka. This study revealed that only 34.84 per cent of the children were fully immunised, whereas 62.58 per cent of the children were partially immunised and 2.58 per cent were non-immunised. The main reason behind a high percentage of partial and non-immunisation was lack of knowledge and information among parents regarding immunisation. Thus, the study showed that the immunisation coverage in slums of Bijapur was well below the 85 per cent mark which is a matter of serious concern. There is need for rigorous implementation and monitoring of immunisation programme to ameliorate the situation.

Prusty, Panda, Chauhan and Das (2013) in their article “Factors affecting immunisation coverage in urban slums of Odisha, India: Implications on urban health policy” carried out a study in urban slums of Cuttack to explore the factors responsible for partial and non-immunisation among slum children. It was reported that nearly 64 per cent of the children were fully immunised. While the highest

immunisation coverage was for BCG, lowest was for measles and this suggest a high incidence of late immunisation dropout. The main factors responsible for low immunisation coverage in slums were lack of awareness about due date of immunisation, frequent illnesses of the children, mobility of the families for the search of employment and lack of awareness about the benefits of immunisation. This study suggested that the immunisation strategy should be revised thoroughly, particularly for slum areas. The local officers should try to minimise the occurrence of immunisation drop out and ameliorate the situation of immunisation coverage. Further, community participation along with local support and supervision could play a critical role in addressing the issue of late dropout and community mobilisation.

Sharma, Desai and Kavishvar (2009, pp. 152) in their article “Assessment of immunisation status in the slums of Surat by 15 clusters multi indicators cluster survey technique” performed a cross-sectional study to assess the immunisation status of children in the age group of 12-23 months in 15 urban slums of Surat city. This study showed that only 25 per cent of the children were fully immunised. While the immunisation coverage was highest for BCG (75 per cent), it was lowest for measles (29.9 per cent). This suggested that the rate of late drop-out was quite high. Further, only 28.9 per cent of the children took vitamin A supplementation. In context of vaccination, families gave preference to male children whereas female children were at disadvantage. This study suggested that overall immunisation coverage was very poor in the slum areas and there is need to implement and monitor immunisation programme more rigorously for improving the immunisation status of children residing in slums.

The review of existing literature highlighted the fact that several researches and studies have been conducted countrywide concerning the health issues of slum dwellers. However, not much work has been done pertaining to health and nutritional issues of women and children in the urban slums of Lucknow city. Moreover, most of the studies have dealt with the nutritional status of women and children separately. In this study, an attempt has been made to assess the nutritional status of women and their children and study the inter-linkages between the two. Further, an endeavour would also be made to analyse the impact of maternal factors on the nutritional status of their children. The impact of health care programmes and utilisation of health care services by them would also be evaluated. In this way, the present study would prove fruitful in addressing the issues of health and nutrition with special reference to women and their children in slums of Lucknow city.



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## *Chapter-III*

### *Conceptual and Theoretical Framework of Slums, Health and Nutritional Status*



## **Chapter III**

### **Conceptual and Theoretical Framework of Slums, Health and Nutritional Status**

#### **3.1 Perspectives on the Definition of Slums**

##### **The Meaning of the Term Slum**

The term 'slum' immediately portrays sorrowful images of poverty and misery, danger and decay. Since the inception of the term 'slum' in English writings, it has had a negative connotation. However, this term lacks a single unified meaning and has been defined differently in various sources. During 1820s this term was used "to identify poorest quality of housing coupled with most unsanitary living conditions and a refuge for activities like crime, 'vice' and drug abuse" (UN Habitat, 2003: 9). This term has also been described as "back-room" for sinister business, a "street and alley of low class or very poor people" (Online Etymology Dictionary, 2017). In 1880s the Housing Reform Movement in England conceptualised an operational definition for the word slum and applied it to "houses materially unfit for human habitation" and in this way provided delimitation of "slum areas"(UN Habitat, 2003: 9). Thus, by the end of 19<sup>th</sup> century a twofold understanding of the term slum has been established which is in common usage since then.

According to Merriam-Webster Dictionary (1994) "slum is a heavily populated urban area characterised by substandard housing and squalor." This definition encompasses the main features of slums: high density of population and poor standards of housing and 'squalor'. The first two characteristics are physical and spatial, whereas the third one is social and behavioural. This widespread combination of such features is typical, not only for the definition of slums but also of our perceptions of them. Dwellings in such settlements range from simple shacks to more permanent structures, and access to basic civic services and infrastructure tends to be limited or badly deteriorated (UN Habitat, 2003: 8). New Oxford Dictionary defined slum as "a squalid and overcrowded urban street or district inhabited by very poor people" (Pearsell, 1999: 1756). Cities Alliance, a global collaboration of national governments, multilateral institutions, local governments, non-governmental organisations such as World Bank, UN Habitat, Asian Development Bank, UNEP, etc. in the "Cities without Slum Action Plan" provided a similar definition "slums are

neglected parts of cities where housing and living conditions are appallingly poor. Slums usually vary from highly dense squatter central city tenements to spontaneous unevenly spread squalid settlements without any legal recognition or occupancy rights, sprawling at the fringes of cities” (UN Habitat, 2003: 10).

At recent times more attempts have been made to develop precise definitions of the slum, however these definitions vary considerably. The Concise Oxford Dictionary defined slum as an “area of poor housing, often characterised by multi-occupancy, overcrowding and poverty. Schools are poor, items sold in local shops are more expensive than those sold in the supermarket and sanitation inadequate. Slum population often exhibits high concentration of drug abusers, alcoholics, criminals and vandals” (Mayhew and Penny, 1992: 210). In this definition major emphasis is on social aspects, i.e., the slum dwellers and the set of negative social characteristics associated with them. Further, Encyclopaedia has also defined slum in the similar manner: “slum is a densely populated area of substandard housing, usually in a city, characterised by unsanitary conditions and social disorganisation (Encyclopaedia Britannica Online, 2017). Whereas, Hunter (1968: 10) defined slums as “more than a crowded building, it is more than the dirty streets, the lacklustre people sitting on the stems, the shrieking children running up and down, the sullen boys hanging at the corners, the stupefied addicts leaning against. It is a way of life and it runs on a way of looking at the future or is perhaps looking away from it.” Dickson (1948: 24) conceptualised slums as “an extreme situation of blight in which the housing is unfit for human inhabitation and it constitute a menace to the health and moral of the community”. UN Habitat in a report on terminology gave blurry definition of slum. This report examined definitions of slums in twenty-nine cities of the world, twenty-one of them had their own specific definition and all these definitions were different from one another. It was also evident in the report that most of the local definitions were focused on structural and urban development aspects. Not even a single definition adopted pejorative tone regarding the inhabitants of the slums (UN Habitat, 2003: 196).

### **The Indefinableness of Slums as Spatial Entity**

The difficulty in finding a single unified definition of slum depicts the heterogeneity of informal settlement and marginalised neighbourhoods. The physical appearance of

the slums is as diverse as human dwellings and on the basis of their location they can be distinguished in ‘central slums’, ‘scattered slum islands’ and ‘outer city slums’ (UN Habitat, 2003: 88). Given the variety of physical phenomena associated with the term ‘slum’ it becomes quite impossible to develop an unambiguous universal definition for slums of the world as a form of settlement that exhibits particular characteristics. Efforts to define the term ‘slum’ are belied in the complexity of the phenomenon and its blurred boundaries. The following features have been discussed in a report by UN Habitat (2003: 11) which explains the reasons for difficulty in developing a universal definition of the term ‘slum’:

- Slums are too complex and one single parameter cannot define them.
- The concept of slums is a relative one and what is considered as a slum in one city may not be regarded as slum in another city- even in the same country.
- Since slums are multifaceted and local variations among slums are too wide, it is difficult to define universally applicable criteria.
- Slums are subjected to rapid changes and any criterion cannot remain valid for a reasonably long period of time.
- Slums have blurred boundaries and lack proper demarcation, as result of which the size of slum area is often vulnerable to changes in jurisdiction or spatial aggregation.

Therefore, it can be ascertained that ‘slum’, on the one hand, is a relational term; what is contemplated as a slum and what is not determined by the respective spatial and temporal context. Whereas on the other hand, in practice the term is always used in the context identical to the spatial embodiment of a social phenomenon, because the interest in slums is not primarily due to the (dilapidated) houses or the (deficient) physical structure but because of the social living conditions and the environment of its dwellers.

### **The UN Habitat Approach to Defining the Slum Phenomenon**

UN Habitat, the United Nation’s pioneer programme on human settlements, was mandated to promote socially and environmentally sustainable cities and it plays a crucial role in providing information on the slum phenomenon all over the world. UN Habitat (2003: 10) defined slum as “a contagious settlement where the inhabitants are characterised as having inadequate housing and basic services. A slum is often

recognised and addressed by the public authorities as an integral or equivalent part of the city.” In this definition poor housing conditions and inadequate access to basic services are considered as main elements for identifying slum areas. The third element which makes this definition distinctive is the non-recognition of these areas as legitimate part of the city. With the passage of time this definition of slum has went through number of changes and modifications and UN Habitat proposed a new (2006: 21) definition of slum household. “Slum household is a group of individuals living under the same roof in an urban area who lack one or the more of following five conditions:

- i. Durable housing of permanent nature and adequate enough to protect its inhabitants from extreme climatic conditions.
- ii. Sufficient living area means that not more than three family members sharing the same room.
- iii. Access to improved water means sufficient amount of water for family use at affordable prices without being subjected to extreme efforts.
- iv. Access to adequate sanitation in the form of private or public toilet shared by reasonable number of people.
- v. Secure tenure for protection against forced eviction.”

The revised definition is different from the previous one in two ways. Firstly, it identifies slums by using deprivation approach and established the fact that all slums are not homogeneous and the degree of deprivation varies among the slum dwellers. The degree of deprivation is determined by how many of the above mentioned five elements are lacking in a household, which is a crucial improvement over a dichotomous slum/non-slum approach of other definitions. For instance, this definition can differentiate between the slums that lack access to only safe drinking water and the slum that lack access to both water and sanitation. In contrast, the simple dichotomous approach will consider both these areas as slums without making any differentiation on the basis of their degree of deprivation. Secondly, this modified definition is based on the condition of single household instead of neighbourhood. This is an important contrast between the two definitions because unlike the previous definition it does not rely on a contiguous area or population size to recognise any place as a slum. This definition is also more practicable as it is possible objectively to measure the overcrowding in a household and to determine the lack of access to basic

services. The definition of the term ‘slum’ as devised by UN Habitat can be considered as the most viable point to start the discussion of the slum phenomenon in an international perspective. It provides a set of clear-cut criteria of what constitutes this phenomenon and therefore allows a collaboration of different perspectives on slums.

### **Perspectives on the Appraisal of Slums and the Slum-related Problems**

Whenever slums become the centre of attention in public, political or academic arena, they are almost always sighted into the ‘problem’ category. They are considered as an area where several grievances are agglomerated and require interventions. It is indeed quite true that slums determine the living standard and opportunities available to the people dwelling there. At the same time they shape the development perspectives of cities or even societies. However, on the other hand it is also noteworthy that the appraisal of the slum phenomenon is determined to a large extent by the perspective from which it is viewed. In other words, the problems which are actually being faced by the slum dwellers may be quite different from those that prevail in public, political and academic debates.

The problems associated with the slums can be viewed at least from three different dimensions. The material dimension refers to the physical and infrastructural outline of the slums. Social dimension deals with the hardships and the problems associated with life in slums and life world of its inhabitants. Institutional dimension is concerned with the number of formal and informal rules that govern the life of slum dwellers.

### **The Material Dimension: Physical Urban Structure and Infrastructural Problems**

The most apparent problems associated with slums across the world are the poor quality and overcrowded tenements, high density of population and inadequate or poorly maintained technical infrastructure such as paved paths or sanitary facilities. Despite of differences in the world’s slums they all suffer from infrastructural deficits. However, one of the worth mentioning points is that there is no single universal criterion which can be utilized for distinguishing the type of housing and

infrastructure that can be regarded as safe and suitable for living. It is also evident that urban infrastructural and development deficits in slums are also accompanied by lack of basic services, poor standard of living and unhygienic conditions. The lack of access to basic civic services is one of the most common and frequently mentioned characteristics of the slums worldwide. All over the world one of the commonest features of slums is inadequate access to safe drinking water and sanitation facilities and this is most often accompanied by the absence of electricity supply, waste and garbage disposal systems, paved paths and roads, street lights and drainage system. Consequently, the lack of access to basic civic services coupled with insanitary and polluted environment in slums leads to unhealthy living conditions which bear an adverse impact on the health and well-being of the slum dwellers. Most of the slums worldwide are built on hazardous locations such as floodplains, in closer proximity to industrial plants with harmful emissions and on areas prone to landslide, etc. The layout of these informal settlements is hazardous due to lack of access to ways and high agglomeration of dilapidated structures.

### **The Social Dimension: Deprivation and Stigmatisation**

It is visible that urban infrastructural and development deficit in slums is accompanied by social problems of grave nature. In majority of the cases these deficits are the manifestations of extreme social inequality, as they are in sharp contrast to well developed urban structure and infrastructural facilities in more prosperous cities. At the same time, they are also sign of poverty, i.e., an indication that slum dwellers do not have adequate financial resources to afford proper standard of living. Apart from the fact that urban structure and development deficits contradicts with the very idea of social justice, the slums are also associated with social deficits. The sociological theories of deviant behaviour such as sub-cultural theory implicit that slums have a negative effect on the behaviour and attitude of its inhabitants. In this manner slums are usually regarded as breeding ground for crime and violence at least for two reasons: (i) large number of people residing in slums have no legal means to pursue their objectives, and also because (ii) those who are socialised in this environment often tend to develop anomic pattern of behaviour i.e. socially unacceptable behaviour. Towards the end of 19<sup>th</sup> century Riis (1890) presented a classical description of slum in his photographic chronicler of the Lower East Side of New York and described slums as “nurseries of pauperism and crime”. However it should

be noted that the portrayal of slums as hot-bed for crime and vices may indeed be not more than a myth. In other words, it is the result of unproved and latently prejudiced ascription of deviant behaviour to the spatial and social living environment of the people. Yet this myth must be seen conjointly with real social problem associated with the slums, i.e. the stigmatisation of slum dwellers, as UN Habitat (2003: 104) has put it “the lack of recognition of slum dwellers as being urban citizens at all”. Stigmatisation is one of the main reasons for the exclusion of slum dwellers from job opportunities and proper housing in the cities and social development in general.

### **The Institutional Dimension: Moral Negligence and Lack in Security of Tenure**

The implications of slums on socialisation of its inhabitants is closely linked with the third dimension of the problem, which plays an equally important role in discussing slums without adopting social determinist approach: the social fabric of rules and norms, i.e. the institutional framework which moulds the everyday life and activities of the slum dwellers. The issue of institutions in the context of slum phenomenon arises mainly because of the absence of rules and norms, at least those which are applied to maintain social order outside the confinements of the slums. However, in the academic discourse the perception of institutional framework has undergone a shift from moral negligence in slums to absence of state, i.e. establishing state authority mainly responsible for deplorable conditions in slums. The violations against the legal norms that secure the cohesion of social interaction and construction are not sanctioned. There is yet another aspect which dominates the discussion on the institutional problems related with slums, the ambiguous ownership and disposal rights of housing in slums. In slums the property relations are quite complex (Durrand-Lasserve and Selod, 2009). In very few cases the slum dwellers have the ownership rights of the land on which they have constructed their houses and majority of the dwellers are illegal occupants. Sometimes they became party of planned invasion or sign illegal tenancy contracts with big landowners and these informal tenancy rights gives privilege to old slum dwellers to rent parts of their dwelling to the new arrivals which are even poorer than them. These precarious tenancy rights pose a threat of forceful eviction to a large number of slum dwellers, which is a serious obstacle for those who plan to invest in having their own houses in slums. As it has been quoted by UN Habitat (2003: 79) “the twofold tenure problem of squatters

- that is, that they have neither the owner's permission nor the permission of the local authorities (while illegal settlements have the owner's permission) - tend to render life there more tenuous and to discourage investment." This situation is further worsened by the ever-increasing rise in the prices of property in the cities. The properties which are close to the cities are beyond the reach of less prosperous sections of the society. The reality has been transformed from "a resource with a use value to a commodity with a market value" (United Nations Centre for Human Settlements [UNCHS], 1984: 25).

### **Alternatives to the Problem-Oriented Approach Towards Slums: From 'Slums of Despair' to 'Slums of Hope'**

In the recent past the problem-oriented approach towards the world's slums has paved the way for a more differentiated perspective. Hence, now there is wide acceptance that the stigmatisation of slums and its inhabitants is agreeable, justified and conducive. For instance, Gilbert (2007) was against the view of taking an oversimplified, stereotypical approach towards that stigmatises the urban residents of informal settlements. In fact, Gilbert considered that the term 'slum' is itself quite problematic because it disarrays the deteriorated physical features of the slum with the poor living conditions and characteristics of its inhabitants. In addition to this, an agenda for 'Cities without Slums' (Cities Alliance, 1999) would throw the door wide open to the risk of returning to standard strategies of local and national policies: "And, with so many unscrupulous governments in power around the world, the stereotype may be used to justify programmes of slum clearance" (Gilbert, 2007: 710).

Apart from the largely acknowledged plea for an even-handed assessment of the slums and slum dwellers, there is sharp contrast in the urban studies and urban politics as to how deal with the slum phenomenon and the problems associated with it. In the recent decades the dichotomy between 'slums of hope' and 'slums of despair' has become the significant issue of discussion at both academic and public debates. These two terms were coined in the 1960s (Stokes, 1962) in opposition to the stigma attached with the slums and to focus the attention on the resources available in slums, so that slum dwellers could take advantage of these resources and extricate themselves from the situation of misery. In particular, the continuous efforts of slum

dwellers have resulted in the significant improvement in the dwellings in the majority of the slums worldwide and this can be considered as the confirmation of existence of self-healing powers of 'slums of despair'. It is mainly the informal work or small trade that shape the commercial life of majority of the slums. Both these things indicate towards the strong will power and the ability of 'slums of hope' dwellers to radically improve their own living conditions. Whereas, 'slums of despair' implies an area where resources are so scarce- it may be due to extreme poverty, inadequate financial and social capital- that no significant development would whatsoever take place.

The inherent optimistic approach evident in the slogan of 'slums of hope' is strongly linked with the market-oriented approach towards the radical changes in the society. The 'right' framework, i.e. the criteria that allows access to market resources, enables the inhabitants of the 'slums of hope' to take advantage of most of the available opportunities. Therefore, the paramount duty of state towards the slums is viewed in the context of setting up this framework instead of investing in infrastructural measures or even social benefits. However, this idealistic or optimistic approach on slums is exactly opposed to the much more pessimistic perspective of other scholars who deal with the slum phenomenon. Davis (2006) in his book 'Planet of Slums' fiercely rejected the idea that slums are (also) places of self-help and a cause for socio-economic processes of development. Although there are some serious doubts about the scientific validity of Davis' pointed line of reasoning, it is one of the most renowned examples of a situation very often encountered in urban research, which can be explained as wholehearted calumination of the slums, thereby unambiguously suggesting towards the topography of the 'slums of despair'.

The problem of insecure tenure which has been discussed above is of paramount importance in the majority of the slums worldwide and in this context the 'slums of hope' perspective can play an important role in shaping and developing the actual slum policies. The application of market-oriented approach to the problem of insecure tenure suggests towards the notion of the 'slums of hope'. These market-oriented responses consider the granting of ownership rights to the slum households as imperative. The belief is that once the slum dwellers have been granted the ownership rights, then they will concentrate on strengthening and improving their household conditions and as a result of their collective efforts thereby improving the

overall standard of living in the slums (Husock, 2009). How legal security is institutionally designed is not that important, what is far more important is that the slum households should be guaranteed permanent residency in-situ (Neuwirth, 2007). This is considered as an essential precondition for the successful implementation of several other measures which would enable further consolidation and development of slums.

### **3.2 Theories on Slums**

In a theory based on the origin of slums, developed after studying cities in the United States, it is stated that slums are formed in the zones around the central business district as a result of certain ecological factors. Early in the development of a city, this area is the home of upper classes a fashionable residential district. With the expansion of commercial and residential ventures, the neighbourhood becomes infiltrated with industrial, storage and wholesome operation, and the well-to-do move further out, away from the city centre. Low-income workers including recently arrived-poor migrants in search of livelihood then move in and become the exclusive inhabitants of these areas. Low rents and poverty of the tenants prevent any improvement in the dwellings while the land-owners try to ‘milk’ the tenants to the maximum extent possible. Overcrowding coupled with destructiveness and carelessness of the occupants worsens the situation and results in the formation of slums (Burgess, 1925).

Oscar Lewis studied the slums in the Latin American region and considered that slums are cultural groups having their own distinct characteristics. He conceptualised a new term ‘culture of poverty’ and opined that ‘culture of poverty’ is “an adaptation and reaction of the poor and marginalized people to their lower position in a class-stratified, highly individualistic and capitalistic society. It represents an effort to cope with the feeling of hopelessness and despair that develop from the realisation of the improbability of achieving success in terms of values and goals of the larger society” (Lewis, 1968: 5). He perceived that the ‘culture of poverty’ would apply to those people who belong to lower socio-economic strata of rapidly changing society and are already alienated from it. According to him, the culture of poverty which is very much evident in slums is characterised by the following features (Lewis, 1968:7-11):

1. One of the most essential features of the culture of poverty is the absence of productive involvement and integration of the poor in the most of the important institutions of the society.
2. Inadequate effective participation of the marginalized people in the larger economic system due to poor economic conditions such as low wages, chronic unemployment and underemployment, lack of property ownership rights, lack of savings, food insecurity in the households, and a chronic shortage of cash.
3. Individuals with a culture of poverty generate very little amount of wealth and as well as receive very little in return.
4. Individuals with a culture of poverty are acquainted with the middle-class values and ethics; they discuss about them and even assert some of these values as their own, but overall they do not live by them.
5. At the local level, the culture of poverty is found to be associated with poor housing conditions, overcrowding, sociability and most importantly, a minimum of organisation beyond the level of the nuclear and extended family. Sometimes informal groupings or voluntary associations are also found in the slums.
6. Despite of the fact that there is low level of organisation in slums, a sense of community and a feeling of pride and mutual loyalty may exist among the slum dwellers.
7. At the family level, the major characteristic of the culture of poverty is the absence of childhood as a specially protracted and secured phase in the life cycle.
8. On the level of the individual the main traits are the strong senses of marginality, of vulnerability, of incompetency, of dependence, and of subjugation.
9. Other characteristics of culture of poverty include high prevalence of material and social deprivation, of morality and lack of ego structure, absence of impulse control, sense of resignation to fate and passivity, strong belief in male superiority and higher tolerance level for all kinds of psychological pathology.

Charles J. Stokes developed one of the first theories on slums in which he mainly focused on the psychological aspects and asserted that slums do play a role or function in the development of the cities. He attempted to make predictions about slum development by finding the meaningful relations between the major variables linked with the situations in slums. To explain the complexity of slum formation in the American cities, Stokes distinguished the slums into two main categories, namely,

‘slums of hope’ and ‘slums of despair’. “By hope is meant that quality of the psychological response by the inhabitant of the slum indicates his intentions to better himself and his estimate of the better outcome of such an effort. ‘Despair’ by the same token denotes either a lack of such intention or a negative estimate of the probable outcome of any attempt to change status. The psychological distinction between ‘hope’ and ‘despair’ may readily be converted into employable and non-employable” (Stokes, 1968).

Stokes made a simple model of two classes and he termed these two classes as ‘escalator’ and ‘non-escalator’. “An escalator class is a group of people who can be expected, barring unusual circumstances, to move up through the class structure. A non-escalator class is one which is denied in some way the privilege of escalation” (Stokes, 1968). However, Stokes did not emphasised on the basic question as how to determine whether an individual belongs to escalator class or non-escalator class except by seeing what happens to him. Thus, both the categories i.e. escalator and non-escalator seem to be entirely descriptive ones.

Stokes held the view that strangers flock to the cities for the improvement and betterment of their life, but they fail to cope up with the demands of the cities and it becomes difficult for them to escalate in life and hence they end up living in informal settlements with poor housing conditions and spread over the shanty towns. People living in ‘slums of despair’ are believed to spend rest of their life at that place without much improvement in their lifestyle. In the end Stokes concluded that with the passage of time when it becomes almost impossible for the immigrants to get over the ‘ability hurdles’ which the city erects, the ‘slums of hope’ may gradually disappear as the process of migration slows down, but the ‘slums of despair’ will continue to survive and will not disappear as there live the poor.

Among the others Seeley (1959) had very positive and optimistic opinion about the slums and he expressed the view that slums are the provider of goods and services to the non-slum population of the cities. He did not regarded slums to be sleepy as they are actively involved in the social and economic life of the city. In other words, the rich in the cities needed the services of the slum dwellers for their own survival. Slum dwellers provided their services to the rich but they themselves live in poverty, darkness and dirt. Like Seeley, Clark (1965), Gans (1965) and Keil (1966) were also

of the opinion that slums are organised in their own way. There are several other scholars who did not consider slums as a pathological and diseased part of a city, instead see them as creative, coping in the city buildings (Rao and Rao, 1984).

According to Desai and Pillai (1972) the problems of slum dwellers is related to the exploitative capitalist system and they asserted that life of slum dwellers in Indian cities is pathetic and highly disorganised due to the exploitation of labour power by merchant class. Their view was supported by Rao and Rao (1984) and they wrote that “industrialists, traders and others who recruit a large number of workers, do not care for their welfare. The former get cheap labour supply from slums without their having to provide them with house or other facilities”.

Davis (2006) elaborately described the poor living conditions in the slums of Africa, Asia, Latin America and the Caribbean. He discussed in detail the growth and development of slums and took into account both historical and contemporary perspective. He emphasised on the fact that poverty is being created and further aggravated by the slum removal programmes and these slum eviction programmes are justified by criminalising the inhabitants of slums. He also focused that the opportunities for the people belonging to low income groups to illegally acquire land on which they can build their houses has reduced drastically, which for the past five decades, had been an important instrument through which many have built or acquired their own homes. He pointed towards the problems which were associated with the health of slum dwellers and highlighted the increase in urban poverty related with the structural adjustment; and also, the highly exploitative nature of majority of the work in the informal sector. He highlighted that cities instead of being the centre of growth and development became the dumping ground for superfluous population engaged in unskilled work, unsecured and low-income informal service industries and trade. He suggested that “...the future of human solidarity depends on the militant refusal of the new urban poor to accept their terminal marginality with global capitalism” (Davis, 2006: 202).

Several theories associated with the phenomenon of slum allow us to develop a better understanding of the different dimensions of this living reality of urban life. However, at the same time these theories fail to recognise various complex socio-economic, cultural and several other factors, which powerfully operate in the

developing countries. Most of the theories developed by sociologists and other institutions about slums and life of the slum dwellers were somewhat generalised. Rao (1983: 13) pointed out at a fact and asserted that it can be easily seen slums in the cities are usually casted into a stereotyped image and most of the times only their physical characteristics are discussed and the actual causes responsible for the existence of slums in the cities are usually neglected. Slums are generally described as a ‘rash’ on city landscape, ‘a blot on civilisation’ with their overcrowding, filth, sub-standard housing, drinking, vice, violence, apathy, poverty, etc.” However, in few studies it has also been stated that slums constitute an integral component or part of the cities.

### **3.3 Theoretical Framework of Nutrition and Health**

The word ‘nutrition’ first appeared in 1551 and it is derived from the Latin word *nutrire* meaning “to nourish”. The term nutrition can be defined as food at work in the human body. McLaren and Donald (1972) defined nutrition as “the process whereby the living organism consumes extraneous solid and liquid substances and utilize it for the maintenance and sustenance of life, growth, the normal functioning of organs and the production of energy required for carrying out day-to-day activities”. Nutrition encompasses everything that happens to food from the time it is eaten until it is used to perform various functions in the body. Nutrients are those components of food that are required by the body in proper quantity in order to grow, develop, reproduce and lead a normal healthy life. Nutrients comprises of water, proteins, carbohydrates, fats, minerals and vitamins. Food supplies more than 40 essential nutrients and these nutrients are used to produce literally thousands of substances essential for healthy life and physical fitness. Expressions such as adequate, optimum and good health are used to indicate that the supply of the essential nutrients is in correct amount and proportion. It also signifies that the utilisation of these nutrients in the body is such that the maximum level of physical and mental health is maintained throughout the life cycle (Akram, 2014). Good health not only means merely absence of disease or infirmity, in fact it is having a quality of life with physical, mental and social well-being (WHO, 1946). Krehl (1983) viewed nutrition as the cornerstone of optimum health and the cutting edge for disease prevention. The nutritional status of an individual presents an outlook on the past, present, and future of his health (Tanaka, 2017). Today, we can define nutrition as the sum of all processes involved in

how organism obtain nutrients, metabolise them and use them to support all of life's processes.

Since ancient times, nutrition has been regarded as one of the most essential components of life by various philosophers and researchers. The classical (ancient) theory of nutrition, which dates back to the time of Aristotle and Galen, considered that nutrition is a vital component of health, disease, work performance, and healing process. It is believed that each part of the body derives its power from the blood flowing in that body part. The formation of blood is carried out by the nutrients, which is absorbed from the consumed foods (Boylan, 2007). The common belief about the consumption of ideal food and optimal balanced diet is closely associated with this classical theory of a balanced diet. The balanced approach for the assessment of diet forms the very basis of this theory and it has continued to retain its importance even today. In simple words, this approach emphasised on the fact that the expense and loss experienced by human body due to work, metabolism and growth in adults as well as in young children should be compensated by the supply of molecular structure. This European theory of nutrition and human physiology is very much similar to the concepts mentioned in an old Chinese medicine manuscript, Huangdi Neijing (Yellow Emperor's Classic of Medicine), which is equivalent to the Hippocratic Corpus (Needham and Lu, 1980). In the Greek, Roman, and Chinese classical literature, it has been stated that an individual should consume a diet which should largely consists of cereal grains, legumes, vegetables, fruits, fish and milk. Foods such as meat and confectionary items should be consumed only in moderation (Tanaka, 2017). One of the noteworthy things is that in ancient times the philosophers and practitioners lack the clear-cut understanding of the working and functioning of human body, however still they were able to predict and develop a gross dietary map.

The modern theory of nutrition has moved one step forward. From 1910 to 1930, a series of vitamins and minerals were discovered and the nutritional theory revolved around the modern food production methods (Rosenfeld, 1997). One of the important theoretical approaches formulated to study nutrition was Becker's microeconomic models of household production and in this approach households allocated goods and time to the production of commodities that are either sold in the market, consumed at home, or for which there is no market (Becker, 1965). Further, Grossman (1972) expanded this work to the demand of health and it has also been

modified by several scholars like Behrman and Deolalikar (1989), Strauss and Thomas (1995) and Currie (2000).

Becker (1965) elaborately studied and highlighted the household determinants of nutrition. He tried to establish a relation between the child's nutritional status and wide range of 'health inputs' through a 'nutrition production function'. The health inputs comprises of the child's nutrient intake, whether the child is breastfed or not, duration of breastfeeding, availability of medical care and the quantity and quality of time spend by mothers or others care-givers in care-related activities. Several others significant factors such as care giver's age, educational status, experience, own health status and environmental factors were also included in the production function framework. The potentially contradictory implications of maternal labour supply were also viewed within the framework of production function. The larger share of income from mother's occupation results into higher consumption pattern of market-purchased inputs such as food and medical care and consequently raises the nutritional status. However, on the other hand reductions in the level or the quality of time in health-related activities reduce the nutritional status.

A child nutritional status shows the effects of combination of factors such as nutrient intake, health status, birth order and behavioural factors determined by parental preferences. In recognition of these interrelated variables is expressed the child's nutrition production function and represented as:

Child's Nutritional Status = Nutrition Production Function (F) (nutritional intake, child's health, child's birth, child's death, biological factors, duration of childcare, behavioural factors, technology factors)

The nutritional model is being analysed at two levels, household level and child level. The nutritional status of child is a direct indicator of access to adequate nutritious food as well as an indirect measure of the child's overall health status. Malnutrition is a strong indicator showing the presence of acute deprivation among children. Theories on social arrangement have emphasised on the importance of liberty, equality and justice in the social order of the society. Rawls (1971) in his 'Theory of Justice' proposed that universal access is called social primary goods such as liberties, opportunities, self-respect, etc for all the individuals in the society. In his theory one of the social goods, though implicitly not explicitly, is that every

individual in the society has to be ensured right to health. Moreover, in the context of human capital, human development and human rights the issue of health assumes the primary importance because the poor health and nutritional deprivation among the children can directly have negative implications on these perspectives. However, the bitter reality is that millions of children in the developing countries like India are deprived of adequate nutrition which has an adverse impact on their health and consequently in the development of the country. Malnutrition is more often associated with the vicious circle of poverty and diseases and these three factors are connected to each other in such a way that each contributes towards the presence and performance of the other.

Anthropometry is widely regarded as one of the most significant and reliable techniques to assess the nutritional status of an individual or the population. Anthropometric parameters such as height-for-age (stunting), weight-for-height (wasting) and weight-for-age (underweight) are most commonly used for estimating the nutritional status among children. In practical terms, the anthropometric values are required to be compared across a set of individuals or population in relation to an acceptable set of reference values. However, the utilisation of an international population both as ‘reference’ and ‘standard’ gave rise to a controversy and this has resulted into emergence of two groups of experts, one group is influenced by Genetic potential theory or Deprivation theory and the other by Heretic views (Osmani, 1992). In the genetic potential theory, it has been stated that every individual is endowed with maximum potential of growth, particularly among children under-five years of age. The failure to reach the level of optimum genetic potential is believed to be caused by various socio-economic factors and thereby resulting in growth retardation. On the other hand, the supporters of Heretic views asserted that deviation from genetic potential does not mean any functional impairment, instead children or adults may be ‘small but healthy’ (Seckler, 1982). In this context, the present study attempts to correlate socio-economic factors as the basic determinants of poor nutritional status among the women and children in the urban slums of Lucknow city.

The medical sociology (nowadays referred to as sociology of health) is one of the modern branches in Sociology because it came into exist only after the Second World War. Social thinkers and researchers perceived that diseases and illnesses not only affect the biology of human body but also has an effect on the social structure of

the society. It causes dysfunctionality or imbalance in the structure of social life and interpersonal relation of a human being. Medical sociology also expresses the values and nature or disposition of illness, disease, patient and health issue. As medical sociology is a newly developed branch, therefore not a lot of studies have been conducted on it. Indian sociologists like I.P. Modi and Ahuja have contributed in the field of medical sociology. However, very few studies have been carried out in the field of medical sociology as compared to other branches of sociology.

The sociology of health examines and assess the effects of status characteristics such as class, caste, gender, race, ethnicity and then asserts that these characteristics results in differences in health (Verbrugge, 1989). A particular set of resources and constraints are associated with each status position. For example, status permits differential access to occupations that pay well and also those who are better educated or who are male are at advantage in this context. Status differences also influence the kind of medical treatment an individual receives (Jones, 1989). Moreover, the role characteristics also result in stress of different levels. Multiple conflicting roles, role overload and role-specific strains often results in depersonalisation, lack of control, constriction of self and this may affect the physical as well as mental health of an individual (Kandel, Davies and Ravies, 1985).

Urban society is surrounded by various social problems and rapid growth in the number of slums is one of them. These slums are hub of several problems and the people residing in slums i.e. slums dwellers have to face numerous problems such as lack of access to basic civic facilities, inadequate distribution of income, lack of community facilities, social security and safety. However, this study focuses mainly on the health and nutritional issues of women and children in inhabiting in slums. Each study has its own theoretical significance and without including theoretical orientation the study is considered to be incomplete because these theories provide milestone which tend to galvanize the study structure. Furthermore, it provides proper direction that serves to fulfil the requirements of the objectives of the study. Thus, the theories are of paramount importance for providing scientific and logical nature to the study. In the present study, it has been attempted to use some theoretical underpinnings such as functional and conflict theories. These approaches are well known in sociology and different sociological branches. Here an endeavour has been made to highlight the socio-economic conditions of slum dwellers, health and

nutrition status of women and children in slums and utilisation of facilities provided under various health care programmes, etc. by theoretical glance. The aim behind explaining and discussing such theoretical aspects is to unveil the theoretical approach in urban sociology and medical sociology. Moreover, these theories will tend to develop an identity of their own and will provide a scientific orientation to this study. Few theoretical approaches have been discussed in detail below:

### **Functional Approach**

According to functionalism, health and illness reflects the level of social normality rather than physical normality characterising an individual (Parsons, 1972). This theoretical approach is based on an analogy between the society and biological organism. Just as the body consisted of many interconnected and interdependent parts, similarly society consists of a number of different systems and sub-systems. These parts achieve a unity in so far they function to sustain the whole. Therefore, functionalism is less concerned with the individual actions and his or her aims, beliefs, and consciousness, rather with how these actions, beliefs, etc., function to maintain the system as a whole (Barry and Yuill, 2002).

Talcott Parsons' in his book *The Social System* used medical profession as a model and analysed the needs of the system and expressed in the duties and reciprocal entitlements of both doctor and patient. For the doctor, the pattern variables of universalism, performance or achievement rather than ascription, specificity, and affective neutrality were appropriate. The rights, obligations and privileges of sick role described the norms of being a patient. This ideal-type contact was what would, theoretically, identify medicine as functional in maintain equilibrium in society and maintain social order (Turner, 2006). This book of Parsons' providing a structural-functionalist model of society, contained Parsons' concept of the sick role. It was for the first time a major sociological theorist included an analysis of the function of medicine in his view of society.

According to the functionalist approach, for the functioning of the society as a stable system, it is essential for its members to be healthy and also contribute towards maintaining the equilibrium of their society. As a result, sickness is considered as a form of deviant behaviour that is required to be controlled by the society. Parsons (1951) for the first time in his concept of the sick role put forward this view. The sick

role is regarded as a shared set of cultural norms that recognises deviant behaviour of an individual caused by the illness as legitimate and channelizes the individual into the health care system. Tischler (2011) has mentioned the following four components of Parsons' notion of sick role:

1. The sick person is exempted from performing normal social role/responsibilities except for the fact that he or she is expected to do whatever is necessary to get well.
2. The sick person is not considered accountable for his or her poor health condition and is not expected to return to normal state of health by an act of will.
3. The sick person must acknowledge the fact that being ill is undesirable and he or she must want to recover.
4. The sick person is expected to obtain medical care from the designated experts, notably the physicians. The sick persons are required to follow doctor's advice strictly. However, sick people are not to be regarded as responsible for their illnesses, but they are expected to work towards regaining their health.

The concept of sick role is used to analyse sickness as a social role, not merely as a biological entity and physical experience. Taking these characteristics into consideration, Parsons believed that illness is dysfunctional for both individuals and the larger society (Kendall, 2011; Tischler, 2011). Thus according to the functional perspective, the sick role exempts the patient from routine activities for a period of time, and assumes that the individual seek appropriate medical attention and get well as soon as possible. Those people taking on the sick role do so only if they agree to comply with the regime given by the medical practitioner and if they are committed to getting well as soon as possible (Cockerham, 2010; Cockerham, 2007; Barry and Yuill, 2002). Thus, Parsons' model of the sick role is an 'ideal type', characterising abstract generalisation and exaggeration of empirical reality. And hence, sick people do not always become patients and not all patients are sick.

The functionalist perspective is a consensual approach to understanding society, which also assumes that the latent or hidden functions of everyday activities have significance for maintaining the system as a whole. In relation to something as simple as eating, Lupton (1996: 8) argues that the 'function' of food can be seen in broader terms than just as nutritional intake. A functionalist perspective serves to highlight the

way in which ‘food practices serve to support co-operative behaviour or structures of kinship in small groups’. Lupton has also argued that the meal is a way of illustrating the culture of a specific society in terms of the order in which food is served (savoury then sweet) and the mixing of food types and temperatures.

According to Parsons “it is essential for the society to maintain social control over the individuals who get into the sick role. Physicians are entrusted with the responsibility to determine who may enter this sick role and when patients are ready to move out of it. Because physicians spend several years in training and having specialised knowledge concerning illness, disease and their proper treatment, they are certified by the society to be ‘gatekeepers’ of the sick role. When patients went to the physician to seek advice, they enter into the patient-physician relationship, which does not hold equal powers for both the parties. The patient is expected to follow the ‘doctor’s orders’ by adhering to a treatment regime, recovering from malady, and returning to a normal routine as soon as possible” (Kendall, 2011: 603). “On the other hand, when patients arrive at the medical counter, they are expected to surrender their medical knowledge and be guided by the medical experts” (Gabe, Bury and Elson, 2004: 64).

Kendall further stated that “Parsons detailed analysis of sick role was regarded as unparalleled when it was introduced. Social analysts perceived that Parsons made a significant contribution towards the knowledge of how society describes the illness-related behaviour and how the physicians have gained their status of gatekeeper. However, the sick role model proposed by Parsons does not take into account the class, racial, ethnic and gender variations and also the ways in which people perceive illness and interpret this sick role. For example, the sick role model does not look into the fact that many individuals in the working class may choose not to accept the sick role until and unless they are seriously ill as because they cannot afford to miss time from work and loose a significant portion of their earnings” (Kendall, 2011). In spite of this, structural functionalism, with its focus on the value consensus, stability, social order and functional processes at the macro-level of the society, had a temporary period as the principal theoretical paradigm in medical sociology. In context to the sick role, for example, it has been argued that Parsons does not take into consideration the potential for conflict between the patient and the practitioner and that he

misguidedly assumed that the practitioner would always act in the best interests of the patient (Cockerham, 2007).

Malinowski articulated a direct connection between culture and health and he regarded culture as a functional response to satisfy and fulfil the organic and basic needs of the human beings. Malinowski defined culture as “the integral whole encompassing human ideas and crafts, beliefs and customs... A vast apparatus, partly material, partly human and partly spiritual by which man is able to cope with the concrete specific problems that face him.” Malinowski saw those problems as human needs that advocated the cultural responses. These human needs were metabolism, reproduction, bodily comforts, safety, movement growth and health. However, from his point of view, apart from the need for relief or removal of sickness or of pathological conditions, health is also implicit in all the other six human needs. He proposed hygiene as the cultural response to health. Hygiene involves all ‘sanitary arrangements’ in a community, ‘rules about exposure, extreme fatigue, the avoidance of dangers or accidents’ ‘native beliefs as to health and magical dangers’, and ‘the never absent range of household remedies’ (Cockerham, 2001: 25-26).

Citing references from different sources, Raphael, Bryant and Rioux (2006) said that Parsons was more theoretical than empirical. Parsons’ conceptualisation came under significant criticism for how it masks the variability in the temporary or legitimate nature of different illnesses and diversity in the actual behaviour of sick individuals and of their providers. Twaddle (1969), for example, claimed that there are multiple configurations of the sick role of which Parsons is but one. Mechanic and Volkart (1960) also noted how Parsons’ description was most relevant to acute illnesses and not the increasingly prevalent chronic illnesses and disabilities that would entail a permanent role status. With respect to the providers’ role, Szasz and Hollender (1956) refined Parsons’ work by elaborating different doctor-patient models arising from different type of illnesses. The first matched patient passivity and physician assertiveness- most akin to Parsons’ sick role- as the most common reaction to acute illness. The second was characterised by physician guidance and patient cooperation where a less acute illness was involved. The third model was characterised by physicians providing advice on a treatment plan that patients had most of the responsibility to implement; this last case was most relevant for chronic illnesses and certain forms of disability (Raphael, Bryant and Rioux, 2006: 37-38).

In this study, Parsons' theory of sick role has been used with some modifications. This study is mainly focusing on the health and nutritional issues of women and children in slums. Slum dwellers are poverty stricken and as a result they cannot spend much to attain better health and nutritional status. Here it is needed to be specified that poverty is not the only reason behind the poor health and nutritional status of slum dwellers, but there are several other factors such as lack of access to basic civic amenities, poor sanitation and environmental conditions, low household income, food insecurity, lack of education and health care services, etc. Thus, it can be traced that slum dwellers have to perform their role in family as well as in their community and poor health and nutritional status creates hindrance in their role playing. Therefore, dysfunctionality comes to exist in their family and community. But here it is also essential to highlight that unhealthiness is not the only reason behind the hindrance in role playing but there are other factors also such as alienation from work, social tension, lack of basic facilities, poor economic condition, lesser employment opportunities and unemployment, poor educational status and sometimes environmental conditions serve as a barrier in role playing for an individual. Since this study is focused on nutritional problems among slum dwellers, therefore, main concern is with role playing and in this context dysfunctionality has been explained. Slum dwellers have the worst health and nutritional situation as compared to those residing in other urban areas. Thus, this study has been conducted to understand the health and nutritional issues among the slum dwellers.

### **Conflict Approach**

Marxist theory takes us back to the concern with the structure of society, suggesting that it is the economic structure of any society that determines the social relations contained within that structure. It is the distribution of the ownership of the means of production that give rise to specific patterns of class relations, which, crucially, in all societies are characterised by inequalities of power. It is argued by Marxists that social change is the product of changes in economic relationships. Marxism describes social phenomena as primarily being determined by the economic structure of society (Choudhary, 2006). Conflict theory, which is established firmly on the works of Karl Marx, is based on the presupposition that society is composed of several groups that are struggling for advantage, conflict is the main cause of social change in the society and inequality is one of the most basic characteristics of social life.

Conflict theory, which is contrast to the functionalist approach, held the view that the health, disease and health care delivery system of people in the society are affected by the social, economic and political forces. The conflict theorists are concerned with the issues of the ability of every individual to obtain health care; how health and health care workers are affected by race, class and gender inequalities; the influence and dominance of the medical model of health care; and the role of profit in the health care system (Kendall, 2011: 604). Looking at health from the conflict perspective, sociology is concerned with the relationship between health, illness and social organisation within a society and how their meanings and definitions are influenced and determined by the economic activities. Health care services are being provided by various entities within the field of health and medicine. In the context of health the conflict theorists were concerned with the struggle or conflict between these various entities such as medical profession, drug companies, insurance companies, business communities and others (Darulius and Kaminskas, 2007). Marx's perspective in conflict theory rejected the views as expressed in structural functionalism that society is being held together and social stability is maintained by shared norms and values.

Marxist tradition in the sociology of medicine specifically attempts to link diseases to structural, economic and political developments. Conflict theories claims that true consensus does not exist; rather society norms and values are those of the dominant elite and imposed on them on the less privileged to maintain their advantaged position. However, Max Weber was of the opinion that besides unequal allocation and distribution of money, financial resources, property, and relationships to the means as well as forces of production, the social inequality is also based upon status and political power and influence. Since inequality exists in all social systems, conflict inevitably occurs and consequently, conflict is responsible for social change. Conflict theory help us to chalk out the manoeuvres of number of organizations and bodies, like the medical profession, insurance companies, drug companies, the business community and the public, as they struggle to acquire, protect or expand their interests against the existing government regulations and programmes and those under consideration. Other conflict approaches rely on the class struggle and in this manner they are directly connected to classical Marxism. On the basis of class struggle these theories explain the outcomes of health policy and the disadvantages

faced by the lower and working classes in the capitalist medical systems where the emphasis is largely on the profit (Cockerham, 2010). In medical sociology, the conflict theory largely focuses on the role of conflicting interests in health care delivery system and lack of adequate ability in work environment, health of working class, differences in lifestyles and ideologies of the doctor-patient relationship. Marxist theory is used to question the naturalness of capitalist relations and to unmask the reality of what is fundamentally in exploitative relationship. This theoretical approach is representative of a structural analysis of society, less concerned with the micro-elements and more concerned with the larger picture, the underlying factors that explain social, economic and political relationships.

According to the Marxist approach, the function of medicine is the maintenance of the capitalist system. The labour is controlled by the medical profession through its control of the sick certificate, whereas the theories of disease formulates, enforces and distinguish the causes of diseases and disregard social factors, thus accomplishing an ideological function in maintaining the status quo. Medical knowledge and technology do not exist in isolation from capitalist social relation, in fact, they are the product of the capitalism (White, 2006). Marxists further argues that disease and treatment are the outcomes of a capitalist economic system. The key text in the Marxist tradition is F. Engles' *The Condition of Working Class in England* (1887). Engles argue that disease is the direct outcome of capitalist's pursuit of profit at the expense of safety. By safety means not industrial matter, but housing conditions and food quality. In the Marxist perspective, medicine played both an economic and an ideological role in contemporary society, which can be summarised as follows:

- i. Medicine is the object-centered rather than person-centered, treating the human beings as things,
- ii. Disease is seen as a condition to be treated by chemical or electronic intervention to restore balance in the body, rather than the outcome of the social relationships,
- iii. Health is defined as fitness to carry out social role, particularly, the ability to sell labour, and
- iv. Medicine focuses on the individual and the individualistic conceptions of lifestyles.

Raphael, Bryant and Rioux (2006) have directly applied Marxist concepts to the study of health and health care. In their focus on the labour process under capitalism, they argue that there is a contradiction between the search of profit and ensuring the safety of workers. In other words, the capitalist mode of production actually results in illnesses and diseases in working or lower class and sometimes it is often referred to as the social production of disease hypothesis. This could be either directly in the form of pathogens (physical, chemical or biological) at the workplace or in the form of stress or risk accidents or as a result of the increasing intensification and fragmentation of work and alienation from the work process. They argued, for example, that morbidity and mortality are higher among individuals doing routine types of work requiring low levels of skills than among individuals working in jobs that demand a large number of skills and which allow for some type of control over one's own work (Navarro, 1986: 123). According to Navarro (1976), the capitalist state's involvement in health care brings about three things: it reproduces alienation. The first of these outcomes is realised via the hierarchies among health workers. In modern capitalist societies, doctors are usually middle-class men, whereas, nurses and health auxiliaries are usually lower middle class or working class women. Thus, the structure of the biomedical hierarchy reproduces the existing class and gender divisions. With respect to ideology, state involvement in health care sustains ideas and practices which suggests that the causes of ill health reside within individuals and their behaviour. Biomedicine as it is practised in modern capitalist economies rarely focuses on the economic and political factors responsible for illness and disease. Finally, state involvement in health care produces alienation. One of the roots of alienation lies in divisions between those who govern and those who are governed and those who are experts and those who are the recipients of expertise. In modern capitalist economies, doctors and other health professionals are the governors and experts. As a result, their clients may feel isolated from the means by which they might recover their health and well-being (Aggleton, 1990).

Alienation affects the worker on the variety of related and interweaving levels that can be deduced as: alienation can affect not only the worker's physical and mental health in terms of exhausting the body and the concentration of the mind that is required to work, but also emotionally, in terms of the frustration, unfulfilling dehumanisation that alienated labour brings forth (Yuill, 2005). Conflict theorists

enhanced our awareness about the race, class and gender inequalities as these factors have an influence on people's access to health care. They also enhance our information concerning various problems associated with health care becoming a big profitable business entity. However, various analysts considered that the conflict approach is unnecessarily pessimistic about the gains that have been achieved in health status and longevity- gains that are to some extent due to large scale investment in research and treatment by the medical-industrial complex (Akram, 2014).

Despite of all this, it can be said that the use of conflict theory in medical sociology has several limitations: (i) all health situations are not affected by the conflict in the society; (ii) people may suffer from diseases or may not be healthy because of various reasons, which in anyway may not be linked with politics, class conflict, interest group competition and others (Darulius and Kaminskas, 2007).

### **3.4 Classification of Malnutrition**

Various classifications of malnutrition have been proposed on the basis of different criteria such as clinical signs, symptoms and anthropometric measurements. However, classifications which are based on clinical signs and symptoms tend to be qualitative and subjective and, therefore, they are much more complex in application. Whereas, classifications based on anthropometric measurements have gained widespread significance for the research purpose. Such classifications include Gomez classification, Wellcome classification, Waterlow classification, Indian Academy of Paediatrics (IAP) classification, Jelliffe classification, WHO classification, etc. these classification are briefly discussed below:

**Gomez Classification:** This classification is based on 'weight-for-age'. It is expressed as percentage of the normal weight using the 50<sup>th</sup> percentile of Harvard standards. It is calculated in following manner:

Per cent of reference age for weight = [(patient's weight) / (weight of normal child of same age)] × 100

- Grade I – 90-75 per cent of expected weight
- Grade II – 75-60 per cent of expected weight
- Grade III – less than 60 per cent of expected weight

**Wellcome Classification:** This classification evaluates the child for edema with Gomez classification system.

**Table 3.1: Wellcome classification**

Weight for Age	With Edema	Without Edema
60-80 %	Kwashiorkor	Underweight
< 60 %	Marismic-Kwashiorkor	Marasmus

Source: Bhat, 2009

**Waterlow Classification:** This classification of malnutrition among children is based on wasting (the percentage of expected weight for height) and degree of stunting (the percentage of expected height of age).

Percentage of weight for height = [(weight of patient) / (weight of a normal child of the same height)] × 100

Percentage of height for age = [(height of patient) / (height of a normal child of the same age)] × 100

**Table 3.2: Waterlow classification**

	Weight for Height (Wasting)	Height for Age (Stunting)
Normal	>90	>95
Mild	80-90	90-95
Moderate	70-80	85-90
Severe	<70	<85

Source: Bhat, 2009

**Indian Academy of Pediatrics (IAP) Classification:** This classification is also like Gomez classification and it is based on weight for age. The 50<sup>th</sup> percentile of Harvard standards are used as the normal:

- Grade I – 80-71 per cent of expected weight
- Grade II – 70-61 per cent of expected weight
- Grade III – 60-51 per cent of expected weight
- Grade IV – Less than 50 per cent of expected weight

**Jelliffe's Classification:** This classification is very much similar to IAP classification, but with an exception, the normal level goes up to 90 per cent and the Grade IV is less than 60 per cent of the expected weight for that age.

- Grade I – 80-90 per cent of expected weight
- Grade II – 70-79 per cent of expected weight
- Grade III – 60-69 per cent of expected weight
- Grade IV – Less than 60 per cent of expected weight

In India, generally IAP classification is used and for defining severe malnutrition WHO criteria are used. The WHO classification of malnutrition is given in the table 3.3.

**Table 3.3: WHO classification of moderate and severe malnutrition**

	Moderate Malnutrition	Severe Malnutrition
Edema	No	Yes
Weight for height		
SD score	-2 to -3	< -3
Percentage	70-79	<70
Height for age		
SD score	-2 to -3	< -3
Percentage	85-89	<85

*Source: Bhat, 2009*

### **3.5 The Conceptual Framework of Malnutrition, Nutritional Status at Household Level and Urban Health**

Any imbalance in satisfying the nutritional requirements of an individual is termed as malnutrition. The synergistic effects of inadequate or poor dietary intake, frequent episodes of parasitic or other childhood diseases such as diarrhoea and lack of adequate care and health services during illness is often regarded as the most common reason for malnutrition among children. In developing countries like India malnutrition is often cited as one of the most important factors contributing to increasing risk of morbidity and mortality among children. During childhood malnutrition can also affect the potential and risk of morbidity and mortality in later

years of life. It is more likely that malnourished children would grow into malnourished adults who would face increased risks of disease and death. Poor nutritional status of women has been linked with the higher age at menarche (Mishra, Lahiri and Luther, 1999).

There are number of factors, which either directly or indirectly affect the nutritional status of children. The most commonly cited factors which are considered to influence the child nutrition are food availability and food intake, breastfeeding and child feeding practices, occurrence of parasitic and infectious diseases, access to health care services, immunisation against major childhood diseases, vitamin A supplementation, maternal care during pregnancy, water supply and sanitation, socio-economic status and health seeking behaviour. There are certain demographic characteristics which are also associated with the child nutrition such as the child's age and sex, mother's age at child-birth, birth intervals (both preceding and following) and child's birth order.

During childhood and early years of development, adequate nutrition has a critical role to play. The initial years of childhood are not only important for attaining optimum growth and development, but also for good health. In the early phase of life, the children are highly susceptible to growth and cognitive retardation, macro and micronutrient deficiencies and other common childhood diseases such as diarrhoea, acute respiratory diseases (ARI) and infections. The prevalence of malnutrition among women leads to a number of undesirable conditions such as reduction in work productivity, slower or poor recovery from illnesses and diseases, increased susceptibility to infections and a very high risk of adverse pregnancy outcomes. A woman's nutritional status not only has important implication for her health, but also for the health of her children. Low body mass index (BMI), anaemia, short stature, or other micronutrient deficiencies are indicators of poor nutritional status in a woman. All these indicators makes a woman vulnerable to a higher probability of obstructed labour, delivering a baby with low birth-weight, having adverse pregnancy outcomes, producing breast milk of a lower quality and in low quantity, illness for herself and her new born baby and death as a result of postpartum haemorrhage (Arnold, Parasuraman, Arokiasamy and Kothari, 2007).

In India, malnutrition continues to be one of the major health problems among women particularly in those women who belong to lower socio-economic strata such as slum dwellers. It not only bears an adverse effect on their health, but also poses a threat to the survival of their children. Among women the adverse effects of malnutrition are coupled with poverty, heavy work demands, childbearing and rearing practices, and the special nutritional requirements of women. This consequently results in increased susceptibility to diseases and higher mortality. Although the problem of malnutrition is prevalent among all the sections of the population in India, but women are the worst sufferers. The vicious cycle of poor nutrition among women starts from infancy and continues throughout their lifetimes. Typically, women and girls are the last to eat in a family; thus, if there is not enough they are the ones who suffers the most.

UNICEF developed a conceptual framework for malnutrition and it has been widely accepted at the international level. According to this framework, there are number of factors which are directly or indirectly responsible for the occurrence of malnutrition. The causes of malnutrition are distinguished into three categories, namely, immediate causes, underlying causes and basic causes. The immediate causes of the malnutrition manifest themselves at the individual level and these immediate factors are dietary intake and health status. These factors are interdependent on one another. It is essential that dietary intake must be adequate in quantity and quality for proper functioning of the body. Further, nutrients must be consumed in appropriate amount and combinations for the human body to be able to absorb them (energy, protein, fat, carbohydrates and micronutrients). At the household level what food is being cooked and put on the table (demand) and who is going to eat it (intra-household distribution) governs the composition of the meals for the individual. Habits such as food taboos and knowledge like preparation and processing of food, child feeding practices, etc not only influence the composition of food but also the biological utilisation of the food. There is strong synergistic association between the health status and nutritional status of an individual. An individual suffering from diseases is more likely to lose his/her appetite, thus consuming a poor diet, digesting the consumed food poorly and must use some of the nutrients to fight against infection. Poor intake of nutritious food has an adverse impact on the immune system and makes the individual more prone to infections. Infections enhance the potential

for and severity of malnutrition, particularly among children. In developing countries like India, the most common nutrition-related health problems are infectious diseases such as diarrhoeal diseases and the acute respiratory infections (ARI). Further, these two immediate causes of the nutritional status are governed by four underlying factors exhibiting themselves at the household level. These underlying causes are adequate food security in the household (availability and access), adequate preventive and curative care for mothers and children, healthy living environment as well as access to sufficient health services. Each of these underlying causes is associated with a set of basic causes for achieving them which are briefly discussed below (Haddad, 1999: 12).

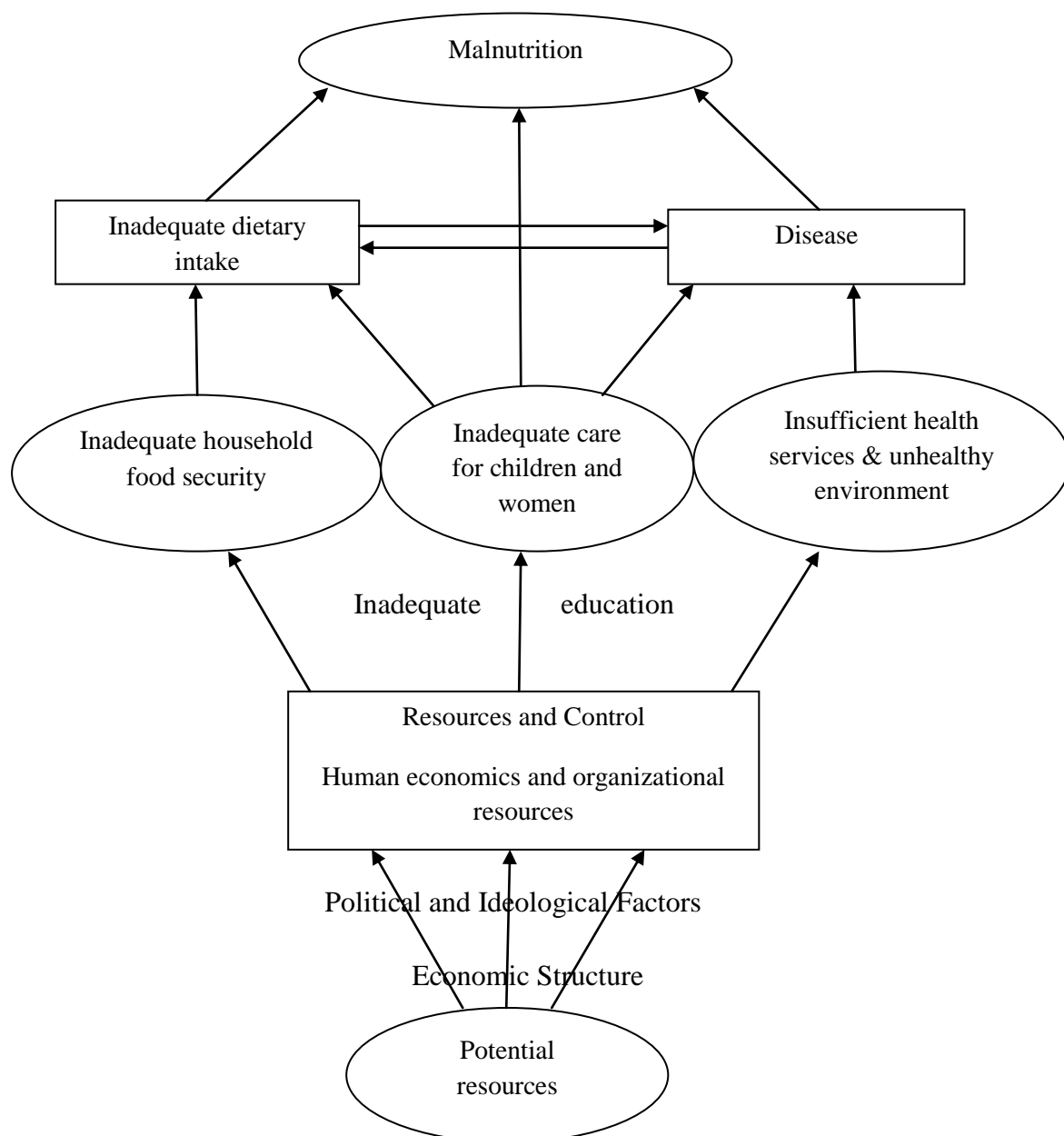
The resources considered essential for gaining access to food are production of food, income for food purchases or purchasing power and in kind transfers of food (whether from other private citizens, national or foreign governments or international institutions). Apart from household production the food availability is determined by the market supply which emerges from the combination of several factors such as domestic food stocks, domestic food production, commercial food imports and food aid. The second underlying determinant of nutritional status is caring capacity, which is the provision in the households “of time, attention and support to meet the physical, mental and social needs of the growing children and other household members” (International Conference on Nutrition [ICN], 1992). Caring practices include child feeding, health seeking behaviour, support and cognitive stimulation for children, support and care for pregnant and lactating women. The competency of such care is being determined by the caregiver’s control over economic resources, physical, mental and social status, and autonomy in decision making. Decisive to execute control is caregiver’s status compared to other household members. The final resource for care is the caregiver’s knowledge and belief.

The third underlying determinant of the nutritional status is the availability and access to a functional health service. It has a direct effect on the morbidity and mortality and consequently on the nutritional status. Further, the caregiver’s knowledge about health and health related topics also play a key role. The last underlying cause which affects the nutritional status is the environmental condition. It plays a detrimental role in influencing the nutritional status via the health situation and mainly includes the availability and access to safe drinking water, adequate

sanitation facilities, and safe environmental and housing conditions. Ameliorating the water and sanitation facilities along with changes in hygiene behaviour and practices, can have long-lasting effects on the population and its health by improving situation for variety of diseases such as diarrhoea, intestinal helminthes, guinea worm and skin diseases. Consequently, these improvements in health can play a decisive role in reducing morbidity, mortality and improving nutritional status (Billig, Bendahmane and Swindale, 1999).

Finally, the general socio-economic and political conditions prevailing in a country bear an influence on the causes of malnutrition (and poverty). These factors include the potential resources accessible within the natural environment of a country or community, access to new scientific and technological resources and the quality of human resources. Social, economical, political and cultural factors determine how these potential resources are utilised for the purpose of food security, health care services and safe living conditions. In other words, these factors are regarded as basic causes that contribute to malnutrition. This model highlights the fact that the various causal factors of malnutrition are associated with different social-organisational level. The immediate causes directly affect the individuals, whereas the underlying causes are related to families, households and communities and the basic causes are associated with the regional, sub-national and national level.

Figure 3.1: Conceptual Framework of Malnutrition (UNICEF)



Source: Lioba Weingarter, 2004

Gross, Schoeneberger, Pfeifer and Preuss (2000) conceptualised a simplified causal model at household level for linking nutritional status with the causal factors. In this conceptual framework, the nutritional status is considered as an outcome of two factors, namely, food intake and health status. However, the underlying causes of health, i.e. availability of health services and healthy environmental conditions, due to difference in their nature have been depicted in different boxes. A poor state of health

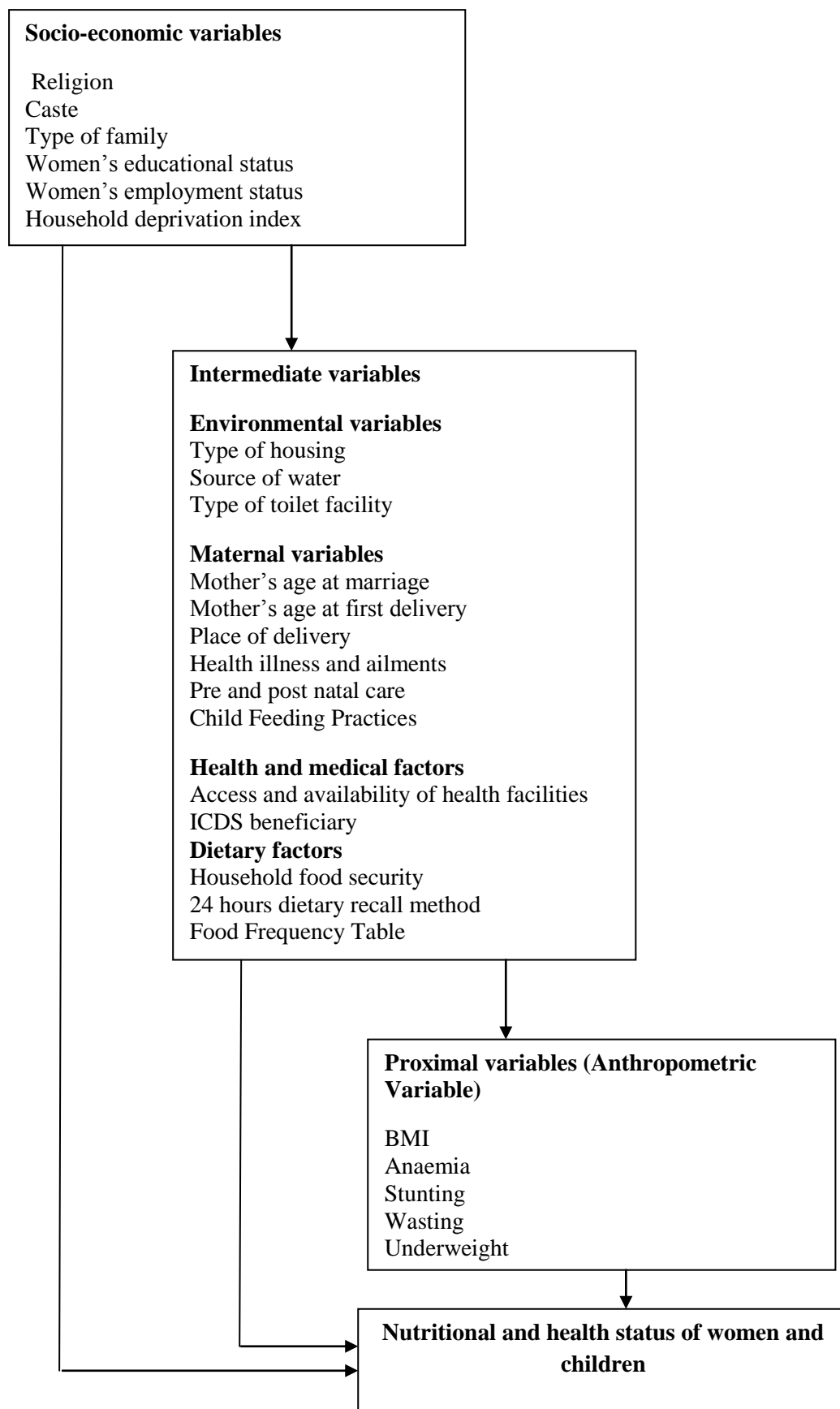
may be attributed in part to inadequate access to health care services, poor housing and environmental conditions and this situation is further worsened by malnutrition, which make individuals vulnerable to diseases. It is essential to distinguish between health care services and environment in order to select appropriate intervention strategies.

They argued that the four underlying causes of food intake and health status are influenced by several determinants. Further, each determinant has several other contributing factors. For example, access to food is determined by food production, food purchase power and/or food donation. This conceptual framework highlights the distinction between 'food security' and 'nutrition security'. The first refers to the area of causes and effects of food availability at household level (access to food) and the latter refers to the entire relationships. In this framework it is also clearly evident that while designing programmes it should be taken into account that less direct the relationship between a causal factor of malnutrition and the nutritional status, the more time is required to improve the situation.

Vlahov, Gibble, Freudenberg and Galea (2004) suggested a conceptual framework for urban health and the core concept of this framework is that the physical and social environmental settings that outline the urban context are shaped by various factors and several players at multiple levels. The context in which local factors operate is being shaped by global trends, national, local/municipal governments, civil society, markets and the private sectors. Thus, governance interventions and strategies in the urban setting must take into consideration various global, national and municipal determinants and should make an endeavour to influence both living and working conditions in urban set up as well as intermediary factors that encompasses social processes and knowledge about health. Interventional strategies can also work upwards to influence the global, national, municipal and local forces. In this framework it has been assumed that in the broader sense (physically, socially, economically and politically) the urban environment influences all the strata of inhabitants, either directly or indirectly. The health sector not only plays a crucial role in strengthening the government's approach towards health and urban policy but also in advocating the local authorities towards the newly emerging health issues.

The present study is being conducted in the four selected slums of Lucknow city. The mothers who had children between six months to five years were interviewed for collecting the desired information. The causal factors of malnutrition are complex and they range from biological and social to environmental factors (Smith and Haddad, 2000). On the basis of various conceptual frameworks and models proposed in past researches for determining the causes of malnutrition, which have been elaborately discussed above, a conceptual framework has been constructed to establish inter-relationship between various variables which are the risk factors for the nutritional status of women and their children. In this framework, the variables can be broadly divided into three categories: socio-economic variables, intermediate variables and proximal variables. Socio-economic variables include religion, caste, type of family, parent's educational status, parent's employment status, household deprivation status, etc. Intermediate variables are further divided into three sub-categories: environmental factors, maternal factors, health and medical factors and household food security. Environmental factors consist of type of housing, source of water, type of toilet facility, garbage disposal facility, etc. Maternal factors include mother's age at marriage, mother's age at first delivery, place of delivery, type of delivery, health illnesses and ailments, pre and post-natal care, mother's nutritional status (BMI, anaemia), mother's knowledge about nutrition, child feeding practices, personal hygiene, etc. Health and medical factors encompasses access and availability of health care services, type of hospitals/practitioners visited for treatment, awareness and utilisation of health care programmes, ICDS beneficiary, etc. Household food security is one of the essential variables of nutritional status and it is determined by 24 hours dietary recall method, dietary diversity score and food frequency table (these three methods are discussed later in this chapter). The proximal variables (individual variables) consist of child's weight at birth, birth order, stunting (height-for-age), wasting (weight-for-height), under-weight (weight-for-age), Mid Upper Arm Circumference (MUAC), initiation of breastfeeding, colostrum feed, duration of exclusive breastfeeding, complementary feeding, immunisation, childhood diseases, etc. The socio-economic variables directly or indirectly affect the other two groups of risk factors and these two groups of variables, in turn, affect the nutritional status of women and their children.

**Figure 3.2: Conceptual Framework of the Determinants of Women and Child's Nutritional Status**



The causal factors of nutritional deprivation are diverse, multi-sectoral, cross-cutting, and interlinked. They range from biological, social and cultural to economic factors. These wide range of factors operate at various levels and has its influence on child, family, household, community and ultimately the nation. In reference to this, a Household Deprivation Score (HDS) has been constructed in the present study which is based on the socio-economic status of the household. The HDS index is simply the measurement of household's deprivation in three dimensions: 1) basic amenities in the household; 2) basic economic assets and 3) basic sources of communication. However, this household deprivation index is not a direct measure of the socio-economic condition of the household on the basis of per capita income or expenditure or the standard of living index, rather it is the measurement of the extent to which the household is deprived in terms of the above three dimensions. In each of these three dimensions of household deprivation, the variables are used in a binary scale. These variables are: 1) whether the household has a kutcha or semi-pucca/pucca type of house, 2) whether the household owns the land/house in which it dwells, 3) whether there is electricity in the household, 4) whether there is facility of drinking water in the household, 5) whether the household has any literate adult member in the family and 6) whether there is a radio, a T.V, or a newspaper in the household.

In modern society, the economy is market oriented and on the basis of ownership of vital socio-economic and physical necessities of life it is possible to determine the dividing line for different degrees of deprivation. This type of classificatory system has its own advantage because it is based on the possession of actual physical, economic or social necessities of life (adult literacy), instead of the income data and it can be used for measuring the changes in deprivation levels of a household over a period of time (Srinivasan and Mohanty, 2004). The Household Deprivation Score (HDS) is the addition of all the six variable scores and its value ranges from 0 to 6. The household whose HDS is 1-2 means that the household does not have any of the above mentioned six possessions and it is in the state of 'abject deprivation' (AD); those households whose HDS is 3 or 4 means they have one or two of the six possessions and they are in the category of 'moderate deprivation' (MD); and households having five or six of the above possessions falls in the category of 'just above the deprivation' (JAD). The first two categories i.e. AD and MD

together form the deprived sections of the population. These six variables used for the construction of deprivation index are discussed in detail in table 3.4.

**Table 3.4: Variables used for computing Household Deprivation Score (HDS)**

<b>Variables Used</b>	<b>Description</b>	<b>Categorisation of Household on the Basis of HDS</b>
1. Adult literacy	0 = No literate adult in the household 1 = Presence of at least one literate adult in the household	1-2 = Abject Deprivation (AD)
2. Type of house	0 = <i>Kaccha</i> house 1 = <i>Semi-pucca/pucca</i> house	
3. Electricity	0 = No electricity in the residence 1 = Household is electrified	3-4 = Moderate Deprivation (MD)
4. Drinking water facility	0 = No drinking water facility within the residence 1 = Own drinking water facility within the residence	5-6 = Just Above Deprivation (JAD)
5. Radio or T.V. or newspaper	0 = No radio or T.V. or newspaper in the house 1 = At least one of these in the house	
6. Ownership of land/house	0 = No legal ownership 1 = Has legal ownership	

*Source: Srinivasan and Mohanty, 2004*

The present study would make an attempt to examine various socio-economic, environmental, maternal and individual variables and it would also analyse how these variables affect the nutritional status of women and children residing in slums. Further, this Household Deprivation Score (HDS) would also help in investigating that how deprivation level of household makes the women and children relatively deprived and has an impact on their nutritional status.

In context to the present study, the main concepts and terms which are being used have been defined and discussed below:

**Slum:** “A slum is a compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities” (Primary Census Abstract for Slum, 2011).

**Nutritional status:** Nutritional status of an individual or a group of individuals is defined as their current body status, which is associated with their nourishment state (the intake and utilisation of nutrients). Furthermore, the nutritional status is determined by interaction between a complex set of internal/constitutional factors and external environmental factors. Internal or constitutional factors consist of age, sex, nutrition, behaviour, physical activity and diseases. Whereas, external environmental factors include food security, social, cultural and economic circumstances. For better health and well-being of an individual, an optimal nutritional status is a powerful factor. It is an important, formidable and influential element in promoting good health, preventing and treating diseases or illnesses and ameliorating the quality of life.

**Malnutrition:** An imbalance (deficiency or excess) in an individual’s intake of nutrients and/or energy is referred to as malnutrition. The term malnutrition is a broad one under which two broad groups of conditions i.e. ‘undernutrition’ and ‘overnutrition’ are covered. The term ‘undernutrition’ includes stunting (low height-for-age), underweight (low weight-for-age), wasting (low weight-for-height) and micronutrient deficiencies or insufficiencies. Whereas, the term overweight covers obesity and diet-related non-communicable diseases (such as heart disease, stroke and diabetes). However, it may be noted that the term malnutrition is commonly used as an alternative to undernutrition.

**Anthropometry:** Anthropometry is the measurement of body weight, height and proportions. Anthropometric measurement is one of the important components of clinical examination among infants, children, pregnant and lactating women. It is used to measure both under and over-nutrition. The measured values obtained from anthropometry represent the current nutritional status of an individual, however it cannot be used to distinguish between acute and chronic changes within the body.

**Body Mass Index (BMI):** Body mass index relates weight to height in a normalised index. It is the international standard for assessing body size in adults. It is calculated as weight (in kilograms) divided by height (in metres) squared. The World Health Organisation defined BMI-based fatness categories of underweight (BMI <18.5 kg/m<sup>2</sup>), normal weight (18.5-24.9 kg/m<sup>2</sup>) and overweight (25.0-29.9 kg/m<sup>2</sup>). The formula used for computing BMI is as follows:

$$\text{BMI} = \text{Weight (kg)} / \text{Height (m}^2\text{)}$$

An adult individual having a BMI below 18.5 kg/m<sup>2</sup> would not be able to perform much physical work because he would be having very poor energy stores. In addition to this, they would be at higher risk of getting infected as a result of poor immunity system. The risk of mortality and morbidity is associated with the nutritional status as assessed by the BMI. The health of the people suffers when they are too fat or too thin. A decrease in the BMI increases the risk of mortality and morbidity. Similarly, the risk of mortality and morbidity increases with the increase in the BMI over 25 kg/m<sup>2</sup>.

**Mid-Upper Arm Circumference (MUAC):** The measurement of Mid Upper Arm Circumference (MUAC) is the most accurate way to measure fat-free mass in the body. The MUAC is the circumference of the upper arm at the midway between the shoulder tip and the elbow tip on the left arm. For determining the mid-arm point, the distance from the shoulder tip to the elbow is measured and then it is dividing it by two. For measuring the MUAC among the children, a special tape is used which has three colours- red, yellow and green. The red colour on the tape indicates severe acute malnutrition, the yellow colour is the indicator of moderate acute malnutrition and the green colour means normal nutritional status in a child. A poor reading on the tape is the indicator of loss in muscle mass. For determining the risk of mortality among children, MUAC is one of the important screening tools. Also, MUAC is the only anthropometric measure which can be used for assessing nutritional status among pregnant women. For screening a large number of people, particularly at community level, it is the most simplest method of screening.

**Stunting (Height-for-age):** Low height-for-age index is used for identifying the condition of past undernutrition or chronic undernutrition. Height-for-age (HAZ) is an

indicator of stunting which usually results from chronic malnutrition, however, genetic factors are also associated with it. It cannot be used for measuring short-term changes in malnutrition. There are number of long term factors which are associated with stunting such as sustained inadequate or insufficient intake of protein and calories, repeated episodes of infection, inappropriate breastfeeding and child feeding practices, and poverty.

**Underweight (Weight-for-age):** The index of low weight-for-age is used for identifying the condition of being underweight, for a specific age. Underweight results either from chronic or acute under-nutrition or both. Underweight, which is based on weight-for-age index, is a composite measure of stunting and wasting and it is used as an indicator to assess and examine the changes in the magnitude of malnutrition over a period of time. The prevalence of underweight is associated with several factors such as gross national product, infant mortality rate, energy intake per capita, female literacy rate, social support from government and NGOs, child population, food sources of energy, socio-economic status of the family, distribution of income, access to safe drinking water and other basic civic amenities.

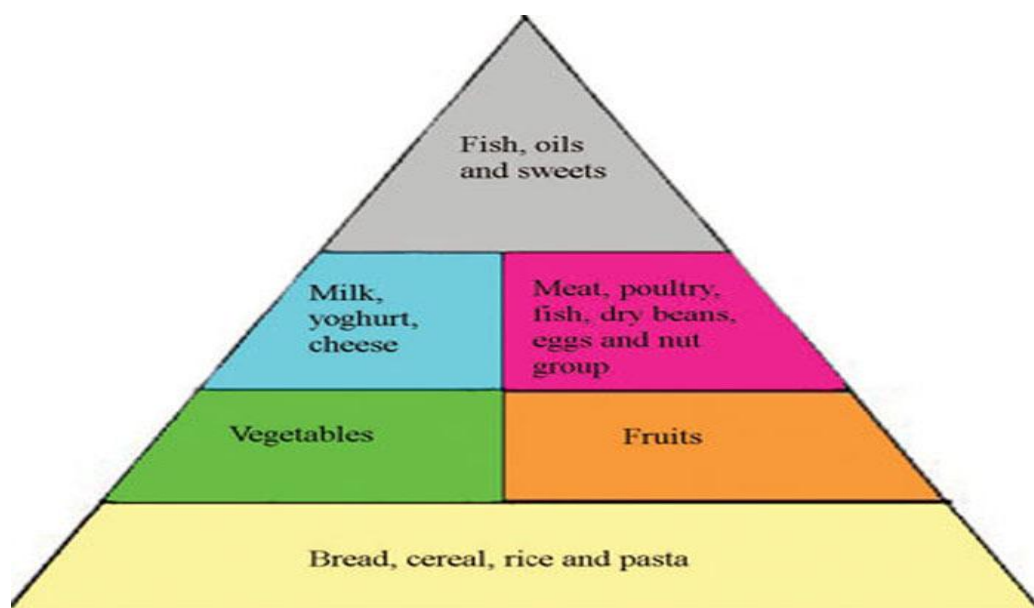
**Wasting (Weight-for-height):** The weight-for-height (WHZ) index is an indicator for thinness or wasting. Wasting is an acute or short-term malnutrition which results from acute starvation or severe diseases, famine etc., however, sometimes it may also occur as a result from chronic dietary deficiency or disease. Wasting is an indicator of acute or current malnutrition resulting as a failure to gain weight or actual weight loss. It is associated with number of causes which include inadequate dietary intake, incorrect or inappropriate feeding practices, diseases and infection.

**Dietary assessment:** The dietary methods of assessment are used for determining the nutritional status of individuals or a group by looking at their past or current dietary and nutrient intakes. There are different methods to assess the nutritional intake among human beings. These methods are: 24 hours dietary recall, food frequency questionnaire, food consumption observation history of diet since early life and food diary techniques. In this study, two methods would be used:

1. **24 hours dietary recall:** In this method an interviewer asks the subject to recall all the food items and drink that he/she has consumed in the previous 24 hours. It is a quick and easy method which depends on short-term memory. This data is

used for calculating the dietary diversity score. Dietary diversity is the measure of food groups consumed by an individual within the reference period i.e. 24 hours. Generally, everyday an individual needs to consume six different food groups. This can be represented in a form of food guide pyramid (figure 1). The base which is the widest part of the pyramid indicates that there is need to consume higher quantities of food sources which are rich in carbohydrates. Whereas, the narrow tip shows that fats and sweet things are to be eaten only in small amounts. The dietary diversity score of a person would be six, if he/she consumes any dietary item from each of the six groups in the last 24 hours. Dietary diversity score is an indicator of both, the balanced and diversified nutrient consumption as well as the food security (or insecurity) level in a household. Higher the dietary diversity score in a family, the more diversified and balanced would be their diet and the more food-secure the household would be.

**Figure 3.3: Food Guide Pyramid**



**Source:** Dietary Guidelines for Indians: A Manual, National Institute of Nutrition

- 2. Food frequency table:** In this method the subject is asked about a list of food items to indicate his or her frequency of consuming variety of food items.

**Anaemia:** The lack of an adequate amount of haemoglobin in the blood is characterised as anaemia. Haemoglobin below normal level lowers the capacity of the blood to carry oxygen from the lungs to other organs and tissues. Women of reproductive age are highly prone to iron-deficiency anaemia due to the loss of blood

during menstruation and the increased demand of blood supply during pregnancy. In young children, who are in the phase of optimum growth and development, anaemia could result in increased morbidity from infectious diseases, and it can cause impairments in coordination, cognitive performance, behavioural and language development, and scholastic achievement. Apart from nutritional deficiency of iron and other essential minerals and vitamins, infections such as malaria and sickle cell disease can also be responsible for anaemia among children.

**Mortality:** Mortality refers to the death process characterising a population. The study of mortality examines the relationship between death and the size, composition and distribution of the population. Furthermore, mortality studies investigate the 'who, how, why and when' issues related to dying. Mortality is significantly influenced by socio-cultural factors and even age-specific deaths are to a certain extent a function of non-biological factors. These include characteristics such as marital status and family structure, socio-economic status, occupation, lifestyle, etc.

**Morbidity:** Morbidity reflects the number of persons affected with some disease and hence indicates ill health. The study of morbidity is perhaps the most important dimension of social epidemiology. Morbidity indicators are used to supplement mortality data to describe the health status of a population. The morbidity rates which are used for assessing ill health in the community are: (a) incidence and prevalence, (b) notification rates, (c) duration of stay in hospitals and (d) spell of sickness or absence from work or school.

**Socio-economic indicators:** These include: (a) rate of population increase, (b) level of unemployment, (c) family size and literacy rates- especially female literacy rates, housing and also per-capita calorie availability. These indicators do not directly measure health. Nevertheless, they have great importance in the interpretation of the indicators of health care.

**Environmental indicators:** Environmental indicators reflect the quality of social, physical and biological environment in which diseases occur and in which people live. They include indicators relating to pollution of air, water, solid waste, noise, exposure of toxic substances in food or drink and stress. Among these the most useful indicators are those measuring the proportion of population having access to safe

water and sanitation facilities. Contaminated water and poor sanitation is responsible for large proportion of diseases in India.

**Utilisation rate:** In order to get more information on health status, the extent of use of health services is often investigated. Utilisation of services or actual coverage is expressed as the proportion of people in need of a service who actually receive it in a given period. Utilisation rate give some indication of the care needed by a population and therefore the health status of a population.



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*Chapter-IV*  
*Health Care Policies*  
*and Programmes in*  
*India*

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## **Chapter IV**

### **Health Care Policies and Programmes in India**

The first National Health Policy (NHP) of India was launched in the year 1983 and prior to this policy only vertical health programmes existed to address the issue of specific diseases. The first NHP tried to revamp public health sector and specified the target of health for all by 2000 as its goal. Before presenting the summary of 1983 policy, it is important to know the background under which the policy came into existence. The background of the first NHP is related with the Alma Ata Declaration. On 6-12 September 1978, the International Conference on Primary Health Care was held in Alma Ata, USSR, which conceived the vision of 'Health for All'. In this conference, it was decided that countries across the globe must strive to achieve the target of health for all by 2000. The national governments all over the world seek the help of this declaration in shaping and formulating their health policy and planning.

#### **4.1 Declaration of Alma Ata**

In the year 1978, the International Conference on Primary Health Care was held in Alma Ata and this conference expressed the need that all the governments, all health workers and health service providers and the entire world community must take an urgent action in order to safeguard and promote the health of all the individuals across the world and made the following declarations:

- i. The Declaration of Alma Ata firmly advocated that health is a fundamental right of every individual. Actions are required from many other social and economic sectors in addition to the health sector for attaining the optimum level of health for the people, which is one of the most important social goals world-wide.
- ii. The health status of the people and the access to quality health care services particularly between the developed and the third world countries as well as within the countries reflect high level of inequality and inequity which is politically, socially and economically unacceptable and, therefore, it is an issue of common concern for all the countries.
- iii. The social and economic development is of paramount importance for reducing the inequality and inequity in the health sector of the developed and developing countries and also for realization of the goal of health for all. Further, for the sustained economic and social development, it is essential to promote and protect

- the health of the people and it would contribute towards the better quality of life and to the world peace.
- iv. It is the right and duty of the people to participate individually and collectively in the planning and implementation of their health care.
  - v. The health of the people is the primary duty of the governments and for the fulfillment of this responsibility effective and efficient social and health measures are required to be implemented. The whole world community, various international organizations and agencies as well as the national governments should focus on the obtainment of highest possible level of health for all the people by 2000 and it is one of the most important social goals. This would play a crucial role in providing socially and economically productive life to the people. Primary health care would play crucial role in attaining this target as part of development in the spirit of social justice.
  - vi. Primary health care constitute an essential and integral part of the health care system. Primary health care is based on practical, scientifically sound and efficient, socially acceptable methods and technology, which should be made universally and easily accessible to all the individual and families in the community through their full involvement and active participation. It should be made available to the community at the cost that they can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It is the central focus and main function of any country's health care system. It is also indispensable for the overall growth and development of the community. It establishes the first level of contact of individuals, the family and community with the national health system and consequently tries to bring about health care within the closer proximity where people live and work and constitutes the very first element of a continuing health care process.
  - vii. Primary health care:
    1. reflects and evolves from the socio-cultural and political characteristics and economic conditions of the country and its communities. It is based on the application of the relevant results derived from the socio, biomedical and health services researches and public health experience;
    2. addresses the major health problems prevailing in the community and it provides essential promotive, preventive, curative and rehabilitation services accordingly;

3. includes basic education related to the prevailing health problems and the methods and techniques used for preventing and controlling these health problems. It also consists of promotion of adequate food supply and proper nutrition; an adequate supply of safe drinking water and other basic sanitation facilities, maternal and child health care services, including family planning and immunization programmes. These measures play a crucial role in providing cost effective treatment, quality health services at cheaper rates and in attainment of good health.
4. encompasses, in addition to the health sector, all other related sectors and dimensions of national and community development. These sectors include agriculture, animal husbandry, food supply, education, housing, industry, public works, communications, and other sectors. Health sector demands the coordinated efforts of all these sectors in order to meet the expected needs and demands of the people;
5. should be maintained through integrated, functional, operative and mutually supportive referral systems. It lead towards the progressive improvement of comprehensive health care for all the people and giving priority to those most in the need;
6. at local and referral levels, it relies on the health workers, which includes doctors, physicians, nurses, midwives, auxiliaries and community workers as required, as well as traditional practitioners as per the need. These health care givers are suitably trained socially and technically to work as a health care team and to provide and respond to the expressed health needs of the community.
- viii. National policies, strategic interventions and plans of action should be well formulated and implemented by all the governments. Primary health care should be sustained as an integral part of a comprehensive national health care system and it should be in coordination with all the other sectors. The exercise of political will is necessary to meet this end, to mobilize the country's resources and to make use of the available external resources rationally for the welfare of the people.
- ix. All the countries world-wide should cooperate and work in a spirit of partnership in order to ensure primary health care facilities for all people. In any one country the attainment and realization of the goal of good health directly or indirectly benefits the other countries of the world. In this regard, a joint report by WHO/UNICEF on primary health care services provides a strong ground for the

further development and operationalisation of primary health care throughout the world.

- x. By the year 2000 an acceptable level of health for all the people of the world can be attained only through a fuller and better utilisation of the world's resources. A considerable part of these resources is nowadays being spent on armaments and military conflicts. A genuine policy of peace, harmony, independence, détente and disarmament could and should release additional resources. These additional resources could well be devoted towards the achievement of peaceful aims and in particular towards the rapid acceleration of social and economic development, of which primary health care is an essential part and it should be allotted an adequate share.

The International Conference on Primary Health Care aimed for an urgent and effective action at national and international levels for overall development and adequate implementation of primary health care throughout the world and especially in developing countries with a spirit of technical support and cooperation. It urged governments across the world, international organisations such as WHO and UNICEF along with multilateral and bilateral agencies, funding agencies, non-governmental organisations, all the health care providers/workers and the entire world community to collaborate, facilitate and support national and international commitment towards improving accessibility of primary health care services, particularly in developing countries and channelizing increased technical and financial support to it. The Conference calls on all the aforementioned agencies and organisations to collaborate and cooperate in introducing, developing and maintaining a sustainable primary health care system according to the spirit and content of this declaration (WHO, 1978).

## **4.2 National Health Policies**

### **National Health Policy, 1983**

National Health Policy (NHP), which was adopted in 1983 mainly focused on the formulation of an integrated, inclusive and comprehensive approach towards future development of health services. These health services were required to be appropriately supported by medical education and research, with special focus on the PHC and related support services. The most significant achievement during the

Seventh Five Year Plan was in terms of establishment of an adequate health infrastructure, particularly in the rural areas. During the Eight Plan (1992-97), 'human development' was identified as the subject of main focus and health and population control were listed as two of six priority objectives. Emphasis was given on the fact that health care facilities must reach each and every individual by the end of eight plan. This plan also identified that peoples' initiative and active participation has a key role to play in facilitating primary health care services.

In 1992, a national conservation strategy and a policy statement on environment and development were formulated by recognising the importance of sustainable development and it was directed towards bringing environmental considerations into the development process. Relationships were established between poverty, population growth and the environment. In the NHP nutrition was identified as a problem that requires special attention and as result in 1993 a National Nutrition Policy was introduced with long and short term strategic interventions.

The family welfare programme which was vertically structured was required to be replaced by a more democratic and decentralised alternative programme. In 1994, a draft of national population policy was submitted to parliament and its revised report in 1996. This policy advocated a holistic, multi-dimensional approach for the stabilisation of ever increasing population, without setting any target for specific contraceptive methods except for achieving a national average Total Fertility Rate (TFR) of 2.1 by the year 2010. As a result, a radical shift has been noticed in the policy from centralized targets to decentralized approach. In order to support population policy a Population and Social Development Commission was also established (Ministry of Health & Family Welfare, 1983).

The recommendations of the ICPD (1994) were accepted by India and various international conventions were also ratified by the country for securing equal rights for women. After the World Summit on Survival, Protection and Development of Children in 1990, India also formulated a Plan for Action for Children in 1992 with actions and interventions that would directly and indirectly affect the child health.

Although the overall mortality rate of the country has declined considerably, the people continue to lead their life in one the poorest living conditions of the world. The health sector has been facing a number of constraints such as lack of adequate

resources, lack of an integrated support and coordination, poor participation of NGOs, inadequate laboratory and technological services, poor disease surveillance system and response systems and the requirement of heavy investment dealing with non-communicable diseases. The problem of gender disparity is still very much prevalent in various forms. The evidences of the declining female to male sex ratio, violence against women at the domestic and social level, social stereotyping and continuing discrimination against the girl child, adolescent girls and women portrays the current status of women in the society.

Thus, the period since the National Health plan was announced in 1983 has witnessed some of the major development in the country. There has been significant increase in the mortality as a result of various 'lifestyle' diseases- diabetes, stroke, cancer and cardiovascular diseases. With the increase in life expectancy, the requirement for geriatric care has also increased significantly. At the same time, the increasing burden of trauma cases is also turning out to be a major public health problem. Since 1983 several changes have been brought out in the health sector of the country and this has generated a situation in which the government undertook various steps to formulate a new policy framework known as the National Health Policy, 2002. However, the government failed drastically in realising the objectively defined goals and targets of health and it had to shift its directions and priorities under the influence of structural adjustment programme (SAP) of 1990s.

The decade of 1990s, known for several economic and structural reforms and moving towards liberalisation, privatisation and globalisation (LPG), resulted in important shifts even in the health policy. Three important things noted then were: (1) increasing participation of voluntary organisations and private corporations; (2) increasing the quality of care at tertiary level; and (3) user charges even at the public health care centres. Further, just at the turn of the century and arrival of the new millennium, the world got a new vision, in terms of the Millennium Development Goals (MDGs). Just as the Alma Ata Declaration was thrust behind the NHP, 1983, the MDGs became the thrust for the NHP 2002.

### **Millennium Development Goals (MDGs)**

At the beginning of the 21<sup>st</sup> century, Millennium Development Goals were designed and they had specific goals for the social transformation of the entire world. MDGs

were a set of numerical and time-bound targets, which were committed towards the measurement of achievements in human and social development. The MDGs had its origin from the Millennium Declaration which was produced by the United Nations. The Millennium Declaration was an attempt to outline the most ambitious agenda till date which was targeted towards the eradication of poverty and preventable disease, promotion of equitable development and protection of the earth's environment. In the Declaration it was asserted that each and every individual has the right to lead a life with freedom, dignity, equality and have access to a basic standard of living with essential civic amenities. Every individual's life should be devoid of hunger, disease and violence and encourage tolerance and solidarity. The MDGs were made to operationalise and implement these ideas by setting up targets and indicators for reducing poverty and improving health (McArthur, 2014).

MDGs were the eight international and development goals, which were agreed to be achieved by all 192 member states of United Nations and at least 23 international organisations by the year 2015. These eight goals were committed to the eradication of extreme poverty and hunger, achievement of universal access to primary education, protection and promotion of gender equality, gender parity and empowerment of women, reduction in the rates of child mortality, improvement in the maternal and child health, fighting against the killer diseases such as HIV/AIDS, malaria and other preventable diseases, ensuring environmental sustainability and establishment of a global partnership for sustainable growth and development. All these goals were directly or indirectly linked with the improvement in health status of individuals and communities. Major successes were achieved in terms of combating extreme poverty and hunger, improving enrolment rates in schools and health status of children and controlling spread of highly deadly and contagious diseases such as AIDS, Malaria and TB in almost all the developing countries- even in the poorest countries- showed that the MDGs were achievable (Ministry of Statistics and Programme Implementation, 2015).

The MDGs did not spoke everything that was needed to be said about health and environment. They said nothing about the importance of effective health systems which are essential for the achievement of all requisite health goals, as well as about reproductive health or communicable diseases. It is, therefore, have to be understood that MDGs were a form of shorthand for some of the most important and essential

outcomes that development should achieve. The health-specific goals of MDGs resulted in: fewer women deaths during childbirth; significant increase in the number of children surviving during the early years of life; dealing effectively with the catastrophe of HIV/AIDS; making life-saving drugs easily accessible to the people who are in need; and better health- in all its forms- making a major contribution to the reduction of poverty.

### **National Health Policy, 2002**

The second National Health Policy i.e. NHP 2002 came into existence as an aftermath of MDGs. There were several shortcomings in the NHP 1983 and therefore, the NHP 2002 was introduced which was a revised and highly improved version of the NHP of 1983. It incorporated several health-related goals and objectives, which were suggested by the MDGs. The NHP 2002 prescribed the following measures: (1) increase the expenditure in health sector to 6 per cent of Gross Domestic Product (GDP) and by the year 2010, 2 per cent of GDP would be contributed for the investment in public health; (2) to reduce the various forms of imbalances and inequities and maintain an equilibrium; (3) 55 per cent of the total health investment should be allocated for the primary health sector, whereas 35 per cent and 10 per cent for secondary and tertiary sectors respectively; (4) great emphasis needs to be laid upon the implementation of public health programmes through the participation and active involvement of local self-government institutions; (5) increased demand for specialists in the public health care and family medicine; (6) the ratio of nurses vis-à-vis doctors/beds requires to be improved; (7) welcoming the increase in the share of private sector in all the areas of health related activities; (8) emphasis on the need for simplifying and making the process easy for government civil society interfacing to enhance the involvement and participation of civil society in public health programmes; and (9) need for providing increased access of secondary and tertiary health service to users from overseas who have the ability to pay (Ministry of Health & Family Welfare, 2002).

However, it could not succeed in achieving the ‘objectively’ defined goals because of several reasons and lack of funds and poor infrastructure were important among them. The goal of eradication of poliomyelitis was missed, however, there was zero reporting of yaws since 2004. According to the standards of WHO, leprosy was

declared eliminated, however, more steps were required to be taken. Integrated Disease Surveillance Project (IDSP) was launched but the establishing of National Health Accounts and Health Statistics was still lagging behind. Moreover, IDSP was also going at a slow pace. Spending of state sector health did not increased much as planned from 5.5 per cent to 7.7 per cent of budget. The policy failed to address the women empowerment policy 2001 while prescribing measures for ensuring women health. In this policy enough attention was not paid towards women's health and similarly, child health, adolescents, old age group and issues of gender discrimination and violence failed to receive adequate concerns. School health programmes failed to generate desired results in majority of the areas. There was a serious mismatch between the analysis of situation and prescription of measures in the policy. There was remark on strengthening the primary health care system, but how this could be achieved was nowhere mentioned in the policy. This policy did not said anything about the issue of village health workers. Further, it failed to build a single platform for bringing anganwadi workers and other grass root level workers together.

### **National Health Policy 2017**

During the Five-Year Plans, the National Health Policy of 1983 and the National Health Policy of 2002 guided the approach for the health sector pretty well. Now, after 14 years since the last health policy, the context and the scenario has changed significantly in four major ways. First, the priorities in health sector are changing. Although there is significant improvement in the maternal and child health and their mortality rates have declined rapidly, the burden on account of non-communicable diseases and some infectious diseases is growing rapidly. The second major change is the robust growth of health care industry, which is estimated to be growing at the rate of double digit. The third change is the rising incidences of huge expenditure as a result of health care costs and at present it is estimated to be one of the major contributors to poverty. Fourth, the fiscal capacity has enhanced as a result of rising economic growth. Therefore, a new health policy was required in response to these contextual changes.

The main objective of the National Health Policy, 2017, is to prioritize and strengthen and provide information and clarification about the role that government needs to play in shaping health care systems in each and every dimension. These

dimensions includes enhancing investments in health care sector, prevention against diseases and infections, better organization and effective implementation of health care programmes and services and promotion of good health through multi-sectoral strategic interventions, encouraging medical pluralism, developing knowledge base for providing better health services, access to better technologies and its utilisation for health care, developing available human resources, developing better strategies for financial protection, strengthening regulation and health assurance. NHP 2017 builds on the progress that has been made since the last NHP 2002.

### **Goal**

The major goal of this policy is visualised as the attainment of the highest possible level of health and wellbeing for each and every individual of all the ages. This can be attained through a health care orientation in all the major developmental policies, which is preventive and promotive in nature and universal access to good quality health care services without anyone getting suffer from financial crisis as a consequence. Besides, there are number of other factors such as enhancing the quality of health care services and lowering the cost of healthcare delivery, which would play detrimental role in achieving this goal. Sustainable Development Goals (SDGs) have been recognised as of pivotal importance in this policy.

### **Key Policy Principles**

- i. Professionalism, Integrity and Ethics:** The policy is committed towards maintaining high standards of professionalism, integrity and ethics in the health care delivery system of the country. This needs to be supported by a credible, transparent and responsible regulatory environment.
- ii. Equity:** Reducing inequity would mean taking affirmative action to reach the poorest and marginalised sections of the society. It would mean to reduce disparity on the ground of gender, poverty, caste, disability and other forms of social exclusion.
- iii. Affordability:** With the increase in costs of care, affordability requires special emphasis. Health expenditure exceeding 10 per cent of its total monthly consumption expenditure is defined as catastrophic household health care expenditures

- iv. **Universality:** Prevention of exclusions on the grounds of social, economic or on current health status. In this backdrop, systems and services are envisioned to be designed to serve the needs of the entire population.
- v. **Patient Centred & Quality of Care:** Effective, safe, convenient and gender sensitive healthcare services should be provided with dignity and confidentiality. There is need to develop and disseminate standards and guidelines for all levels of facilities. A system is required to be established to ensure that the quality of healthcare is not compromised.
- vi. **Accountability:** In both public and private health sectors, financial and performance accountability should be taken. There needs to be transparency in decision making and health care systems should be completely devoid of corruption.
- vii. **Inclusive Partnerships:** A multi-stakeholder approach is needed, which would involve effective partnership and participation of all non-health ministries and communities. This approach would also include partnerships with academic institutions as well as not for profit agencies.
- viii. **Medical Pluralism:** When appropriate and when the patients chooses so, would have access to AYUSH care providers. It should be based on documented and validated local, home and community based practices. These systems would also get government support and assistance in research to develop and enrich their contribution in order to meet the national health goals.
- ix. **Decentralization:** The power of decision making needs to be decentralised to a level which is in consistency with the institutional capacity and other practical considerations. At the same time, community participation is also need to be promoted in the health planning processes.
- x. **Dynamism and Adaptiveness:** The dynamic organization of health care system needs to be improved constantly on the basis of new knowledge and learning acquired from the communities and from national and international knowledge partners.

### Objectives

A concerted policy action in all the sectors to improve the health status and special emphasis would be given on the quality of the preventive, promotive, curative, palliative and rehabilitative services that are provided through the public health sector.

**I. Progressively achieve Universal Health Coverage**

(a) Assurance has been given that for preventing and curing all the aspects of reproductive, maternal and child health care and adolescent health and the most prevalent communicable, non-communicable and occupational diseases in the population, availability of free, comprehensive primary health care services would be provided. The Policy also envisioned about the maximum utilisation of existing manpower, human resources and infrastructure as available in the health sector. Further, it has been advocated that for the effective and efficient delivery of health care services collaboration would be done with the non-government sector and every family would be provided with a health card to enable them to have access to a doctor of their choice from amongst those volunteering their services.

(b) The secondary and tertiary health care services can be made easily accessible and affordable to the people by enhancing the quality of public hospitals. In the health deficit areas the government can strategically purchase facilities and services.

(c) Significantly reducing out-of-pocket expenditure resulting due to costlier health care services. Also, achieving reduction in the proportion of households which are experiencing catastrophic health expenditures and consequently suffering from poverty and impoverishment.

**II. Strengthening trust in Public Health Care System:** The trust of the common man needs to be reinforced in public health care system and this objective can be achieved by making health system more predictable, patient-centric, efficient, affordable and cost-effective, with an overall package of services and products that would help in meeting the immediate health care needs of most people.

**III. Alignment of growth and development in private health care sector with public health goals:** The growth and operation of the private health care sector and medical technology needs to be influenced in order to ensure its alignment with public health goals. The private sector should be enabled to contribute in making health care systems more effective, efficient, rational, safe, affordable and ethical. Government should adopt strategic purchasing in order to fill critical gaps in public health systems and this would create an increasing demand for private health care sector.

**IV. Specific Quantitative Goals and Objectives:** In this policy, the indicative, quantitative goals and objectives have been outlined under the three broad components viz. (a) health status and programme impact, (b) performance of health systems and (c) strengthening of health system.

**(a) Health Status and Programme Impact**

**i. Life Expectancy and Healthy Life:** By 2025 it has been planned to increase life expectancy from 67.5 to 70. A system for regular tracking of Disability Adjusted Life Years (DALY) Index as a measure of burden of disease is planned to be established and its trends by major categories by 2022. Further, by 2025 it has been targeted to reduce TFR to 2.1 at national and sub-national level.

**ii. Mortality by Age and/ or Cause:** It has been targeted to reduce Under Five Mortality to 23 by 2025, MMR from current levels to 100 by 2020. Further, a reduction in infant mortality rate to 28 by 2019, neo-natal mortality to 16 and reducing still birth rate to “single digit” by 2025.

**(b) Reduction of Disease Prevalence/ Incidence:** A plan has been put forward for achieving the global target of 2020 which is also known as target of 90:90:90, for HIV/AIDS. As per this target, 90 per cent of the patients having HIV should be aware about their HIV status. Further, 90 per cent of all people diagnosed with HIV infection should be provided with the sustained antiretroviral therapy and 90 per cent of all people receiving antiretroviral therapy would have viral suppression by 2020. Targets have also been set for achieving and maintaining the elimination status of Kala-Azar by 2017, Filariasis in endemic pockets by 2017 and Leprosy by 2018. Also, it has been targeted to achieve and maintain a cure rate of more than 85 per cent in for new TB patients and to reach its elimination status by 2025. Besides, it has also been aimed that by 2025 the premature mortality resulting from metabolic and chronic diseases should be reduced by 25 per cent.

**(c) Performance of Health Systems**

**i. Coverage of Health Services:** By 2025 increase in the utilization of public health facilities by 50 per cent from current levels. Sustained coverage of antenatal care to be above 90 per cent and availability of skilled attendance at birth above 90 per cent by 2025. Full immunization of more than 90 per cent of the newborn by one year of age by 2025. At

national and sub national level, meeting above 90 per cent needs of family planning by 2025.

- ii. **Cross Sectoral goals related to health:** The prevalence of current usage of tobacco to be reduced by 15 per cent by 2020 and 30 per cent by 2025. The prevalence of stunting among under-five children to be reduced by 40 per cent by 2025. All having access to safe water and sanitation by 2020 (Swachh Bharat Mission). The occupational injury to be reduced to half from current levels of 334 per lakh agricultural workers by 2020.

#### (d) Strengthening of Health System

- i. **Health Finance:** Increment in the health expenditure from the existing 1.15 per cent of GDP to 2.5 percent by 2025. States are directed to spend more than 8 per cent of their budget in the health sector by 2020. By 2025, reduction in the proportion of households facing catastrophic health expenditure due to health care cost from the current levels by 25 per cent.
- ii. **Health Infrastructure and Human Resource:** In high priority districts the availability of paramedics and doctors should be ensured as per the norms of Indian Public Health Standard (IPHS) by 2020. Increase in the number of community health volunteers as well as establishment of primary and secondary care facility as per the norms of IPHS in high priority districts by 2025.
- iii. **Health Management Information:** Ensuring and maintaining the electronic database of information on the components of health system at the district level by 2020. The health surveillance system needs to be strengthened and the registries for diseases of public health importance should be established by 2020. By 2025, integrated health information architecture i.e. Health Information Exchanges and National Health Information Network would be established.

#### Policy Thrust on Urban Health Care

Addressing the issue of primary health care needs of the urban population has been prioritised in this national health policy and special focus would be on the poor populations living in listed and unlisted slums, other vulnerable sections of the population such as homeless, street children, construction workers, rag-pickers, etc. In urban health care the utilisation of AYUSH personnel would also be prioritised. For

the efficient and effective delivery of urban health care services, the policy recommended developing sustainable models with the partnership of profit and not for profit sectors because the private sector is highly active in the urban India. In the urban health policy, the priority would be on achieving the confluence among the various determinants of health. These determinants would be controlling air pollution, better technology for solid waste management, safe drinking water, better housing facilities, safety at workplace, control of vector, road safety, reduction in violence and urban stress. For developing smart cities, these dimensions would also play a significant role. In the peri-urban areas, the health care needs of the people would also be addressed under the NUHM. Further, NUHM would also address the highly predominant Non-Communicable Diseases (NCDs) like hyper tension, diabetes in urban areas through planned early detection. In the urban health strategy, providing better secondary prevention would also be an integral part. The capacity building of the community based organizations and establishment of an appropriate referral mechanism, improved health seeking behaviour would also be important components of this strategy.

#### **Focus on National Health Programmes**

**RMNCH+A services:** Maternal and child health is the reflection of the entire spectrum of social development. The policy strongly recommended for strengthening the general health systems in order to prevent and manage the maternal complications and to ensure continuous care and emergency services for maternal health. With the help of various developmental actions, this policy tries to address the social determinants for comprehensively addressing the factors that affect the maternal and child survival.

**Child and Adolescent Health:** The policy endorsed for achieving the neonatal mortality targets and ‘single digit’ stillbirth rates through improved home based and facility based management of sick newborns. Proper screening and effective treatment of birth defects, growth related problems and genetic diseases among children must be ensured at district hospitals. The policy is committed towards providing pre-emptive care in order to achieve highest levels of health for child and adolescent. In this policy school health programmes as well as health and hygiene have been envisioned as being made an essential part of the school curriculum. The policy envisages the health challenges of adolescents as a main focus area and emphasises on long term

investment in their health care. The policy expanded the scope of reproductive and sexual health in order to address the issues like inadequate dietary intake, poor nutritional status and psychological problems linked with the misuse of technology, etc.

**Strategic Interventions for Addressing Malnutrition and Micronutrient**

**Deficiencies:** Malnutrition among children, particularly micronutrient deficiencies, impairs their proper growth, development and survival. Malnutrition is one of the most common determinants of morbidity and mortality in the poor, socially marginalized and the vulnerable sections of the population. Consequently, the number of productive beings reduces substantially. Thus, in order to address the issue of micronutrient deficiencies, the policy declare a well-planned strategy on micronutrient interventions. Emphasis would be on minimising micronutrient malnourishment and fostering interventions like supplementation of micronutrient, food fortification, screening for anaemia and public awareness. A systematic approach is needed to address the diversity in micronutrient adequacy and in this approach special focus would be on the more vulnerable sections of the population across the country. Hence, the policy advocated for screening of multiple micronutrient deficiencies. The consequences of deficiencies are particularly severe and many are irreversible during the critical period of pregnancy, lactation, early childhood, adolescence and old age. While diversity in dietary intake is the most desirable way to fulfil the nutritional gaps, micronutrient supplementation and food fortification are needed to be considered as the short and medium term solutions. More intensification in the current efforts of distribution of Iron Folic Acid (IFA) supplementation and calcium supplementation during pregnancy and Vitamin A supplementation, iodized salt, Zinc and Oral Rehydration Salts/Solution (ORS) for children are required. In order to reach every beneficiary more sustained efforts are needed to be made and this in turn requires that intensive monitoring mechanisms are needed to be set up. The policy advocates for developing strong evidence base for estimating the burden of collective micronutrient deficiencies and correlating it with disease burden, particularly, for understanding the causes of anaemia. Policy recommended that *anganwadi* and schools should be used as centres for addressing deficiencies through exploring fortified food and micronutrient sprinkles. The policy recognised the importance of different platforms for performing the complementary role in various nutrition-

sensitive interventions and called for synergistic inputs from departments like Women and Child Development, Education, WASH, Agriculture and Food and Civil Supplies. The policy envisioned that the Ministry of Health and Family Welfare would monitor and ensure that nutrition-sensitive and nutrition-specific interventions are effectively carried out in order to attain optimal results.

**Universal Immunisation:** Focus would be on improving immunisation coverage, providing vaccine security with quality and safety and introducing newer vaccines based on epidemiological considerations according to National Vaccine Policy 2011. The emphasis would be on building upon the success of mission Indradhanush and strengthening it.

**Communicable diseases:** The policy recognised the association between the control programmes of communicable disease and strengthening of public health system. The policy advocated that for effective implementation and operation of Integrated Disease Surveillance Programme, the districts need to respond according to the communicable disease priorities in their locality. This could be possible through developing a network of well-equipped laboratories supported by tertiary care centres and enhanced public health capacity to respond to the disease outbreaks.

**Control of Tuberculosis:** The policy recognised HIV and TB co-infection and increased cases of drug resistant tuberculosis, which pose a greater threat in controlling Tuberculosis. The policy calls for early screening and more active detection of TB and involving greater participation of private sector along with the preventive and promotive action at the workplace and other living conditions. Access and availability of free drugs would need to be supplemented by other positive actions so that the treatment is carried transmission of resistant strains are contained.

**Control of HIV/AIDS:** In all the policies and programmes till now the major focus was on preventive measures in order to control HIV/AIDS. However, this policy recommended that interventions should be formulated in such a manner that emphasis is on identifying the communities and geographical areas which are at higher risk of HIV/AIDS. The list of essential medical drugs would include antiretroviral (ARV), Hep-C in order to facilitate the treatment of people living with HIV/AIDS.

**Leprosy Elimination:** In order to eliminate the leprosy and achieve the global goal of reducing grade 2 disability to less than 1 per million by 2020, the proportion of grade-

2 cases amongst new cases will determine the level of community awareness and health systems capacity, keeping in mind the. Accordingly, the policy calls for proactive measures for achieving the target of eliminating leprosy from India by 2018.

**Vector Borne Disease Control:** The increasing challenge of drug resistance in Malaria has been recognised by this policy and therefore, recommendations are made for introducing changes in the treatment regimens with logistics support. With strong inter-sectoral collaboration, acceleration is provided to New National Programme which has been launched for prevention and control of Japanese Encephalitis (JE)/Acute Encephalitis Syndrome (AES).

The close association between communicable disease control programmes and strengthening of public health system has been recognised by the policy. A strong public health system is required for proper implementation and functioning of each one of these programmes and in return, these programmes strengthen the health care system.

**Non-Communicable Diseases:** The policy recognises the growing incidence of chronic diseases and therefore, calls for halting and reversing this process. Recommendations are being made for setting up a National Institute of Chronic Diseases including Trauma, in order to generate evidence for adopting cost effective approaches and to obtain best possible results. This policy supported an integrated approach for reducing the morbidity and preventable mortality through screening of the most prevalent NCDs with secondary prevention. This would be assimilated into the extensive primary health care system with linkages to specialist consultations and follow up at the primary level. Focus would be on ensuring medication and access on a 'round a year' basis for some chronic illness. The policy would not only focus on the diagnosis and monitoring of hypertension and diabetes, but it would also try to address the severe health problems such as various forms of cancer and Chronic Obstructive Pulmonary Disease (COPD). The policy also emphasised on conducting research for holistic development in health care. It emphasised on mainstreaming AYUSH and developing it as an integral component of health care. AYUSH being safe and cost-effective possess a strong potential for prevention, cure and therapy. Moreover, the policy is committed towards supporting programmes for prevention against diseases like blindness, oral health, deafness, fluorosis and sickle cell

anaemia, etc. To meet the health care needs of the old age group, the policy committed itself to adopt culturally appropriate solutions for them. For dealing with all geriatric illnesses, this policy recognised the increasing need for palliative and rehabilitative care and advocated for the continuity of these care across all the levels. The policy envisaged to encourage and promote awareness about the voluntary organ donations in order to meet the critical need and growing demand of tissue and organ transplant in the country.

**Mental Health:** This policy focused on the provisions of the National Mental Health Policy 2014 and at the same time envisaged to take action on the following fronts:

- i. With the help of public finances creation of more specialists and special rules should be formulated to give preference to those who desire to give their services in public systems.
- ii. At primary level a strong network of community members should be created in order to provide psycho-social support to strengthen mental health facilities and
- iii. In areas where there is lack of well qualified and efficient psychiatrists, leverage digital technology would be used.

**Population Stabilisation:** In order to achieve successful population stabilisation, the policy recognised that improving access, education and empowerment would play a detrimental role in attaining this goal. The policy asserted that instead of providing services in camps where there are problems of quality and dangers for safety and dignity of women, these services should be made available on any given day of the week which is fixed for it. The policy also calls for increasing the proportion of male sterilisation from current level of less than 5 per cent to at least 30 per cent.

**Women's Health and Gender Mainstreaming:** The policy is committed to make more provisions for reproductive morbidities and other health care needs of women who are above 40 years of age.

**Gender based violence (GBV):** By making public hospitals more women friendly and its health workers oriented towards gender sensitive issues, the policy is committed to strengthening women's access to better health care services. This policy has taken note of and shown concern towards the seriousness associated with the variety of consequences of GBV and recommended that free health care services

needs to be provided to the survivors/ victims with all dignity in the public and private sector.

Besides, the aforementioned goals, principles, objectives and programmes, the NHP 2017 is also committed towards several other aspects related with the public health. This policy calls for better response to disasters, whether natural or man-made, and building effective capacity for emergency management. The policy recommended that the government should establish new medical colleges, AIIMS and other medical institutions countrywide in order to deal with the issue of regional disparity and expand the provisioning of tertiary services in public health sector. This policy proposed for starting the certification programme for ASHAs so that they can be given preferential selection into ANM, nursing and other paramedical courses. The policy is in support of creating Public Health Management Cadre in all the states which would be based on public health or related disciplines. In this policy, the effective management of human resource has been recognised as an important tool in boosting and strengthening of health care system. Therefore, the policy is determined in continuing the medical training and nursing education of health care providers, particularly to those who are working in the remote or rural areas. The health insurance schemes financed by the government should be aligned in order to provide secondary and tertiary care services benefit package purchased from public, not for profit and private sector in the same order of preference, which is subjected to availability of quality services on time. The policy also suggested for capacity building and skill development programmes for strengthening the health care system. Only effective implementation and monitoring of policy makes it good. In order to fulfil the commitments that have been made in this policy, an implementation framework is essentially required to be put into place. For achieving the goals of the policy such an implementation framework would set a roadmap with clear-cut milestones (Ministry of Health & Family Welfare, 2017).

### **4.3 Health Care Programmes**

Various vertical health programmes were launched by the GOI for controlling and eradicating various diseases depending upon the urgency of situation. Presently the focus is on high morbidity due to communicable diseases, high burden of diseases due

to non-communicable diseases and nutritional problems. The focus is also on the unmet needs for contraception and high unwanted fertility.

The National Malaria Control Programme was launched by GOI in 1953 and it was converted into National Malaria Eradication Programme (NMEP) in 1958. In North-eastern states and some other high-risk areas, an intensified Malaria Control Project (IMCP) was implemented to make the diagnosis and treatment accessible in remote areas. National Leprosy Control Programme (NLCP) was launched by the GOI in 1955. The programme was redesigned into National Leprosy Eradication Programme (NLEP) in 1983. Further, India has the largest number of active TB cases and accounts one-fifth of the global TB incidence. Since 1962, National Tuberculosis Control Programme (NTCP) has been operational to control TB. On 26 March 1977 the Revised National Tuberculosis Control Programme (RNTCP) was launched to control and eliminate TB and this programme received assistance for its operation from the World Bank, DFID (Department for International Development), USAID (United States Agency for International Development), GDF (Global Drug Facility) and GFATM (Global Fund for AIDS, Tuberculosis and Malaria).

The GOI is implementing the National Iodine Disorder Programme (NIDDCP) also, which was formerly known as National Goiter Control Programme (NGCP) since 1962. In 1975-76, the National Cancer Control Programme was launched with the primary aim of prevention, early detection of the disease, providing treatment and rehabilitation. The focus of the revised programme which was completed in December 2004 is to provide cancer care facilities equally across the country. In India, several mental disorders such as schizophrenia, bipolar disorder, organic psychosis and major depression affect nearly 20 per 1000 population. To address the huge burden of mental diseases, National Mental Health Programme (NMHP) was started in 1982.

2 to 3.1 million people are estimated to be infected with HIV in the country. In the years 2006, a revised estimate showed that almost 0.36 per cent of the adults have been living with HIV. The largest proportion of HIV infected persons is in four states namely Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu with almost 63 per cent of the HIV infected persons living in these states. Under the National AIDS Control Programme, many interventions were taken by the government to

control and combat AIDS. In order to interrupt the transmission of HIV among highly vulnerable sections of the population which comprises of injecting drug users, commercial sex workers, men who have sex with men, truckers and migrant workers, the Targeted Intervention (TI) projects have been launched by the government. In the National AIDS Control Programme one of the most essential parts is the blood safety activities. For all the blood units, it is mandatory to be tested against the five blood transfusion transmissible infections (TTIs), which include HIV, Hepatitis-B, Hepatitis C, malaria and syphilis. Under HIV/AIDS programme, the promotion of condom usage is central and essential component. During NACP-III, it has been targeted to distribute 3.5 billion condoms. In order to bring about behavioural change in the people, NACO is working towards a strategy which would involve active participation at community level.

Besides the above mentioned programmes, in 1990-91 the GOI started 'kala azar' control programme which had the provision of providing support for buying insecticide and anti-leishmanial drugs. The severity of kala azar is high in the states of Bihar, West Bengal and in some parts of Uttar Pradesh. The NHP 2017 envisaged a goal of kala azar elimination by the year 2017. Further, Pulse Polio Immunisation (PPI) was launched in 1995-96 to cover all the children below the age of three years. However, the target group was increased from three to five years from 1996-97 to increase the speed of polio eradication (Akram, 2014).

The major health care programmes, particularly addressing the issues of urban health, women and child health have been discussed below in detail.

### **Integrated Child Development Services (ICDS) Programme**

India's Integrated Child Development Services (ICDS) is a centrally sponsored scheme that has been the Government of India's (GOI) flagship programme since 1975. This programme was launched with an aim to address the holistic needs of the children and this programme is one of the largest child development programmes in the world. This programme offers a wide range of services to fulfil the health and nutritional needs of the children up to 6 years of age. Further, it also serves to cater the health care needs of pregnant and lactating women and now the programme has also been extended to cover adolescent girls. At the same time, ICDS has also laid down the framework for the overall physical and mental development of children 0-6

years through providing non-formal preschool education for children between 3-6 years and through the provision of nutritional and health education to their mothers. It is committed towards breaking the vicious cycle of malnutrition, morbidity, impairment of growth and mental development, reduced learning capacity and mortality. Another important aspect element of this scheme is that under ICDS all the services are delivered at the community level through *Anganwadi* Centres (AWCs) (Gangbar, Rajan and Gayithri, 2014).

### **ICDS Policy Overview**

**Infrastructure:** ICDS delivers a comprehensive range of services specifically focused on health, nutrition, and education and these services are delivered by *Anganwadi* Workers (AWWs) at *Anganwadi* Centres (AWCs) at the community level. In an area, on the basis of the number of beneficiaries AWCs are established. As per the norms of AWCs, one AWC is meant to cater the needs of 400-800 beneficiaries. However, in the areas where it is difficult-to-reach such as the North East region of the country, the norms changes for one AWC from 400-800 beneficiaries to 300-800 beneficiaries.

**Funding Patterns:** Under the ICDS scheme, a top-down model is followed for the funding patterns which divided this programme into two major components: ICDS General (G), and ICDS Supplementary Nutrition (SN). ICDS (G) is meant to cover the costs required for the operation of the programme, whereas, ICDS (SN) dealt with the supplementary nutrition component of ICDS. The norms that govern the funding of these two components of the programme differed from one other and these norms have also evolved over a period of time. From 2009 onwards, ICDS (G) received 90 per cent of its funding from the Central government and the remaining 10 per cent is being covered by the respective state government. Prior to 2009, 100 per cent of the funding for ICDS (G) came from the central government. However, for ICDS (SN) the norms have evolved over time. Prior to 2005-06, no central assistance came for ICDS (SN) and from 2005/06-2008/09 there is a 50:50 Central-State contribution. Still, this norm is applicable across all the states of the country, however, for the North Eastern states from 2009-10 onwards this norm has changed and now Central-State contribution for supplementary nutrition is 90:10.

**Nutritional Component:** The ICDS (SN) component is one of the essential and largest elements of the ICDS programme. All the eligible beneficiaries are provided supplementary feeding for 300 days per year. The main aim of this component is to improve the average dietary intake of children, adolescent girls and pregnant and lactating women and address the issue of protein-energy gap. The norms for the per day expenditure on every beneficiary for ICDS (SN) fall under 3 categories: (1) children in the group of 6-72 months (2) severely malnourished children in the age group of 6-72 months and (3) pregnant and lactating women. After 2008 several revisions have been made in these norms. For category 1 the daily expenditure has been increased from Rs 2 to Rs 4, whereas daily expenditure for category 2 increased from Rs 2.7 to Rs 6 and for category 3 it increased from Rs 2.3 to Rs 5. Exclusive breastfeeding is emphasised for the children for the first six months, whereas children between 6 months to 3 years are given wheat or rice as Take Home Ration (THR). Lastly, at AWCs children in the age group of 3-6 years are provided with hot cooked meals.

**Policy Goals and Measurement:** The main objective of the ICDS programme is to improve the health and nutritional status of children aged 0-6 years as well as of pregnant and lactating mothers and adolescent girls. The key output indicators of the scheme are related to the anthropometric measurements and infant mortality rate.

Although, ICDS was originally designed to cater the needs of rural communities, but now the presence of ICDS has also been substantial in the urban areas, particularly in the poor urban slums and squatter settlements. In the urban landscape, AWCs are playing a key role in providing health and nutrition services to children as well as women. In the current scenario, there is almost near universalisation of ICDS and out of 7075 approved ICDS projects nearly 7067 (99.89 per cent) projects are covered under the ICDS scheme. Further, almost 13.60 lakh AWCs (97.14 per cent) out of 14 lakh across all the states of India are covered under ICDS scheme. However, out of all these, for urban areas there are just 755 ICDS projects and 11, 7411 AWCs sanctioned all over the country.

Since the very beginning, an apparent gap in the policy implementation greatly hindered the ICDS and its efficiency, which even today continues to remain a major challenge. At the all-India level it has affected the overall performance of the

programme. The factors that are responsible for sustained policy-implementation gap and the effective performance of ICDS are: (1) Poor allocation of resources (2) Poor governance and (3) Programmatic deficiencies. As a result of these aforementioned challenges, the Supreme Court of India in the year 2001 issued an interim order which stated that the ICDS programme was needed to be universalised and by 2004 the implementation of this order come into effect (Mohmand, 2012). With the universalisation of ICDS programme, a new challenge has been created for the implementing bodies of the programme as not only expansion of the programme is needed, but also it has to be ensured that this expansion is with quality. In a research on ICDS it has been highlighted that the universalisation of ICDS and the effectiveness of its implementation rests on the quality with which the programme is universalised (Drèze, 2006). Various studies have been conducted to assess the implementation and monitoring of ICDS programme. These studies highlighted that there are number of programmatic deficiencies, for instance children in the age group of 0-3 years were neglected, excessive focus on the Supplementary Nutrition Programme, poor coverage of the programme and at the field level overburdened/under-trained human capital and these deficiencies bear a huge impact on the quality implementation of programme. Therefore, it is imperative to analyse the technical efficiency and effective implementation of the ICDS scheme and how well the resources are being utilised by the government in order to achieve its intended targets, outputs and outcomes as they relate to ICDS, as well as, the health and nutritional status of children and women.

### **National Urban Health Mission (NUHM)**

On 1<sup>st</sup> May 2013, the Cabinet approved one of the most important health interventions in urban areas known as the National Urban Health Mission (NUHM) and launched it on 20<sup>th</sup> January, 2014. NUHM is launched as a sub-part of National Health Mission (NHM) and it is envisioned towards targeting the urban population with specific focus on the urban poor and slum dwellers to fulfil their health care needs by providing them with necessary primary health care services and reducing their out-of-pocket expenditure on treatment. This goal could be achieved by strengthening the health care system in the urban areas. Moreover, the slum dwellers and urban poor would be specifically targeted as they are the highly vulnerable segments of the urban population. It emphasised on convergence of the various schemes and programmes

associated with the wider determinants of health such as drinking water, sanitation, school education, food security, maternal and child health, environmental conditions, occupation, etc. implemented by the Ministries of Human Resource Development, Urban Development, Housing & Urban Poverty Alleviation, and Women & Child Development.

NUHM is dedicated towards improving the health status of the urban population especially slum dwellers and other vulnerable groups of the urban areas by improving their access to quality primary health care services. Under NUHM, all the state capitals, district headquarters and other cities/towns with a population of 50,000 and above (as per census 2011) would be covered in a phased manner. Cities and towns having population less than 50,000 would be covered under NRHM (Ministry of Health & Family Welfare, 2013).

#### **NUHM Goals**

- To fulfil the varied health care demands and needs of the urban poor, slum dwellers and other vulnerable sections of the urban areas, a need based urban health care system specifically focusing on urban population would be established.
- To deal with the health related issues and challenges of rapidly increasing urban population, an efficient institutional mechanism and effective management systems would be developed.
- Developing partnership with local bodies and more active involvement and participation of communities in planning, implementation, and monitoring of health care programmes and health related activities.
- Easy accessibility and availability of resources for providing quality primary health care services to urban population, particularly to urban poor.
- Establishing partnerships with NGOs and other health service providers either for profit or not for profit and capacity building of other stakeholders.

#### **NUHM Framework for Implementation**

NUHM has been launched as a sub-mission of NHM to effectively and efficiently address the health care issues of the urban poor population. For NUHM, the Mission

Steering Group of the NHM would be expanded to work as its apex body. All the Municipal Corporations, Municipalities, Notified Area Committees, and Town Panchayats would function as a unit of planning and they would have their own approved broad norms for setting up of health care facilities. The Notified Area Committees, Town Panchayats and Municipalities would have the separate plans and their plan would become part of the District Health Action Plan drawn up for submission NUHM. There would be a separate plan of action for the Municipal Corporations in the urban areas as per the broad norms. In order to fulfil the needs of sub-mission NUHM, all the existing structures and mechanisms of governance working under NHM would be suitably adapted by NUHM. Each community/slum would be having community worker called Urban Social Health Activist (USHA). At the household level, access to improved health care services would be facilitated through self help groups and community based groups like Mahila Arogya Samitis.

#### **NUHM Cover**

All the state capitals, districts and cities/towns having a population above 50,000 would be covered under NUHM. NUHM would mainly focus on urban poor residing in slums, squatter settlements and other marginalised and vulnerable groups like rickshaw pullers, street vendors, homeless people, sex workers, rag pickers, street children, destitute, construction site workers, etc.

#### **Funding Pattern**

The centre-state contribution to the funding of NUHM would be 75:25 for all the States, however, with the exception of North-Eastern states and other special category states of Jammu & Kashmir, Uttarakhand and Himachal Pradesh, for whom the centre-state contribution would be 90:10. The Ministry would apprise and approve all the Programme Implementation Plans (PIPs) sent by the states (Ministry of Health & Family Welfare, 2013).

#### **Rashtriya Swasthya Bima Yojana (RSBY)**

RSBY has been launched by Ministry of Labour and Employment, GOI, from 1 April 2008 to provide health insurance coverage for below poverty line families. The primary objective of RSBY is to provide BPL households with a protection against financial liabilities and out-of-pocket expenditure, which has risen as a result of health shocks that involve hospitalisation. Under RSBY, in most of the diseases for which

the patient is required to be hospitalised, the beneficiaries are entitled to avail hospitalisation coverage up to Rs. 30,000. The package rates have been fixed for various interventions by the government. There is no provision of age limit and from the day one onwards the pre-existing conditions are covered. This scheme provides coverage to five members of the family, which includes the head of the family, his spouse and up to three dependents. The beneficiaries have to pay only registration fee which is Rs 30, while the premium is being paid by the central and state governments to the insurer and these insurers are selected in a competitive bidding by the state government (Akram, 2014).

Today, under RSBY almost 60 million people are being provided with coverage for hospitalisation in the country and it is one of the largest health insurance schemes in the world. Most of the people covered under this scheme are living below poverty line and cannot afford high cost health care. However, what is more important than its scaling is the innovative approach which is being adopted to provide health care services to the poor. It uses reliable technology that can easily identify the beneficiaries and verify transactions with a public-private partnership. Further, the incentives for all stakeholders are appropriately aligned. In the first few years of the programme, it has been indicated that voluntary enrolment rates is around 45 per cent and overall utilisation rate is also quite reasonable. This shows that the model is both functional and scalable. However, countrywide there are large variations in the outcomes. Despite the well-built framework and strengths of its design, more institutional capacity is required to efficiently supervise RSBY and improve the effectiveness of the system over the period of time. If this change could be incorporated in the scheme, then the positive outcomes of RSBY would not only be limited to health insurance and it could bring about a fundamental change in the manner in which the government delivers benefits and services to the India's poor (RSBY Working Paper Series, 2010).

### **Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)**

In 2013, RMNCH+A approach has been launched in order to address the major causes responsible for high mortality among women and children. It also essentially looked into the causes resulting in delays in accessing and utilising health care

services. Further, it also included the health interventions pertaining to adolescence, which was previously not much emphasised. The GOI formulated the strategic approach of RMNCH+A for developing a better understanding of ‘continuum of care’ and ensuring equal focus on every stage of life. In this strategic approach, for each thematic area priority interventions have been formulated to ensure that the inter-linkages between various stages of life are contextualised. Under this approach, various new interventions have also been introduced such as tracking down the performance by using Score Cards, addressing the public health issue of anaemia among all the age groups by launching National Iron + Initiative and conducting comprehensive screening for detecting and identifying defects at birth, diseases and deficiencies among children and adolescents and suggesting early interventions. The state governments have been made to emphasize more on the marginalized sections of the society made by the strategic intervention of RMNCH+A. It also focused on the fact that more efforts are needed to be enforced in the states where performance in terms of health indicators is very poor and those areas in the states should be recognised as high focus districts.

The three health outcome goals are relevant to the RMNCH+A strategic approach and these goals are: (1) by 2017 reducing the Infant Mortality Rate (IMR) to 25 per 1000 live birth; (2) by 2017 reducing the Maternal Mortality Ratio (MMR) to 100 per 100,000 live births; and (3) by 2017 reducing the Total Fertility Rate (TFR) to 2.1. A collective goal of reducing maternal and child mortality rates by 2017 was taken up by the government, however it could not be achieved. Moreover, it is quite apparent that there are wide differences in the progress being made within the states and districts. Therefore, it is essential that coverage targets should be specified in context to each state as against the existing baselines. The introduction of national and state scorecards have increased the transparency and track progress of maternal and child health indicators (Ministry of Health & Family Welfare, 2013).

### **Janani Suraksha Yojana**

Janani Suraksha Yojana (JSY) is an initiative launched under the National Rural Health Mission (NRHM) for ensuring safe motherhood. The main objective of this intervention is to promote institutional delivery among the poor pregnant women for reducing maternal and neonatal mortality. This yojana has been launched on 12 April

2015 and it is being implemented in all the states and UTs with special focus on low-performing states. This scheme is fully sponsored by central government and cash assistance is being provided along with delivery and post-delivery care. The significant increase in the number of institutional delivery among the poor families is one of the most important indicators of the success of this scheme. In the low performing states, ASHA has been recognised as an important link to bridge the gap between government and the poor pregnant women. Further, other states and union territories which are eligible for receiving benefits under this scheme could associate *Anganwadi* Worker (AWW) and Traditional Birth Attendants (TBAs) or ASHA like activists with this yojana for providing the services to poor pregnant women. The main focus of this scheme is to provide financial assistance and care during delivery and post-delivery to the poor pregnant woman and special privilege is being given to those states which have low institutional delivery rates which include the states of Uttar Pradesh, Bihar, Uttarakhand, Madhya Pradesh, Jharkhand, Chattisgarh, Assam, Rajasthan, Orissa and Jammu & Kashmir. While these states have been named as low-performing states (PGS), the remaining states have been named as high-performing states (HPS). Each beneficiary registered under this scheme should have a JSY card. It is mandatory for ASHA/AWW/any other identified link worker to prepare micro-birth plan under the overall supervision of ANM, the Mo and PHC. Under this programme, the delivering mother and the recommending ASHA for rural areas will get cash assistance of Rs 1,400 and Rs 600 respectively, after the first and second institutional delivery. The amount for the urban areas is Rs 1,000 and Rs 200, respectively (Ministry of Health & Family Welfare, 2015).

Although, the JSY has succeeded in significantly increasing the proportion of institutional deliveries; but this has not resulted into significant reduction in the MMR. It can be due to a weak and inefficient supply side, which failed to convert the situation of increased access to institutional births into reducing the proportion of maternal deaths, as mothers are not being provided with appropriate or adequate care. It is also likely that the mothers with life-threatening complications could not be drawn into institutions which is also a failure on the part of JSY and consequently most of such women delivered at home, resulting into persistent maternal mortality. Further, it is essential that studies should be carried out to examine how far JSY has increased the access of mothers with complications to institutional care. Moreover, it

is also important to translate the success of JSY in institutional birth coverage into reducing the maternal mortality outcomes by ensuring that all the women reaching an institution for delivery must receive good quality obstetric care (Randive, Diwan and De Costa, 2013).

### **Janani Shishu Suraksha Karyakaram**

On 1<sup>st</sup> June 2011, keeping in view the difficulty being faced by the pregnant women during delivery and the parents of sick new-born across the country, the Government of India launched Janani Shishu Suraksha Karyakaram (JSSK). This initiative addresses the issue of high out-of-pocket expenses being incurred by poor families on delivery and treatment of sick new-born. This major initiative has been taken by the Ministry of Health and Family Welfare (MoHFW) in order to develop a common consensus among all the state governments to provide completely free and cashless services in public health institutions to pregnant women including normal deliveries as well as caesarean operations and sick new-born (up to 30 days after birth) in both rural and urban areas. This scheme has been implemented in all the states and UTs.

#### **Key Features of the Scheme**

- Under the scheme, all the pregnant women who are accessing government health institutions for delivery are entitled to be provided with absolutely free, cashless and no expense for both normal delivery as well as caesarean operation.
- The pregnant women are provided with number of entitlements and it include free drugs and consumables, free diet during the stay in the hospital, free diagnostic services, and free provision of blood wherever required. This scheme also has the provision of free transport from home to health institution and in case of referral, free transport between facilities is provided and also drop back home. Similar entitlements have also been provided to all sick newborns (up to 30 days after birth), who will be availing treatment from public health institutions. The coverage of this scheme has also been expanded to sick infants.
- The target of this scheme is to get rid off the out-of-pocket expenses being imposed on the pregnant women and parents of sick new-borns while accessing health care services at public health institutions.

It has been estimated that this scheme would benefit more than 12 million pregnant women who would be delivering in Government health institutions.

Moreover, it is likely to motivate those people who could not afford the expenses of the delivery in hospitals, to opt for institutional deliveries rather than delivering at home. However, there is need to take further steps for increasing awareness pertaining to every aspect of JSSK among all the sections of the community in order to avail the maximum benefit of the scheme (Ministry of Health & Family Welfare, 2011).

### **Mission Indradhanush**

Mission Indradhanush has been launched by the central government on December 25, 2014 with an aim to significantly increase the immunization coverage. Between 2009-2013 the immunisation coverage has increased by only 1 per cent every year i.e. from 61 per cent to 65 per cent. Indradhanush mission has been adopted to accelerate the process of immunisation by covering 5 per cent and more children every year and to achieve the target of full immunisation coverage by 2020.

### **Objective**

The primary objective of mission Indradhanush is to cover all those children who are either unimmunised, or are partially immunised against vaccine preventable diseases by 2020. In India almost 26 million children are being provided free vaccines against 12 life threatening diseases every year under the Universal Immunisation Programme (UIP). Countrywide all the children are provided life saving vaccines free of cost in order to protect them against Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Pneumonia and Meningitis due to *Haemophilus Influenzae* type b (Hib), Measles, Rubella, Japanese Encephalitis (JE) and Rotavirus diarrhoea.

### **Implementation**

All the children who are either unimmunised or partially immunised would be covered by a focused and systematic immunisation drive through a “catch-up” campaign mode. The tetanus vaccine is also administered to pregnant women. ORS packets and zinc tablets are distributed to be used in the event of severe diarrhoea or dehydration among children. To boost up the child immunity, vitamin A doses are administered.

**Mission Indradhanush Phase I:** From 7<sup>th</sup> April 2015 onwards a weeklong intensified immunisation round was carried out for four consecutive months in 201 high focus districts. In this phase, above 7.5 million children were immunised, out of

which 2 million children were fully immunised. Over 2 million pregnant women were vaccinated for tetanus.

**The Phase II:** The phase II of mission Indradhanush was conducted in 352 districts with 279 being medium focus districts and the rest of 73 being high focus districts. From October 2015 onwards weeklong four special intensified immunisation sessions were conducted in these districts.

Almost 10.48 million children and nearly 3.8 million pregnant women were additionally immunised in the first two phases of mission Indradhanush. Further, almost 3.9 million children and above 2 million pregnant women were fully immunised. In some of the low performing districts more than 2.1 million rounds of special immunization were carried out.

**Phase III:** The phase III of mission Indradhanush was launched from April 2016 to July 2016 and it covered 216 districts across the country. In these districts four drives of intensified special immunisation were conducted for a week in each between April and July 2016. Those states were selected for this phase which had full immunisation coverage less than 60 per cent and high dropout rates. Besides children under-two years, this phase also focused on children under-five years. It also concentrated on boosting the DPT coverage and immunising pregnant women against tetanus.

The first three phases of mission Indradhanush carried out almost 2.8 million special rounds of intensified immunisation and it covered nearly 20.1 million children across 497 high focus districts. Apart from this almost 5.5 million pregnant women were given vaccine for tetanus. An increase of full immunisation coverage by 5 per cent to 7 per cent has been reported since the inception of mission Indradhanush.

**Phase IV:** From 7 February 2017 onwards the phase IV of mission Indradhanush was launched in the North-eastern states of the country and from April 2017 it has been rolled out in rest of the part of the country. All the four phases of Mission Indradhanush have reached out to more than 20 million children and 6.8 million pregnant women with life-saving vaccines. This mission is being supported by WHO, UNICEF and other donor partners. Adequate monitoring and evaluation of the scheme should be performed for its better functioning and execution (Ministry of Health & Family Welfare, 2014).

### **Rashtriya Bal Swasthya Karyakram**

Rashtriya Bal Swasthya Karyakram (RBSK) was launched in February 2013 and it aimed to cover children from birth to 18 years in order to provide them with early identification and early treatment for 4 'D's i.e. Defects at birth, Deficiencies, Diseases, Development delays. Under this scheme, 30 health conditions have been selected for screening, early detection and free treatment/intervention. The aim of RSBK is to reduce out-of-pocket expenditure of economically poor families. The children up to 6 years of age are specifically screened at District Early Intervention Centre ( DEIC ) level, while the children between 6 -18 years are provided with the necessary facilities through the existing public health centres. For both the age groups, DEIC acted as referral linkages. At all the delivery points, the first level of screening is done by the existing Medical Officers, Staff Nurses and ANMs. The screening of newborns after 48 hours of birth is done at home by ASHA for the first six weeks. The outreach screening of children up to 6 years is done by block level teams at *anganwadi* centres and screening of 6 - 18 years children is performed at school. Once the screening is done and the child is being referred by any identification centre, then it is ensured that free of cost necessary treatment/intervention is provided to the child.

Until 2015-16, nearly 180 million children were screened under RBSK and it was found that 2.3 million were afflicted with birth defects such as Down's syndrome, whereas 0.3 million were found to have developmental delays such as vision and hearing delays, motor and cognitive delays etc. Further, 1.7 million children were detected with nutritional deficiency such as anaemia, vitamin D deficiency, goitre, etc. As many as 5.9 million children were found to be having problems such as dental conditions, air-borne diseases, etc. Approximately 3.5 million children were reported to be treated at the government's expense (Ministry of Health and Family Welfare, 2015). It could be one of the most essential components of future health care in India by screening children with health conditions and providing them with the necessary treatment at the government's expense.

### **Facility Based Newborn and Child Care**

Two-third of the infant death results from neonatal mortality. With an aim to reduce the high neonatal mortality rate, an emphasis has been made on establishment of

facility based newborn care services at the health care centres. Under NHM, various newborn care units have been set up at different levels for providing health care facilities to sick newborn such as Special New Born Care Units (SNCUs), New Born Stabilisation Units (NBSUs) and New Born Baby Corners (NBCCs). States have been directed that there should be at least one SNCU in every district. These SNCUs have 12-20 beds, four doctors and 10-12 nurses for treating newborns. NSBUs are established at community levels for stabilisation of sick newborns and NSBUs have 4 beds, trained doctors and nurses. NBCCs are established at each delivering facility centre and these are attached to the labour room and are usually 1 bedded (Ministry of Health & Family Welfare, 2013).

### **Facility Based Integrated Management of Neonatal and Childhood Illness (F-IMNCI)**

Under F-IMNCI, the health personnel are empowered with the skills to provide appropriate services for treating newborn and childhood diseases at the community as well as facility level by integrating Facility based Care Package with the IMNCI package (includes of providing pre-service and in-service training to health providers and improving health care systems). It focuses on providing the adequate skills for managing inpatient and addressing the major causes responsible for early and high neonatal and childhood deaths such as asphyxia, pneumonia, malaria, low birth weight, diarrhoea, severe malnutrition in children, etc. For adequate implementation of this programme, Medical officers, Staff nurses and ANMs are given training for 11 days at CHCs and PHCs where deliveries are taking place (Ministry of Health & Family Welfare, 2013).

### **Home Based New Born Care (HNBC)**

Under this scheme, the ASHAs are provided incentives for delivering home based care services to newborns. As per the specified schedule the ASHA makes visits to the home of all newborns for the first 42 days of infant's life. For every home visit of around one hour duration, ASHA is given an incentive of Rs 50 and for five visits it would amount to a total of Rs. 250. The payment to them would be done after 45 days of delivery and it is subject to the fulfilment of the following services:

- recording the weight of newborn

- ensuring BCG and 1<sup>st</sup> dose of OPV and DPT
- both the mother and newborn are safe for till 42 days of delivery
- registration of birth has been done (Ministry of Health & Family Welfare, 2013).

### **3.19 Navjat Shishu Suraksha Karyakram (NSSK)**

This scheme has been launched to address the issues related with birth care i.e. prevention of infants against hypothermia and infection, encouraging the practice of early initiation of breast feeding among mothers and basic newborn resuscitation. For any neonatal program, one of the most essential components is the newborn care and resuscitation as it ensures the starting of safe and best possible life. The main objective of this initiative is to ensure the availability of a trained health personal at every delivery point for basic newborn care and resuscitation. Until this scheme the health personnel are given training for 2 days and it is expected that this scheme could be crucial in significantly reducing the neonatal mortality across the country (Ministry of Health & Family Welfare, 2013).

### **Nutritional Rehabilitation Centres**

Nutritional Rehabilitation Centres (NRCs) have been established to treat children suffering from Severe Acute Malnutrition (SAM). SAM is one of the major contributors of death among children suffering from common childhood diseases. Death caused by SAM can be reduced significantly by timely implementation of the appropriate actions. These NRCs would serve as a bridge between health institutions and home based care. NRCs have been set up with an aim to provide inpatient management for children who are severely malnourished as well as counselling of mothers to provide appropriate food to their children. It would provide institutional care to severely malnourished children and would also help in improving their physical, mental and social growth. Once the children show improvement, they would be sent back to their home for full recovery with time-to-time follow-up (Ministry of Health & Family Welfare, 2013).

### **4.4 National Nutritional Programmes**

Since independence various nutritional programmes have been launched in the country and these programmes have been briefly discussed below:

### **Applied Nutritional Programme**

Since independence, various nutritional programmes have been launched in the country. One of the earliest nutritional programmes was Applied Nutrition Programme (ANP). Initially, this programme was launched in Orissa in the year 1963, however, later on, in 1973 this programme was extended in all the states. Till date, this programme is the best formulated nutrition programme, however, it failed to achieve the desired results due to lack of proper management and implementation. Initially, this programme was centrally sponsored scheme but now it is being implemented by the states. In the recent years, a shift has been observed in the policy thrust, as a result of which the ANP has become a non-expandable and low priority programme than the other nutrition programmes, which are being implemented and executed by the states.

One of the primary objectives of this programme is to promote and enhance the production of nutritionally rich food such as fruits and vegetables. Moreover, it also aimed at increasing the consumption of nutritious food by the pregnant and lactating women. At the community and individual level, the programme aimed that self reliance approach should be developed. The main focus of the programme was at imparting nutritional education. Through concerted efforts and demonstration method the rural communities were being taught how to produce nutritious food for themselves. The beneficiaries of this programme are children who are in the age group of 2-6 years and pregnant, lactating and nursing mothers. For 52 days in a year, nutrition worth of 25 paise per day and 50 paise per day are being provided to children and women respectively. No specification has been made about the definite nutrient content. The central idea of this programme is to provide better seeds for production of nutritious food and encourage kitchen gardens and poultry farming, etc. However, this programme failed to produce any significant impact. Lack of access to suitable agricultural land, inadequate irrigation facilities along with low financial investment resulted in impairment of proper functioning of community kitchens and school gardens National Institute of Health & Family Welfare, 2014).

### **Balwadi Nutritional Programme**

Another nutritional programme named Balwadi Nutritional Programme was launched in 1970-71 under the department of social welfare. This programme was operated

through balwadis and day care centres which were being run by the voluntary organisations and these organisations were receiving grants from the government. It was a non-planned and non-expanding intervention of central government. Almost 5,000 balwadis were established to implement this programme. This programme was launched with an aim to provide pre-school children with about one-third proportion of their calorie and half proportion of their protein requirements in order to improve their nutritional and health status. The beneficiaries of this programme were pre-school children and priority was to children belonging to economically poor families. At the balwadis children were provided with the supplementary nutrition and each child was given 300 kilo calories and 10 g of protein for 270 days in a year. Besides the nutritional supplementation, other activities undertaken at balwadis include the social and emotional development of the children. With the universalisation of ICDS, balwadis are being phased out.

### **Special Nutrition Programme**

In 1970-71, the Special Nutrition Programme (SNP) was launched by the GOI. Initially, this programme was centrally sponsored scheme, but later it came under the vicinity of state government. Afterwards, continuous efforts were being made to convert the SNP centres as per the pattern of ICDS scheme and SNP was strengthened with better health and other related inputs. Under this scheme, almost 30.92 million people were benefitted. The main focus of this programme was to improve the nutritional status of children up to 6 years as well as pregnant and lactating mothers residing in urban slums and remote areas such as tribal and rural areas. On the basis of socio-economic background, the beneficiaries of this programme were selected. Further, the malnourished children, pregnant mother who were in their last trimester and lactating mothers for the first four months were given more priority. Children aged 6-72 months were provided with the supplementary nutrition of 300 kilo calories and 10-12 gm protein per day, whereas children who were severely malnourished were given 600 kilo calories and 20 gm protein per day. Iron and folic acid tablets and Vitamin A solution were also given to the children. The pregnant and lactating mothers were provided with supplementary nutrition of 600 calories and 20g protein per day. They were also receiving Iron and folic acid tablets. At the village and community level, the programme was implemented and operated through a network of balwadis. Gradually, SNP is being merged with ICDS (Nutrition & Health, 2014).

### **Wheat Based Nutrition Programme**

In 1986, the central government launched Wheat Based Nutrition Programme (WBNP) and this programme was implemented through Ministry of Women & Child Development, but later on it was transferred to the state sector. Further, this programme followed the norms of the nutritional component of the ICDS as well as of SNP. By covering additional beneficiaries this scheme enlarged the scope of ongoing nutritional programmes. Pre-school children, pregnant and lactating mothers were the main beneficiaries of this programme. Special focus of this programme was on those areas where mortality rates were high such as urban slums, remote areas, tribal areas, etc. Under this programme, full assistance was provided for free supply of wheat and also supportive costs for cooking, other ingredients, transport, etc (National Institute of Health & Family Welfare, 2014).

This scheme consisted of two essential components i.e. centrally sponsored component and state sponsored component. Under the centrally funded WBNP component, the preschool children were supplemented with 300 kilo calories and 10 grams protein, whereas pregnant and lactating women were provided with 500 kilo calories and 20 grams. Every month for 25 days each beneficiary was assisted with 75 paise per day. Out of 75 paise, 50 paise were contributed by GOI and the rest of the 25 paise were contributed by the concerned state governments. Under state funded component, initially the state governments were provided with the wheat at a subsidy rate of Rs. 700 per month, so that state could give nutritional supplement to the beneficiaries covered under this programmes. Although, after 1989 state governments were ripped off from subsidy, the states were continued to be provided wheat at the public distribution system (PDS) rate. Now, this programme has been tied with the ICDS project.

### **Nutrition Programme for Adolescent Girls**

In the year 2002-2003, the Nutrition Programme for Adolescent Girls was introduced by the central government. This programme was started as a pilot project and on the basis of pilot analysis, in 2005-06 this programme was approved by the GOI. This scheme was fully sponsored by the central government. The main aim of this programme was to improve the health and nutritional status of adolescent girls, pregnant and lactating women. The beneficiaries of the programme were adolescent

girls weighing less than 35 kg and pregnant women below 45 kg. They were provided 6 kg of ration per month for a period of three months. This scheme was implemented through *anganwadi* centres and the beneficiaries were weighed four times in a year. It was on the basis of the bodyweight of the beneficiaries that the supplementation of ration would continue. This scheme also focused on imparting health and nutritional education to the beneficiaries as well as empowering adolescent girls by making them aware about the importance of personal care and nutritional needs (Nutrition Foundation of India, 2009).

### **National Nutritional Anaemia Prophylaxis Programme**

Nutritional anaemia is one of the most serious public health problems in India. In order to address this issue, the National Nutritional Anaemia Prophylaxis Programme was launched in 1970 by the then central government. The beneficiaries of this programme were children between 1-6 years, pregnant and lactating women and acceptors of family planning. This programme focused on promoting the consumption of iron rich food and facilitating the iron and folic acid supplementation to the target population. The aim was to identify and treat the severely anaemic cases. The recommended daily dosages for pregnant and lactating women were 60 mg elemental iron + 0.5 mg folic acid per day for 100 days, whereas for pre-school children it was 20 mg elemental iron + 0.1 mg folic acid per day for 100 days. In 1991, this programme was renamed as National Nutritional Anaemia Control Programme. Now, the beneficiaries were redefined again and it included both anaemic and non-anaemic pre-school children as well as expecting and lactating mothers. It recommended daily iron dosage from 60-100 mg per day. In 1992, it became an essential part of the Child Survival and Safe Motherhood (CSSM) Programme. With the first dose of Tetanus Toxoid vaccine 100 mg iron + 0.5 folic acid daily for 100 days. In 1997 and 2005, it was integrated in Reproductive and Child Health Programme and National Rural Health Mission respectively. In 2007, new directions were given by Ministry of Health and Family Welfare. Now, children between 6-12 months were also included and they would be given doses in liquid form. Also, children in the age group of 6-10 and adolescents between 11-18 were also included in this programme (Nutrition & Health, 2014).

### **National Vitamin A Prophylaxis Programme**

In the year 1971, the National Vitamin A Prophylaxis programme was started with an aim to combat nutritional blindness. Its primary aim was to prevent nutritional blindness caused by keratomalacia and it was fully centrally sponsored. It was launched to immediately combat the alarmingly high proportion of xerophthalmia blindness in 1950s and 1960s. Initially it was started in 11 states, however in later years it was extended in all the states. In 1994, as a part of CSSM Programme modification were made in the vitamin A supplementation programme due to high vulnerability of young children. This programme was restricted to children in the age group of 9 to 36 months. As per this programme every child was to be given recommended five dosages of vitamin A before completing 3 years. In 2006, revisions were made in the target group and it was extended to cover children aged 6-59 months. At present, vitamin A supplementation is being carried out through primary health centres and sub-centres and services are being administered by female multipurpose workers, paramedics and ICDS functionaries. After every six months, a month long intensive drives of vitamin A supplementation are conducted to achieve universal coverage of children. Significant reduction has been indicated in the nutritional blindness due to vitamin A deficiency because of widespread nutritional supplementation available at different public health facilities as well as improvement in the nutritional intake (Kapil and Sachdev, 2010).

### **National Iodine Deficiency Disorder Control Programme**

In 1962, the National Goitre Control Programme (NGCP) was launched by GOI realising the seriousness of problems associated with iodine deficiency. It was a fully centrally sponsored programme. In 1992, this programme was renamed as National Iodine Deficiency Disorder Control Programme (NIDDCP) and it widened the spectrum of disorders caused by iodine deficiency such as mental retardation, stunting, impairment of speech and hearing, cretinism, goitre, miscarriage, still births, etc. This programme has been implemented in all the States and UTs. The primary goal of this programme was to reduce the level of iodine deficiency disorders below 5 per cent. It also aimed to attain the level of 100 per cent consumption of iodised salt at the household level.

This programme was committed towards conducting surveys in districts for assessing the prevalence of iodine deficiency disorders. This programme also

advocated the use of iodised salt in place of common salt. It was also envisaged that after every five years survey would be conducted to assess the impact of consumption of iodised salt on the prevalence of iodine deficiency disorders. It also targeted to impart education about the maximum consumption of iodised salt at the community level. For adequate implementation of this programme, Ministry of Health & Family Welfare was designated as nodal ministry. Over the years this programme has achieved several landmarks. In the country, the Total Goitre Rate (TGR) has reduced significantly. The total production of iodine in the country is adequate enough to meet the needs of the entire population. At the household level, the consumption of adequately iodised has increased significantly. The Food Safety and Standard Regulation, 2011 has banned the sale of common salt for human consumption unless it is adequately iodised. For monitoring of iodine deficiency disorders, a National Reference Laboratory has been established in Delhi and four regional laboratories have also been set up for monitoring the quality of salt. Iodine deficiency disorder control cells have been established in all the states and UTs for effective implementation of NIDDCP. IEC activities were conducted at massive scale in order to increase awareness about the consumption of iodized salt (Ministry of Health & Family Welfare, 2017).

Under the Constitution of India, public health is a shared responsibility of the central, state and local levels of governments. However, health is essentially a state responsibility. The amount of public health spending is not uniform throughout the country, but the state and local governments account for three-fourth of the total public health spending. The responsibility for the central government includes looking at port quarantine, research, and specific and technical education. On the other hand, the private health care services are provided by herbal healers, modern unqualified or quasi-qualified 'quacks' and qualified practitioners of different systems of medicine. Until mid-seventies, large private hospitals were not-for-profit or charitable in nature and for-profit private hospitals were primarily small nursing homes. By 1990s, corporate sector came forward to invest in private health care and thus expanded this sector. Although most of the health care is provided by private sector, there is lack of any regulation and specification of standards for private health care. The payment in the private sector is largely fee-for-service and paid out from the pocket of the patients. There is no uniform standard for the charge of similar activities.



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## *Chapter-V*

# *Socio-Economic Status and Housing Conditions of Families in Slums*



## **Chapter V**

### **Socio-Economic Status and Housing Conditions of Families in Slums**

In India, the degree and spectrum of urban poverty is by and large underestimated and its nature is highly misunderstood. The means for reducing urban poverty is hardly acted upon. In this chapter we are focusing at various aspects of the socio-economic status which have an effect on the health status of women and their children. The health of the urban poor residing in slums is threatened by a large variety of diseases. In order to achieve health equity, it is essential that the living and housing conditions of the urban poor should be levelled up. Moreover, the vulnerabilities and differential exposure of various socially excluded and deprived groups needs to be reduced. For any social group, its health conditions have complex inter-linkages with the socio-economic conditions. It is clearly evident that the slum dwellers, particularly women and children severely lack the resources and opportunities for leading a decent lifestyle. The women in slums are devoid of healthy and fulfilling lives since the very beginning and simultaneously they have to look after their families and carry out immense responsibilities.

#### **5.1 Demographic Profile and Socio-Economic Status**

##### **Age of the Respondents**

In the context of health, age is an important indicator therefore it is one of the essential variables in this study. In the present study, women of reproductive age have been considered because during this period women have to deal with various health issues. Women living in slums are particularly more prone to health problems. Further, only those respondents have been selected who had children between six months to five years of age. According to medical parameters, the reproductive age of women is considered to be between 15 to 45 years. During the study it was reported that some of the respondents had their first pregnancy between 16 to 17 years which had an adverse affect on their health. Early pregnancy not only badly affects the health status of the women but it also has an adverse impact on their nutritional status. Moreover, age and health situation of a woman depicts her reproductive capability. Lack of availability and access to adequate health care facilities makes the situation worse for the slum dwellers.

**Table 5.1: Age-wise distribution of the respondents**

<b>Slum</b>	<b>Age Range</b>	<b>Frequency (n=200)</b>	<b>Percentage (%)</b>
Chinhat Bazaar Slum	15-19	04	8
	20-24	11	22
	25-29	13	26
	30-34	10	20
	35-39	06	12
	40-45	06	12
Sikander Nagar Slum	15-19	01	2
	20-24	12	24
	25-29	10	20
	30-34	14	28
	35-39	08	16
	40-45	05	10
Rajajipuram Slum	15-19	06	12
	20-24	13	26
	25-29	14	28
	30-34	08	16
	35-39	05	10
	40-45	04	8
Vikas Nagar Slum	15-19	05	10
	20-24	13	26
	25-29	11	22
	30-34	12	24
	35-39	05	10
	40-45	04	8

*Source: Field survey*

Table 5.1 shows that respondents of Rajajipuram slum and Vikas Nagar slum were comparatively young in age ranging from 15 to 34 years of age. In Chinhat Bazaar slum and Sikander Nagar slum the age of the respondents largely varied from 20 to 44 years of age. As mentioned above, only those women have been selected for

the study who had children up to 5 years of age and hence the data clearly shows that some of the respondents gave birth to their first baby between 15 to 19 years. Acharya (2008) has revealed in his study of urban slum settlements in Surat that women residing in these localities had their first delivery at the age of 19 years. During field survey it came into light that early pregnancy resulted in child mortality as well as miscarriages and this has been dealt in detail in the later chapters. Thus, age and health are interrelated and is one of the important variables of the study.

### **Religion of the Respondents**

Religion is one of the important factors to show the perception of people towards the health. The impact of religion is seen on the lifestyle and behaviour pattern of the individuals. Each community has its own religious beliefs attached with the process of healing and cure. In the context of slums, where the level of literacy is quite low and people lack awareness about health, the religious faith and perceptions are highly relevant to the life of the urban slum dwellers.

**Table 5.2: Religion-wise distribution of the respondents**

<b>Religion</b>	<b>Frequency (n=200)</b>	<b>Percentage (%)</b>
Hindu	127	63.5
Muslim	63	31.5
Sikh	-	-
Christian	-	-

*Source: Field survey*

From table 5.2 it is clearly evident that majority (63.5 per cent) of the respondents were Hindus whereas 31.5 per cent of the respondents were Muslims. Most of these Muslim respondents were residing in Sikander Nagar slum. However, none of the respondents belonged to any other religion. During the fieldwork it was revealed that slum dwellers were bound by the conservative perceptions and they believed in traditional method of faith-healing. Further, some of the respondents also visit quacks for treatment. This issue has been addressed in detail in later chapters.

### **Caste of the Respondents**

In India, one of the important determinants of social status is caste. In the present study, the respondents belong to different castes and sub-castes but for the general

observation and analytical purpose they have been broadly divided into four categories i.e. General OBC, SC and ST.

**Table 5.3: Caste-wise distribution of the respondents**

Slum	Category	Frequency (n=200)	Percentage (%)
Chinhat Bazaar Slum	General	07	14
	OBC	23	46
	SC	20	40
	ST	-	-
Sikander Nagar Slum	General	05	10
	OBC	27	54
	SC	18	36
	ST	-	-
Rajajipuram Slum	General	08	16
	OBC	31	62
	SC	11	22
	ST	-	-
Vikas Nagar Slum	General	04	8
	OBC	18	36
	SC	26	52
	ST	02	4

*Source: Field survey*

Table 5.3 revealed that in Chinat Bazaar slum, Sikander Nagar slum and Rajajipuram slum majority of the respondents were OBCs i.e. 46 per cent, 54 per cent, 62 per cent respectively, whereas in Vikas Nagar slum more than half of the respondents (52 per cent) were SCs. Except Vikas Nagar slum (4 per cent), none of the slums had respondents belonging to ST category. Overall, only 27 per cent of the respondents belonged to General category. The data clearly shows that majority of the respondents were of socially backward castes i.e. OBC and SC, thus it can be asserted that slums are mainly inhabited by socially backward and marginalised groups. The women residing in slums have to deal with the burden of discrimination in terms of gender, poverty and caste which adversely affect their health and nutritional status.

**Type of Family and Number of Family Members**

In the present study, majority (86.5 per cent) of the respondents were living in nuclear families, whereas only 13.5 per cent of the respondents were living in joint families. During the fieldwork it was found that in the surveyed slums the joint family usually consisted of a nuclear family with one or two dependent members such as mother, father, mother-in-law, etc. living along with them. Significantly higher number of nuclear families in slums suggested that the lack of financial resources and low income resulted in the disintegration of the families. This had an impact on the upbringing of their children because many of the respondents work outside home to financially support their families and consequently children are left alone at home with no one to look after them. This in the long run also adversely affects the health of their children.

**Table 5.4: Type of family**

Type of Family	Frequency (n=200)	Percentage (%)
Nuclear Family	173	86.5
Joint Family	27	13.5

*Source: Field survey*

**Table 5.5: Number of family members**

Slum	Number of family members	Frequency (n=200)	Percentage (%)
Chinhat Bazaar Slum	1-4	11	22
	5-8	37	74
	9 and above	2	4
Sikander Nagar Slum	1-4	13	26
	5-8	33	66
	9 and above	4	8
Rajajipuram Slum	1-4	07	14
	5-8	40	80
	9 and above	3	6
Vikas Nagar Slum	1-4	09	18
	5-8	35	70
	9 and above	6	12

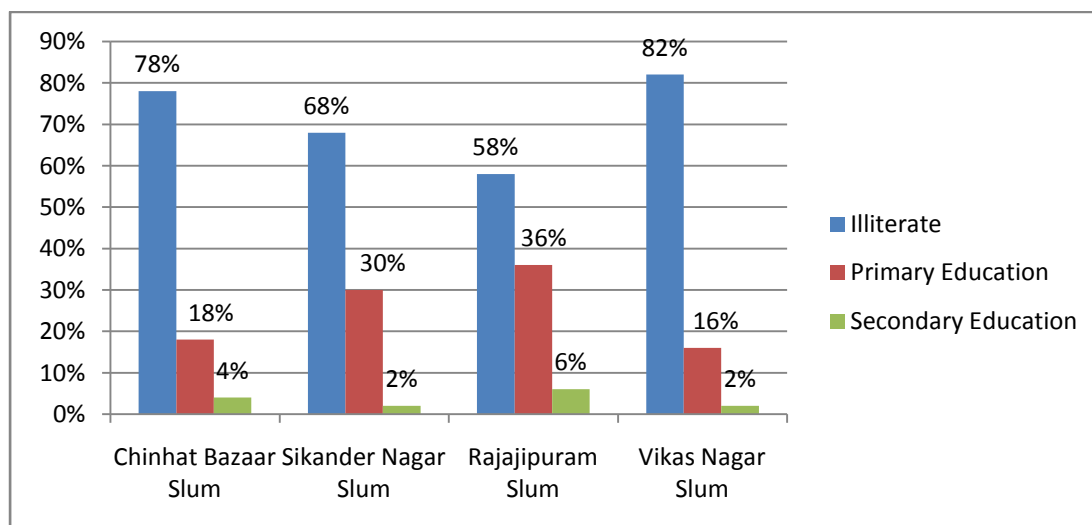
*Source: Field survey*

From the table 5.5 it is clearly evident that majority of the households had number of family members between 5-8. In Chinhat Bazaar slum, 74 per cent of the households had family size between 5-8 whereas in Sikander Nagar slum more than half of the households family members between 5-8. In the Rajajipuram slum and Vikas Nagar Slum, the situation was more or less similar. Thus, it could be said that most of the households had a large family size which means high dependency ratio. With low income and poor financial resources it becomes quite difficult to fulfil the basic necessities of each and every family member. Women are the worst sufferers because least attention is paid to their requirements. As a result women in slums lack access to quality health care facilities which in turn had an impact on their health.

### **Educational Attainment of the Respondents**

Education is considered to be the one of the most important socio-economic factors that has an influence on the person’s behaviour, attitude and perception. Moreover, it is also the most crucial indicator of human capital development in any country. Figure 5.1 shows the per cent distribution of the respondents by the level of their education.

**Figure 5.1: Distribution of respondents as per educational attainment**



*Source: Field survey*

Figure 5.1 shows that the educational attainment of the respondents is strikingly low in the slums. A substantial proportion of the women residing in the slums had little or no education at all and this reveals the poor level of educational attainment within the female slum dwellers. Almost 71.5 per cent of the respondents were illiterate which depicts educational disparity within the urban areas. In Vikas Nagar slum and Chinhat Bazaar slum the situation was worse with 82 per cent and 78

percent of the respondents respectively being illiterate. Further, it shows that the female literacy rate is much lower than the national average. The low level of educational attainment is directly associated with the poor health status of women in the slums. As majority of the respondents were illiterate, they had lower level of health awareness and consciousness which is detrimental not only for their health but also for the health of their children.

### **Age of Women at Marriage**

In slums the age of women at marriage is one of the key indicators in assessing their health status (Kaviarasu and Xavier, 2015). The analysis of the data showed that more than half of the respondents were married when they were between 19-21 years. One of the alarming situations is that as high as 37 per cent of the respondents were married before completing 18 years (Table 5.6). This revealed that a substantially high proportion of women in selected slums were married before legal age of marriage. Early marriage means early chances of conceiving, which in the long run has an adverse impact on the health and nutritional reserve of the women. It is essential that the women should be physically and mentally prepared to enter into the institution of marriage. In one of the studies conducted in the Udupi district of Karnataka it was observed that women who were married before 18 years, they had poor health status (Noronha, Bhaduri and Bhat, 2008).

**Table 5.6: Age of the respondents at marriage**

<b>Age</b>	<b>Frequency</b>	<b>Percentage</b>
Below 18 years	74	37%
19-21 years	109	54.5%
22-24 years	17	8.5%
Total	200	100%

*Source: Field survey*

### **Age of Women at First Childbirth**

Pregnancy at an early age is not only detrimental for the health of the mother but also for the child's health and it is a medically proven fact. Although the government has undertaken various measures through enacting laws and disseminating awareness by several programmes about preventing early marriage and avoiding pregnancy before the age of 18 years, the situation has not changed much among the poorer sections of the society, especially among the urban poor. In the present study it is appalling to learn that more than half of the respondents (51 per cent) delivered their first child

before completing the age of 21. In slums women are usually not given adequate post-natal care which further stresses their bodily reserves. After delivery it is essential for women to recuperate and maintain the nutritional reserves of the body. It is not only important for the health of the women but also for the well-being of their children.

**Table 5.7: Age of the respondents at first childbirth**

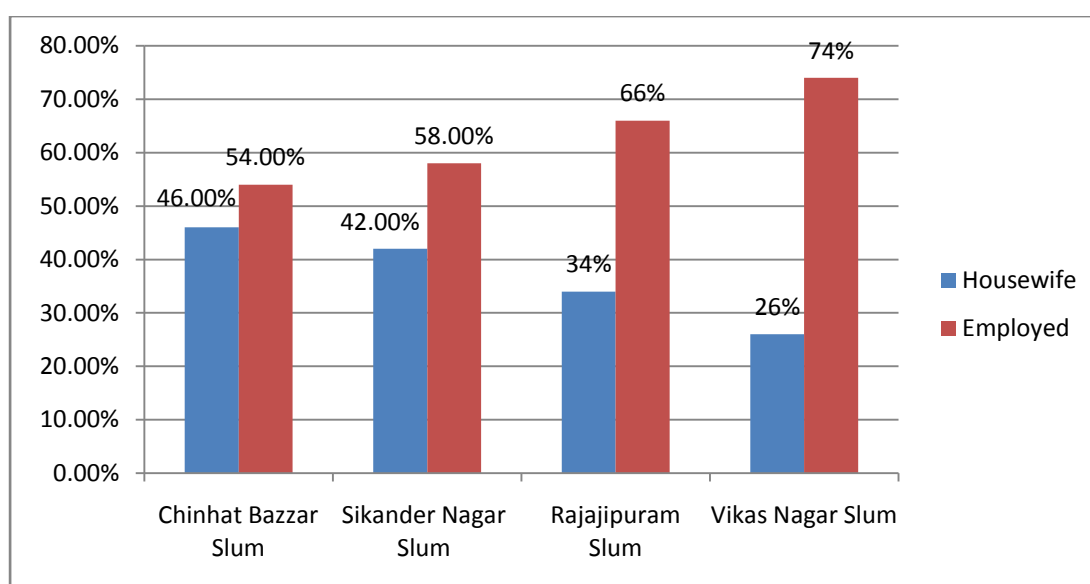
Age	Frequency	Percentage
Below 21 years	102	51%
22-24 years	89	44.5%
25 years and above	09	4.5%
Total	200	100

*Source: Field survey*

### **Employment Status and the Occupational Pattern**

People residing in slums under dilapidated situation have to survive with minimum basic amenities. Due to the poor financial conditions, it becomes difficult for the slum dwellers to focus on the education of their children, health, nutritional requirements and the other essential aspects of the life. In order to fulfil these basic requirements the women in slums also work outside to contribute in the income of their household. They engage themselves in different kinds of income-generating activities such as they work as domestic servant, daily wage labourer, self-employment (tea stalls, street vendor, vegetable vendor, etc.).

**Figure 5.2: Employment status of the respondents**



*Source: Field survey*

In the figure 5.2 it could be seen that in Chinhat Bazaar slum (54 per cent) and Sikander Nagar slum (58 per cent) almost half of the respondents were employed, whereas in Rajajipuram slum (66 per cent) and Vikas Nagar slum (74 per cent) majority of the respondents were working. Overall, in all the four slums 63 per cent of the respondents were working. This clearly shows that the contribution of women in their household income is fairly significant. However, it does not connote that higher percentage of employment among women increases their participation in the decision-making. From the field experiences it could be asserted that gender plays a crucial role in determining the social status of an individual in the society. In the study area it was observed that despite of their economic contribution in the family, women were subjugated and had secondary status in their household. Even the decisions related to their health and the health of their children were taken by the male members of the family.

**Table 5.8: Occupational Patterns of the Respondents**

Slum	Occupation	Frequency (n=200)	Percentage
Chinhat Bazaar Slum	Domestic servant	14	51.85%
	Daily wage labourer	03	11.11%
	Self employed	10	37.03%
Sikander Nagar Slum	Domestic servant	17	58.62%
	Daily wage labourer	06	20.68%
	Self employed	06	20.68%
Rajajipuram Slum	Domestic servant	21	63.63%
	Daily wage labourer	04	12.12%
	Self employed	08	24.24%
Vikas Nagar Slum	Domestic servant	25	67.56%
	Daily wage labourer	04	10.81%
	Self employed	08	21.62%

*Source: Field survey*

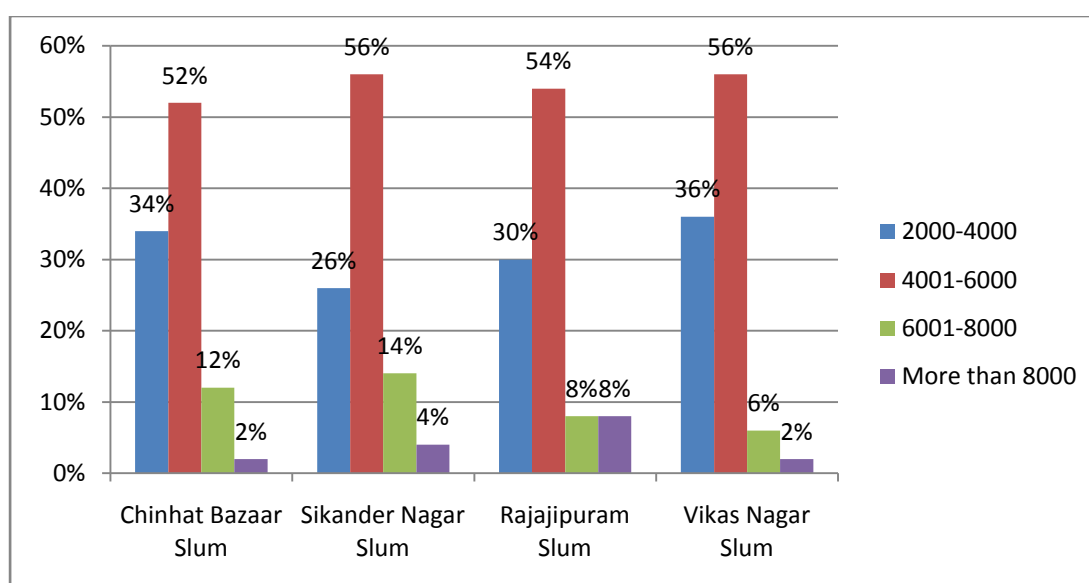
The table 5.8 deals with the occupational patterns of the working women in all the four slums. From the table it is clearly evident that majority of the respondents were working as domestic servants in other households. Some of the respondents were also working as daily wage labourers, whereas few of them were self-employed

having their own tea stalls, small vending shops, etc. The economic condition of the slum dwellers plays a pivotal role in their social and health status. The present study revealed that the economic condition of the families in all the four slums was miserable, which directly had an impact on their social as well as health status. However, it was found that the families in which women were working had better financial conditions than those families where women were not working. Kaviarasu and Xavier (2015) in their study have opined that undoubtedly, the financial independence of women, particularly mothers is closely associated with the awareness regarding their health as well as the health of their children. In this study it could be clearly portrayed that women have to work really hard for long hours doing household chores in others houses in order to earn money. Although, it was reported by most of the respondents that they were being paid less in spite of working for long hours.

### **Monthly Income of the Households**

As it has been stated above, the women were contributing significantly in the income of their household and thus, the monthly income of the household consisted of income of the head of the family along with income of the female members. It depicts the family’s joint effort in their struggle for existence. Moreover, this study is focused on the slum dwellers which are usually considered as economically weaker section of the society. Therefore, income is one of the important indicators for assessing the economic status of the households.

**Figure 5.3: Monthly income of the households**



Source: Field survey

The figure 5.3 highlights the fact that majority of the household's income in all the four slums was between Rs. 4001-6000. On the contrary, only 4 per cent of the households had their monthly income more than Rs. 8000. Further, 31.5 per cent of the households had their monthly income between Rs. 2000-4000. These low ranges of income reflect the poor earning condition of the families residing in slums. Thus, we can categorise the households into three groups on the basis of their income, low income group (Rs. 2000-4000), medium income group (Rs. 4000-6000) and high income group (more than Rs. 6000). The analysis of the data showed that most of the households in all the four slums were in middle income group. Therefore, it could be said that the income in all the four slums was insufficient to meet the basic necessities of the families. The families were bound to live in dilapidated environment which directly had an impact on their health. Oscar Lewis's concept of culture of poverty is evident here as individuals were generating very little amount of wealth and as well as receiving very little in return.

## **5.2 Household Living Conditions**

### **Housing, Residential Crowding and Ventilation**

In slums, one of the issues of great concern is inadequate housing and living conditions. Slums are usually characterised by dilapidated housing conditions and lack of basic civic amenities such as safe drinking water, adequate toilet facilities, sanitation, garbage disposal facilities and clean cooking fuel. As a result, slum residents are exposed to a wide variety of diseases and infections. In this section, it has been endeavoured to examine some of the important indicators of housing and living conditions in slums. Information on the household characteristics consisted of type of housing, quality of housing, number of rooms, ventilation i.e. number of windows, electricity, etc.

**Table 5.9: Type of housing**

<b>Type of Housing</b>	<b>Chinhat Bazaar Slum</b>	<b>Sikander Nagar Slum</b>	<b>Rajajipuram Slum</b>	<b>Vikas Nagar Slum</b>
<i>Kaccha</i>	28 (56%)	17 (34%)	21 (42%)	28 (56%)
<i>Semi-Pucca</i>	19 (38%)	26 (52%)	25 (50%)	21 (42%)
<i>Pucca</i>	03 (6%)	07 (14%)	04 (8%)	01 (2%)

*Source: Field survey*

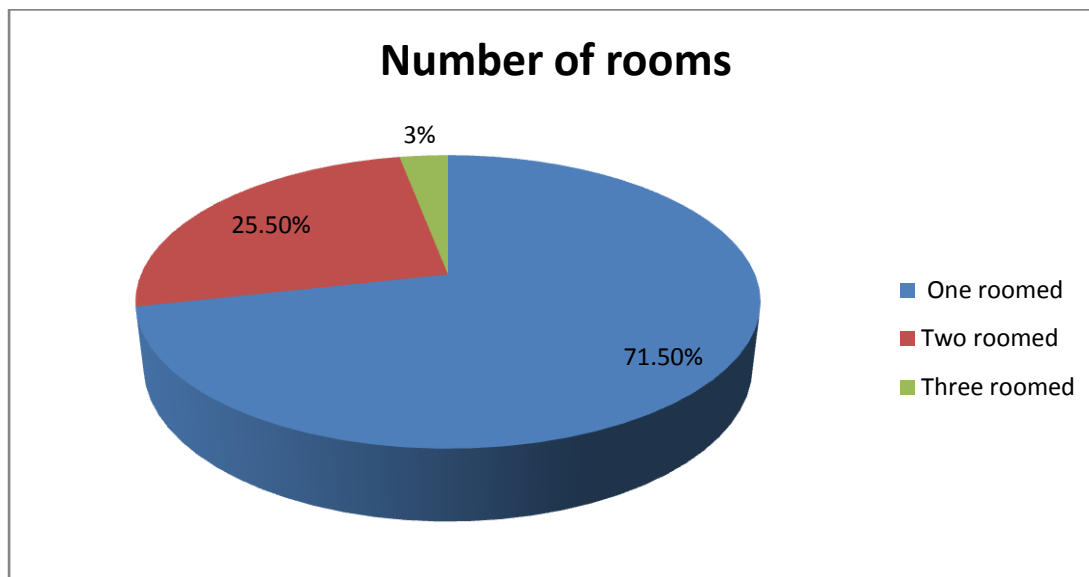
From the table 5.9 it is evident that a large majority of the respondents were living in *kaccha* (47 per cent) and semi-*pucca* (45.5 per cent) houses. Semi-*pucca* houses means the walls were made up of brick and cement, whereas the roof was of polythene, bamboo, tin shade etc. Ray (2003) in his study of slums in Ahmadabad conversed about the informal temporary settlements and explained that most of houses were made up of brick walls with polythene or asbestos roofs and situated in congested conditions. In Chinhat Bazaar slum and Vikas Nagar slum more than half of the respondents (56 per cent) were living in *kaccha* houses whereas in Sikander Nagar slum almost 50 per cent of the respondents were residing in semi-*pucca* houses. Only 7.5 per cent of the respondents were living in the *pucca* houses. Due to the inaccessibility of houses in non-slum areas and high rent they were bound to live in these slums. This clearly reflects that the respondents in slums were living in deplorable conditions. The poor economic status of the families in slums compelled them to live in degraded situation. Most of the respondents informed that their families had constructed houses on their own without any governmental help.

### **Number of Rooms**

Residential overcrowding and congestion is a matter of grave concern in slums. This could be examined by the number of rooms available in every household. In the study area it was revealed that majority of the families (71.5 per cent) were living in single-roomed houses, whereas 25.5 per cent of the respondents were residing in two-roomed houses and only 3 per cent of the respondents had three-roomed houses (Figure 5.4). These rooms were also small in size which further worsened the situation. As stated earlier in this chapter, majority of the households had 5-8 family members, thus the phenomena of overcrowding is clearly evident. In majority of the households single room was used for various purposes. The existence of one and two-roomed houses in all the four slums reflect the precarious conditions under which the slum residents were forced to live and this in the long run had an adverse impact on their health. Chandramauli (2003) in his study of slums indicated that the availability of living space in slums is an important parameter of health. Davis (2006) pointed towards the problems which were associated with the health of slum dwellers and highlighted the increase in urban poverty is related with the structural adjustment. Thus, it could be asserted that lack of adequate living space had a negative effect on

the health of the slum residents, particularly on the health of women and their children because their staying hours at home is more than the male members of the family.

**Figure 5.4: Number of rooms in the households**



*Source: Field survey*

### **Number of Windows**

Generally, majority of the houses in slums are very small and congested. They are often located in closer proximity to other buildings and as a result they lack proper ventilation. In this study the information has been collected on whether or not each household had any windows in their houses. On the basis of collected data it was revealed that most of the houses in all the four slums had one or no window at all. The prevalence of windows was particularly lower in Vikas Nagar slum and Sikander Nagar slum, however, in Chinhat Bazaar slum and Rajajipuram slum almost 60 per cent of the houses had at least one window. Although in many of the houses the opening of the window was towards the open drain, which was itself one of the reasons for diseases and infections. Thus, it could be clearly seen that a large proportion of the houses in the slums were not well-ventilated. Lack of proper ventilation and sunlight in the houses is closely associated with the health of the slum residents.

**Table 5.10: Number of windows in the houses**

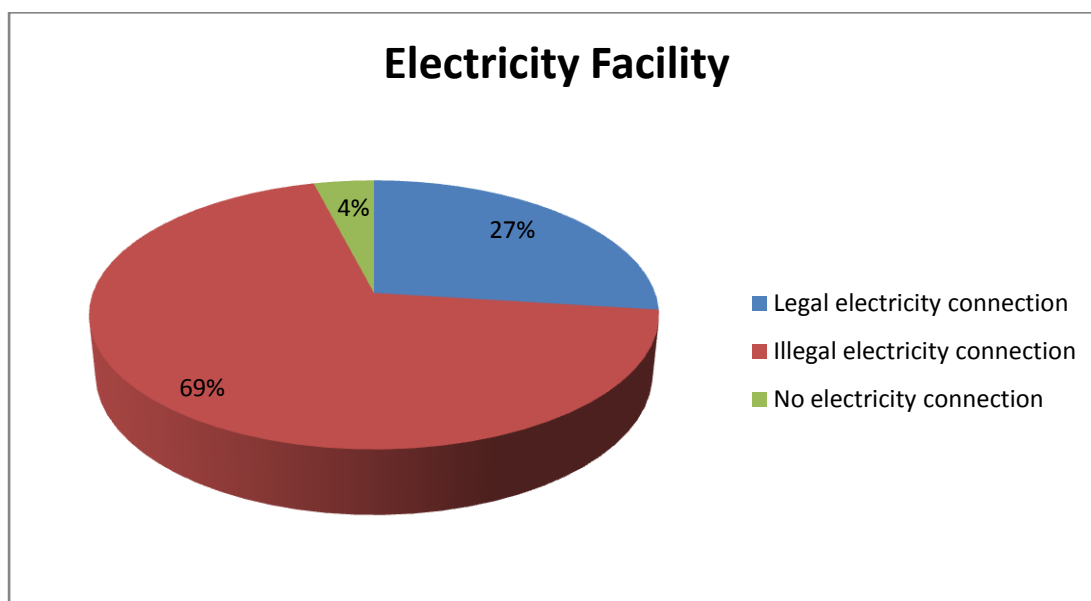
<b>Slum</b>	<b>One Window</b>	<b>Two Window</b>	<b>No Window</b>
Chinhat Bazaar Slum	63%	4%	33%
Sikander Nagar Slum	29%	2%	69%
Rajajipuram Slum	68%	7%	25%
Vikas Nagar Slum	24%	-	76%

*Source: Field survey*

### **Electricity Facility**

Majority of the respondents (96 per cent) had electricity connection in their household. However, the households had legal as well as illegal electricity connection. 27 per cent of the households had legal electricity connection whereas 69 per cent households had illegal electricity connection (Figure 5.5). The proportion of households with illegal electricity connection was found to be quite high. Households having illegal electricity connections were either without meter or they had shared connection which means they were drawing electricity from single meter. Most of the shared connections were either in the kaccha houses or in those households where the families were living on rent. Only 4 per cent of the households were without electricity connection. Hence, it could be concluded that in all the four slums 96 per cent of the households were having legal or illegal access to the electricity supply. Similarly, Acharya (2008) in his study on urban low income squatter settlements of Surat stated that a total of 96 per cent households had access to electricity supply. Chandramauli (2003) in his study found that almost 79 per cent of the households in slums had the facility of electricity. These findings are very much similar to the present study. Moreover, several other recent studies have reported that a substantially high proportion of households in slums were deriving the facility of electricity.

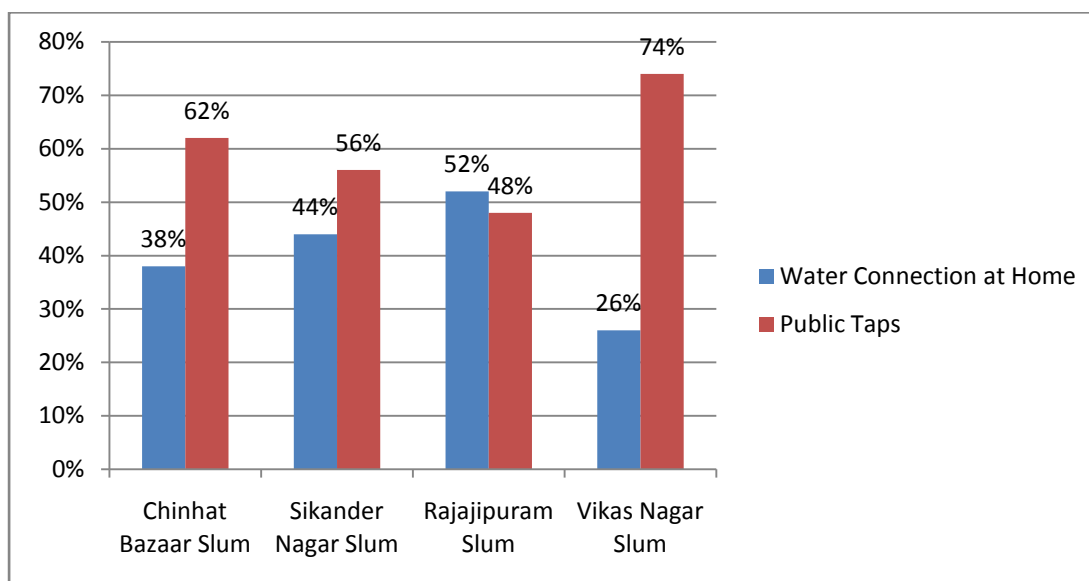
Figure 5.5: Electricity facility in the households (in percentage)



Source: Field survey

#### Source of Drinking Water

The availability and accessibility to safe drinking water, toilet and sanitation facilities, a separate kitchen in the household, and the type of cooking fuel used are considered to be important environmental health indicators. In the present study, the data has been collected on these indicators in order to assess the impact of environmental health indicators on the health status of the respondents. The availability of safe drinking water is essential requirement for every individual and hence, it is regarded as one of the important parameters for good health. In the study area it was found that some of the households had water connection at their home whereas rest of the households were using public tap for drawing water. Mostly the female members of the households collect water from the public taps and sometimes they had to spend long hours in queue for collecting water which often resulted in quarrels. Chandramauli (2003) in his study of slums in Tamilnadu found that only 26 per cent of the households in slums had the facility of tap water at their home whereas others had to walk more than 500 metres for collecting water. This study is very much similar to the finding of the present study. In all the four slums, the places where public taps were connected, they were also used for the purpose of bathing, washing clothes and utensils and as result it was usually covered with moss. Hence, it could be stated that the places of public tap connections were unhygienic and it made slum residents prone to a variety of water-borne diseases and infections.

**Figure 5.6: Source of drinking water**

Source: Field survey

Figure 5.6 highlights the data about the source of drinking water in all the four slums where the study has been conducted. It is clearly evident that majority of the households were using public taps for collecting water. In the Chinhat Bazaar slum (62 per cent) and Vikas Nagar slum (74 per cent), a substantially high percentage of the households were using public taps. The situation was more or less similar in Sikander Nagar slum and Rajajipuram slum where more than half of the respondents were using public tap connections for fetching water. The data shows that the authorities are unsuccessful in providing the connection of safe drinking water in every household in slums. Some of the respondents reported that they were not satisfied with the purity of the drinking water and it also came into light that the authorities never turn up to check the quality of the water. Lack of access to safe drinking water is one of the issues of serious concern in the study area. The respondents also divulged the information that their children frequently suffer from various water borne diseases such as diarrhoea, cholera, etc. Thus, it is clearly visible that the unsafe drinking water was having an adverse impact on the health of the children in slums.

### **Toilet and Sanitation Facilities**

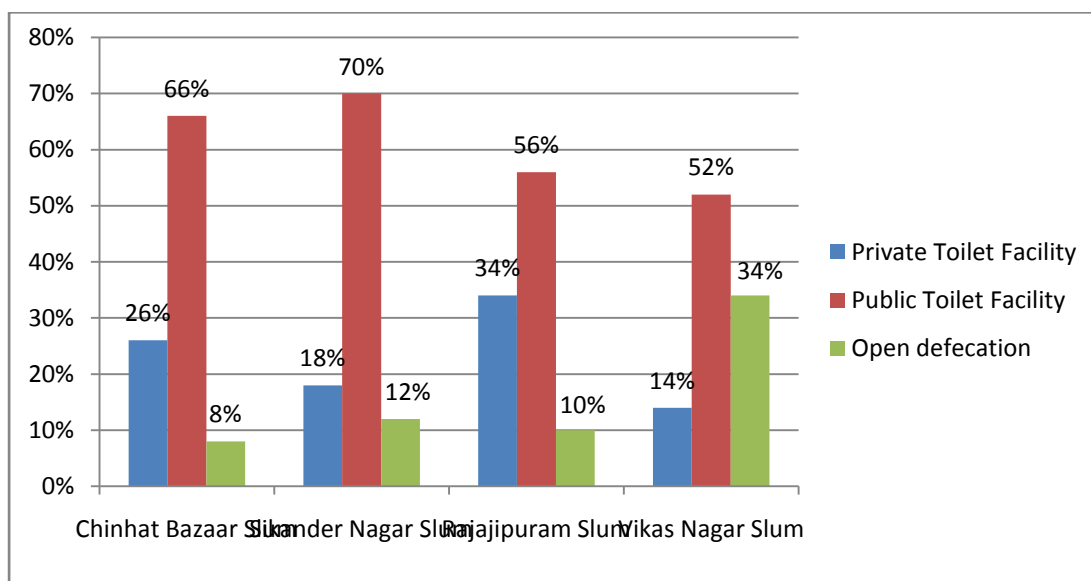
One of the major problems of slum dwellers is the lack of adequate toilet facilities and sanitation. The use of shared/common and non-hygienic toilets leads to the spread of several infections among slum dwellers. During the field survey it came into light that

majority of the respondents were facing the problem of lack of adequate space and unclean environmental conditions. Slums are usually characterised by the presence of closely packed small deteriorated houses, low standard of living, congested lanes, piled up filth and garbage, and unhygienic public toilets. These environmental conditions make slums a breeding ground for variety of diseases and infections.

The data showed that about 61 per cent of the respondents in all the four slums were using public toilets. In Chinhat Bazaar slum and Sikander Nagar slum almost 70 per cent of the respondents were using public toilet facilities whereas in the Rajajipuram slum and Vikas Nagar slum nearly half of the respondents were dependent on public toilet facilities. Overall, 16 per cent of the respondents reported that they did not have access to either public or private toilet and thus they defecate in the open. In Vikas Nagar slum this percentage was substantially high i.e. 34 per cent of them were defecating in open (Figure 5.7). Chattopadhyay, Mukherjee and Sudha (2015) in their study of basic facilities in slums of Mumbai revealed that about 91 per cent of the slum dwellers were using public toilet facilities. In the present study also the usage of public toilets is substantially high.

This indicated towards the scarcity of toilet facilities. Moreover, some of the respondents reported that they had to pay for using public toilets and they could not afford to pay every time. Therefore, they practise open defecation. Open defecation not only makes the environment unpleasant but it is responsible for the spread of number of infections. Most of the respondents were disposing their child's stool in the drains and open places and this further worsened the environmental conditions of the slums. One of the major concerns of most of the respondents was the unsafe condition of public toilets in the night. Respondents also reported about the irregular supply of water in the public toilets.

Figure 5.7: Availability of toilet facilities



Source: Field survey

Generally, the number of toilets available in every slum is too low to meet the demands of the rapidly increasing population of the ever expanding slums. Furthermore, this situation is worsened by the lack of cleanliness along with the inadequate supply of water in the public toilets. In all the four slums one of the problems that has been noticed is that women had to carry buckets of water not only for their own use but they have to do the same for their children as well as for the older members of their family. Malinowski has proposed hygiene as the cultural response to health. Hygiene involves all ‘sanitary arrangements’ in a community, ‘rules about exposure, extreme fatigue, the avoidance of dangers or accidents’ ‘native beliefs as to health and magical dangers’, and ‘the never absent range of household remedies’ (Cockerham, 2001: 25-26).

Some of the other common problems prevalent in the women’s toilet were the absence of dustbins for the disposal of sanitary napkins. Apart from the poor infrastructural facility, lack of knowledge and awareness on personal hygiene and cleanliness made women more vulnerable to health problems as compared to men. Since majority of the women in the slums were either illiterate or less educated and some of them have migrated from rural areas where they defecated in the open fields, therefore, they found it difficult to use unclean and non-hygienic public toilets. Another major issue that needs the urgent attention of the authorities is the safety of women at night in using public toilets.

### **Place for Cooking**

The availability of separate kitchen is essential considering the cleanliness and hygiene required while cooking food. This is particularly crucial for those households where solid fuel is used for cooking, as smoke of the solid fuels is hazardous for the health. However, in slums most of the households were devoid of separate kitchens due to the lack of adequate space and overcrowding. The field survey show that majority of the respondents were cooking food either within the rooms or in the open place along with the house. Only few of the respondents had separate kitchens in their households. In Chinhat Bazaar slum, Sikander Nagar slum and Rajajipuram slum a substantially high proportion of the respondents reported that they cooked food within the rooms and they did not have any separate kitchen in their household. Whereas, in Vikas Nagar slum none of the households had the facility of separate kitchen (Table 5.11). Thus, from the data it is clearly evident that in the study area the availability of separate kitchen is far from satisfactory. Shukla et. al. (2015) studied the housing conditions in slum dwellers of Lucknow and the study highlighted that more than half of the houses did not have separate kitchen due to overcrowding and lack of space.

Moreover, it had been reported by 81 per cent of the respondents that they were using wood, coal, dung, kerosene stove apart from other sources. This reflects that slum dwellers were still dependent on solid fuels for cooking. It particularly affects the health of the female members of the household, as they were in direct contact with the smoke of the fuel while cooking food. Some of the respondents complained of headache, respiratory problems due to the smoke. As in most of the households the food was cooked in the rooms, it had an impact on the health of other family members also. Hence, it could be asserted that the use of solid cooking fuel was posing threat to the health of the slum residents.

**Table 5.11: Place for cooking**

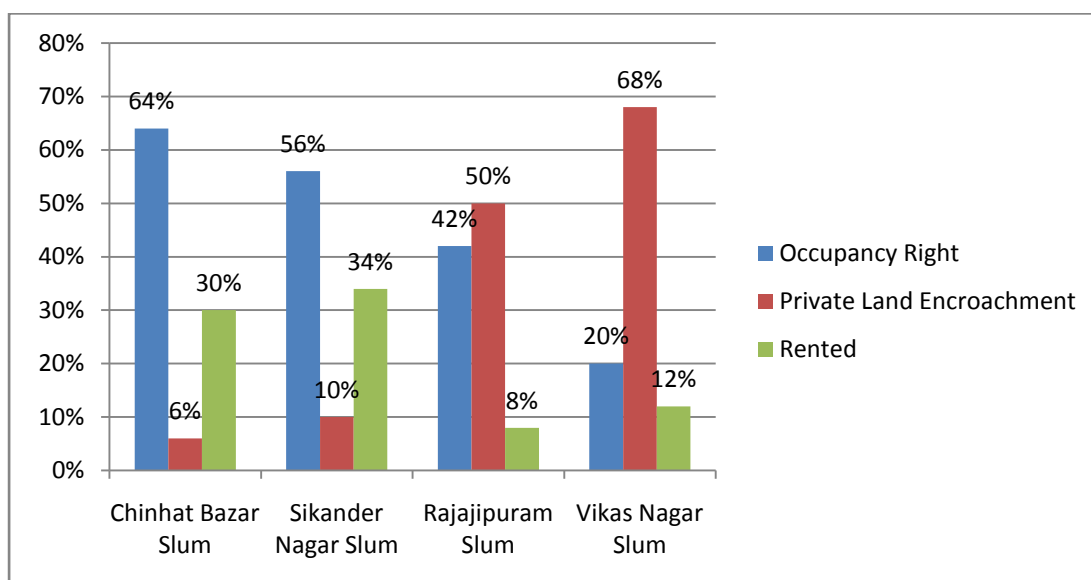
<b>Place for Cooking</b>	<b>Chinhat Bazaar Slum</b>	<b>Sikander Nagar Slum</b>	<b>Rajajipuram Slum</b>	<b>Vikas Nagar Slum</b>
Separate Kitchen	02 (4%)	04 (8%)	03 (6%)	-
In the room	38 (76%)	35 (70%)	41 (82%)	28 (56%)
Open place along with the house	10 (20%)	11 (22%)	06 (12%)	22 (44%)

*Source: Field survey*

### Ownership of Land/House

In number of definitions given by various organisations and bodies, the lack of security of tenure is regarded as one of the central characteristics of slums. Generally, the slum inhabitants do not hold any formal document which should prove their entitlement to occupy the land or any structure and hence, this acts as *prima facie* evidence of illegality. The terms such as informal or unplanned squatter settlements, tenement housing are often being considered as synonymous with the slums. Most of the slum definitions emphasize upon the informality of the occupation as well as the non-compliance of settlements with the land usage planning. Some of the factors responsible for the non-compliance are the construction of the informal settlements on the invasive non-urban land or on the land reserved for non-residential purposes.

**Figure 5.8 Land tenure status**



Source: Field survey

The data showed that the majority of the sampled households were built on the occupied or privately encroached land. In Chinat Bazaar slum and Sikander Nagar slum more than half of the respondents (64 per cent and 56 per cent respectively) reported that they had the occupancy rights. Whereas, in Rajajipuram slum and Vikas Nagar slum most of the houses were built on the privately encroached land. Overall, only 21 per cent of the respondents were living in rented houses (Figure 5.8). As it is evident that majority of the houses were built either on occupied land or privately encroached land, they were not constructed with proper planning. Moreover, the slum inhabitants had the fear of losing the land therefore it lacks planning. This acts as a

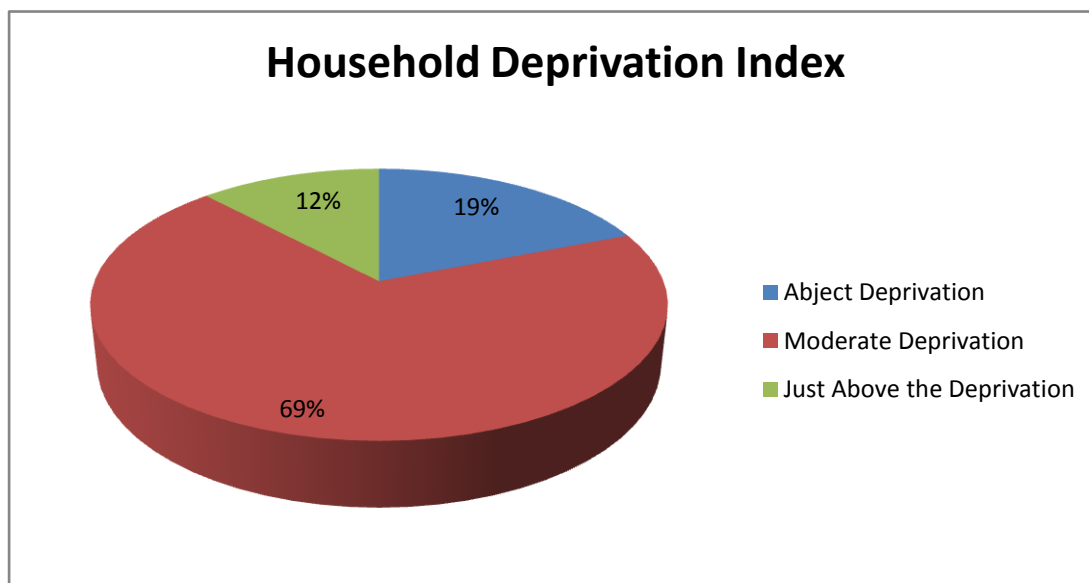
barrier for the urban planning and development. However, this aspect of slums also has other dimension. Davis (2006) focused that the opportunities for the people belonging to low income groups to illegally acquire land on which they can build their houses has reduced drastically. It had been an important instrument through which many have built or acquired their own homes.

### **Household Deprivation Index**

In modern society, the economy is market oriented and on the basis of ownership of vital socio-economic and physical necessities of life it is possible to determine the dividing line for different degrees of deprivation. This type of classificatory system has its own advantage because it is based on the possession of actual physical, economic or social necessities of life (adult literacy), instead of the income data and it can be used for measuring the changes in deprivation levels of a household over a period of time (Srinivasan and Mohanty, 2004). The Household Deprivation Score (HDS) is the addition of all the six variable scores and its value ranges from 0 to 6. These six variables are: adult literacy, type of housing, electricity, drinking water facility, T.V./newspaper and ownership of land/house. The household whose HDS is 1-2 means that the household does not have any of the above mentioned six possessions and it is in the state of 'abject deprivation' (AD); those households whose HDS is 3 or 4 means they have one or two of the six possessions and they are in the category of 'moderate deprivation' (MD); and households having five or six of the above possessions falls in the category of 'just above the deprivation' (JAD).

The analysis of the collected data showed that most of the households (69 percent) were in the category of moderate deprivation (MD). The proportion of the abject deprivation (AD) was found to be substantially high in the Vikas Nagar slum, where almost half of the respondents were deprived of basic commodities and necessities. The situation was comparatively better in Sikander Nagar slum and Rajajipuram slum. In these two slums the proportion of the respondents in the category of JAD i.e. just above the deprivation, was significantly high (Figure 5.9). Overall, most of the sampled households were still facing deprivation which clearly indicated the poor socio-economic status of the slum inhabitants.

Figure 5.9: Distribution of the respondents on Household Deprivation Index (HDS)



Source: Field survey

This deprivation index could be related with Stokes differentiation of slums into two types. He distinguished the slums into two main categories, namely, ‘slums of hope’ and ‘slums of despair’. “By hope is meant that quality of the psychological response by the inhabitant of the slum indicates his intentions to better himself and his estimate of the better outcome of such an effort. ‘Despair’ by the same token denotes either a lack of such intention or a negative estimate of the probable outcome of any attempt to change status. The psychological distinction between ‘hope’ and ‘despair’ may readily be converted into employable and non-employable” (Stokes, 1968). Inhabitants of slums in the present study fall into both the types with some of the respondents being optimistic while some had lost hope of any betterment.

In this chapter the primary information concerning the respondents has been analysed. In the selected slum areas the literacy level of the respondents was found to be very low and it is intricately interlinked with the lack of awareness about their health and hygiene. The inhabitants of the slums are usually considered to be in the lower income and in the surveyed slums the situation is more or less similar. Most of the households were facing the financial crisis and as a result, in the severe illness they fail to cope up with the high expense of the medical treatment. However, most of the women surveyed in this study were also working in order to financially support their family. A substantially high proportion of the sampled households reported to

have monthly income less than Rs. 6,000/-, which seems to be very low considering the average size of the families in slums. The condition of some of the families was such that it was difficult for them to even arrange for two meals in a day. Thus, in this situation it is clearly evident that the high cost of medical treatment was beyond their reach.

If we look into the physical structure and housing conditions in slums, the houses were small, congested and lack space. Most of the sampled houses were either *kaccha* or semi-*pucca*. Majority of the households were having only one room without any provision for the separate kitchen. Furthermore, the rooms lacked windows which mean the houses were devoid of ventilation and natural light. This shows that the slum dwellers were living in substandard housing with non-ventilated room and no separate kitchen. Moreover, it has been found that in these congested and dilapidated houses, women were cooking food using solid fuels which produced harmful smoke and it had an adverse affect not only on the health of the women but other family members also.

In almost every household there was electricity connection, however, it was either legal or illegal connection. Majority of the households were using public water connection and public/shared toilet facilities. Most of the selected households were having *kaccha* drainage connection. The use of unsafe water for drinking, non-hygienic toilet facilities and open defecation was responsible for number of diseases and infections among slum inhabitants. Moreover, the slum dwellers lacked the common understanding about the waste disposal and this further worsened the situation. In the surveyed slums the existence of *kaccha*, congested and narrow streets made them the breeding ground for diseases which had an impact on the health of its inhabitants. Thus, in this chapter it could be summarised that poor socio-economic status coupled with degraded physical structure of the houses in the slums increases the possibility of spread of communicable diseases and other infections.



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*Chapter-VI*

*Nutritional and Health  
Status of Women in  
Slums*



## **Chapter VI**

### **Nutritional and Health Status of Women in Slums**

Malnutrition is one of the most serious public health problems in India (Dhok and Thakre, 2016). A significantly high proportion of women and children suffer from one or the other form of malnutrition such as stunting, wasting, underweight, overweight, low birth weight, vitamin A deficiency, anaemia, etc. The effects of malnutrition are not only seen on an individual but they are also transferred from one generation to another as malnourished mothers give birth to infants who struggle to survive, develop and thrive. If these children are girls, then in the later stages of their life it is quite likely that they grow up into malnourished mothers themselves. The survivors of malnutrition are highly vulnerable to diseases, infections, stunted growth, impaired intellectual and mental growth (UNICEF, 2009).

In India, the women start facing deprivation since their birth. Moreover, in India like other developing countries, the scenario of nutritional status of women belonging to poor socio-economic group, which are not only socially deprived but also marginalised, depicts a gloomy picture. The socio-economic, health and nutritional status of women who live in the urban slums reflect a rather far too serious picture (Hassan and Shukla, 2013). From the point of view of nutrition, children and women of reproductive age are considered to be the most vulnerable group (Haque et. al., 2014). Malnutrition is not only the outcome of various complex biological processes but it is also intricately interconnected with the social processes. Malnutrition is deeply rooted in the complex social web and it is a matter of grave concern that there has been no significant change in the scenario of malnutrition in the last two decades.

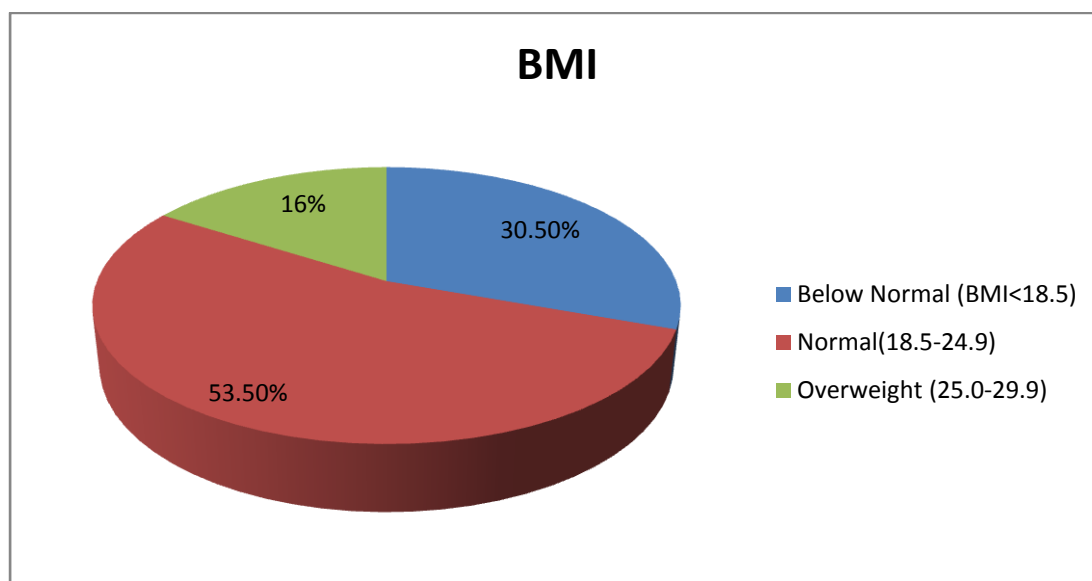
The large scale migration to urban areas has led to the mushrooming of slums within the cities and its fringes and it is coupled with overcrowding, unhygienic living conditions, lack of basic civic amenities and economic insolvency which leads to malnutrition and poor health condition among slum inhabitants. With the view to improve the health and nutritional status of slum dwellers, especially of women and children residing in slums, it is imperative to improve the living conditions and sanitation in the slums. In this chapter it has been endeavoured to assess the nutritional and health status of women living in selected slums. This study would help

in analysing many of the interrelated variables which play a crucial role in explaining the prevailing situation amongst the urban slum women.

### 6.1 Body Mass Index (BMI) of Women

Body mass index is considered as the most important anthropometric indicator for assessing the nutritional status of adults. In this study the BMI classification of the sampled women revealed that more than half of the women (53.5 percent) were having normal BMI, whereas 30.50 per cent of the women were too thin and 16 per cent of the women were obese. This indicates that the proportion of thinner women is more than the overweight (Figure 6.1). NFHS-4 (2017) data revealed that almost 22 per cent of the women had BMI lower than the normal level. Thus, the BMI finding of the present study is more than the national average. This indicates that the BMI of women in slums is worse than the country. In slums, factors such as gender disparity, poor socio-economic status, inadequate dietary intake, etc. are responsible for poor nutritional status (Noronha, Bhaduri and Bhat, 2008).

**Figure 6.1: BMI status of women in slums**



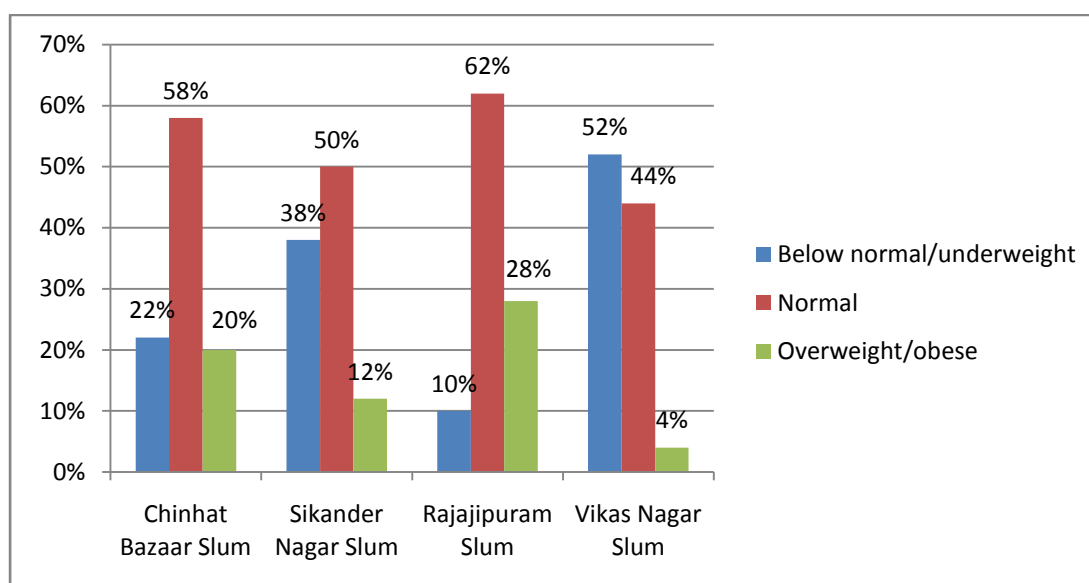
*Source: Field survey*

#### Slum-wise BMI status of Women

In figure 6.2 the slum-wise distribution of the respondents showed that in all the slums except Vikas Nagar slum more than half of the respondents had normal BMI status. The proportion of thinner women was highest in Vikas Nagar slum where almost 52 per cent of the women had BMI status below normal level. It is followed by

Sikander Nagar and Chinhat Bazaar slum where 38 and 22 per cent women respectively were thinner. Whereas the percentage of obese women was highest in Rajajipuram slum (28 per cent) followed by Chinhat Bazaar slum (20 per cent). This depicts that a substantial proportion of women in all the four slums were not having normal BMI and presents a gloomy picture of their nutritional status. This finding is in consistency with other studies which suggested that most of the women residing in slums were undernourished (Haque et. al., 2014). There is need to focus on their health and nutrition as they face the double burden of gender discrimination and poverty.

**Figure 6.2: Slum-wise distribution of respondents as per their BMI status**



Source: Field survey

### BMI and Demographic Variables

The data has been analysed to assess the association between BMI and demographic variables. Women in slums are highly vulnerable social groups due to deprivation and discrimination which in return has an impact on their health and nutrition. The indicators like education and income have been selected to throw light on the factors affecting the nutritional status of women residing in slums. Many previous studies have revealed the effect of education and income on BMI (Mahanta, 2017). In the present study, same has been reflected.

Table 6.1 represents the findings which highlight the fact that with increase in educational status the percentage of women with normal BMI increases. The

incidences of undernutrition and obesity were higher in those women who were either illiterate or primary educated. However, the effect of household income on BMI status was moderate. It has been observed that women who were in the income group of 4001-6000 had better BMI status as compared to others. Thus, the association between income and BMI is not as significant as between education and BMI. One of the reasons for it could be the preferential treatment of male members of the family which means more money is being spent on fulfilling their needs whereas the needs of the women were neglected. Hence, women living in slums continue to be the marginalized section of the society.

**Table 6.1: Inter-linkages between BMI and socio-demographic variables**

Variable	Below Normal (BMI < 18.5 kg/m <sup>2</sup> )		Normal BMI (18.5-24.9 kg/m <sup>2</sup> )		Overweight/Obese (25- 29.9 kg/m <sup>2</sup> )		Total
	Frequency	%	Frequency	%	Frequency	%	
<b>Education</b>							
Illiterate	48	33.5%	75	52.4%	20	13.9%	143
Primary	11	22%	29	58%	10	20%	50
Secondary	02	28.5%	03	42.8%	02	28.5%	07
<b>Income of the Household</b>							
2000-4000	33	52.3%	27	42.8%	03	4.7%	63
4001-6000	17	15.5%	67	61.4%	25	22.9%	109
6001-8000	09	45%	11	55%	-	-	20
>8000	02	25%	02	25%	04	50%	08

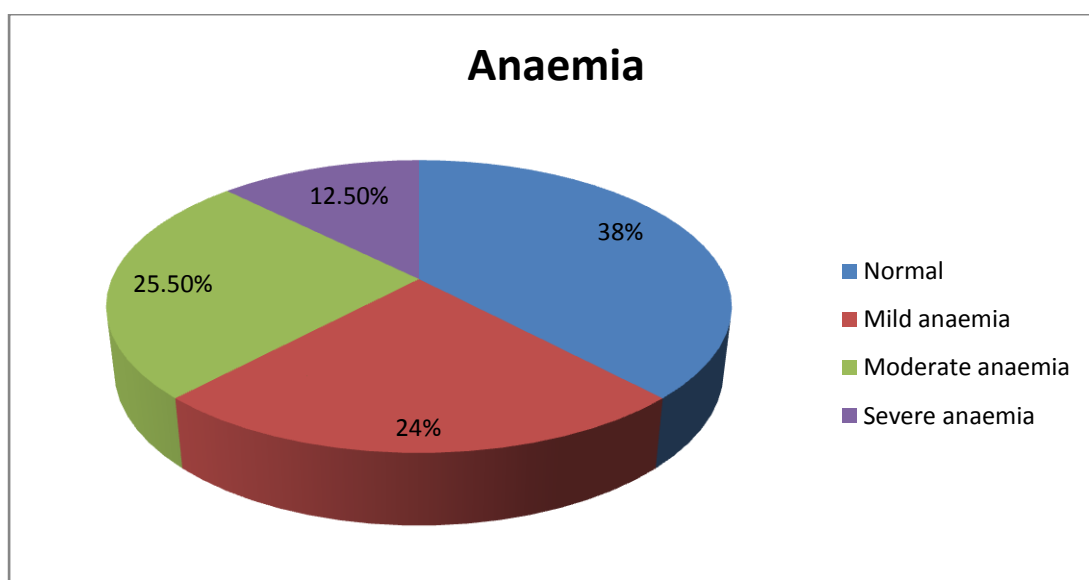
Source: Field survey

## 6.2 Prevalence of Anaemia among Women

Anaemia is an important indicator for assessing the nutritional status of women. In the present study the investigation was conducted to find out the prevalence of anaemia among women selected for the study. The blood samples of the selected respondents were collected with the help of a trained specimen collector. The blood samples were tested by the pathologist in the laboratory and on the basis of the reports the haemoglobin status of the respondents was revealed.

On the basis of haemoglobin level, three levels of anaemia were categorised: mild anaemia (10.0-11.9 g/dl), moderate anaemia (7.0-9.9 g/dl) and severe anaemia (less than 7.0). The analysis of the data depicted that overall 67 per cent of the sampled women were anaemic. 24 per cent of the women had mild anaemia, 25.50 per cent had moderate anaemia and 12.5 per cent were severely anaemic (Figure 6.3). In a study conducted in slums of Delhi a high prevalence of anaemia (77 per cent) was observed (Virender et. al., 2002). NFHS-4 reported that almost 55 per cent of the women were anaemic whereas in the present study this finding is found to be higher (67 per cent). Thus, this clearly shows that the prevalence of anaemia among women living in slums is high.

**Figure 6.3: Prevalence of anaemia in women**



*Source: Field survey*

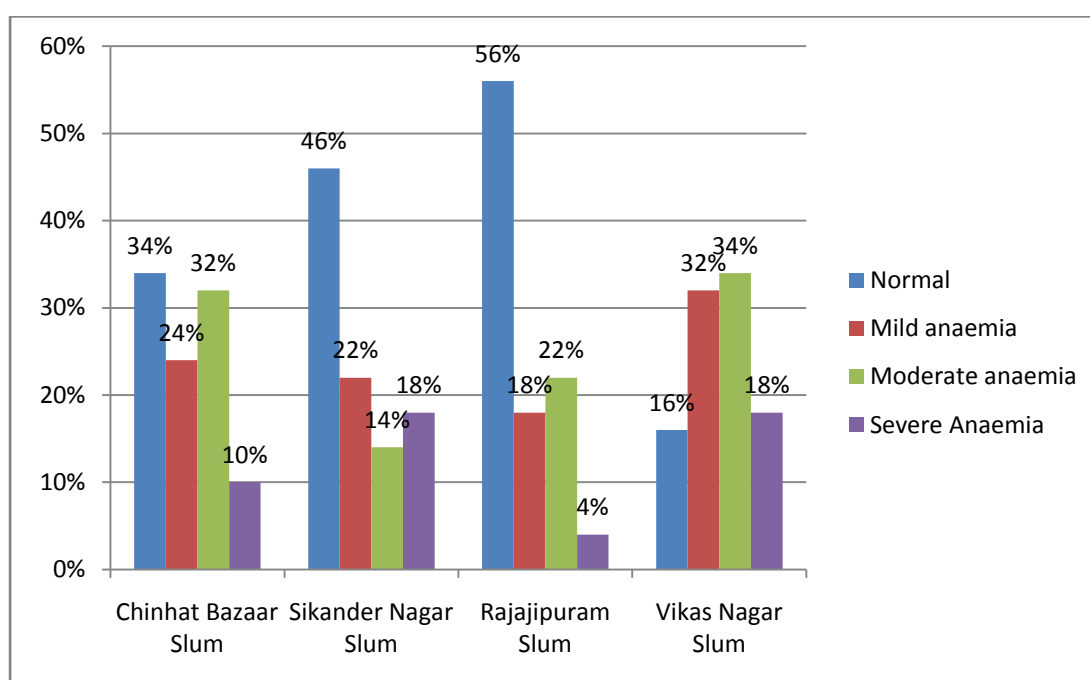
### Slum-wise Prevalence of Anaemia

It has been attempted to show the distribution of respondents as per their haemoglobin status in the four slums selected for the study. The analysis of the data showed that most of the women in Vikas Nagar slum were anaemic. Similarly, in Chinhat Bazaar slum and Sikander Nagar slum a significantly high proportion of women were suffering from anaemia. The situation was comparatively better in Rajajipuram slum where more than half of the respondents (56 per cent) were non-anaemic (Figure 6.4). One of the notable features is that most of the cases of severe anaemia were reported in Vikas Nagar slum and Rajajipuram slum. However, an analysis of whole scenario revealed that Vikas Nagar slum and Rajajipuram slum are opposite to each other in

context of non-anaemic women. Thus, it is clearly evident the problem of anaemia is prevalent in all the four slums.

Apart from body mass index, the level of haemoglobin is also considered to be the one of the important indicators to assess the nutritional status of women (Kumar and Sinha, 2007). Agarwal et. al. (2005) stated that a substantially high proportion of women in all the states, irrespective of socio-economic and demographic categories were found to be anaemic. This indicates that anaemia continues to be one of most common nutritional problems among women.

**Figure 6.4: Slum-wise prevalence of anaemia among women**



*Source: Field survey*

### **Inter-linkages between Prevalence of Anaemia and Socio-Demographic variables**

The prevalence of anaemia has been analysed in context of socio-demographic variables among slum women. The inter-linkages between anaemia and variables such as age of women at marriage, age of women at first childbirth, education, etc have been analysed. The findings have been represented in the table 6.2.

Table 6.2: Inter-linkages between prevalence of anaemia and demographic variables

Variables	Anaemic		Non-anaemic		
	Frequency	Percentage	Frequency	Percentage	Total
<b>Age at marriage</b>					
Below 18 years	61	82.40%	13	17.60%	74 (37%)
19-21 years	57	52.30%	52	47.70%	109 (54.5%)
22-29 years	06	35.30%	11	64.70%	17 (8.5%)
<b>Age at first childbirth</b>					
Below 21 years	77	75.50%	25	24.50%	102 (51%)
22-24 years	45	50.56%	44	49.43%	89 (44.5%)
25 years and above	02	28.57%	07	77.77%	09 (4.5%)
<b>Education</b>					
Illiterate	89	62.23%	54	37.76%	143 (71.5%)
Primary education	31	62%	19	38%	50 (25%)
Secondary education	04	57.14%	03	42.85%	07 (3.5%)

Source: Field survey

The prevalence of anaemia was as high as 82.40 per cent among women who were married before 18 years. This indicates that marriage at an early age increases the risk of occurrence of anaemia. Further, the incidences of anaemia were significantly high among women who delivered their first child before 21 years of age. This shows that early pregnancy has a negative impact on the nutritional status of women residing in slums. Moreover, the prevalence of anaemia was also higher among women who were either illiterate or educated till primary. Even high prevalence of anaemia was seen among the women who have received secondary education. In a study conducted in an urban slum of Bhubaneswar, a significantly

higher prevalence of anaemia was noted among slum women who were illiterate or received only primary education (Panigrahi and Sahoo, 2011). Thus it is evident from the analysis of data that the above mentioned variables are significantly associated with the occurrence of anaemia in women inhabiting in slums.

### **Inter-linkages between Prevalence of Anaemia and Knowledge of Anaemia and Food Selection Ability**

In the present study it has been endeavoured to assess the impact of knowledge about anaemia and food selection ability on the occurrence of anaemia among women living in the selected slums. Table 6.3 depicts the association of these two variables with the occurrence of anaemia.

**Table 6.3: Inter-linkages between prevalence of anaemia and knowledge about anaemia and food selection**

Variables	Anaemic (n=124)		Non-Anaemic (n=76)		Total (n=200)
	Frequency	Percentage	Frequency	Percentage	
<b>Knowledge about anaemia</b>					
Yes	27	28.7%	67	71.2%	94 (47%)
No	97	91.5%	09	8.4%	106 (53%)
<b>Food selection ability</b>					
Yes	39	38.2%	63	61.7%	102 (51%)
No	85	86.7%	13	13.2%	98 (49%)

*Source: Field survey*

The analysis of the data indicated that women in slums who had some knowledge about anaemia were relatively less anaemic as compared to those women who lacked the knowledge. It was observed that those women who were anaemic 91.5 per cent of them had no knowledge about anaemia. Further, among non-anaemic women 71.2 per cent were aware about anaemia. This showed that the knowledge of anaemia is inversely associated with the prevalence of anaemia.

The food selection ability is also an essential variable in assessing the occurrence of anaemia. It has been revealed that majority of the anaemic women lacked the appropriate food selection ability, whereas most of the non-anaemic women (61.7 per cent) were selecting food rich in iron and protein. Thus, the women

living in slums lacked the ability to select iron and protein rich food which seemed to increase the prevalence of anaemia. This finding is in conformity with the previous studies which asserted that poor dietary intake of green leafy vegetables and pulses increases the incidences of anaemia among women (Bentley and Griffiths, 2003). Thus, it is evident in the present study that the burden of anaemia is significantly high among women inhabiting in the urban slum areas.

### **6.3 Dietary Assessment**

It has been suggested by FAO that dietary assessment of individuals furnish necessary information which can be used for explaining differences in food intake and nutrients. Dietary survey method is an invaluable tool for not only measuring protein, energy and macronutrients but also for determining micronutrient deficiencies (ICDAM, 2003). In the present study an attempt has been made to investigate the relationship between food consumption pattern, socio-demographic and anthropometric variables. Moreover, the criteria of food selection, food frequency consumption and use of iodised salt were also assessed to develop a better understanding of food consumption pattern of slum dwellers, particularly of women.

The functionalist perspective is a consensual approach for understanding society, which also assumes that the latent or hidden functions of everyday activities have significance for maintaining the system as a whole. In relation to something as simple as eating, Lupton (1996: 8) argues that the ‘function’ of food can be seen in broader terms than just as nutritional intake. A functionalist perspective serves to highlight the way in which ‘food practices serve to support co-operative behaviour or structures of kinship in small groups’.

#### **Food Selection**

Usually, the criteria of food selection in a household are affected by a variety of social, economic, cultural and spiritual factors. Slums are inhabited by people who belong to socially excluded and marginalised sections. Here, these factors become more prevalent which influence their food practices. It has been tried to analyse the food selection criteria used by the slum inhabitants since it plays a crucial role in determining their food consumption pattern. The data collected in this context has been analysed and the results are presented in table 6.4.

**Table 6.4: Criteria for food selection**

S.No.	Particulars	Frequency*	Percentage
1.	Seasonal food	191	95.5%
2.	Cost	187	93.5%
3.	Ease of preparation	183	91.5%
4.	Local availability	152	76%
5.	Nutritional quality	86	43%
6.	Likes and dislikes of family	64	32%

Source: Field survey

(\* indicates multiple response)

As the table suggests women living in the selected slums considered six criteria for selection of food. Majority of the women were considering a combination of criterion for selecting food. Seasonal food (95.5 per cent), cost of food (93.5 per cent) and ease of preparation (91.5 per cent) were the highest considered ones. More than 90 per cent of the women took these factors into account while selecting food for their family members. This depicts that preference was being given to easy affordability and availability of food. Whereas most of the women in slums neglected the importance of nutritional quality. The factors of nutritional quality and likes and dislikes of the family members were the least preferred ones. Thus, it could be asserted that economic deprivation and lack of awareness about nutrition could be seen in the food choices of the slum dwellers which have an effect on their nutritional status. In a study conducted among the female urban slum dwellers of Mumbai, it was observed that cost and easy availability of seasonal food were given preference while selecting the food (Chopra et. al., 2012). Hence, the current finding is in line with this study.

### **Food Frequency**

A food frequency list of various food items was prepared and it was administered to the respondents in all the four selected slums. The consumption of varied nutritious food products is imperative for good health. The analysis of consumption of food items would be helpful in understanding the food practices of women in slums as well as in assessing their nutritional status. In table 6.5 a consolidated list of various food items and their monthly consumption by the respondents has been presented.

Table 6.5: Frequency of consumption of food

S.No.	Food Items	Daily	Weekly	Fortnightly	Monthly
1.	Cereals	200 (100%)	-	-	-
2.	Pulses	33 (16.5%)	137 (68.5%)	21 (10.5%)	09 (4.5%)
3.	Milk	11 (5.5%)	171 (85.5%)	14 (7%)	04 (2%)
4.	Leafy vegetables	03 (1.5%)	106 (53%)	54 (27%)	37 (18.5%)
5.	Other vegetables	87 (43.5%)	98 (49%)	15 (7.5%)	-
6.	Fruits	06 (3%)	76 (38%)	97 (48.5%)	21 (10.5%)
7.	Fish*	-	23 (11.5%)	37 (18.5%)	04 (2%)
8.	Meat*	-	12 (6%)	45 (22.5%)	07 (3.5%)
9.	Egg*	-	31 (15.5%)	33 (16.5%)	-
10.	Sugar	200 (100%)	-	-	-
11.	Oil	200 (100%)	-	-	-
12.	Salt	200 (100%)	-	-	-

Source: Field survey

(Number in parentheses indicate percentages)

(\* indicates data representing only non-vegetarian respondents)

Table 6.5 shows the food consumption pattern of women residing in the slums selected for the study. It revealed that most common food items that were consumed daily by all the respondents were cereals, sugar, oil and salt. However, most of the respondents consumed pulses (68.5 per cent) and milk (85.5 per cent) on the weekly basis. During field survey one notable feature which came to light is that in almost every house milk was bought daily, yet women did not consume it on the daily basis. The reason given for this by the respondents was that the milk was consumed by other members of the family and they would get it only when something is left after consumption of other family members. It is clearly evident that preference was given to others members of the household whereas women were treated as secondary.

Similarly, the frequency of consumption of leafy vegetables (53 per cent) and other vegetables (49 per cent) was mostly on weekly basis. Further, majority of the respondents (48.5 per cent) consumed fruits fortnightly. The study clearly brought out the inadequate consumption of fruits and vegetables in daily diet which are considered to be the rich source of vitamins and nutrients. NFHS-3 (2009) also reported the similar findings which stated that almost 60 per cent of the women were not

consuming fruits even on weekly basis. Moreover, the analysis of data highlights the fact only 32 per cent of the women were consuming non-vegetarian food items. Fish (18.5 per cent), meat (22.5 per cent) and eggs (16.5 per cent) were mostly consumed fortnightly. This suggest that majority of the women in slums were vegetarian.

The analysis of consumption of food frequency revealed the fact that majority of the women in slums were deprived of adequate daily diet. The key findings depict poor dietary diversity with predominantly cereals and oil based diet. Most of the nutritious food items such as pulses, milk, vegetables, fruits, meat, eggs, etc. were not part of their daily diet. The high price of these food items is one of the reasons for their infrequent consumption. Chopra et. al. (2012) in the study of female slum dwellers of Mumbai stated that the daily consumption of green leafy vegetables and fruits is correlated with its cost. Thus, it could be seen that finding of this study is in conformity with the previous studies.

#### **Frequency of Consumption of Leafy Vegetables and Fruits by Women's Education and Occupation**

In the present study, it has been attempted to investigate the impact of socio-demographic variables on the vegetable and fruit consumption among women living in the sampled slums. Women's occupational and educational statuses were selected as socio-demographic indicators and its influence was seen on the respondents' consumption of vegetables and fruits. Table 6.6 presents the frequency of intake of leafy vegetables and fruits and its association with education and occupation. Women who were employed ate leafy vegetables more frequently than those who were housewives. Majority of the employed women (78.5 per cent) consumed leafy vegetables at least once in a week. In contrary to this, a large proportion of housewives in slums were eating leafy vegetables either fortnightly (40.5 per cent) or monthly (50 per cent). This suggests a positive correlation between employment status and consumption of leafy vegetables by women. This finding is similar to a study in rural area in which the income of the women was positively associated with leafy vegetable intake (Panwar and Punia, 1998).

Similarly, the situation is more or less similar in consumption of fruits. Almost half of the employed women in slums were consuming fruits on the weekly basis, whereas most of the housewives were consuming it on fortnightly (55.4 per cent) and

monthly (28.3) basis. It could be attributed that employed women in slums had some decision making power while selecting vegetables and fruits in comparison to non-employed women. Further, it depicts that income provides power to women in slums who are otherwise neglected and deprived. Thus, it could be suggested that the probability of normal nutritional status among employed women increases in slums.

Education level of women was found to be positively associated with the consumption of leafy vegetables and fruits. All the women who were secondary educated consumed vegetables and fruits either daily or at least once in a week. Most of the illiterate women (48.4 per cent) ate leafy vegetables once in a week, however more than 60 per cent of the illiterate women consumed fruits only fortnightly. This clearly shows that with the increase in educational level the consumption of fruits and vegetables increases. This finding is in conformity with an urban slum based study in Mumbai which showed positive correlation between education and intake level of fruits and leafy vegetables (Chopra et. al., 2012).

Table 6.6: Association between frequency of consumption of leafy vegetables and fruits with education and occupation of women

	Consumption Frequency							
	Leafy Vegetables				Fruits			
	Daily	Weekly	Fortnightly	Monthly	Daily	Weekly	Fortnightly	Monthly
<b>Occupation</b>								
Housewife	-	07 (9.4%)	30 (40.5%)	37 (50%)	01 (1.3%)	11 (14.8%)	41 (55.4%)	21 (28.3%)
Employed	03 (2.3%)	99 (78.5%)	24(19.04%)	-	05 (3.9%)	65 (51.5%)	56 (44.4%)	-
<b>Education</b>								
Illiterate	-	69 (48.4%)	37 (25.8%)	37 (25.8%)	-	32 (22.3%)	90 (62.9%)	21 (14.6%)
Primary	01 (2%)	32 (64%)	17 (34%)	-	02 (4%)	41(82%)	07 (14%)	-
Secondary	02 (28.5%)	05 (71.4%)	-	-	04 (57.1%)	03 (42.8%)	-	-

Source: Field survey

(Number in parentheses indicate percentages)

### 24 Hour Dietary Recall

24 hour dietary recall was conducted for two days among sampled women in all the four slums. National Nutrition Monitoring Bureau (NNMB) routinely uses this method in the national level surveys. This method has been used to compile and analyse the food and nutrient intake. Most of the respondent (87 per cent) reported consuming two meals a day. Tea was the most common beverage consumed by majority of respondents (91 per cent) at least once in a day. Refined vegetable oil (mustard and soyabean were the commonest) was found to be the most common cooking medium (77 per cent) in the households. A significantly high proportion of the women (51 per cent) reported consuming some kind of snacks either freshly prepared at home or purchased from the market. Most commonly consumed home-made snacks were *pakori*, chips, *halwa*, *seviyaan*. These deep-fried snacks were revealed to be eaten weekly or fortnightly. Market snacks biscuits, rusk, *namkeen*, *samosas*, *kachodis* were commonly consumed and it was observed to be eaten by almost 33 per cent of the respondents. This shows a high consumption rate of deep-fried snack rich in fat content which indicate towards unhealthy dietary practices. The consumption of these snacks has implications on the dietary quality due to low micronutrient content (Singh et. al., 2015). Further, during the field survey it came into light that the consumption of snack was more in Sikander Nagar slum and Rajajipuram slum. In Chinhat Bazaar slum and Vikas Nagar slum the intake of snacks was relatively low due to poorer economic status of the households in these two slums.

One-third of the respondents reported to consume vegetables and fruits which highlight lack of nutritional content in the diet of rest of the respondents. One of the notable features is that most of the women preferred eating seasonal vegetables and fruits. The lower intake of vegetables and fruits aggravates the already compromising nutritional status of women residing in slums. Further, a negligible per cent of respondents (2 per cent) revealed to consume tubers and roots. The intake of milk was reported by only 11 per cent of the women. The consumption of meat, eggs and fish was found to be relatively low with only 17 per cent of the women reporting to have eaten them. The intake of pulses was revealed by only 32 per cent of the women. However, all the respondents reported to have consumed cereals, oil, sugar, salt, spices. The inadequate consumption of milk, leafy vegetables, fruits, pulses reflect

poor nutritional intake among women inhabiting in slums. This finding highlights that daily consumption pattern of women was far from satisfactory. It is essential that various strategies should be implemented to spread awareness about healthy eating practices among slum dwellers, particularly women in order to improve the quantity and quality of food intake.

### Consumption of Iodised Salt

One of the major causes of mental retardation all around the world is iodine deficiency (AIIMS, 2002). In 1984, on the recommendations of Central Council of Health, the Indian government took decision to iodize the entire edible salt. Inadequate consumption of iodized salt coupled with lack of awareness and inappropriate practices makes it difficult to completely eradicate Iodine deficiency disorders (IDDs) (Saman et. al., 2009). In the present study data has been collected to determine the utilization of iodized salt by the households in slums and also to assess the awareness about iodized salt among women in slums. Table 6.7 represents the utilization and awareness about iodized salt among the respondents.

**Table 6.7: Utilization of iodized salt by the respondents**

Variable	Frequency	Percentage
<b>Use of iodized salt</b>		
Yes	176	88%
No	24	12%
<b>Awareness about iodized salt</b>		
Usage of iodized salt is better than non-iodized salt	129	64.5%
Its consumption prevent goitre	31	15%

*Source: Field survey*

The analysis of data revealed that majority of the sampled households (88 per cent) were using iodized salt regularly. One of the striking results of this high consumption rate was that during field survey only in one household the incidence of goitre was reported. This clearly reveals that the problem of goitre was not prevalent in the selected slums. NFHS-4 reported that 93 per cent of the households were using iodized salt. This finding of the present study is in conformity with NFHS-4 data.

However, only 64.5 per cent women were aware that consuming iodized salt is better. Further, only 15 per cent of the respondents were conscious about the benefits of iodized salt. Hence, it can be concluded that the consumption of iodized salt and absence of goitre in the sampled slums is not found to be associated with the awareness level among the respondents.

#### **6.4 Health Status of Women**

Poor housing conditions, overcrowding, deterioration, lack of sanitation and basic civic amenities, environmental degradation pose a continuous threat to the health of slum dwellers. An overview of health status of women residing in slums presents a gloomy picture. The incidences of death and illnesses are highest among women belonging to poorer sections of the society (Goswami, 2014a). Besides suffering of women, one of the major causes of concern is their ignorant attitude towards their own health. The health of women in the urban slums is the most neglected one. Irregularity of income, inadequate food, absence of safe and hygienic shelter, lack of access to quality health services and other services coupled with unfavourable physical and social environments, such as exploitative and abusive behaviour towards women, adversely affect the health of the urban poor women living in slums (Goswami, 2014b).

In this section of the chapter, various health problems being faced by the sampled women in the slums have been discussed. The health problems have been broadly divided into four categories namely metabolic related problems, nutritional deficiencies, reproductive health problems and other health ailments. Table 6.8 provides the prevalence of various health problems among the women in slums. Age-wise distribution of respondents has been presented to analyse the occurrence of diseases in different age groups.

Table 6.8: Age-wise distribution of health problems among respondents

Health Problems*	Age (in years)		
	15-25	26-35	36-45
<b>Metabolic related problems</b>			
Hypertension	07 (3.5%)	24 (12%)	13 (6.5%)
Diabetes	-	07 (3.5 %)	15 (7.5%)
Cardiovascular Diseases	01 (0.5%)	03 (1.5%)	06 (3%)
Cancer	-	-	03 (1.5%)
<b>Nutritional Deficiencies</b>			
Poor BMI status	12 (6%)	21 (10.5%)	33 (16.5%)
Chronic energy deficiency	14 (7%)	25 (12.5%)	37 (18.5%)
Anaemia	39 (19.5%)	41 (20.5%)	44 (22%)
<b>Reproductive health problems</b>			
Vaginal discharge	27 (13.5%)	31 (15.5%)	24 (12%)
Irregular menstrual cycle	08 (4%)	17 (8.5%)	12 (6%)
Heavy menstrual flow	14 (7%)	24 (12%)	27 (12%)
Frequent micturition	04 (2%)	11 (5.5%)	17 (8.5%)
<b>Other health ailments</b>			
Gastric and abdominal problem	07 (3.5%)	13 (6.5%)	21 (10.5%)
Jaundice	01 (0.5%)	06 (3%)	02 (1%)
Headache	09 (4.5%)	37 (18.5%)	19 (9.5%)
Body pain and joint pain	02 (1%)	11 (5.5%)	13 (6.5%)

Source: Field survey

(\* indicate multiple responses)

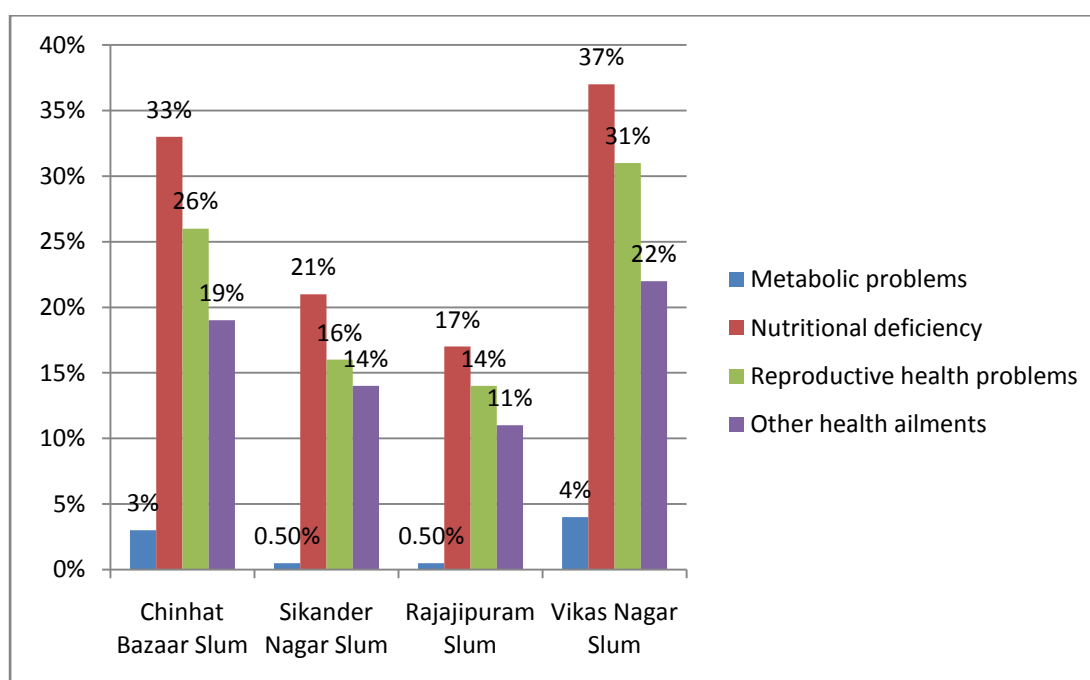
The analysis of health problems among women was done under four heads. It was revealed that the most prevalent health problems among women in the slums were nutritional deficiencies (6% to 22%) followed by other health ailments (1% to 18.5%) and reproductive problem (2% to 15.5%). The contribution of metabolic health problem was comparatively low to the disease profile (0.5% to 7.5%). Higher incidences of nutritional deficiencies indicate poor dietary intake and unhygienic food, whereas higher proportion of reproductive and ailments suggest the impact of unhygienic practices, poor living and environmental conditions on their health. Further, one of the issues which has been observed during field survey in the slums is

that that women were often ignorant towards minor health problems and only consult doctors when they fell seriously sick. This finding of the present study is in conformity to a similar study conducted in slums of Raipur (Goswami, 2014). The above table suggests a high occurrence rate of variety of diseases among sampled women. It was observed that with the increase in age the incidences of health problems increased. Hence, it can be attributed that the prevalence of illnesses was higher among the older women. Further, the higher incidence of nutritional problem is a matter of serious concern which needs to be looked into.

### Slum-wise Distribution of Health Problems

The slum-wise analysis of prevalence of health problems highlights a very distressing condition of Vikas Nagar slum and Chinhat Bazaar slum where the episodes of disease, particularly of nutritional deficiency and reproductive health problems were higher than the other two slums. In both the slums women were at higher risk of having serious health problems. The situation in Sikander Nagar slum and Rajajipuram slum was comparatively better with slightly fewer cases of acute illnesses. The incidences of metabolic problems are more in these two slums. However, the incidences of chronic energy deficiency, anaemia, irregular monthly cycle, heavy menstrual flow, headache were invariably high in all the four slums.

**Figure 6.5: Slum-wise distribution of diseases among respondents**



Source: Field survey

**Socio-Demographic Indicators and Health Problems**

It has been attempted to analyse the impact of socio-demographic factors on the prevalence of health problems among the women residing in the selected four slums. Socio-demographic factors like educational status of respondents and monthly income of family were selected to assess the episodes of illnesses among women. One of the most crucial factors for determining the occurrence of health problems is education, as it is an important indicator for assessing the awareness level about health among respondents. Table 6.9 depicts the association between educational status and prevalence of diseases.

**Table 6.9: Educational status of the respondents and prevalence of health problems**

Health Problems*	Education		
	Illiterate	Primary	Secondary
<b>Metabolic related problems</b>			
Hypertension	27 (61.3%)	21 (47.7%)	02 (4.5%)
Diabetes	12 (54.5%)	08 (36.3%)	01 (4.5%)
Cardiovascular Diseases	-	08 (80%)	02 (20%)
Cancer	01 (33.3%)	02 (66.6%)	-
<b>Nutritional Deficiencies</b>			
Poor BMI status	41 (62.1%)	25 (37.8%)	02 (3%)
Chronic energy deficiency	47 (61.8%)	26 (34.2%)	03 (3.94)
Anaemia	71 (57.2%)	50 (40.3%)	03 (2.4%)
<b>Reproductive health problems</b>			
Vaginal discharge	47 (57.3%)	43 (52.4%)	01 (1.2%)
Irregular menstrual cycle	21 (55.2%)	15 (39.4%)	02 (5.2%)
Heavy menstrual flow	33 (50.7%)	31 (47.6%)	01 (1.5%)
Frequent micturition	17 (53.1%)	15 (46.8%)	-
<b>Other health ailments</b>			
Gastric and abdominal problem	24 (58.5%)	14 (34.1%)	03 (7.3%)
Jaundice	05 (55.5%)	04 (44.4%)	-
Headache	34 (52.3%)	27 (41.5%)	04 (6.1%)
Body pain and joint pain	13 (50%)	12 (46.1%)	01 (3.8%)

Source: Field survey

(\* indicate multiple responses)

As the table suggest the incidences of metabolic diseases decreases with the increase in educational status. These metabolic diseases are often termed as the health problems of the elite class and it is considered to be the by-product of changing dietary habits, inactive lifestyle and stress. It has been reported in several studies that malnutrition and diseases related with sedentary lifestyle act as a double burden for urban poor in India. The present situation in the study is in conformity with the above-stated problem. Stressful environment along with low fibre diet can be seen as the contributory factors for the prevalence of metabolic diseases among slum women. This needs to be viewed as an alarming situation for the near future for the low income group people.

As evident in the table the incidences of anaemia were highest among the illiterate women followed by the primary educated. The prevalence of poor BMI status and chronic energy deficiency was also found to be highest among illiterates. The high incidences of nutritional deficiencies indicate towards the poor bodily reserves and inadequate nutritional intake of women in slums. Moreover, no significant difference could be seen in the case of reproductive health diseases. In most of the women irrespective of their educational status, the problems of irregularity of menstrual cycle, heavy flow, vaginal discharge were significantly high. Thus, in case of reproductive health diseases the educational status had no significant role.

The prevalence of other health ailments was found to be decreasing with the increase in educational status of the women. The diseases like abdominal pain, body pain, headache, were the most commonly reported ailments. However, their occurrence rate decreased substantially with the increase in educational status. Thus, it could be asserted that the prevalence of metabolic diseases, nutritional deficiencies and other health ailments was found to be associated with the educational level, but no significant relationship could be seen between the educational status and reproductive health diseases in the present study.

Monthly income of the household could be a crucial indicator in assessing the prevalence of various health problems among women in slums. In table 6.10 income-wise distribution of health problems among respondents has been depicted. The trend showed that household income and prevalence of health problems are associated with

each other. However, the analysis of data presents a sombre picture of women's health status in slums.

**Table 6.10: Monthly income of the household and prevalence of health problems among women**

Health Problems*	Monthly Income of the Household			
	2000-4000	4001-6000	6001-8000	> 8000
<b>Metabolic related problems</b>				
Hypertension	06 (13.6%)	25 (56.8%)	11 (25%)	02 (4.5%)
Diabetes	-	15 (68.1%)	04 (18.1%)	03 (13.6%)
Cardiovascular Diseases	-	03 (30%)	06 (60%)	01 (10%)
Cancer	-	-	02 (66.6%)	01 (33.3%)
<b>Nutritional Deficiencies</b>				
Poor BMI status	37 (56%)	18 (27.2%)	10 (15.1)	01 (1.5%)
Chronic energy deficiency	44 (57.8%)	20 (26.3%)	12 (15.7%)	-
Anaemia	54 (43.5%)	65 (52.4%)	04 (3.2%)	02 (1.6%)
<b>Reproductive health problems</b>				
Vaginal discharge	41 (50%)	33 (40.2%)	06 (7.3%)	02 (2.4%)
Irregular menstrual cycle	17 (44.7%)	12 (31.5%)	05 (13.1%)	04 (10.5%)
Heavy menstrual flow	38 (58.4%)	21 (32.3%)	04 (6.1%)	02 (3%)
Frequent micturition	16 (50%)	12 (37.5%)	04 (12.5%)	-
<b>Other health ailments</b>				
Gastric and abdominal problem	10 (24.5%)	23 (56%)	06 (14.6%)	03 (7.3%)
Jaundice	05 (55.5%)	04 (44.4)	-	-
Headache	19 (29.2%)	40 (61.5%)	05 (7.6%)	01 (1.5%)
Body pain and joint pain	10 (38.4%)	13 (50%)	2 (7.6%)	1 (3.8%)

Source: Field survey

(\* indicate multiple responses)

The table suggests an increasing trend of metabolic health problems among women has been reported with increase in their household income. Hypertension was prevalent in all the income groups and one of the reasons for it could be stressful environment in slums. However, the incidence of diabetes and cardiovascular diseases were more in higher income groups. Overall, women living in households with better

income were more susceptible to metabolic health problems. The presence of metabolic diseases among slum inhabitants is a cause of worry because these diseases are usually found to be present in people who are economically well-off. Here, despite of lower income these diseases were prevalent and this is indicative of poor life-style and inappropriate dietary habit.

As the table depicts the household income did not have much influence on the nutritional profile of the respondents in the slum areas except for anaemia which decreases with increase in income. However, a slight decline is evident in nutritional problems with increase in income of the household, but it could be observed that the nutritional deficiencies were prevalent in all the income groups in slums. This suggests that the dietary and nutrient intake in most of the households were inadequate, especially of women.

The frequency of reproductive health problems were more in women belonging to the income group of Rs. 2000-4000 followed by Rs. 4001-6000. With the increase in income the incidences of reproductive health problems decreased. This suggests that reproductive health problems were found to be associated with the income of the family. Similarly, other health ailments like gastric and abdominal pain, headache, joint pain were found to be more common in women of lower income groups. Thus, it could be asserted that except anaemia all the other health problems were associated with the income of the household.

### **Other Reproductive Health Indicators**

Reproductive health consist of various indicators such as age of women at menarche, marriage and first delivery, birth spacing between children, prenatal care, postnatal care, type of delivery, etc. In slums, these indicators are particularly important considering the poor socio-economic, cultural and living conditions. In table 6.11 the data concerning various indicators of reproductive health has been analysed to assess the health status of women. It has been endeavoured to present slum-wise picture of reproductive health for better understanding of the situation.

Table 6.11: Slum-wise reproductive health status of women

Variable	Chinhat Bazaar Slum (n= 50)	Sikander Nagar Slum (n=50)	Rajajipuram Slum (n=50)	Vikas Nagar Slum (n=50)
<b>Age of menarche (years)</b>				
11-13	27 (54%)	21 (42%)	26 (52%)	33 (66%)
14-16	23 (46%)	29 (58%)	24 (48%)	17 (34%)
<b>Age at marriage (years)</b>				
<18	19 (38%)	17 (34%)	11 (22%)	27 (54%)
19-21	26 (52%)	31 (62%)	29 (58%)	23 (46%)
22-24	02 (4%)	02 (04%)	10 (20%)	-
<b>Age at first delivery (years)</b>				
<21	30 (60%)	22 (44%)	15 (30%)	35 (70%)
22-24	19 (38%)	26 (52%)	29(58%)	15 (30%)
25 years and above	01 (2%)	02 (4%)	06 (12%)	-
<b>Spacing between children</b>				
Only Child	02 (4%)	01 (2%)	04 (8%)	-
<1	21 (42%)	07 (14%)	05(10%)	19 (38%)
<2	24 (48%)	31 (62%)	35(70%)	27 (54%)
>3	03 (6%)	11 (22%)	06 (12%)	04 (8%)
<b>Pregnancy related</b>				
Prenatal care	31 (62%)	34 (68%)	39 (78%)	22 (44%)
Normal delivery	27 (54%)	02 (42%)	24 (48%)	32 (64%)
Post natal care	19 (38%)	25 (50%)	31 (62%)	14 (28%)
Miscarriage	05 (10%)	04 (8%)	03 (6%)	09 (18%)
Infant mortality	03 (6%)	02 (4%)	02 (4%)	04 (8%)

Source: Field survey

The details of reproductive health shown in the above table reveal that in all the slums except Sikander Nagar slum, the age of menarche of more than half of

the women was mostly between 11-13 years. The onset of menarche marks the development of reproductive organs and the beginning of capacity to reproduce among women. In majority of the cases the age of marriage was between 19-21 years. However, in Vikas Nagar slum a large proportion of women (54 per cent) were married before 18 years. This shows that women were married at an early age and they were physically and mentally not prepared for marriage and children. Moreover, majority of the women gave birth to their first child before completing 21 years of age. Particularly in Vikas Nagar slum (70 per cent) and Chinhat Bazaar slum (60 per cent), the percentage of early pregnancy is significantly high. Early pregnancy is not only risky for the mother, but it poses serious threat to the health of the infants. As per USAID (2010) pregnancies in women before completing 20 years of age increases the peri-natal risks and pregnancies in women who are below 18 years are associated with maternal and peri-natal risks.

In majority of cases the spacing between pregnancies was less than two years. However, in Vikas Nagar slum almost 38 per cent of the women had pregnancy spacing less than one year. Further, except Vikas Nagar slum (44 per cent) most of the women received prenatal care. Although, the percentage of women who received post natal care was comparatively lower than prenatal care. Especially in Vikas Nagar slum and Chinhat Bazaar slum the situation is worst where only 28 per cent and 38 per cent respectively received post natal care. This finding is contrast with NFHS-3 report where almost 71 per cent of the women in urban areas received post natal care from trained medical personnel.

The cases of miscarriages (10.5 per cent) and infant mortality (5.5 per cent) were also reported. Early pregnancy and lack of adequate prenatal care could be the reason for abortions and infant mortality. For reducing such incidences, it is essential that women in slums should be provided with much needed pre and post natal care. Providing focused health services to urban poor women who have obstetrical history or deliver before completing the normal pregnancy term can help in reducing the infant mortality rate (Kapoor et al., 1996).

According to the functionalist approach, for the functioning of the society as a stable system, it is essential for its members to be healthy and also contribute towards maintaining the equilibrium of their society. As a result, sickness is considered as a form of deviant behaviour that is required to be controlled by the society. Parsons

(1951) for the first time in his concept of the sick role put forward this view. The sick role is regarded as a shared set of cultural norms that recognises deviant behaviour of an individual caused by the illness as legitimate and channelizes the individual into the health care system.

### 6.5 Access and Utilization of Health Care Services

One of the biggest challenges being faced by the health care providers is the inequitable distribution of the health care services. The urban slum dwellers are highly vulnerable to lack of access to the health care services. It is a grim reality that poor in urban India are deprived of basic health facilities. Moreover, women living in slums are the worst sufferer as they lack access to basic determinants of good health (Banerjee, 2012). Multiple factors are responsible for the inadequate availability of health care opportunities. On the demand side, the detection of illness and the potential benefits from health care may be obscured by the socio-cultural and educational factors and even if the benefits of health care is recognized, its utilization may be suppressed by the economic constrains. In this section of the chapter it has been attempted to present a detailed analysis of the health seeking behaviour among women in slums.

#### Types of hospital visited

The table 6.12 suggests that more than half of the women (56 per cent) in slums visited private hospitals/clinic or nursing homes for treatment. Whereas 39 per cent of the women visit government hospitals and 5 per cent preferred others which include *vaid*, *hakim*, quacks. This indicates that women in slums gave preference to private hospitals/clinics as compared to government ones. Contrary to the expectations, very less number of respondents had sought medical treatment from traditional healers. The preference to the private hospitals indicates that the increasing government infrastructure has failed to cater the needs of the urban poor.

**Table 6.12: Type of hospital visited**

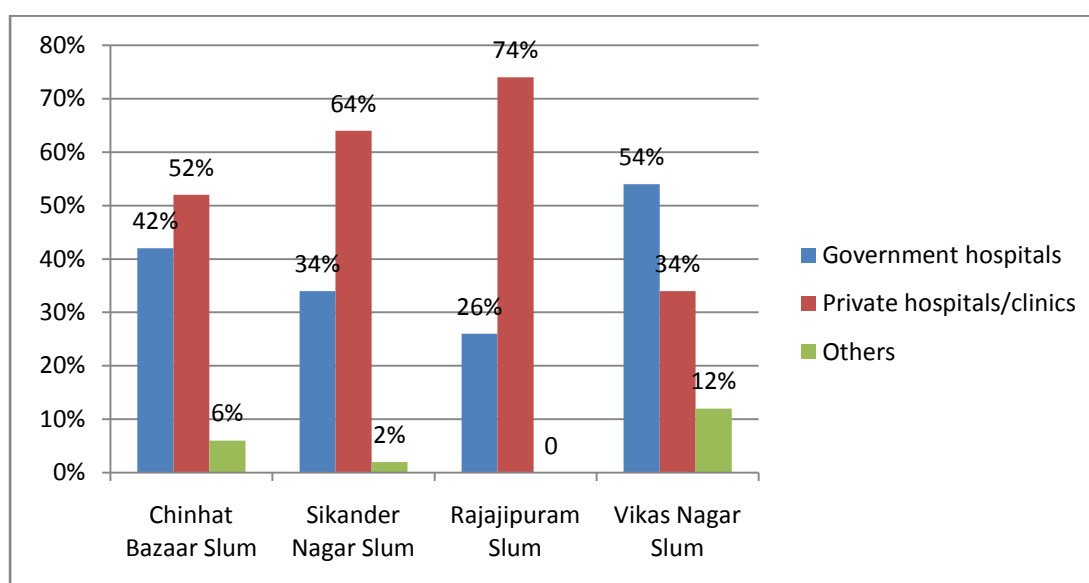
Type of Hospital Visited	Frequency	Percentage
Government hospital	78	39%
Private hospital/nursing home/clinic	112	56%
Others	10	5%

Source: Field survey

Slum-wise analysis of health seeking behaviour showed that in Sikander Nagar slum and Rajajipuram slum majority of the respondents preferred private hospitals whereas in Chinhat Bazaar slum and Vikas Nagar slum almost half of the respondents visited private hospitals. In Rajajipuram slum none of the respondents took medical advice from traditional healers, however in Vikas Nagar slum 12 per cent of the respondents visited quacks for medication (Figure 6.6). The sampled women also visited the clinic of non-registered private doctors who often take the advantage of their ignorance which further worsens the situation. One of the practices that came into notice is that women avoid visiting doctors in minor ailments and they only take advice from doctors when they fell seriously sick. This suggests the practice of self-medication among women was common and the local medical stores procure the medicines to women on the basis of their symptoms. It was also reported that sometimes these self-prescribed medicines resulted in drug reactions. These key findings depict inappropriate medication practices among women in slums.

Parsons detailed analysis of sick role was regarded as unparalleled when it was introduced. However, the sick role model proposed by Parsons does not take into account the class, racial, ethnic and gender variations and also the ways in which people perceive illness and interpret this sick role. For example, the sick role model does not look into the fact that many individuals in the working class may choose not to accept the sick role until and unless they are seriously ill as because they cannot afford to miss time from work and loose a significant portion of their earnings.

**Figure 6.6: Slum-wise distribution of respondents as per the hospitals visited**

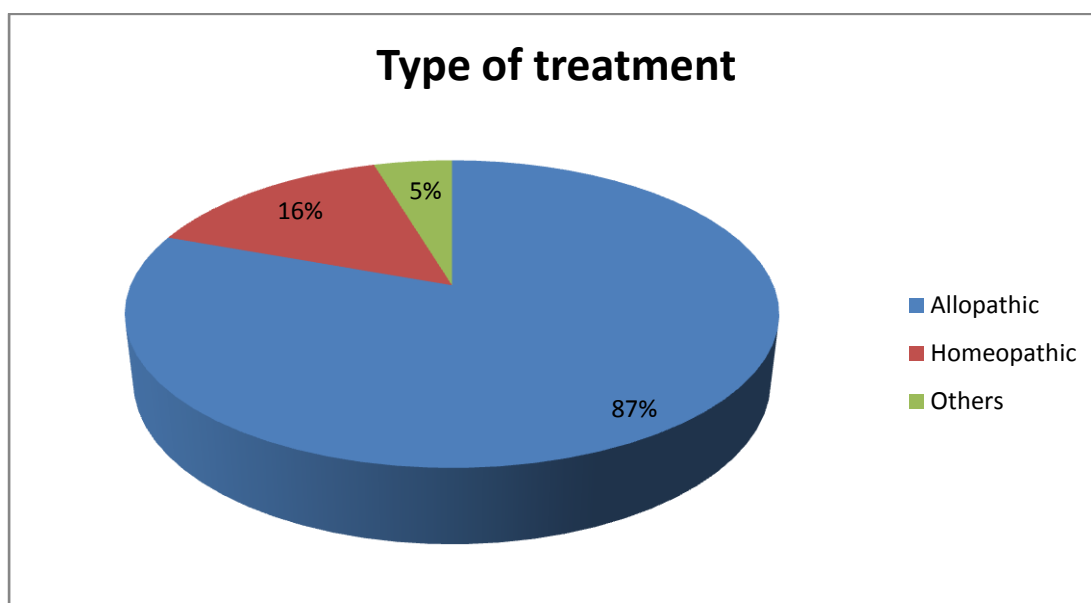


Source: Field survey

### Type of Treatment

The study revealed that a high proportion of respondents (87 per cent) received allopathic treatment which suggests that women in slums preferred modern medical treatment facility. Only 16 per cent of the respondents availed homeopathic medication and 5 per cent were dependent on traditional method of treatment. One of the reasons for higher allopathic treatment could be the penetration of private medical practitioners at the local level. Moreover, in the minor ailments the respondents procure medicines from the local medical pharmacist which is also the cause of higher consumption of allopathic medicines. Further, the respondents believed that allopathic medicines are more effective and reliable than the other forms of treatment.

**Figure 6.7: Type of treatment availed by respondents**



*Source: Field survey*

### Satisfaction about the Treatment Received

In the present study, it has been attempted to assess the satisfaction among respondents about the health facilities that they are being provided by the authorities. It has been revealed that about 39 per cent of the respondents who received health services at government hospital were dissatisfied and 33.9 per cent of the respondents who availed treatment at private hospitals expressed their dissatisfaction. Considering the poor economic condition of women in slums, it is a matter of concern that in spite of expending money on health facilities they were not provided the adequate health care. Thus, it is evident that a significant proportion of the women in slums were not

satisfied with the health services provided to them at the governmental as well as private hospitals. This finding is in conformity with a study conducted in an urban slum of Pune (Banerjee et. al., 2012).

**Table 6.13: Satisfaction of treatment among the respondents**

Place of Treatment	Satisfied with treatment	Not satisfied with treatment
Government hospital	47 (60.2%)	31 (39.7%)
Private hospital/clinic	74 (66%)	38 (33.9%)
Others	6 (60%)	4 (40%)

Source: Field survey

### Barriers to Access Health Care Facilities

There are several reasons responsible for dissatisfaction regarding the health care services among women residing in slums. In table 6.14 details on reasons concerning dissatisfaction have been presented. Long hours of waiting and lack of affordable medical treatment were found to be the most common reasons for dissatisfaction among respondents. On probing the factor of affordability the respondents reported about the shortage of drug supply in the government hospitals and as a result they had to buy medicines from outside which add extra burden on their pocket. Other important factors which acted as a barrier were poor quality of health services, distance and inconvenient consultation timing. The respondents complained about the quality of services that were being provided to them. Further, distance of the hospitals and inconvenient timings resulted in the loss of their daily work. Apart from these factors, rude behaviour of health personnel, their absenteeism and private practice by the doctors were some of the important intervening factors. Combination of these factors was responsible for lack of adequate health care services to women living in slums.

Conflict theory held the view that the health, disease and health care delivery system of people in the society are affected by the social, economic and political forces. The conflict theorists are concerned with the issues of the ability of every individual to obtain health care; how health and health care workers are affected by race, class and gender inequalities; the influence and dominance of the medical model of health care; and the role of profit in the health care system (Kendall, 2011: 604).

**Table 6.14: Barriers in availing health care services**

Reasons for Dissatisfaction*	Percentage
Long hours of waiting time	36.3%
Affordability	29%
Poor quality of health care	22.3%
Inconvenient timing	17%
Distance	13.5%
Health personnel absent	5.4%
Rude behaviour of staff	2.8%
Private practice by the doctors	1.3%

Source: Field survey

(\* indicate multiple responses)

### Monthly Expenditure on Treatment

In all the four slums, the respondents stated that income of the household is low which makes it difficult for them to spend money on their health. Whenever any family members fall sick it puts extra burden on their household. In spite of this almost 50 per cent of the household spend between 500-1000 on the medical expenses. Further, almost one-fourth of the households spent between 1001-2000 for availing treatment. The poor economic status and lack of quality health services worsens the situation of health status in slums. If any member of the family suffers from serious disease then it becomes difficult for slum dwellers to bear the out of the pocket expenditure. Here, it is imperative that the government should take immediate steps to launch special health programmes focusing the urban poor.

**Table 6.15: Monthly expenditure on treatment in the households**

Monthly expenditure on treatment (in Rs)	Frequency	Percentage
Up to 500	34	17%
501-1000	98	49%
1001-2000	54	27%
More than 2000	14	7%

Source: Field survey

**Awareness and Utilization of Health Care Programmes**

In Sikander Nagar slum and Rajajipuram slum anganwadi centres (AWCs) were functional, whereas in Vikas Nagar slum and Chinhat Bazaar slum there was no AWC. However, in Chinhat Bazaar a community health centre was established. In the two AWCs, ASHA were posted under NRHM. The awareness and the utilization of programmes like *Janani Suraksha Yojana*, *Janani Shishu Suraksha Karyakram* and Urban ASHA scheme were assessed among the respondents. Table 6.16 provides comprehensive detail about awareness and utilization of some of the health programmes by the women in slums.

**Table 6.16: Awareness and utilization of health care programmes [*Janani Suraksha Yojana (JSY)*, *Janani Shishu Suraksha Karyakram (JSSK)*, ASHA]**

Item	Range	Chinhat Bazaar Slum (n=50)	Sikander Nagar Slum (n=50)	Rajajipuram Slum (n=50)	Vikas Nagar Slum (n=50)
JSY	Aware about the scheme	14 (28%)	21 (42%)	24 (48%)	06 (12%)
	Had institutional delivery under the scheme	06 (12%)	08 (16%)	11 (22%)	02 (4%)
	Received cash incentive	04 (8%)	05 (10%)	07 (14%)	01 (2%)
JSSK	Aware about the scheme	08 (16%)	16 (32%)	21 (42%)	03 (6%)
	Had institutional delivery under the scheme	03 (6%)	05 (10%)	08 (16%)	01 (2%)
	Received cash incentive	02 (4%)	03 (6%)	08 (16%)	-
ASHA	Aware of ASHA	21 (42%)	41 (82%)	43 (86%)	08 (16%)
	Met ASHA at least once	21 (42%)	41 (82%)	43 (86%)	-
	Met ASHA	17 (34%)	39 (78%)	40 (80%)	-

	atleast once during ANC				
	Had postnatal visit by ASHA	21 (42%)	39 (78%)	40 (80%)	-
	Was advised regarding child immunization	15 (30%)	33(66%)	36 (72%)	-

*Source: Field survey*

The table clearly depicts that the awareness and utilization of health programmes was extremely low in Vikas Nagar slum followed by Chinhat Bazaar slum. Most of the respondents in these two slums were unaware about the various health schemes. However, in Rajajipuram slum and Sikander Nagar slum the respondents were comparatively more aware and their utilization rate of various health schemes was also high. In Rajajipuram and Sikander Nagar slum almost 40 per cent of the respondents were aware about JSY, but less than 20 per cent were benefited from this scheme and fewer received cash incentive. Further, 32 per cent in Sikander Nagar slum and 42 per cent in Rajajipuram slum had knowledge about JSSK. Although, the utilization rate of JSSK in these slums was also low as compared to JSY. On qualitative probing it was observed majority of the women came to know about various programmes through ASHA.

In Rajajipuram and Sikander Nagar slum almost 80 per cent of the respondents were aware about ASHA and had met atleast once during ANC. Similarly, majority of the women in these two slums had been visited by ASHA and also advised about the immunization of the child. On the contrary only 42 per cent women in Chinhat Bazaar slum and 16 per cent in Vikas Nagar slum were aware about ASHA. In Vikas Nagar slum none of the women had ever met ASHA, nor did they receive any health facility from them. It can be asserted that the level of awareness and utilization was higher in those slums which had AWCs and where ASHA had been posted. ASHA acted as a bridge in providing knowledge about various health programmes to women in slums. Thus, it can be attributed that women living in slums with AWCs were able to avail the services of various health programmes.

In this chapter the important information on the nutritional and health status of sampled women living in the four selected slums has been provided. The findings of the study present a gloomy picture of health and nutritional status of the women residing in slums. The anthropometric measurements of women revealed that almost half of the women had normal BMI status, however, rest of the women were having either low BMI status or surplus BMI. The incidences of chronic energy deficiency and obesity were reported. The study showed that the educational status and household income was found to be associated with the BMI status. Further, the assessment of haemoglobin level depicted that a substantially high proportion of women were anaemic in all the selected four slums. The prevalence of anaemia was higher among those women who delivered their first child before 21 years. Moreover, the women who were either illiterate or primary educated had more chances of having anaemia. This indicated towards the problem of malnutrition among the women in the study area.

The information collected on general food habits showed that most of the nutritious food items such as pulses, milk, vegetables, fruits, meat, eggs, etc. were not part of their daily diet. The women considered several factors while selecting food for their household. Seasonal food, cost and ease of preparation were the most common criteria for food selection. The factors like nutritional quality and the liking and disliking of the family members were by and large ignored. The nutrient intake of most of the women in slums was found to be deplorable. The women were deprived of adequate daily diet. 24 hours dietary recall method reflected that the daily consumption pattern of women was far from satisfactory. Most of the households were consuming iodized salt and the problem of goitre was not prevalent.

The analysis of health problems among women was done under four heads. It was revealed that the most prevalent health problems among women in the slums were nutritional deficiencies followed by other health ailments and reproductive problem. The contribution of metabolic health problem was comparatively low to the disease profile. The health and nutritional status of women was found to be affected by the practice of marrying young girls before completing 18 years. Early pregnancies and less spacing between pregnancies were also contributing towards the poor health of women. Most of the women received prenatal care, however comparatively lower proportion of women received post-natal care. The incidences of miscarriage and

infant mortality were also reported. For reducing such cases it is essential that women in slums should be provided with adequate prenatal and post-natal care.

Most of the women preferred private hospitals over government ones and only a few visited traditional healers for treatment. Moreover, the practice of self-medication was also prevalent among them. Further, most of the women were not satisfied with the health services being provided to them. They complained about the long waiting hours, quality of health care services, inconvenient consultation timing, distance and rude behaviour of staff. Further, it was observed that awareness and utilisation of health care programmes was higher in those slums where AWCs were present. Urban ASHAs were acting as a bridge in imparting awareness about various health services among slums dwellers.



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## *Chapter-VII*

# *Nutritional and Health Status of Children in Slums*



## **Chapter VII**

### **Nutritional and Health Status of Children in Slums**

One of the major public health problems prevalent among children in the country is undernutrition. It manifests itself in various forms such as stunting, wasting or underweight (Panigrahi and Das, 2014). It causes physical and mental retardation among children and increases their susceptibility to infection and various diseases. It impairs their cognitive development and consequently reduces their educational attainment and productivity. Providing adequate nutrition to child is not only crucial for healthy growth but also for the proper functioning of the body. The feeding practices in childhood have a long lasting impact on the health of the children. Children living in urban slums are exposed to poor housing and living conditions, lack of access to basic civic amenities, poor-socio-economic status of the family, unhygienic feeding practices which makes them more vulnerable to nutritional and health problems. In this chapter it has been attempted to assess the nutritional and health status of children in the age group of 6 months to 5 years in the selected slums of Lucknow. The anthropometric measurements and childhood feeding practices have been used to assess the nutritional status of the children.

#### **7.1 Nutritional Anthropometry**

The mostly widely used indicator of nutritional status is child growth. Anthropometric measurements are one of the most common and reliable methods for assessing the nutritional status. These measurements are used on the basis of age assessment and the normal values for comparison (ICMR, 2005). Table 7.1 presents distribution of children according to their age and gender. For assessing the nutritional status 200 children aged between 6 months to 5 years were selected in the study area. Out of the total children, 55 per cent were males and 45 per cent were females. Male population outnumbered the female population in the gender distribution. In the age-wise distribution the highest proportion of children was in the age group of 13-24 months followed by 25- 36 months age group.

**Table 7.1: Age and gender-wise distribution of the children**

Age (months)	Male	Female
6 – 12	14 (12.7%)	19 (10%)
13 – 24	31 (28.1%)	24 (26.6%)
25 – 36	25 (22.7%)	21 (23.3%)
37 – 48	16 (14.5%)	11 (12.2%)
49-60	24 (21.8%)	15 (16.6%)
Total	110 (55%)	90 (45%)

Source: Field survey

### Underweight among the Children

Weight of the children is a crucial indicator in assessing their nutritional status. As per the WHO child growth standard children with z scores (WAZ) less than -2 are regarded as underweight. In table 7.2 age and gender wise prevalence of underweight among the children is shown. The analysis of data revealed that almost 33 per cent of male children were underweight whereas nearly 43 per cent of the female children were below normal weight. This shows that the prevalence of underweight is higher among female as compared to male. The occurrence of underweight is indicative of chronic malnutrition among the children living in slums. Further, the incidences of underweight were higher in the age group of 13-24 months. Overall, 38 per cent of the children in the selected slums were found to be underweight. In NFHS-4 36 per cent of the children were reported to be below normal weight. Thus, the finding of the study is almost similar to NFHS-4 data.

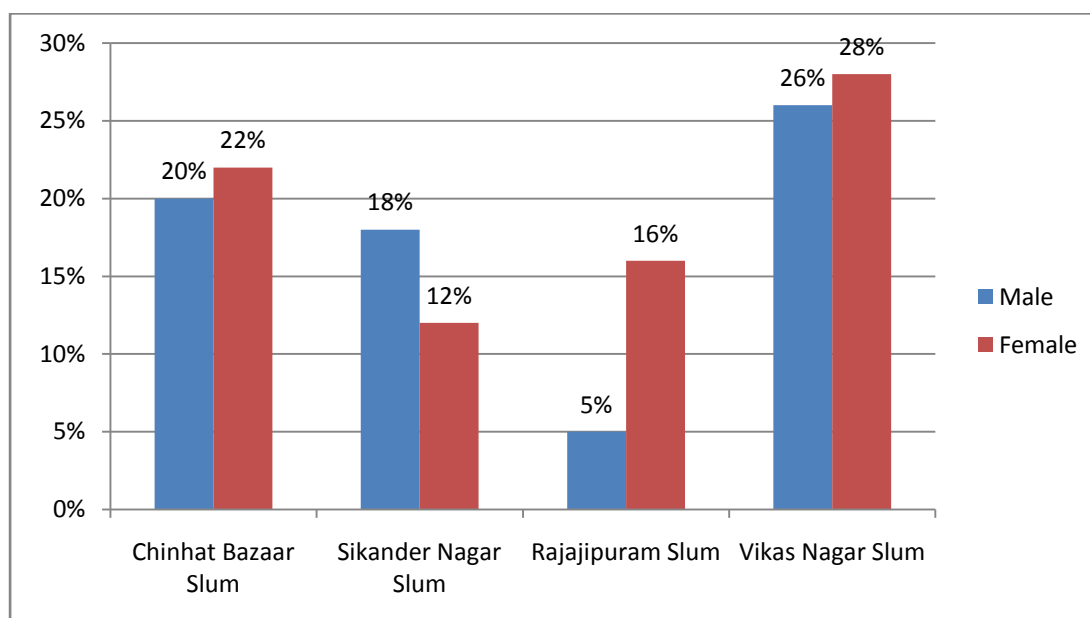
**Table 7.2: Underweight among the children**

Age (months)	Underweight	
	Male (n=110)	Female (n=90)
6 – 12	06 (5.4%)	09 (10%)
13 – 24	13 (11.8%)	12 (13.3%)
25 – 36	08 (7.2%)	04 (4.4%)
37 – 48	07 (6.3%)	09 (10%)
49 – 60	03 (2.7%)	05 (5.5%)
<b>Total</b>	37 (33.6%)	39 (43.3%)

Source: Field survey

The problem of underweight was found to be prevalent in all the four slums where study was conducted. The incidences of underweight were highest in Vikas Nagar slum followed by Chinhat Bazaar slum. The situation was comparatively better in Rajajipuram slum. Overall, the high prevalence of underweight among children presents a gloomy picture of their nutritional status. Poor nutritional status coupled with poor living and environmental conditions in slums further complicates their situation. Undernutrition makes children more prone to infection and morbidities. The higher prevalence of underweight among female children is also a cause of concern. In a study conducted in urban slums of Lucknow it was reported that late initiation of breastfeeding and illiteracy among mothers were responsible for underweight among children (Aggarwal and Srivastava, 2017).

**Figure 7.1 Slum-wise prevalence of underweight**



*Source: Field survey*

The socio-economic variables were analysed to find the association between the prevalence of underweight among children and socio-economic variables. Educational status of mothers and household income were observed to be correlated with the underweight. Table 7.3 clearly shows that with the increase in household income and educational status the episodes of underweight were found to be reduced.

**Table 7.3: Inter-linkages between educational status of mother and household income with the underweight among children**

Variable	Underweight
<b>Educational status of mothers</b>	
Illiteracy	56 (28%)
Primary	17 (8.5%)
Secondary	03 (1.5%)
<b>Monthly Income of the household (in Rs)</b>	
2000-4000	38 (19%)
4001-6000	29 (14.5%)
6001-8000	07 (3.5%)
>8000	02 (1%)

Source: Field survey

Most of the cases of underweight (28 per cent) were found in those children whose mothers were illiterate and it was followed by primary educated (8.5 per cent). Educational status of mother seems to significantly influence the nutritional status of children in slums. This suggests that education plays a crucial role in imparting knowledge among women about the adequate dietary intake of their children so that their physical and mental growth is not hampered. Similarly, the incidences of underweight were higher in households with 2000-4000 income (19 per cent). Hence, this depicts that the prevalence of underweight is correlated with education and income. This is relatable to other studies conducted in urban slums where it was revealed that educational status and income of the household is associated with occurrence of underweight among children (Biswas, Mandal and Biswas, 2011).

### **Stunting and Wasting**

Stunting and wasting are important indicators for assessing the nutritional status of children. According to the WHO child growth standards children having z score (HAZ) less than -2 fall in the category of stunted and children with z score (WHZ) less than -2 are considered to be wasted. Stunting is chronic form of undernutrition whereas wasting is regarded as acute undernutrition. In the study area, the anthropometric measurements of the children were collected for determining the prevalence of stunting and wasting among children. Age and gender wise distribution of stunted and wasted children is shown in the table 7.4.

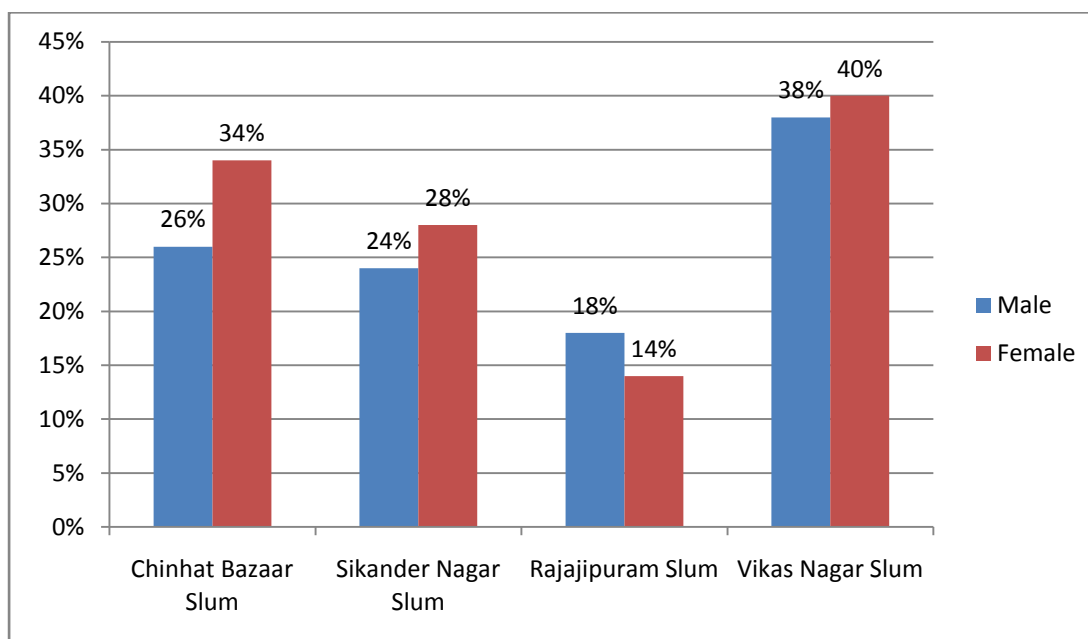
**Table 7.4: Age and gender-wise distribution of stunting and wasting among children**

Age (months)	Stunting		Wasting	
	Male (n=110)	Female (n=90)	Male (n=110)	Female (n=90)
6 – 12	06 (5.4%)	04 (4.4%)	03 (2.7%)	05 (5.5%)
13 – 24	11 (10%)	13 (14.4%)	07 (6.3%)	04 (4.4%)
25 – 36	14 (12.7%)	17 (18.8%)	09 (8.1%)	11 (12.2%)
37 – 48	17 (15.4%)	16 (17.7%)	05 (4.5%)	07 (7.7%)
49 – 60	05 (4.5%)	08 (8.8%)	04 (3.6%)	06 (6.6%)
Total	53 (48.1%)	58 (64.4%)	28 (25.4%)	33 (36.6%)

*Source: Field survey*

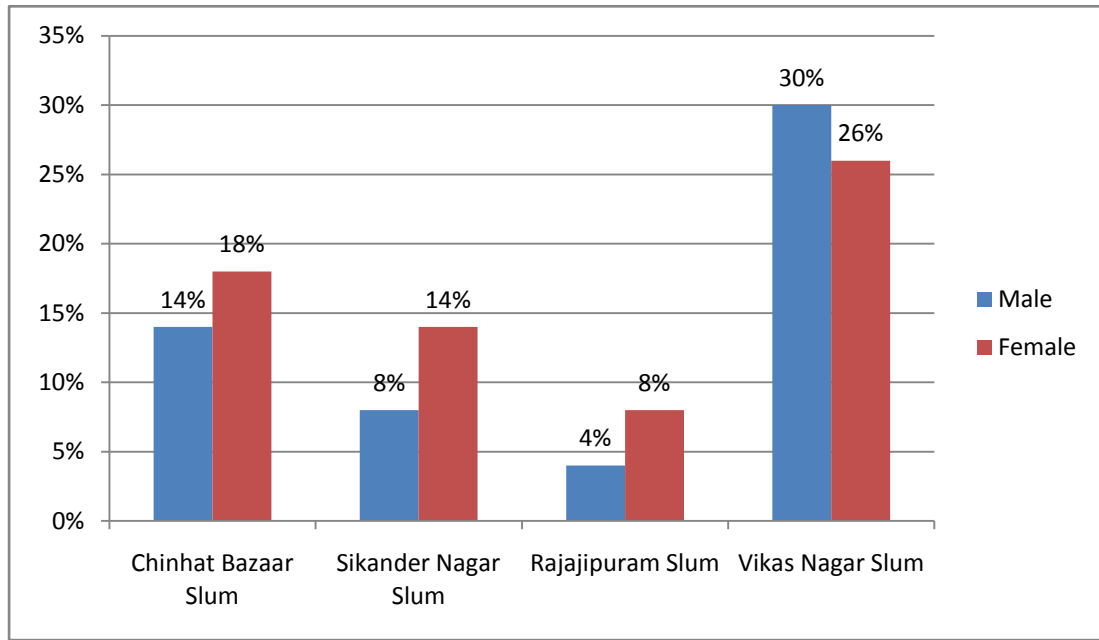
From the table it is clearly evident that the prevalence of stunting and wasting was widespread in all the age groups. Particularly, the incidences of stunting were as high as 64 per cent among female children and a substantial proportion of male children (48.1 per cent) were stunted. NFHS-4 reported almost 38 per cent of the children were stunted and this clearly highlights that the incidences of stunting are higher in slums than the national average. However, the prevalence of wasting was comparatively low with 25.4 per cent male children and 36.6 per cent female children being overtly thin for their stature (wasting). This indicates that significantly high proportion of children in the study area were malnourished. Their poor nutritional status along with poor socio-economic status, lack of access to basic facilities and inadequate daily diet makes them highly vulnerable to infections and several diseases. Thus, it can be attributed that children living in slums face the triple burden of poverty, deprivation and poor health.

Figure 7.2: Slum-wise prevalence of stunting



Source: Field survey

Slum-wise analysis showed that the problem of stunting and wasting was prevalent in all the four selected slums (Figure 7.2 and 7.3). In Vikas Nagar slum the incidences of stunting were highest with 38 per cent male children and 40 per cent female children suffering from stunting. Similarly, the highest episodes of wasting were reported from Vikas Nagar slum. Such higher number of undernourished children is cause of concern. Their epidemiological profile with several other risk factors like exposure to infections, life style problems and health beliefs based on culture make them highly vulnerable to health risk (Aggarwal and Srivastava, 2017). Lack of education, inappropriate feeding practices, poor income of the family could be the probable reasons for high occurrence of undernutrition among children in slums. Further, women in slums work outside to support the family and thus adversely affecting the breastfeeding and child feeding practices.

**Figure 7.3: Slum-wise prevalence of wasting**

Source: Field survey

The socio-economic variables like educational status and working status of mother were analysed to assess their association with the undernutrition among children. From table 7.5 it is clearly evident that both these variables were associated with the stunting and wasting. As the table suggests increase in mother's educational status reduces the rate of stunting and wasting among under-five children. The largest proportion of stunted children was in the category of illiterate mother followed by primary educated. Likewise, the proportion of wasted children was more in the illiterate category. This suggests that the educational level of mother has an impact on the nutritional status of the under-five children.

Further, the prevalence of stunting and wasting was more in those children whose mother were working. Mother's engagement in occupation has an adverse impact on the growth of the children as it is evident from the data. The probable reason behind it could be that working women were not able to feed their children for the appropriate number of times. They have to leave their child at home to be looked after by other members of the family. This has an adverse affect on the nutritional and health status of the children. These key finding are in conformity with a study conducted among urban slum population of Patiala which highlighted that the maternal factors have an impact on the health of the children (Mittal, Singh and Ahluwalia, 2017).

**Table 7.5: Nutritional status of children in relation to mother's educational and working status**

Variable	Stunting	Wasting
<b>Educational status of mother</b>		
Illiterate	87 (78.3%)	44 (67.6%)
Primary	22 (19.8%)	18 (27.6%)
Secondary	02 (1.8%)	03 (4.6%)
<b>Working status of mother</b>		
Working	43 (38.7%)	27 (44.2%)
Non-working	68 (61.2%)	34 (55.7%)

Source: Field survey

### Mid Upper Arm Circumference (MUAC)

Besides, underweight, stunting and wasting MUAC is also an important indicator to predict the nutritional status of the children. This indicator is not only helpful for identifying the incidences of malnutrition but it is also useful for determining the risk of mortality in children. It is believed to be correlated with clinical signs, weight and weight for height (Park, 2004). As suggested by WHO the MUAC malnourishment can be divided into three categories normal, mild and severe malnutrition. With the help of MUAC tape the MUAC measurements have been taken. Table 7.6 presents the nutritional status of children in slums on the basis of MUAC.

**Table 7.6: Nutritional status of children on the basis of MUAC**

MUAC	Male (n=110)	Female (n=90)
Normal (>13.5cm)	89 (80.9%)	58 (64.4%)
Mild malnutrition (12.5-13.5 cm)	17 (15.45%)	23 (25.5%)
Severe Malnutrition (<12.5 cm)	04 (3.63%)	09 (10%)

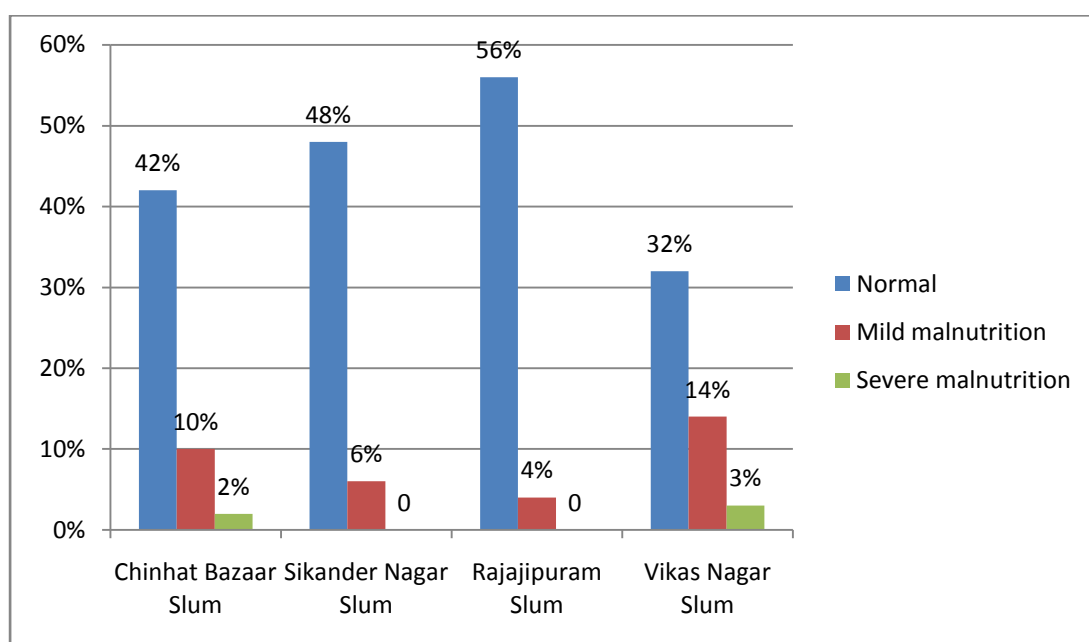
Source: Field survey

As the table suggests most of the male children were having normal nutritional status with MUAC value more than 13.5 cm and almost 18 per cent of them were either mildly or severely malnourished. However, the proportion of MUAC based malnutrition was found to be higher in female children with nearly 35 per cent of them having mild or severe malnutrition. The incidences of severe malnutrition among female children were almost double as compared to male ones.

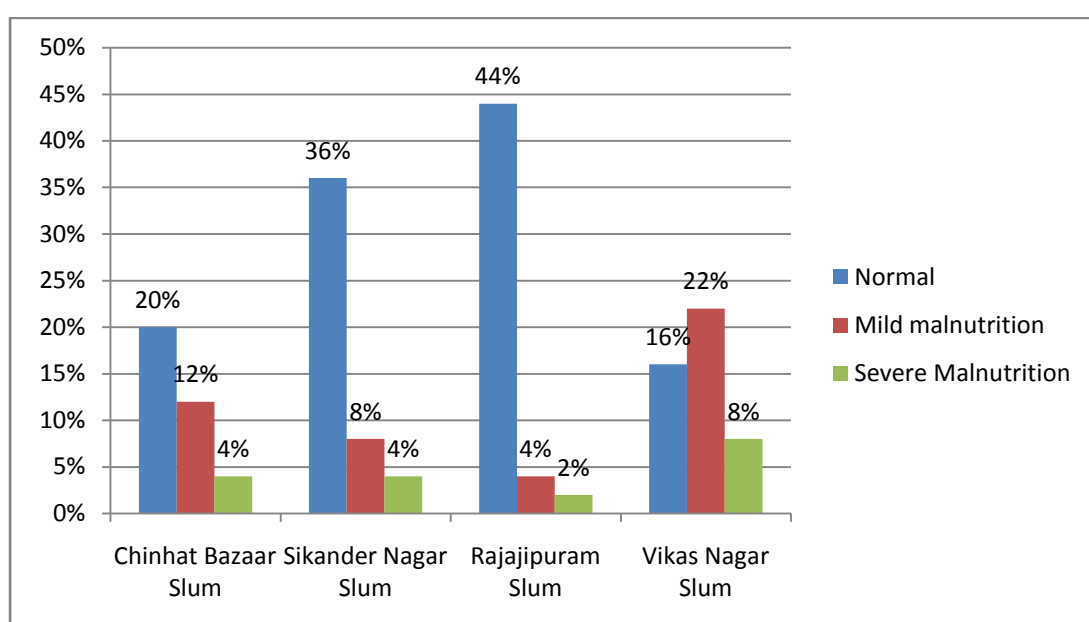
This indicates that the incidences of malnutrition on the basis of MUAC value were higher in girls as compared to boys. However, when compared to stunting, wasting and underweight, the MUAC based nutritional status of children, particularly of male children was found to be better.

The slum-wise nutritional status of male and female children on the basis of their MUAC have been presented in the figures 7.4 and 7.5. In Rajajipuram slum more than half of the male children were having normal nutritional profile followed by Sikander Nagar slum and Chinhat Bazaar slum. However, the nutritional profile in Vikas Nagar slum presents a gloomy picture with only 32 per cent of the male children having normal nutritional status. Most of the cases of severe malnutrition were reported in Chinhat Bazaar and Vikas Nagar slums. In Rajajipuram and Sikander Nagar slum no cases of severe malnutrition based on MUAC among male children were reported. Hence, it can be seen that the incidences of MUAC based malnutrition among male children were more in Chinhat Bazaar and Vikas Nagar slums.

Now if we look into figure 7.5 it shows that except Rajajipuram slum (48 per cent) all other three slums had lower per cent of female children with normal nutritional status. In Vikas Nagar slum the situation was worse with 22 per cent and 8 per cent female children being mildly and severely malnourished. The incidences of MUAC based severe malnutrition among girls were reported in all the four slums. Moreover, the incidences of malnutrition were found to be more among female children as compared to male children. The higher malnutrition among females is a sign of worry which needs to be addressed. Further, there are higher chances that female children would be more vulnerable to infections and diseases.

**Figure 7.4: Slum-wise nutritional profile of male children on the basis of MUAC**

Source: Field survey

**Figure 7.5: Slum-wise nutritional profile of female children on the basis of MUAC**

Source: Field survey

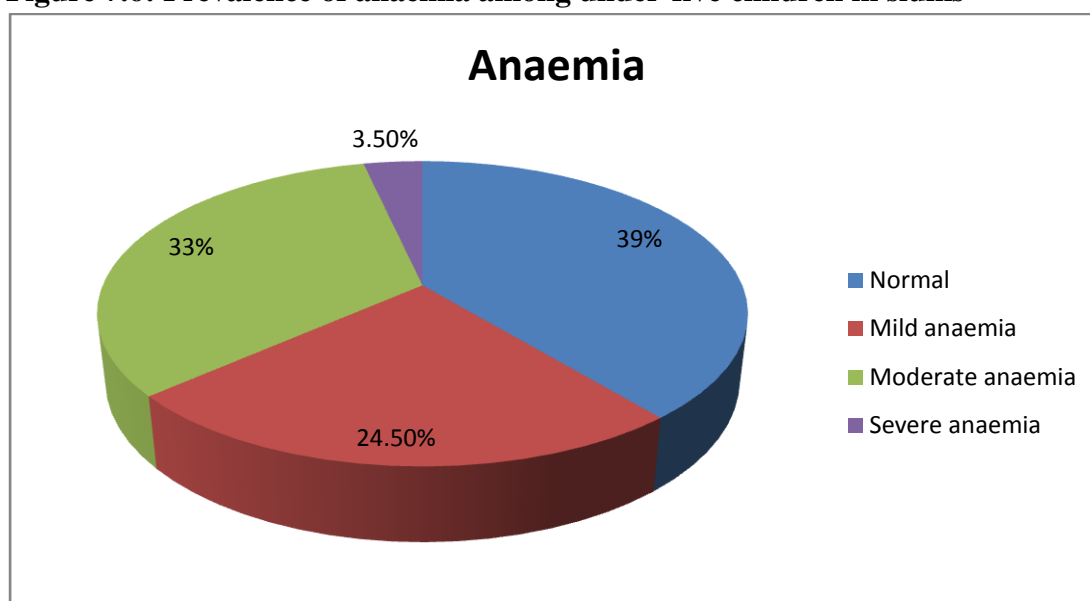
The prevalence of MUAC based malnutrition among under-five children in slums showed malnutrition of all grades was affecting children. It indicates toward the fact that faulty feeding and inappropriate hygiene practices could be potent contributory factors. Moreover, frequent episodes of infections and diseases may have

also resulted in muscle wastage. In an Odisha based study it was observed that the maternal factors such as mother's education, occupation, nutritional status, feeding and hygiene practices were significantly associated with the MUAC based malnutrition (Sethy et. al., 2017). Same study also reported that no significant relationship could be seen between gender and malnutrition which is in contrast with the present study where female children were found to be more malnourished than male children.

## 7.2 Anaemia among Children

Anaemia is the lack of adequate amount of haemoglobin in the blood (NFHS-3, 2009). Anaemia among children makes them highly vulnerable to infections which increase the risk of morbidities. Consequently, it affects their growth and impairs their cognitive and behavioural development as well as educational achievement. In the present study the blood samples were collected by trained specimen collector and then tests were performed in the laboratory by pathologist. The consent of mothers were taken before collecting sample. On the basis of test reports the children were classified as anaemic and non-anaemic. On the basis of haemoglobin level three levels of anaemia were categorised: mild anaemia (10.0-10.9 g/dl), moderate anaemia (7.0-9.9 g/dl), and severe anaemia (<7.0 g/dl).

**Figure 7.6: Prevalence of anaemia among under-five children in slums**

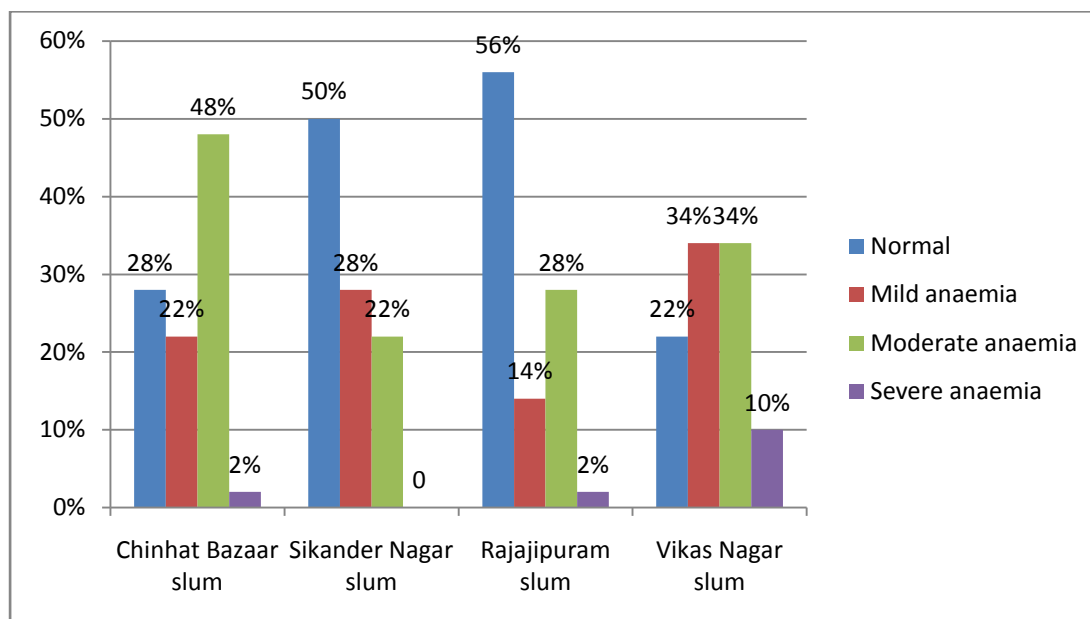


Source: Field survey

The analysis of data revealed that more than half of the children (61 per cent) were anaemic, out of which 24.5 per cent were mild anaemic, 33 per cent were

moderately anaemic and 3.5 per cent were severely anaemic (Figure 7.6). It is clearly evident that a significantly high proportion of under-five children were suffering from anaemia. NFHS-4 reported that almost 55 per cent children in urban India were anaemic. In another study conducted in an urban slum of Delhi it was revealed that 64 per cent of children were anaemic (Kapoor et. al., 2002). Thus, the finding of the present study is more or less similar the aforesaid studies.

**Figure 7.7: Slum-wise prevalence of anaemia among under-five children**



Source: Field survey

The slum-wise analysis of data revealed that the problem of anaemia was prevalent in all the four slums selected for the study. The situation is comparatively better in Sikander Nagar and Rajajipuram slums where almost half of the under-five children were normal. Whereas, in Chinhat Bazaar and Vikas Nagar slums less than 30 per cent children were normal. The percentage of mild and moderate anaemia is more or less similar in all the slums. The proportion of severe anaemia was highest in Vikas Nagar slum. This indicates towards the prevalence of micronutrient deficiency among under-five children in slums. Inappropriate and faulty child feeding practices and low intake of iron rich diet could be the reason behind the high incidence rate of anaemia among children. Some of the past studies have reported about the impact of maternal and dietary factors on the haemoglobin status of under-five children in slums (Kapoor, et.al., 2002).

### Impact of Socio-Demographic Variables on the Prevalence of Anaemia among Children in Slums

Maternal factors are crucial in determining the causes of anaemia among under-five children. In the present study it has been attempted to analyse the effects of maternal factors on the prevalence of anaemia among children living in slums. Maternal factors such as age of mother at marriage, mother's literacy, occupational and anaemia status were taken into consideration for the study. Table 7.7 provides comprehensive details about the inter-linkages between maternal factors and anaemia among children.

**Table 7.7: Inter-linkages between maternal factors and prevalence of anaemia among children in slums**

Maternal Factors	Anaemic (n=122)	Non-anaemic (n=78)	Total
<b>Age of mother at marriage</b>			
Below 18 years	58 (78.3%)	16 (21.6%)	74
19-21 years	60 (55.04%)	49 (44.9%)	109
22-29 years	04 (23.5%)	13 (76.4%)	17
<b>Mother's educational status</b>			
Illiterate	107 (74.8%)	36 (25.1%)	143
Primary education	12 (24%)	38 (76%)	50
Secondary education	03 (42.8%)	04 (57.1%)	07
<b>Mother's occupational status</b>			
Working	60 (81.08%)	14 (18.9%)	74
Non-working	62 (49.2%)	64 (50.7%)	126
<b>Mother's anaemia status</b>			
Anaemic	79 (63.7%)	45 (36.2%)	124
Non-anaemic	43 (56.5%)	33 (43.3%)	76

Source: Field survey

From the table it is clearly evident that the prevalence of the anaemia was found to be more in those children whose mother were married before completing 18 years of age and with the increase in the age of marriage, the incidences of anaemia among children decreases. This shows that mother's age at marriage is crucial for the nutritional profile of the child. Delay in the age of marriage means delayed pregnancy

which would be beneficial not only for the mother but also for the child as this would physically and mentally make women ready for the intricate process of pregnancy. Besides this, mother's literacy level was also found to be associated with the prevalence of anaemia among children. The children of most of the illiterate or primary educated women were anaemic. Whereas the children of secondary educated women were relatively less anaemic. The reason behind this could be that the educated women have better access to the resources and they are more aware about the dietary practices which would enable them to secure the nutritional status of their children. Further, they would be more aware about the adequate diet and nutrition. Therefore, it could be asserted that educated women could play an important role in protecting the nutritional profile of their children.

The children of working women were having lower level of haemoglobin as compared to the non-working women. This could be due to the reason that the working women in slums have to spend hours outside home and this adversely affects the feeding frequency of their children. This shows that poverty coupled with improper feeding practices makes children in slums highly vulnerable to nutritional deficiencies. Further, it was observed that children of majority of anaemic women (67.3 per cent) were also anaemic. This shows that the bodily reserves of women have an impact on the nutritional status of the children. The poor dietary intake by women not only adversely affects their health but it also has an impact on the health of their children. Thus, it can be attributed that maternal factors are found to be closely associated with the prevalence of anaemia among under-five children in slums.

#### **Inter-linkages between Prevalence of Anaemia among Children and Knowledge of Anaemia and Food Selection Ability of Mother**

The knowledge about anaemia and food selection ability of mothers are also important variables in assessing the prevalence of anaemia among children in slums. It has been attempted to evaluate the impact of these two variables on the occurrence of anaemia among under-five children. Table 7.8 presents the findings based on the inter-linkages of these variables with anaemia.

**Table 7.8: Impact of knowledge of anaemia and food selection ability of mother on the prevalence of anaemia among under-five children in slums**

Variable	Anaemic (n=122)	Non-anaemic (n=78)	Total (n=200)
<b>Mother having knowledge about anaemia</b>			
Yes	19 (20.2%)	75 (79.7%)	94 (47%)
No	103 (97.1%)	03 (2.8%)	106 (53%)
<b>Food selection ability</b>			
Yes	32 (31.3%)	70 (68.6%)	102 (51%)
No	90 (91.8%)	08 (8.1%)	98 (49%)

Source: Field survey

As the table 7.8 depicts women residing in the selected slums had some information about anaemia. However, more than half of the women (53 per cent) were not aware about anaemia. 97.1 per cent of children of those women who were not aware about anaemia were anaemic. This indicates that the children of unaware women were nutritionally deficient as compared to those who were aware. Further, a significant proportion of women were lacking the food selection ability which directly had an impact on the anaemia status of their children. Almost 90 per cent of those children whose mother lacked the ability to select food were anaemic. These women were selecting those food items which lacked the necessary nutrients. Lack of green leafy vegetable and other food items rich in iron and protein resulted in the higher incidences of anaemia among children. This suggests that food selection ability was correlated with the prevalence of anaemia among children. Thus, it is clearly evident that anaemia is the one of the common nutritional deficiencies found among the under-five children in the urban slums.

### 7.3 Dietary Assessment

Diet is an essential determinant for assessing the health and nutritional status of the children. Good nutrition forms the very basis of good health in the child. During childhood adequate nutrition is of utmost importance as the foundation of health, intellect and strength is laid during this period. Inappropriate infant and faulty complementary feeding practices would continue to affect the children throughout their life. In the present study dietary assessment consist of food habits, infant feeding and weaning practices, food frequency and food intake. It has been attempted to assess the nutritional intake of children by evaluating their food consumption pattern and feeding practices.

### Food habits and practices among children

Dietary practices of children were assessed through food habits, number of meals, food preferences and consumption. Table 7.9 depicts their dietary habits and practices. As the table suggests almost 40 per cent of the children were given non-vegetarian food. Although the percentage of families consuming non-vegetarian food was higher, the children were avoided being given non-vegetarian food due to belief that they should be given such food after attaining certain age. One more feature which was observed is that the consumption of non-vegetarian food was lesser in mothers as compared to their children. When enquired mothers revealed that due to poor poverty such food items are cooked occasionally and in small quantity therefore they prefer it feeding to their children instead to themselves.

Most of the children were fed two times a day (48.5 per cent) followed by three times (39.5 per cent). This shows that feeding frequency of children were less than normal. The inadequate number of meals could hinder the physical and intellectual development of a child. Further, it makes them prone to infections resulting in frequent episodes of diseases. The data on food preferences revealed that most of the mothers gave home cooked food (89 per cent) to their children. This is quite promising as consumption of market products and fast food at such an early stage could result in health problems.

**Table 7.9: Dietary practices and habits among children**

Particulars	Frequency (n=200)
<b>Food habits</b>	
Vegetarian	119 (59.5%)
Non-vegetarian	81 (40.5%)
<b>No. of meals</b>	
Two meals	97 (48.5%)
Three meals	79 (39.5%)
May vary	24 (12%)
<b>Food preference</b>	
Homemade food	178 (89%)
Fast food and bakery products	22 (11%)

Source: Field survey

(Number in parentheses indicate percentage)

### Infant and Young Child Feeding (IYCF) Practices

One of the most essential determinants for assessing the nutritional status during childhood is the feeding practices. Breastfeeding and complementary feeding practices are the integral part of IYCF. They play major role during the early developing years of a child. Infant and young child nutrition is of paramount importance as it not just paves the way for good health but also provides good workforce in a country. In this study data has been collected pertaining to IYCF to analyse the feeding practices among the slum dwellers. Further, it would help in assessing the knowledge among mothers in slums about IYCF practices.

### Breastfeeding

It has been recommended universally to exclusively breastfed the infant for the first six months. This should be followed by complementary feeding and weaning practices with breastfeeding up to two years of age or beyond. This has been considered to prevent malnutrition among children (WHO, 2009). Studies have reported that early introduction of semi-solid and solids are prevalent in urban slums. Moreover, studies have shown that faulty and inappropriate feeding practices are common among slum inhabitants (Akra, 1989). With reference to this fact the breastfeeding practices has been analysed and discussed in detail to evaluate the situation in the study area.

**Table 7.10: Breastfeeding practices**

Practices Checked	Frequency (n=200)
<b>Initiation of breastfeeding</b>	
Within 1 hour	79 (39.5%)
Within 24 hours	68 (34%)
After 24 hours	53 (26.5%)
<b>Colostrum feeding</b>	
Fed	93 (46.5%)
Not fed	107 (53.5%)
<b>Prelacteal feeding</b>	
Given	81 (40.5%)
Not given	119 (59.5%)

<b>Type of breastfeeding</b>	
Exclusive breastfeeding	47 (23.5%)
Not exclusive breastfeeding	153 (76.5%)
<b>Initiation of complementary feeding</b>	
Before 6 months	42 (21%)
At 6 months	71 (35.5%)
After 6 months	87 (43.5%)
<b>Sources of knowledge regarding feeding</b>	
Advice by elder/peer group	129 (64.5%)
Advice by health personnel	71 (35.5%)

*Source: Field survey*

Table 7.10 provides details about the breastfeeding practices among women in the study area. The initiation of breastfeeding within 1 hour was reported for only 39.5 per cent children while the rest were breastfed within 24 hours or after that. Almost 46 per cent of the women gave colostrum to their children and the remaining ones discarded it. They considered that it is indigestible and not good for the health of the baby. Majority of them did it on the advice of their family members. A substantial proportion of women gave prelacteal feed to their children in the form of water, honey or cow milk. These women were not aware about the practice of exclusive breastfeeding. It was reported that only 23 per cent of the mothers exclusively breastfed their children. The reasons for it were lack of awareness about exclusive breastfeeding, inadequate production of milk, illness of mother. This clearly suggests that the breastfeeding practices in slums were highly faulty and inappropriate with majority of the children remaining devoid of exclusive breastfeeding.

Further, the introduction of complementary food was also inappropriate with majority of them receiving it either before or after the prescribed duration. It is essential that the introduction of weaning food should be at appropriate time otherwise it could cause undesirable health problems to the children. Most of the mothers (64.5 per cent) received information about the child feeding practices from their elders or peer group. The lack of advice by health personnel could be one of the reasons for faulty feeding practices. Thus, late initiation of breastfeeding, discarding colostrum, giving prelacteal feed, lack of exclusive breastfeeding were found to be

prevalent among mothers in slums. Similar feeding practices were reported in a study conducted in an urban slum of Kolkata (Roy, Dasgupta and Pal, 2009). The faulty feeding practices in slums increase the chance of malnutrition among the children and make them vulnerable to infections further posing threat to their life.

### Weaning Practices

It has been recommended by health personnel to introduce complementary food along with breastfeeding after child completes six months. The combination of two helps in the proper growth and development of the child. Inadequate food supplementation could result in nutritional deficiencies among children. Besides the time of initiation, consistency of complementary food is also important in children. Table 7.11 provides the details about the type of complementary food that was given to the children in slums.

**Table 7.11: Weaning practices in slums**

Weaning Food*	Consistency		
	Liquid	Semi-solid	Solid
Cereals	-	174 (87%)	26 (13%)
Pulses	37	163 (81.5%)	-
Fruits	19	167 (83.5%)	14 (7%)
Vegetables	-	188 (94%)	12 (6%)

*Source: Field survey*

(\*indicates multiple responses)

The first food introduced to the children in slums primarily consisted of cereals, pulses, fruits and vegetables. Most of these foods were introduced in semi-solid form. More than 80 per cent of the children were given cereals, pulses and fruits as complementary food in semi-solid consistency. Further, more than 90 per cent were provided vegetables in semi-solid form as complementary food. Few of the children were also given complementary food in solid form. This shows that children were familiarized with locally available food. For optimal growth it is essential that children should be provided with diverse kind of complementary food. It has been reported in the studies that in urban slums the early introduction of top feeds and late introduction of semi-solids are widely prevalent (Ghosh and Shah, 2004). Therefore,

it is important that children should be provided with complementary food at the appropriate time and in recommended consistency.

### Relationship between Feeding Practices and Certain Social Variables

In the present study an attempt has been made to assess the relationship between child feeding practices and certain social variables. These variables were mother's educational status and information received from health personnel about feeding practices. Mother's educational status is an important factor considering the fact that literate women could adopt better feeding practices as compared to illiterate ones. Further, mothers receiving information about IYCF from health personnel are believed to be aware about feeding practices. Table 7.12 shows relationship of these two variables with the child feeding practices in slums.

**Table 7.12: Relationship between Feeding Practices and Certain Social Variables**

Feeding practice	Mother's educational status		Informed by health personnel	
	Illiterate (n=143)	Literate (n=57)	Yes (n=71)	No (n=129)
Exclusive breastfeeding				
Yes	04 (2.9%)	43 (75.4%)	44 (61.9%)	03 (2.3%)
No	139 (97.2%)	14 (24.5%)	27 (38.02%)	126 (97.6%)
Prelacteal feed given				
Yes	48 (33.5%)	33 (57.8%)	13 (18.3%)	68 (52.7%)
No	95 (66.4%)	24 (42.1%)	58 (81.6%)	61 (47.2%)
Colostrum given				
Yes	42 (29.3%)	51 (89.4%)	66 (92.9%)	27 (20.9%)
No	101 (70.6%)	06 (10.5%)	05 (7.04%)	102 (79.06%)

Source: Field survey

Majority of the literate women exclusively breastfed their children, whereas almost 90 per cent of illiterate women did not practice breastfeeding exclusively. This clearly shows that the literate women were more aware about the importance of exclusive breastfeeding for their children. Further, the practice of giving prelacteal feed to children was more in illiterate women. They gave water, honey or cow milk to children before breastfeed. Most of the literate women were found to have given

colostrum to their children whereas a significantly high proportion of illiterate women discarded it. Those who discarded it believed that colostrum was not good for the health of their children. This suggests that most of the illiterate women were unaware about the appropriate child feeding practices. Similar finding has been reported in a study conducted in an urban slum of Kolkata (Roy, Dasgupta and Pal, 2017).

Now if we look at the other variable then it could be observed that those mothers who were provided information about the IYCF by health personnel were practising more exclusive breastfeeding than those who received it from elders or peers. Further, a high proportion of women who were given information about child feeding by elders gave prelacteal feed to their children. Likewise, these women discarded colostrum which is considered to be good for the health of the child. Thus, it is clearly evident that women who received knowledge about IYCF by health personnel were following appropriate feeding practices than those who received from elders of the family. This proves that the literacy level of women and information obtained from health personnel were associated with the child feeding practices in slums.

### **Child Feeding Practices and Malnutrition**

The child feeding practices are considered to be one of the most important determinants of malnutrition. Inadequately fed children are at higher risk of being malnourished. In slums poverty coupled with faulty feeding practices makes the children highly vulnerable to malnutrition. In the present study the high incidences of underweight, stunting and wasting were reported in children. Children were found to be suffering from more than one form of malnutrition. Here, it has been attempted to examine the relationship between child feeding practices and malnutrition.

Table 7.13: Feeding practices and malnutrition\* among children in slums

Feeding Practices	Underweight (n=76)	Stunting (n=111)	Wasting (n=61)
<b>Breastfeeding</b>			
Exclusive breastfeeding	07 (9.2%)	12 (10.8%)	04 (6.5%)
Non-exclusive breastfeeding	69 (90.7%)	99 (89.1%)	57 (93.4%)
<b>Colostrum</b>			
Fed	04 (5.2%)	09 (8.1%)	06 (9.8%)
Not fed	72 (94.7%)	106 (95.4%)	55 (90.1%)
<b>Complementary Food</b>			
Before 6 months	21 (27.6%)	39 (35.1%)	13 (21.3%)
At 6 months	02 (2.6%)	07 (6.3%)	05 (8.9%)
After 6 months	53 (69.7%)	65 (58.5%)	43 (70.4%)

Source: Field survey

(\* indicate multiple responses)

As the table 7.13 suggests the incidences of malnutrition were higher in those children who were not exclusively breastfed by their mothers. The prevalence of underweight, stunting and wasting was reported to be significantly high in these non-exclusively breastfed children. Exclusive breastfeeding has been regarded as an essential part during the initial months of child's life and it has long lasting effects on the health. Further, the occurrence of malnutrition was also found to be more in those children who were not given colostrum. Colostrum helps to prevent children from many infections and boosts the immunity system of the body. In the study area, children whose mothers have discarded colostrum were underweight, stunted and wasted. Complementary food was also associated with the prevalence of undernutrition among children residing in slums. Children who were initiated weaning food either early or after the prescribed period were reported to be malnourished. Inadequate and inappropriate feeding practices affect the nutritional reservoir of the children. Hence, it could be asserted that children who were not exclusively breastfed, remained devoid of colostrum and appropriate complementary food had higher prevalence rate of malnutrition.

Becker (1965) elaborately studied and highlighted the household determinants of nutrition. He established a relation between the child's nutritional status and wide range of 'health inputs' through a 'nutrition production function'. The health inputs comprised of the child's nutrient intake, whether the child is breastfed or not, duration of breastfeeding, availability of medical care and the quantity and quality of time spend by mothers or others care-givers in care-related activities. Several others significant factors such as care giver's age, educational status, experience, own health status and environmental factors were also included in the production function framework. The potentially contradictory implications of maternal labour supply were also viewed within the framework of production function. The larger share of income from mother's occupation results into higher consumption pattern of market-purchased inputs such as food and medical care and consequently raises the nutritional status. However, on the other hand reductions in the level or the quality of time in health-related activities reduce the nutritional status. All these factors stated by Becker in his theory of nutrition have been used in the present study. These variables were found to be significantly associated with the child's nutritional status. It indicated that household determinants played a critical role in the nutritional profile of the children.

#### **7.4 Health Status of Children**

The health of children is invariably associated with the living and environmental conditions in slums. Lack of adequate housing space, basic civic facilities and sanitation makes the children in slums vulnerable to infections which often results into serious health problems. Children succumb to infections which has an adverse affect on their health status. Poverty, deprivation and poor living conditions add to their misery. Proper care is essential during the early years of life to ensure the growth of a child into healthy adult. However, in slums children usually remain devoid of adequate care which affects their physical as well as social well-being. It is important to have knowledge about the extent and nature of morbidities prevalent in a community to assess the health status of the individuals. In the present study, the information on prevalence of diseases and type of illnesses has been collected to assess the magnitude of health problems being faced by children living in slums.

### Childhood Diseases

Studies have reported that the health of children in slums is two to three times worse than the other urban areas (Rao and Thakur, 2007). Here, it has been endeavoured to analyse the prevalence of vaccine preventable diseases among children in the study area. Under the universal immunisation programme children are given vaccinations against six vaccine-preventable diseases and these diseases are tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles (Kamla et al., 2009). Table 7.14 provides details about the incidences of the vaccine preventable diseases among the sampled children in the slums.

**Table 7.14: Incidences of vaccine preventable diseases among children**

Diseases	Incidences (n=200)	
	Frequency	Percentage
Diphtheria	01	0.5%
Whooping Cough	07	3.5%
Tuberculosis	03	1.5%
Tetanus	-	-
Polio	-	-
Chicken pox	11	5.5%
Mumps	04	2%
Total	26	13%

*Source: Field survey*

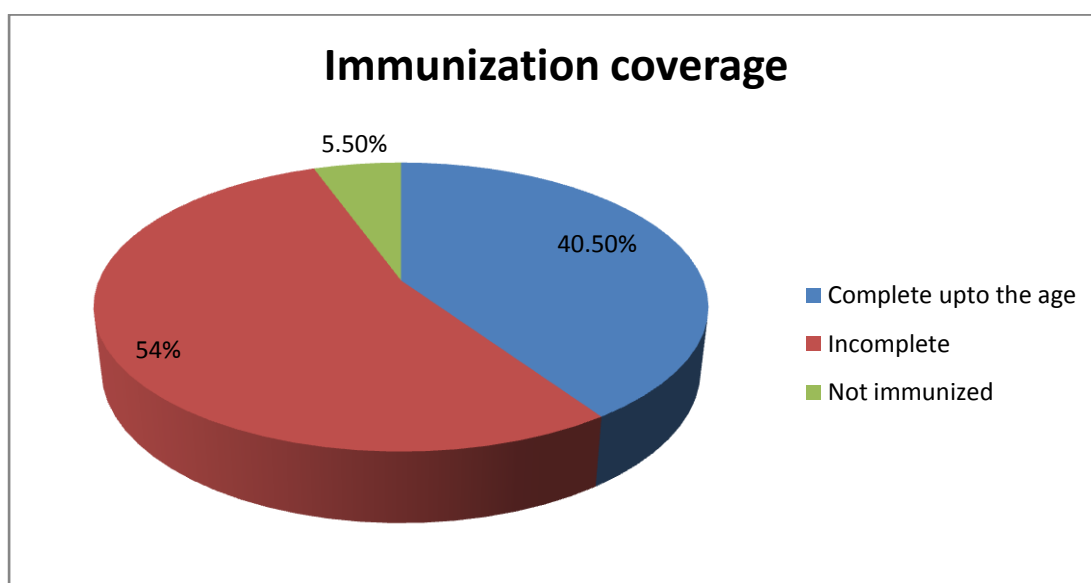
The incidences of vaccine preventable diseases such as tetanus and polio were totally absent in the study area. The highest prevalence was of chicken pox (5.5 per cent) followed by whooping cough (3.5 per cent). Few cases of diphtheria, tuberculosis and mumps were also reported. Overall, 13 per cent of the children were found to be suffering from some form of vaccine preventable disease. This clearly suggests that the occurrence of vaccine preventable diseases in the slums was quite low. Considering the low incidences of these diseases it is essential to check the immunization status of children in order to assess the relationship between the two.

### Immunization coverage

One of the major interventions of the child focused programmes is immunization. Immunization helps to prevent children from various infectious diseases which are the

largest contributor to child morbidity and mortality (Prusty et. al., 2013). Considering the poor socio-economic status of slum dwellers, the low immunization coverage had been reported in the previous studies (Sharma, Desai and Kavishvar, 2009). In the selected slums the analysis of immunization coverage was done to evaluate the immunization status of the children. However, the immunization cards were available for only 37 children (18.5 per cent) and for the rest of the children parental recall was relied upon.

**Figure 7.8: Immunization status of children in slums**



*Source: Field survey*

As the figure shows only 40 per cent of the children were completely immunized whereas more than half of the children were partially immunized. This suggests that the drop-out was prevalent in between the immunization. Analysis of data showed that the proportion of complete immunization was more in girls as compared to boys, however no significant relationship could be established. The reasons reported by mothers for incomplete immunization were frequent episodes of illness among children, lack of information about the prescribed age and venue of immunization. Further, the educational level of mother was also found to be positively correlated with the immunization status. It highlights that the lack of appropriate knowledge about the immunization inhibits the achievement of complete immunization coverage in the slums. Low immunization coverage in slums is a matter of concern.

### Other Childhood Diseases

Apart from vaccine preventable diseases, other childhood illnesses such as respiratory and gastrointestinal problems are found to be commonly prevalent among children particularly in slums. Acute respiratory diseases have been regarded as one of the largest contributor to the burden of morbidity among children. Studies (Gladstone et. al., 2007) have shown that the household environment, young age and wet/cold weather are the risk factor which increases the chances of occurrence of these illnesses among children in slums. The data related to these diseases in the study area has been collected and the frequency of occurrence has been presented in the table 7.15.

**Table 7.15: Incidences of other childhood illnesses among children in slums**

Illness	Frequency of Occurrence (n=200)		
	Frequently	Occasionally	Rarely
Cold	153 (76.5%)	31 (15.5%)	16 (8%)
Cough	145 (72.5%)	34 (17%)	21 (10.5%)
Fever	67 (33.5%)	103 (51.5%)	30 (15%)
Vomiting	17 (8.5%)	65 (32.5%)	118 (59%)
Diarrhoea	08 (4%)	181 (90.5%)	11 (5.5%)

*Source: Field survey*

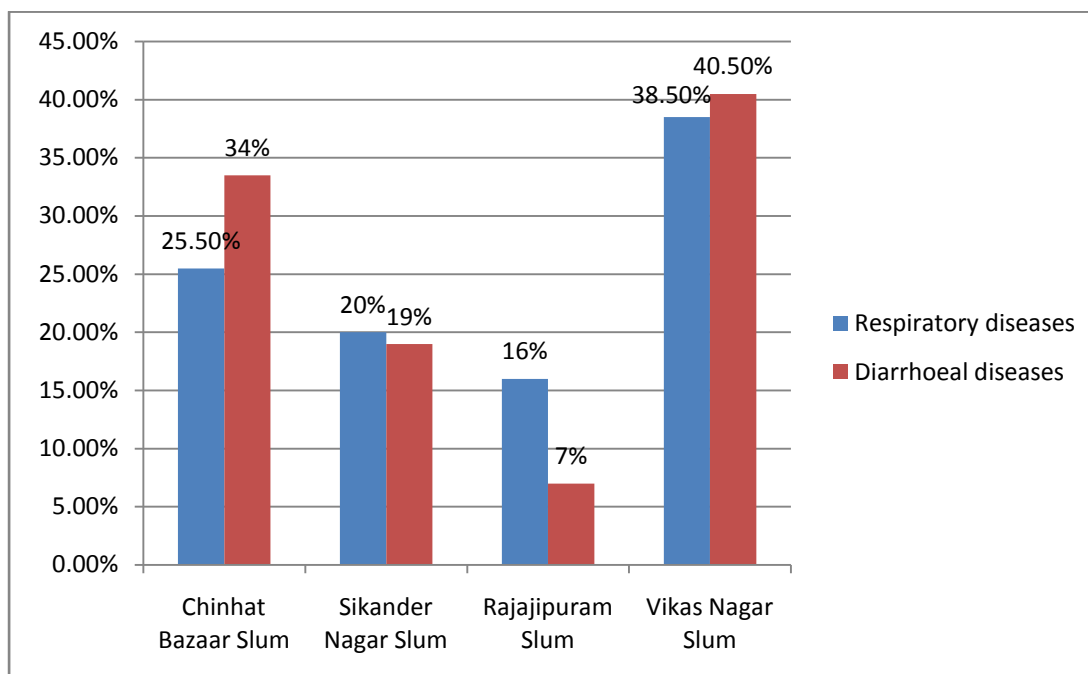
Cold (76.5 per cent) and cough (72.5 per cent) were the most frequently reported illnesses among sampled children in slums. The incidences of fever (51.5 per cent) and diarrhoea (90.5 per cent) were occasionally found in the children, whereas, most of the children rarely experienced the bouts of vomiting (59 per cent). This shows that the sampled children were prone to one or the other type of childhood disease. The higher frequency of cold and cough depicts their poor immunity and nutritional status. NFHS-3 (2009) reported acute respiratory and diarrhoeal diseases to be the most common causes of morbidity and mortality in the country. Dilapidated and inadequate living conditions, unhygienic and faulty feeding practices, lack of sanitation and safe drinking water could be the reasons for high incidences of childhood diseases. A study based on the urban slums of Delhi attributed living conditions and lack of sanitation to be the causes of childhood illnesses in slums

(Marimuthu, Meiti and Sharma, 2009). This clearly suggests that children living in slums are more susceptible to diseases than those living in non-slum urban areas.

### Slum-wise Prevalence of Childhood Diseases

For clearer picture slum-wise prevalence of diseases among children has been presented. The distribution of respiratory and diarrhoeal diseases has been shown in the figure 7.9. These two diseases were found to be most common and prevalent among the sampled children. The high prevalence of these diseases is indicative of poor health status of children.

**Figure 7.9: Slum wise prevalence of respiratory and diarrhoeal diseases among children**



Source: Field survey

From the figure it is clearly evident that the highest incidences of respiratory infections (38.5 per cent) were reported in the Vikas Nagar slum. It was followed by Chinhat Bazaar (25.5 per cent) slum and Sikander (20 per cent) Nagar slum. This shows that a substantially high proportion of children were suffering from respiratory diseases. Similarly, the occurrence of diarrhoeal infection was highest in Vikas Nagar slum and lowest in Rajajipuram slum. The children of Vikas Nagar slum were highly vulnerable to respiratory and diarrhoeal infections. However, these diseases were also prevalent in all the four slums. In short, it could be asserted that the respiratory and diarrhoeal diseases were the most frequent health problems reported in the study area.

Gladstone et. al. (2007) in his study on Indian slums revealed that almost one-fifth children had respiratory or diarrhoeal infection.

### **7.5 Access and Utilization of ICDS**

ICDS is India's flagship programme launched with an aim to impart comprehensive and cost-effective services in order to fulfil the multidimensional needs of the children. It symbolises India's commitment to break the vicious cycle of malnutrition among children through providing a package of services (Meena et al., 2017). These services consist of supplementary nutrition, health checkups, immunization, preschool education, nutritional and health education to mothers. The services under ICDS are delivered through *Anganwadi* centres (AWCs) by *Anganwadi* workers (AWWs) and helpers. Past studies have pointed towards the poor implementation of the programme. Poor quality and coverage of ICDS services were reported in an evaluation conducted by the planning commission. This report highlighted the plight of AWWs who were underpaid, overburdened and unskilled and consequently it affected the adequate implementation of the programme.

The present study tried to assess the coverage of ICDS in the four slums which were selected for the study. In the study area only two AWCs were functional, one in Sikander Nagar slum and other one was operating in Rajajipuram slum. In Chinhat Bazaar slum and Vikas Nagar slum there were no AWCs. The absence of AWCs in these two slums clearly suggests that the coverage of ICDS was poor in the study area. The AWCs in Sikander Nagar and Rajajipuram slums were visited to assess the enrolment of children in these centres and analyse the quality of services that were being provided to the children. All the positions of ICDS staff were full and they met the eligibility criteria that were required for the positions they held. The review of the health record suggested that a large proportion of children in slums were malnourished and frequently suffered from infectious diseases. Various problems were being faced by AWWs and helpers such as lack of adequate infrastructure and community support, poor salary and irregular supply of logistics. AWCs were lacking in terms of resources with inadequate space, lighting and ventilation, improper seating arrangement and non-availability of separate kitchen and crèche facility.

**Table 7.16: Coverage assessment of ICDS services**

Services	Total beneficiaries*	Beneficiaries covered
Pre-school education enrolment	49	21 (42.8%)
Supplementary nutrition	77	46 (59.7%)
Health checkups	89	46 (51.6%)
Nutrition and health education to mothers	17	06 (35.2%)

Source: Field survey

(\* includes only sampled children)

The table suggests that only one-fourth of the sampled children were beneficiaries of non-formal pre-school education, out of which only 42 per cent were covered. Only half of the beneficiaries were covered under the services of supplementary nutrition (59 per cent) and health check-ups (51 per cent). The numbers of beneficiary mothers getting nutritional and health education were extremely low and even lower were the coverage numbers with only 6 women being covered. This shows that the enrolment of beneficiaries was extremely low and lesser was the coverage. The child health services and immunization coverage were unsatisfactory and non-availability of equipments such as weighing machine, height measurement tapes further discouraged the beneficiaries. The poor health education service along with absence of referral service indicates the dysfunctional relationship between AWCs and the health centres.

The beneficiaries were interviewed about the supplementary nutrition service and they were not satisfied with the quality, quantity and accessibility of the nutritional supplement. They reported about the frequent interruption of the nutritional supplement services in the last six months. Inspections were not carried out to check the quality of the supplementary nutrition that was being provided to them. The inadequate utilization of pre-school education service is a matter of concern and it has been found to be associated with lack of awareness and parental involvement. The community participation and outreach was poor which affected the utilization of ICDS services. These finding of the present study largely conforms to the previous studies (Singh, Gaur and Sharma, 2013).

In the chapter information concerning the nutritional and health status of children residing in the selected slums has been presented. The analysis of data depicts shabby picture of their health and nutritional status. More than half of the children (55 per cent) were male and female were outnumbered by male population. Majority of the children were in the age group of 13-24 months. The anthropometric assessment of the children showed their nutritional profile. While analyzing data one notable feature that came into light is that the children were found to be suffering from more than one form of malnutrition and this is the matter of grave concern. A substantial proportion of the sampled children were found to be underweight. The socio-economic variables such as mother's education and income of the household were associated with the prevalence of underweight among the children in slums.

The incidences of stunting and wasting were prevalent in all the four slums with highest being in Vikas Nagar slum. The frequency of occurrence of stunting was particularly high in all the age groups. With the increase in educational level and working status of mother the incidences of stunting and wasting among children decreased. Apart from stunting, wasting and underweight, MUAC was also used as anthropometric indicator to assess the nutritional status of the children. Majority of the male children had normal MUAC value, however among female children MUAC based malnutrition was prevalent. The higher incidence of underweight, stunting, wasting and MUAC based malnutrition points toward the poor nutritional status of sampled children in the slums.

The incidences of anaemia were found in more than half of the children. Maternal factors such as mother's age at marriage, educational, occupational and anaemia status of mothers were closely associated with the prevalence of anaemia among the children. Inter-linkages were also seen between mother's knowledge about anaemia and her food selection ability. Mothers who had knowledge about anaemia and food selection, their children were less prone to anaemia. Anaemia was found to be the most commonly occurring micronutrient deficiency among the children.

Dietary assessment was done to unravel the food habits and feeding practices of the children. Most of the children had two meals a day and mothers preferred giving home cooked food to their children. A high proportion of children was deprived of colostrum and was not breastfed within one hour after delivery. A

significantly higher number of women gave prelacteal feed to their children in the form of water, honey or cow milk. Mother's literacy level and source of information about feeding practices were significantly correlated with the feeding practices. Weaning practices were also found to be faulty and in most of the cases it was not introduced at the prescribe time. Inappropriate and faulty feeding practices could be one of the reasons for the poor nutritional status of the children in the slums.

The immunization coverage of the children in slums was low with less than half of the children being completely immunized up to the age. Although, the incidences of vaccine preventable diseases were low, the prevalence of other childhood diseases particularly respiratory and diarrhoeal infections was quite high. Cold, cough, fever, diarrhoea were some of the most frequent childhood diseases in the children. Due to lack of adequate housing, civic facilities and poor environmental conditions children living in slums were highly vulnerable to infections which increase the risk of morbidities in them. The coverage of ICDS services was poor with only two AWCs functioning in Rajajipuram and Sikander Nagar slums. The enrolment of children for non-formal pre-school education was low and the frequency of health checkups was even fewer. The beneficiaries were not satisfied with the quantity and quality of supplement nutrition. Lack of community participation affected the utilization of ICDS services.



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*Chapter-VIII*  
*Summary and*  
*Conclusion*

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## **Chapter VIII**

### **Summary and Conclusion**

The present study entitled as “Health Care Programmes and Nutritional Status of Women and Children: A Sociological Study of Lucknow Slums” is an attempt to assess the health and nutritional status of women and their children living in the urban slums of Lucknow city. The study also endeavoured to examine the awareness and utilization of some of the health care programmes among the slum inhabitants. With ever increasing population and large scale migration to the cities for better living and employment opportunities, the mushrooming of slums has become a common urban phenomenon. Lucknow being the capital of Uttar Pradesh attracts people from the adjacent districts and states and thus the city experiences a large influx of people. Due to lack of resources and poor socio-economic condition this expanding population is forced to live in substandard housing. The poor living and housing conditions, lack of basic civic amenities and sanitation, unhygienic and faulty food habits coupled with poverty and deprivation makes the slum dwellers particularly, women and children highly vulnerable to malnutrition and subsequently to number of morbidities. Nutritional deficiencies and frequent episodes of illnesses act as a barrier in leading a healthy normal life.

The present study highlights that women and children living in slums suffer from poor nutritional and health status due to number of factors. Inadequate housing and environmental conditions, lack of basic civic facilities and faulty lifestyle along with deprivation and discrimination are considered to be the probable reasons behind the health and nutritional problems among slum inhabitants. The physical characteristics of slums make its inhabitants, particularly women and children vulnerable to health problems. Nutritional deficiencies result in frequent episodes of illnesses which worsens the situation further. Malnutrition is the most common phenomenon among women and children in slums due to their poor living conditions and faulty and inappropriate dietary habits.

Any imbalance in satisfying the nutritional requirements of an individual is termed as malnutrition. The synergistic effects of inadequate or poor dietary intake, frequent episodes of parasitic or other childhood diseases such as diarrhoea and lack of adequate care and health services during illness is often regarded as the most

common reason for malnutrition among children. In developing countries like India malnutrition is often cited as one of the most important factors contributing to increasing risk of morbidity and mortality among children. During childhood malnutrition can also affect the potential and risk of morbidity and mortality in later years of life. It is more likely that malnourished children would grow into malnourished adults who would face increased risks of disease and death. Poor nutritional status of women has been linked with the higher age at menarche (Mishra, Lahiri and Luther, 1999).

There are number of factors, which either directly or indirectly affect the nutritional status of children. The most commonly cited factors which are considered to influence the child nutrition are food availability and food intake, breastfeeding and child feeding practices, occurrence of parasitic and infectious diseases, access to health care services, immunisation against major childhood diseases, vitamin A supplementation, maternal care during pregnancy, water supply and sanitation, socio-economic status and health seeking behaviour. There are certain demographic characteristics which are also associated with the child nutrition such as the child's age and sex, mother's age at child-birth, birth intervals (both preceding and following) and child's birth order. During childhood and early years of development, adequate nutrition has a critical role to play. The initial years of childhood are not only important for attaining optimum growth and development, but also for good health. In the early phase of life, the children are highly susceptible to growth and cognitive retardation, macro and micronutrient deficiencies and other common childhood diseases such as diarrhoea, acute respiratory diseases (ARI) and infections.

The prevalence of malnutrition among women leads to a number of undesirable conditions such as reduction in work productivity, slower or poor recovery from illnesses and diseases, increased susceptibility to infections and a very high risk of adverse pregnancy outcomes. A woman's nutritional status not only has important implication for her health, but also for the health of her children. Low body mass index (BMI), anaemia, short stature, or other micronutrient deficiencies are indicators of poor nutritional status in a woman. All these indicators makes a woman vulnerable to a higher probability of obstructed labour, delivering a baby with low birth-weight, having adverse pregnancy outcomes, producing breast milk in low

quantity, illness for herself and her new born baby and death as a result of postpartum haemorrhage (Arnold, Parasuraman, Arokiasamy and Kothari, 2007).

In India, malnutrition continues to be one of the major health problems among women particularly in those women who belong to lower socio-economic strata such as slum dwellers. It not only bears an adverse effect on their health, but also poses a threat to the survival of their children. Among women the adverse effects of malnutrition are coupled with poverty, heavy work demands, childbearing and rearing practices, and the special nutritional requirements of women. This consequently results in increased susceptibility to diseases and higher mortality. Although the problem of malnutrition is prevalent among all the sections of the population in India, but women are the worst sufferers. The vicious cycle of poor nutrition among women starts from infancy and continues throughout their lifetimes. Typically, women and girls are the last to eat in a family; thus, if there is not enough they are the ones who suffers the most.

With this background the urban slums in Lucknow have been chosen as the study area. Broadly, two old slums (Pre-1990s) i.e. Sikandarnagar slum, Chinhat bazaar slum and two new slums Rajajipuram slum and Vikasnagar slum have been selected for the study from the slum list of Lucknow Municipal Corporation. These slums were selected randomly on the basis of availability of sample population. 50 households from each slum were selected and the women who were in the age group of 15-45 years and had children between 6 months to 5 years were selected purposively for the study. The sample, thus, consisted of 200 women. Initially, the background information of the respondents were collected followed by their socio-economic status, housing conditions, health and nutritional status, dietary intake and awareness and utilization of some of the health care programmes. Anthropometric measurements of women and their children were recorded to assess their nutritional status. Their haemoglobin estimation was done with the help of trained specimen collector. The food frequency, consumption pattern and dietary recall method were used to assess their dietary intake. Information was also collected from AWCs to examine the utilization of ICDS and other health programmes by the respondents.

Broadly, there are five objectives in the present study. The research is aimed at understanding the health care policies and programmes that have been launched in the

country. The main objective of the research is to assess the nutritional status of women and their children in the slums. It is also very pertinent to examine the socio-economic status, housing conditions and hygienic practices of the families residing in the slums. The focus of the study is to understand the issue of health and nutritional status of women and children in slums at grass-root level and the same need to be contextualized. It has also been analyzed whether slum dwellers are aware about health care programmes and to what extent health care facilities are being utilized by them. As not much concrete work has been done earlier in the field of nutritional status of women and children residing in slums of Lucknow, the present study would facilitate a new dimension in understanding the nutritional status of these deprived and socially excluded people. It is also very essential to examine the correlation between the maternal factors and nutritional and health status of the children.

### **8.1 Summary**

The major findings of the study are as follows:

The demographic profile of the respondents showed that most of them fall in the age group of 20-35 years, however some of the respondents were less than 18 years of age (16 per cent) which highlights the fact that they were married before completion of 18 years. During field survey it came into light that early pregnancy resulted in child mortality as well as miscarriages. Thus, age and health are interrelated and is one of the important variables for the study. More than half of the respondents (63.5 per cent) in the study area were Hindus whereas rest of them were Muslims. This shows that slums selected for the study were inhabited by Hindus and Muslim only and there were no Sikh or Christian households. Majority of the respondents in the slums were either OBCs (49.5 per cent) or SCs (37.5%). This reveals that mostly people of the lower castes were residing in the slums. The women residing in slums have to deal with the burden of discrimination in terms of gender, poverty and caste which adversely affect their health and nutritional status.

Most of the families in slums were nuclear type (86.5 per cent) and this suggests that the lack of financial resources and low income resulted in the disintegration of the families. This had an impact on the upbringing of their children because many of the respondents work outside home to financially support their families and consequently children are left alone at home with no one to look after

them. This in the long run also adversely affects the health of their children. Most of the households had a large family size with family members between 5-8, which means high dependency ratio. With low income and poor financial resources it becomes quite difficult to fulfil the basic necessities of each and every family member. Women are the worst sufferers because least attention is paid to their requirements.

Educational attainment of the respondents was found to be strikingly low in the slums. A substantial proportion of the women residing in the slums had little or no education at all and this reveals the poor level of educational attainment within the female slum dwellers. Almost 71.5 per cent of the respondents were illiterate which depicts educational disparity within the urban areas. The low level of educational attainment is directly associated with the poor health status of women in the slums. As majority of the respondents were illiterate, they had lower level of health awareness and consciousness which is detrimental not only for their health but also for the health of their children.

Almost half of the respondents (54.5 per cent) got married when they were between 19-21 years. One of the alarming situations is that as high as 37 per cent of the respondents were married before completing 18 years. Early marriage means early chances of conceiving, which in the long run has an adverse impact on the health and nutritional reservoir of the women. In the present study it is appalling to learn that more than half of the respondents (51 per cent) delivered their first child before completing the age of 21. In slums women are usually not given adequate post-natal care which further stresses their bodily reserves.

Almost 63 per cent of the respondents were working to financially support their families. They were engaged in different kinds of income-generating activities such as they work as domestic servant, daily wage labourer, self-employment (tea stalls, street vendor, vegetable vendor, etc.). However, it does not connote that higher percentage of employment among women increases their participation in the decision-making. In the study area, it came into light that despite of women's contribution in the income of the family, they were subjugated and had secondary status in their household. Even the decisions related to their health and the health of their children were taken by the male members of the family. The present study revealed that the

economic condition of the families in all the four slums was miserable, which directly had an impact on their social as well as health status. However, it was found that the families in which women were working had better financial conditions than those families where women were not working. In all the four slums more than half of the households had monthly income between Rs. 4001-6000 and only 4 per cent of the households had their monthly income more than Rs. 8000. Further, 31.5 per cent of the households had their monthly income between Rs. 2000-4000. These low ranges of income reflect the poor earning condition of the families residing in slums.

The housing conditions were probed to assess the impact of living conditions on the health of the respondents. Majority of the respondents were living in *kaccha* (47 per cent) and *semi-pucca* houses (45.5 per cent). Only 7.5 per cent of the respondents were living in the *pucca* houses. Due to the inaccessibility of houses in non-slum areas and high rent they were bound to live in these slums. This clearly reflects that the respondents in slums were living in deplorable conditions. Most of the respondents informed that their families had constructed houses on their own without any governmental help. In the study area it was revealed that majority of the families (71.5 per cent) were living in single-roomed houses, whereas 25.5 per cent of the respondents were residing in two-roomed houses and only 3 per cent of the respondents had three-roomed houses. In majority of the households single room was used for various purposes. Residential overcrowding and congestion is a matter of grave concern in slums. Most of the houses in all the four slums had one or no window at all. As a result, a large proportion of the houses in the slums were devoid of adequate ventilation. Lack of proper ventilation and sunlight in the houses is closely associated with the health of the slum residents.

Majority of the respondents (96 per cent) had electricity connection in their household. 27 per cent of the households had legal electricity connection whereas 69 per cent households had illegal electricity connection. Households having illegal electricity connections were either without meter or they had shared connection which means they were drawing electricity from single meter. Only 4 per cent of the households were without electricity connection. Further, most of the respondents (60 per cent) were using public taps for collecting water whereas rest of them had tap connection in their homes. Some of the respondents reported that they were not satisfied with the purity of the drinking water and it also came into light that the

authorities never turn up to check the quality of the water. Lack of access to safe drinking water is one of the issues of serious concern in the study area. The respondents also divulged the information that their children frequently suffer from various water borne diseases such as diarrhoea, cholera, etc. About 61 per cent of the respondents in all the four slums were using public toilets. Overall 16 per cent of the respondents reported that they did not have access to either public or private toilet and thus they defecate in the open. This indicated towards the scarcity of toilet facilities. Moreover, some of the respondents reported that they had to pay for using public toilets and they could not afford to pay every time. Therefore, they practise open defecation. Open defecation not only makes the environment unpleasant but it is responsible for the spread of number of infections. Furthermore, this situation is worsened by the lack of cleanliness along with the inadequate supply of water in the public toilets. Another major issue that needs the urgent attention of the authorities is the safety of women at night in using public toilets.

Most of the households were devoid of separate kitchens due to the lack of adequate space and overcrowding. Majority of the respondents were cooking food either within the rooms or in the open place along with the house. Only few of the respondents had separate kitchens in their households. Moreover, it had been reported by 81 per cent of the respondents that they were using wood, coal, dung, kerosene stove apart from other sources. This reflects that slum dwellers were still dependent on solid fuels for cooking. It particularly affects the health of the female members of the household, as they were in direct contact with the smoke of the fuel while cooking food. Some of the respondents complained of headache, respiratory problems due to the smoke. As in most of the households the food was cooked in the rooms, it had an impact on the health of other family members also.

Majority of the sampled houses were built on the occupied (45.5 per cent) or privately encroached land (33.5 per cent). Overall, only 21 per cent of the respondents were living in rented houses. As it is mentioned that majority of the houses were built either on occupied land or privately encroached land, they were not constructed with proper planning. Moreover, the slum inhabitants had the fear of losing the land therefore it lacks planning. Most of the households (69 percent) were facing moderate deprivation and rest of the households were either abjectly deprived or just above the

deprivation. Overall, most of the sampled households were still facing deprivation which clearly indicated the poor socio-economic status of the slum inhabitants.

The analysis of nutritional and health status of women in slums depicts a gloomy picture. A substantial proportion of women were found to have poor BMI status with 30.5 per cent women having BMI lower than the normal level and 16 per cent were obese. The proportion of thinner women was more than the obese. The study revealed that factors like gender disparity, poor socio-economic status and inadequate dietary intake were associated with the BMI status. With increase in educational status and household income the BMI status of women found to be improved. The incidences of undernutrition and obesity were higher in those women who were either illiterate or primary educated. It was observed that women who were in the income group of 4001-6000 had better BMI status as compared to others.

The prevalence of anaemia was high among women in all the selected slums. Overall 67 per cent of the sampled women were anaemic. 24 per cent of the women had mild anaemia, 25.50 per cent had moderate anaemia and 12.5 per cent were severely anaemic. The inter-linkages between anaemia and variables such as age of women at marriage, age of women at first childbirth, education, etc have been analysed. The prevalence of anaemia was as high as 82.40 per cent among women who were married before 18 years. The analysis indicated marriage at an early age increases the risk of occurrence of anaemia. Further, the incidences of anaemia were significantly high among women who delivered their first child before 21 years of age. This shows that early pregnancy has a negative impact on the nutritional status of women residing in slums. Moreover, the prevalence of anaemia was also higher among women who were either illiterate or educated till primary. Women in slums who had some knowledge about anaemia (71.2 per cent) were relatively less anaemic as compared to those women who lacked the knowledge. 61.7 per cent women lacked the ability to select iron and protein rich food which seemed to increase the prevalence of anaemia. The burden of anaemia is significantly high among women inhabiting in the urban slum areas.

Majority of the women were considering a combination of criterion for selecting food. Seasonal food (95.5 per cent), cost of food (93.5 per cent) and ease of preparation (91.5 per cent) were the highest considered ones. More than 90 per cent of

the women took these factors into account while selecting food for their family members. The factors of nutritional quality and likes and dislikes of the family members were the least preferred ones. Economic deprivation and lack of awareness about nutrition could be seen in the food choices of the slum dwellers which have an adverse effect on their nutritional status. The analysis of consumption of food frequency revealed the fact that majority of the women in slums were deprived of adequate daily diet. Most common food items that were consumed daily by all the respondents were cereals, sugar, oil and salt. However, most of the respondents consumed pulses (68.5 per cent) and milk (85.5 per cent) on the weekly basis. Similarly, the frequency of consumption of leafy vegetables (53 per cent) and other vegetables (49 per cent) was mostly on weekly basis. Further, majority of the respondents (48.5 per cent) consumed fruits fortnightly. Only 32 per cent of the women were consuming non-vegetarian food items. Fish (18.5 per cent), meat (22.5 per cent) and eggs (16.5 per cent) were mostly consumed fortnightly. The key findings depict poor dietary diversity with predominantly cereals and oil based diet. Most of the nutritious food items such as pulses, milk, vegetables, fruits, meat, eggs, etc. were not part of their daily diet. The high price of these food items is one of the reasons for their infrequent consumption. 24 hours dietary recall method reflected that the daily consumption pattern of women was far from satisfactory. Majority of the sampled households were using iodized salt regularly and the problem of goitre was not prevalent in the selected slums.

Women's occupational and educational statuses were selected as socio-demographic indicators and its influence was seen on the respondents' consumption of vegetables and fruits. Women who were employed ate leafy vegetables more frequently than those who were housewives. Majority of the employed women (78.5 per cent) consumed leafy vegetables at least once in a week. In contrary to this, a large proportion of housewives in slums were eating leafy vegetables either fortnightly (40.5 per cent) or monthly (50%). Similarly, the situation is more or less similar in consumption of fruits. Almost half of the employed women in slums were consuming fruits on the weekly basis, whereas most of the housewives were consuming it on fortnightly (55.4 per cent) and monthly (28.3) basis. It could be attributed that employed women in slums had some decision making power while selecting vegetables and fruits in comparison to non-employed women. Education

level of women was found to be positively associated with the consumption of leafy vegetables and fruits. All the women who were secondary educated consumed vegetables and fruits either daily or at least once in a week. Most of the illiterate women (48.4 per cent) ate leafy vegetables once in a week, however more than 60 per cent of the illiterate women consumed fruits only fortnightly. This clearly shows that with the increase in educational level the consumption of fruits and vegetables increases.

24 hour dietary recall was conducted for two days among sampled women in all the four slums. Most of the respondent (87 per cent) reported consuming two meals a day. Tea was the most common beverage consumed by majority of respondents (91 per cent) at least once in a day. Refined vegetable oil (mustard and soyabean were the commonest) was found to be the most common cooking medium (77 per cent) in the households. A significantly high proportion of the women (51 per cent) reported consuming some kind of snacks either freshly prepared at home or purchased from the market. One-third of the respondents reported to consume vegetables and fruits which highlight lack of nutritional content in the diet of rest of the respondents. Further, a negligible per cent of respondents (2 per cent) revealed to consume tubers and roots. The intake of milk was reported by only 11 per cent of the women. The consumption of meat, eggs and fish was found to be relatively low with only 17 per cent of the women reporting to have eaten them. The intake of pulses was revealed by only 32 per cent of the women. This finding highlights that daily consumption pattern of women was far from satisfactory.

The analysis of health problems among women was done under four heads namely metabolic related problems, nutritional deficiencies, reproductive health problems and other health ailments. Most prevalent health problems among women in the slums were nutritional deficiencies (6% to 22%) followed by other health ailments (1% to 18.5%) and reproductive problem (2% to 15.5%). The contribution of metabolic health problem was comparatively low to the disease profile (0.5% to 7.5%). The impact of socio-demographic factors on the prevalence of health problems among the women was also assessed. The incidences of diseases decreased with the increase in educational status.

Reproductive health indicators were examined to assess the health status of women in slums. Majority of the women gave birth to their first child before completing 21 years of age. In most of cases the spacing between pregnancies was less than two years. Most of the women received prenatal care. Although, the percentage of women who received post natal care was comparatively lower than prenatal care. The cases of miscarriages (10.5 per cent) and infant mortality (5.5 per cent) were also reported. Early pregnancy and lack of adequate prenatal care could be the reason for abortions and infant mortality. For reducing such incidences, it is essential that women in slums should be provided with much needed pre and post natal care. Providing focused health services to urban poor women who have obstetrical history or deliver before completing the normal pregnancy term can help in reducing the infant mortality rate.

The analysis of utilization of health facilities showed that women in slums gave preference to private hospitals/clinics (56 per cent) as compared to government ones. Contrary to the expectations, very less number of respondents had sought medical treatment from traditional healers. The preference to the private hospitals indicates that the increasing government infrastructure has failed to cater the needs of the urban poor. One of the practices that came into notice is that women avoid visiting doctors in minor ailments and they only take advice from doctors when they fell seriously sick. This suggests the practice of self-medication among women and the local medical stores procure the medicines to women on the basis of their symptoms. A high proportion of respondents received allopathic treatment (87 per cent) which suggests that women in slums preferred modern medical treatment facility.

A significant proportion of the women in slums were not satisfied with the health services provided to them at the governmental as well as private hospitals. Several reasons were responsible for dissatisfaction regarding the health care services among women residing in slums. The respondents complained about the quality of services that were being provided to them. Further, distance of the hospitals and inconvenient timings resulted in the loss of their daily work. Apart from these factors, rude behaviour of health personnel, their absenteeism and private practice by the doctors were some of the important intervening factors. Combination of these factors was responsible for lack of adequate health care services to women living in slums. The awareness and utilization of health programmes was extremely low in all the four

slums. However, the level of awareness and utilization was comparatively more in those slums which had AWCs and where ASHA had been posted. ASHA acted as a bridge in providing knowledge about various health programmes to women in slums. Thus, it can be attributed that women living in slums with AWCs were able to avail the services of various health programmes.

Demographic profile of children showed that 55 per cent of sampled children were male and 45 per cent were female. Most of the children were in the age group of 13-36 months. The anthropometric measurements of children revealed the prevalence of malnutrition among children and it was found to be associated with age and gender. The problem of underweight was found to be prevalent in all the four slums. Overall, almost 38 per cent of the children were below normal weight. The cases of undernutrition were reported to be more in girls as compared to boys. The occurrence of underweight is indicative of chronic malnutrition among the children living in slums. Educational status of mothers and household income were observed to be correlated with the underweight. Most of the cases of underweight (28 per cent) were found in those children whose mothers were illiterate and it was followed by primary educated (8.5 per cent). Educational status of mother seems to significantly influence the nutritional status of children in slums. Similarly, the incidences of underweight were higher in households with 2000-4000 income (19 per cent). This depicts that the prevalence of underweight is correlated with education and income.

The prevalence of stunting and wasting was widespread in all the age groups. Particularly, the incidences of stunting were as high as 64 per cent among female children and a substantial proportion of male children (48.1 per cent) were stunted. However, the prevalence of wasting was comparatively low with 25.4 per cent male children and 36.6 per cent female children being overtly thin for their stature (wasting). The socio-economic variables like educational status and working status of mother were associated with the stunting and wasting. The largest proportion of stunted children was in the category of illiterate mother followed by primary educated. Likewise, the proportion of wasted children was more in the illiterate category. Further, the prevalence of stunting and wasting was more in those children whose mother were working. Mother's engagement in occupation had an adverse impact on the growth of the children. One of the possible reasons behind the poor

nutritional profile of children could be the inability of working women to feed their children for the appropriate number of times.

Most of the male children were having normal nutritional status with MUAC value more than 13.5 cm and almost 18 per cent of them were either mildly or severely malnourished. The proportion of MUAC based malnutrition was found to be higher in female children with nearly 35 per cent of them having mild or severe malnutrition. The maternal factors such as mother's education, occupation, nutritional status, feeding and hygiene practices were significantly associated with the MUAC based malnutrition.

Haemoglobin status of children showed that more than half of the children (61 per cent) were anaemic, out of which 24.5 per cent were mildly anaemic, 33 per cent were moderately anaemic and 3.5 per cent were severely anaemic. Maternal factors such as age of mother at marriage, mother's literacy, occupational and anaemia status were taken into consideration for assessing the inter-linkages with the haemoglobin status of children. The incidences of anaemia were highest in those children whose mother were married before completing 18 years of age and the prevalence reduces with the increase in the age of marriage. Mother's literacy level was also found to be associated with the prevalence of anaemia among children. The children of most of the illiterate or primary educated women were anaemic. The children of working women were having lower level of haemoglobin as compared to the non-working women. Further, it was observed that children of majority of anaemic women (67.3 per cent) were also anaemic. Women residing in the selected slums had some information about anaemia. However, more than half of the women (53 per cent) were not aware about anaemia. 97.1 per cent of children of those women who were not aware about anaemia were anaemic. This clearly shows that maternal variables are closely associated with the child's anaemia status.

Dietary practices of children were assessed through food habits, number of meals, food preferences and consumption. Although the percentage of families consuming non-vegetarian food was higher, the children were avoided being given non-vegetarian food due to belief that they should be given such food after attaining certain age. Most of the children were fed two times a day (48.5 per cent) followed by three times (39.5 per cent). This shows that feeding frequency of children were less

than normal. Almost 40 per cent of the children were given non-vegetarian food. Majority of the mothers gave home cooked food (89 per cent) to their children.

One of the most essential determinants for assessing the nutritional status during childhood is the feeding practices. Breastfeeding and complementary feeding practices are the integral part of IYCF. The initiation of breastfeeding within 1 hour was reported for only 39.5 per cent children while the rest were breastfed within 24 hours or after that. Almost 46 per cent of the women gave colostrum to their children and the remaining ones discarded it. A substantial proportion of women gave prelacteal feed (40.5 per cent) to their children in the form of water, honey or cow milk. It was reported that only 23 per cent of the mothers exclusively breastfed their children. This clearly suggests that the breastfeeding practices in slums were highly faulty and inappropriate. Further, the introduction of complementary food was also inappropriate with majority of them receiving it either before or after the prescribed duration. Most of the mothers (64.5 per cent) received information about the child feeding practices from their elders or peer group. Late initiation of breastfeeding, discarding colostrum, giving prelacteal feed, lack of exclusive breastfeeding were found to be prevalent among mothers in slums. The first food introduced to the children in slums primarily consisted of cereals, pulses, fruits and vegetables. Most of these foods were introduced in semi-solid form. Further, more than 90 per cent were provided vegetables in semi-solid form as complementary food. Few of the children were also given complementary food in solid form. This shows that children were familiarized with locally available food.

Majority of the literate women exclusively breastfed their children, whereas almost 90 per cent of illiterate women did not practice breastfeeding exclusively. This clearly shows that the literate women were more aware about the importance of exclusive breastfeeding for their children. Further, the practice of giving prelacteal feed to children was more in illiterate women. Most of the literate women were found to have given colostrum to their children whereas a significantly high proportion of illiterate women discarded it. Mothers who were provided information about the IYCF by health personnel were practising more exclusive breastfeeding than those who received it from elders or peers. Further, a high proportion of women who were given information about child feeding by elders gave prelacteal feed to their children.

Likewise, these women discarded colostrum which is considered to be good for the health of the child.

The child feeding practices are considered to be one of the most important determinants of malnutrition. The analysis of child feeding practices in context to malnutrition revealed that the prevalence of underweight, stunting and wasting was reported to be significantly high in these non-exclusively breastfed children. The occurrence of malnutrition was also found to be more in those children who were not given colostrum. Complementary food was also associated with the prevalence of undernutrition among children residing in slums. Children who were initiated weaning food either early or after the prescribed period were reported to be malnourished.

The analysis of morbidities indicated that children were suffering from number of infections and diseases. The highest prevalence was of chicken pox (5.5 per cent) followed by whooping cough (3.5 per cent). Few cases of diphtheria, tuberculosis and mumps were also reported. The incidences of vaccine preventable diseases such as tetanus and polio were totally absent in the study area. Overall, 13 per cent of the children were found to be suffering from some form of vaccine preventable disease. Apart from vaccine preventable diseases, other childhood illnesses such as respiratory and gastrointestinal problems are found to be commonly prevalent among children. Cold (76.5 per cent) and cough (72.5 per cent) were the most frequently reported illnesses among sampled children in slums. The incidences of fever (51.5 per cent) and diarrhoea (90.5 per cent) were occasionally found in the children, whereas, most of the children rarely experienced the bouts of vomiting (59 per cent). Only 40 per cent of the children were completely immunized whereas more than half of the children were partially immunized. This suggests that the drop-out was prevalent in between the immunization.

Probing into the awareness and utilization of ICDS services revealed that only one-fourth of the sampled children were beneficiaries of non-formal pre-school education, out of which only 42 per cent were covered. Only half of the beneficiaries were covered under the services of supplementary nutrition (59 per cent) and health check-ups (51 per cent). The numbers of beneficiary mothers getting nutritional and health education were extremely low and even lower were the coverage numbers with

only 6 women being covered. The beneficiaries were not satisfied with the quality, quantity and accessibility of the nutritional supplement. AWCs were lacking in terms of resources with inadequate space, lighting and ventilation, improper seating arrangement and non-availability of separate kitchen and crèche facility. The community participation and outreach was poor which affected the utilization of ICDS services.

## **8.2 Conclusion**

The findings and interpretations of the present study on the basis of various parameters and aspects conclude that women and children living in the slums of Lucknow suffer from poor health and are malnourished. Due to various interacting factors women and their children in slums are prone to health problems. There is need for community participation and community awareness so that women could be educated about the nutritional issues in particular and its implication on the general health. Door to door services and community counselling in reference to appropriate nutritional and dietary intake, child feeding practices and strengthening of government schemes and programmes could facilitate changes in the prevalent scenario. Challenges to good nutrition and health care are presented by the physical characteristics of slums. There are number of underlying social, economic and political forces that perpetuate slums and redressal of these issues would take time. However, immediate implementation of number of interventions could prove fruitful and have life-changing effects. The approach to address health problems in slums need not to be comprehensive or exclusive but it should direct the attention of policy makers and health professionals towards the slum life which has profound effect on the health of the people living there. Moving from understanding to action could be helpful in improving the lives of slum dwellers.

The nutritional and health problems in slums are affected by interplay of number of factors including housing and environmental factors, sanitation, social and economic factors, common beliefs and customs, insufficient quantity and quality of food consumption, deficiency of nutrients, etc. The housing and environmental conditions such as overcrowding, congestion, lack of separate kitchen, open drains, inadequate sunlight and ventilation were found to be affecting the health of the slum population in the study area. Most of the households had one room space and were

devoid of basic amenities. Anderson (1960) in his study opined that slums are characterised by four basic components namely appearance, economic status, overcrowding and population and he defined these components in context to slums. The poor environmental conditions accentuate the health vulnerability of the people living in slums. In the present study, these environmental factors were associated with the prevalence of respiratory diseases among the women and children.

The indicators chosen for sanitation and hygiene behaviour were access to safe drinking water, type of toilet facility, disposal of waste and garbage, disposal of infant's excreta etc. Not only the nature of housing but the availability of basic civic amenities was also lagging behind in slums. Most of the households lack the facility of running tap water at home and they were dependent on the public taps. The quality of water was also not satisfactory as most of the respondents were complaining about the purity of water. Unavailability of safe drinking water is one of the most common causal factors for water-borne diseases. Besides, majority of the households do not had toilet facility and they were using public toilets or practice open defecation. Most of them were disposing child's stool in open drains. In public toilet the supply of water was irregular and respondents were afraid to use public toilets in night. Cleanliness of toilets was also a matter of concern. This shows that the condition of sanitation in slums was appalling. K. R. Rao and M.S.A. Rao (1991) pointed out that the main physical conditions of a slum area are: informal settlement, high density of population and congestion, dilapidation, overcrowding, unhygienic conditions, absence of basic civic amenities like safe drinking water, drainage, sewerage and disposal of garbage. Lack of adequate sanitation contributed to the burden of infections and morbidities. Thus, the slum population have to cope up with not only poor and unhygienic housing conditions but also lack of sanitation.

When the health and nutritional status of women were looked into the prevalence of nutritional and health problems were evident. The anthropometric assessment showed that a significant proportion of women were having either low BMI (thinness) or higher BMI (obesity) than the normal limits. However, the incidences of thinness were higher than the occurrence of obesity among the women. The prevalence of anaemia was also quite high with more than half of the women suffering from it. These nutritional deficiencies were found to be closely associated with the educational status of the women and monthly income of the household. With

the increase in the educational status and household income the incidences of malnutrition decreased. Further, the knowledge of women about anaemia and food selection ability were found to be linked with the frequency of undernutrition. Hassan and Shukla (2013) carried out a cross-sectional epidemiological study to assess and examine the nutritional status of women in urban slums of Allahabad city. They found that the prevalence of thinness and anaemia among married women in slums was very high. In the present study, the poor socio-economic conditions in the slums directly had an impact on the nutritional status of women.

Dietary assessment furnished essential information about the food and nutrient intake of women in the slums. Criteria for food selection, food frequency, 24 hour dietary recall method were used to assess the nutritional intake of the respondents. Majority of the women gave preference to seasonal food, cost of food and ease of preparation while selecting food items for the family. Nutritional quality and liking of the family members were the least preferred ones. Lack of economic resources and awareness were the common factors that had an impact on their choices. The food consumption pattern of women in slums consisted of cereals, sugar oil and salt daily in their diet. The consumption of green leafy vegetables and other vegetables, fruits, pulses and milk was mostly on the weekly basis. The women were not able to include these food items daily in their diet. The lack of diet diversity was clearly evident in their food intake. The poor financial resources and economic constraints were intricately connected with the food consumption of the slum population. Gender also had a critical role in the distribution of food within the household. Male members were given the preference whereas the women were the last to eat in the family. Pal, Bharati, Ghosh and Vasulu (2009) provided an inclusive and in-depth analysis of issues of gender discrimination and also examined the status of women from critical viewpoint at different spheres of life. They portrayed a complex association between gender and poverty. Thus, the women have to face the double discrimination of poverty and gender.

The next issue probed was the health problems prevalent among women in the slums. The occurrence of number of health diseases among women is a grave problem. The health problems were categorised under four heads- metabolic, nutritional, reproductive and other health ailments. The incidences of metabolic illnesses were comparatively very low, however the occurrence of nutritional

deficiencies such chronic energy deficiency and anaemia was sufficiently high. The prevalence of reproductive health problems and other health ailments was common. Socio-demographic variables such as age, educational status and income were found to be significantly correlated with the occurrence of health problems. The poor housing conditions coupled with lack of sanitation were also responsible for the higher incidences of ailments among the slum population.

The reproductive health indicators were also probed into which revealed that a substantial proportion of women were married before completing 18 years which is considered to be the legal age of marriage. Early marriage results in early pregnancy which adversely affects not only the health of the women but also the health of the children. In most of the cases the spacing between the two consecutive deliveries was less than two years. Women were not able to recuperate properly which had a negative impact on their bodily reserves. The cases of infant mortality and miscarriages were also reported. Inadequate prenatal care and lack of post natal care were also the contributing factors towards the poor nutritional reservoir of women. Lack of community participation, outreach and awareness towards the health programmes makes women deprived of many health facilities.

The inequitable distribution of health services makes the slum dwellers vulnerable to diseases. Poor access and utilization of health services by them pose a threat to their health. Women preferred private hospitals and clinics for treatment instead of government hospitals. Contrary to the expectation very few women took medical aid from traditional healers. Self-medication was also a common practice in slums. In minor ailments they procured medicines from local medical stores. Most of the women visited doctors only when they were seriously ill. They had more trust on the allopathic doctors as compared to others. The women were not satisfied with the health care services that were being provided to them. Long hours of waiting, distance, poor quality of health care, affordability, rude behaviour of health personnel, etc. were some of the causes of dissatisfaction. Illness acted as a catastrophe for the families in slums. Poverty and lack of financial resources over-burden the family and out of the pocket expenditure make it difficult for them to avail quality health services. Further, lack of awareness and ignorance about the health was clearly evident in the slum dwellers. Banerjee (2012) assessed the health status of women in urban slums of Hooghly and asserted that women were not only socio-economically

backward but were also the most vulnerable section of the society. This study revealed that water-borne diseases were quite rampant. The physical conditions in slums were adversely affecting the health of women, but there were several other factors that were responsible for poor health status of women. Statistical analysis revealed that factors like early age of marriage, conceiving at a younger age, less gap between successive pregnancies, poor pre and post-natal care, poor intake of food were significantly associated with the health status of women in slums.

The awareness about *Janani Suraksha Yojana*, *Janani Shishu Suraksha Karyakram*, ICDS and Urban ASHA scheme were probed and it came into light most of the women were not aware about these health programmes and the utilization rate was even lower. Two AWCs and one community health centre were functional in the three selected slums and in one slum there was no such centre. The awareness and utilization of various health care programmes was comparatively better in those slums where AWCs were available. ASHAs were acting as a bridge in imparting awareness about various health services among slums dwellers. Still the level of awareness and utilization was far from satisfactory. More concrete and focused interventions are needed for the adequate implementation, monitoring and utilization of the health care services.

Now we look into the nutritional and health status of children aged between 6 months to 5 years in slums. Nutrition is one of the key factors which has an impact on the public health. Nutritional status of children especially with regard to the threat of morbidities and mortality has been identified as an area of concern. Improper nutrition results in the occurrence of number of diseases among children. Hence, there is need to develop nutrition specific programmes in order to prevent the incidences of communicable and communicable diseases among children. One of the major public health problems prevalent among young children is malnutrition. It is intricately connected with multitude of factors including faulty feeding practices, inappropriate dietary intake, frequent episodes of infections and illnesses, educational status of parents, maternal factors, etc. Children who are prone to infections, lack adequate nutritional diet and not provided with required care, are at higher risk of malnutrition.

The anthropometric measurements of children were taken to assess the magnitude and characteristics of nutritional deficiencies among children in slums. The

incidences of underweight, stunting and wasting were prevalent among children. This shows that children were suffering from acute as well chronic from of malnutrition. One of the alarming situations is the occurrence of more than one form of malnutrition in a child. Malnutrition was found to be significantly associated with the age and gender. The incidences of malnutrition were higher in girls as compared to boys. However, the prevalence of MUAC based malnutrition was low as compared to stunting and wasting. Slum-wise analysis showed that the problem of malnutrition was high in all the four slums although the frequency of incidences varied. All forms of malnutrition were found to be closely correlated with the mother's educational and working status. Aggarwal and Srivastava (2017) conducted a study to assess the prevalence of malnutrition and explore the breastfeeding and weaning practices, immunisation coverage and illnesses among under-five children in urban slums of Lucknow. This study showed that children were found to be stunted, underweight and wasted. This study revealed that undernutrition, poor feeding practices and low immunisation coverage resulted in the prevalence of several morbidities among children.

Anaemia of varying degree was prevalent among the children of slums. Maternal factors like mother's age at marriage, mother's educational, occupational and anaemia status were affecting the anaemia status of the children. Mother's knowledge about food selection and anaemia was also having an impact on the haemoglobin level of the under-five children. The frequency of anaemia was more or less similar in all the four selected slums of Lucknow. The high prevalence of anaemia indicates lack of dietary intake of iron and protein. Haemoglobin among children is not only essential for supply of oxygen within the body, but it helps in the cognitive and behavioural development also. Its deficiency may lead to the impairment of the mental development in the children.

Dietary assessment of children was done as diet is an important determinant of nutritional status in children. Inappropriate infant and faulty complementary feeding practices would continue to affect the children throughout their life. Although the children were avoided being given non-vegetarian food due to belief that they should be given such food after attaining certain age, some were given non-vegetarian food items. One of the notable features is that most of the children were fed home cooked food. The assessment of food habits showed that most of the children were fed two

times a day which is inadequate. Children who are not fed appropriately have low resistance towards the infections and higher chances of getting sick.

To have a better insight into the dietary pattern of children IYCF practices were also probed. IYCF practices were found to be faulty and inadequate. Most of the children were not breastfed within 1 hour of delivery. Exclusive breastfeeding was not practiced by all mothers. Moreover, a significant number of mothers discarded colostrum and gave prelacteal feed to their children. These faulty feeding practices have an adverse affect on the nutritional reserve of the children and make them vulnerable to diseases. Weaning practices were also inappropriate with majority of children given complementary food before or after prescribed period. Mothers received knowledge about child feeding practices mainly from elders or peers followed by health personnel. Lack of proper IYCF practices is bound to affect the nutritional intake which in the long run may result in malnourished child. The literacy level of mother is positively correlated with the IYCF practices. Literate women were more informed about the correct feeding practices. Children who were fed adequately and correctly were at lower risk of stunting, wasting and underweight. Mitra (2007) conducted a study in urban slums of Kolkata to assess the dietary intake and nutritional status of children. This study indicated that poor dietary intake in slums which resulted in high prevalence of malnutrition among children.

The immunization coverage was reported to be low in the study area. Incomplete immunization and drop-out is a cause of worry. The immunization coverage was found to be more among boys than girls. It made children susceptible to number of vaccine-preventable diseases such as chicken pox, whooping cough, diphtheria, mumps, etc. Other childhood diseases were also observed like cold, cough, fever and diarrhoea. Acute respiratory and diarrhoeal infections were the most commonly occurring diseases among the children in slums. The incidences of illnesses may be due to the unsafe drinking water, low dietary intake of nutrients, poor personal hygiene and sanitation. This suggests that physical characteristics of slums are also responsible for the frequent illnesses.

Poor coverage and quality of ICDS services were reported in the selected slums. AWCs were lacking in terms of resources with inadequate space, lighting and ventilation, improper seating arrangement and non-availability of separate kitchen and

crèche facility. AWWs were under-paid, overburdened and lacked skills. The enrolment of children was low and fewer women received nutrition and health education. The beneficiaries were not satisfied with the quality and quantity of supplementary nutrition. The poor health education service along with absence of referral service indicates the dysfunctional relationship between AWCs and the health centres. The inadequate utilization of pre-school education service is a matter of concern and it has been found to be associated with lack of awareness and parental involvement. The child health services and immunization coverage were unsatisfactory and non-availability of equipments such as weighing machine, height measurement tapes further discouraged the beneficiaries. The community participation and outreach was poor which affected the utilization of ICDS services. Meena, Verma and Kumar (2017) performed a descriptive case study in an urban slum of Delhi to evaluate the implementation of ICDS programme. In this study the mean coverage of all ICDS services was reported to be only 58.3 per cent with maximum coverage of supplementary nutrition and minimum coverage of child and maternal health. This study revealed inadequate infrastructure facilities, poor coverage of services and dissatisfaction of slum dwellers towards the ICDS.

A single factor cannot be considered to be solely responsible for the nutritional and health status of women and their children in slums, in fact it is determined by web of factors. It is probably affected by interplay between several variables which collectively contribute to their nutritional profile. Therefore, a comprehensive, multifaceted and multipronged approach is required to effectively and successfully address, control and prevent the nutritional and health problems of women as well as of children living in slums.

### 8.3 Testing of Hypothesis

#### **Hypothesis 1: Health care policies and programmes in India are operationalized at macro level.**

Government has launched various health care policies and programmes to improve the health care services. These policies and programmes are implemented and operationalized at the macro level. These programmes lack special provisions for the socially backward and marginalized sections of the society. The absence of target specific interventions hinders the effective implementation of various health schemes.

Inadequate access and inequitable distribution of health services deprive the socially marginalized and vulnerable segments from availing these services. Lack of multifaceted and multipronged approach is a major shortcoming of the health programmes. Hence, the hypothesis health care policies and programmes in India are operationalized at macro level is true.

**Hypothesis 2: The socio-economic status and housing conditions of families in slums is poor.**

The study of slums in Lucknow revealed that most of the slum inhabitants belonged to socially backward castes. The educational status of women was low and the illiteracy rate was extremely high. Women were engaged in low paid and unskilled occupation. Most of the women were working as domestic servant followed by unskilled menial jobs. The monthly income of the families was extremely low and they find it difficult to fulfil their basic necessities. The women and their children in slums were living in overcrowded and congested houses and most of them were either *kaccha* or semi-*pucca*. Majority of the houses were devoid of basic civic amenities with lack of safe drinking water, toilet facilities and garbage disposal. Insanitary living conditions pose a serious threat to the health of the slum dwellers. Mother's educational status, income of the household and housing conditions were found to be determinants of mother's as well as child's health and nutritional status. Thus, the hypothesis socio-economic status and housing conditions of families in slums is poor is completely true.

**Hypothesis 3: The nutritional and health status of women and their children in slums is below the normal level.**

In the study of Lucknow slums it was found that the nutritional and health status of women and their children was poor and below the normal level. Most of the women had lower BMI level and they were suffering from chronic energy deficiency. The prevalence of anaemia was also quite high with more than half of the women being anaemic. The frequency of diseases such as reproductive health problems, metabolic problems and other health ailments like gastric and abdominal problems, jaundice, body pain, etc. was found to be high. The dietary intake was inappropriate and the food lacked diversity. The consumption of nutritionally rich food was inadequate and this adversely affected the nutritional status of women.

The incidences of stunting, wasting and underweight were significantly high among the children in slums. Children were found to be suffering from more than one form of malnutrition. MUAC based malnutrition was also prevalent among children, however, its frequency was low. Anaemia of varying degree was found to be prevalent among children. These nutritional deficiencies coupled with poverty resulted in frequent episodes of infections and morbidities in children. Children were suffering from various childhood diseases and vaccine preventable diseases. The immunization coverage was low which invariably enhanced the probability of illnesses. The child feeding practices were faulty and children were fed insufficient number of times. The practices of exclusive breastfeeding and colostrum feed were inadequate. The food given to children lacked dietary diversity and mothers had inadequate knowledge about child rearing and bearing practices. Hence, the hypothesis nutritional and health status of women and their children in slums is below the normal level is found to be true.

**Hypothesis 4: The maternal factors are associated with the nutritional and health status of children.**

The present study conducted in the slums of Lucknow observed that the maternal factors are significantly associated with the health and nutritional status of children. The educational status of mothers was affecting the prevalence of malnutrition among children. The children of the illiterate mothers were found to be more prone to malnutrition than those whose mothers were literate. Child feeding practices were comparatively better in literate mothers as compared to the illiterate ones. The practice of exclusive breastfeeding and colostrum feed was more in literate women. Mother's working status was also correlated with the child's nutritional status. The nutritional and health status was better of those children whose mothers were not working as they were able to take care of their children whereas working women had to spend hours outside which deprive their children from necessary care. The mother's age of marriage and first pregnancy were also affecting the nutritional status of children. Mothers who were married at a young age and consequently conceived early had poor nutritional status and it adverse effects were also visible on the children. Their children were reported to have high prevalence of nutritional disorders than those who were married after completion of 18 years of age. Hence the

hypothesis maternal factors are associated with the nutritional and health status of children is true.

**Hypothesis 5: The access and utilization of health care services is lower among women and children living in slums.**

The women living in slums of Lucknow were not satisfied with the health care services available in government hospitals and they preferred private hospitals and clinics. They complained about the long waiting hours, quality of health care services, inconvenient consultation timing, distance and rude behaviour of staff. The penetration of less qualified private practitioners at the local level is a matter of concern. For minor ailments they practiced self-medication and procure medicines from local medical stores without any medical prescription. The level of awareness and utilization of various health programmes like *Janani Surakasha Yojana*, *Janani Shishu Suraksha Karyakram* and Urban ASHA scheme was found to be low.

The coverage of ICDS was poor in the slums of Lucknow city. In the study area only two slums out of four had AWCs. The AWCs were lacking the infrastructural and other necessary resources. The number of beneficiaries in the AWCs was extremely low with few children receiving non-formal pre-school education. The quality and quantity of supplement nutrition provided from AWCs was dissatisfactory. Most of the women were not getting any nutrition and health education from AWCs. Hence, the hypothesis access and utilization of health care services is lower among women and children living in slums stands to be true.

#### **8.4 Suggestions**

Few recommendations have been suggested in order to improve the nutritional and health status of women and their children residing in slums. These suggestions are as follows:

- Studies similar to the present study with more slums and larger sample size should be conducted for developing scales and growth standards that can be used to assess the anthropometric and nutritional status of children living in slums.
- Adequate implementation and monitoring of the existing health care programmes is essential for its optimum utilization.

- Welfare schemes and centres should be launched to train and provide income generating skills to young girl and women which would make them self-dependent. This in turn would be crucial in improving the economic status of the families living in slums. Poor economic condition is one of the underlying causes of malnutrition.
- Intervention programmes need to be organised by government and NGOs to facilitate door to door basic health services in slums.
- Government should launch intervention programme for imparting nutrition and health education particularly to women in slums in order to improve their food selection ability and child feeding practices.
- Government in collaboration with NGOs should establish health check-up camps at regular interventions for slum dwellers.
- The health policies should be formulated in such a way so that it promotes the community participation.
- Community health centres and referral centres should be established in closer proximity to slums for easy access to slum dwellers.
- Slums are usually devoid of basic civic amenities which often result in infections and illnesses. Therefore, authorities should take interventions to provide safe drinking water, toilet facilities and garbage disposal in slums.

These suggestions would be fruitful in improving the nutritional and health scenario in slums. They may prove to be helpful to government, policy makers, NGOs in formulating policy with a special emphasis on the needs of the slum dwellers. Further, these recommendations could provide direction for implementation of projects specifically related to health, hygiene and nutrition.



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*Section 1*  
*Bibliography*

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*Section 2*  
*Appendix: Interview*  
*Schedule*

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b) Rs 1,00,000	2
c) Rs 2,00,000	3
d) Rs 3,00,000	4

## II. Socio-Economic Background and Housing Conditions

14. Type of family	
a) Joint	1
b) Nuclear	2
c) Extended	3
15. Marital Status	
a) Married	1
b) Widow	2
c) Divorced	3
d) Separated/Deserted	4
16. Religion	
a) Hindu	1
b) Muslim	2
c) Sikh	3
d) Christian	4
17. Social Category	
a) General	1
b) OBC	2
c) SC/ST	3
d) Minorities	4
18. Ownership of land	
a) Owned	1
b) Not owned	2
c) Owned at another place	3
19. Ownership of house	
a) Owned	1
b) Rent	2
c) Lease	3
20. Type of house	
a) Pucca house	1
b) Semi-Pucca house	2
c) Kachcha house	3
d) Thatched hut	4
21. Rooms	
Total no. of rooms	
a) One room/Multipurpose	1
b) Two rooms	2
c) Three rooms	3
22. Separate kitchen	
a) Absent	1
b) Present	2
23. Drinking water	
i. Source of drinking water	
a) Public tap	1
b) Own tap	2
c) Manual hand bores	3
ii. How often you are getting drinking water?	
a) Daily	1
b) One in two days	2
c) Twice in a week	3
iii. In case of not possessing own taps how many hours you spend in collection of water every day?	
a) 1 hour	1
b) 2 hours	2

- c) 3hours or more 3
- iv. Is drinking water that you are getting is pure and safe?  
YES-1 NO-2
- v. Is the scarcity of pure drinking water problem is being brought to the notice of elected representatives?  
YES-1 NO-2
24. Toilet Facility
- a) Absent 1
- b) Common for more than two houses 2
- c) Separate 3
- Sanitation facility
- a) Open defecation 1
- b) Pit toilet 2
- c) Flush toilet 3
25. Light and ventilation
- i. Doors and windows
- a) Adequate 1
- b) Inadequate 2
- ii. Provision for lighting
- a) Natural 1
- b) Artificial 2
- iii. Sources of artificial lighting
- a) Electricity 1
- b) Solar 2
- c) Kerosene 3
26. Household ownership of durables and goods
- YES-1 NO-2
- | S. No. | Durable Goods     | Yes/No |
|--------|-------------------|--------|
| 1      | Cot               |        |
| 2      | Mattress          |        |
| 3      | Chair             |        |
| 4      | Table             |        |
| 5      | Clock/Watch       |        |
| 6      | Fan               |        |
| 7      | Radio             |        |
| 8      | Bicycle           |        |
| 9      | Telephone/Mobile  |        |
| 10     | Refrigerator      |        |
| 11     | Television        |        |
| 12     | Washing Machine   |        |
| 13     | Sewing Machine    |        |
| 14     | Scooter/Motorbike |        |
27. Do you work?  
YES-1 NO-2
- If yes then what do you do?
- a) Rag picker 1
- b) Labourer 2
- c) Domestic servant 3
- d) Vegetable vendor 4
- e) Other 5
28. Number of working hours
- a) <4 hours 1
- b) 5-8 hours 2
- c) 9-12 hours 3
- d) Not fixed 4
29. Monthly income
- a) < Rs 500 1



- b) Well water
  - c) Bore well water
  - d) Lorry supply
  - e) Supply of electricity
  - f) Street supply
39. Educational Institution
- a) Preschool
  - b) Primary school
  - c) High school
  - d) Intermediate school
  - e) College
  - f) University
  - g) Any other
40. Marketing
- a) Ration
  - b) Market
  - c) Textile
  - d) Vegetable shop
  - e) Medical store
  - f) Stationary
  - g) Bakery
  - h) Hotel
  - i) Any other
41. Public utility services
- a) Bank
  - b) Creche
  - c) Worship place
42. Waste disposal
- a) Government
  - b) Non-government
  - c) Voluntary
  - d) Other
43. Recreation
- a) Movie halls
  - b) Sports and arts club
  - c) Play ground
  - d) Youth club
- IV. Hygiene**
44. Water and Food Hygiene
- Scoring Pattern
- Not aware and not practiced- 1
- Aware but not practiced-2
- Not aware but practiced-3
- Aware and practice-4
- a) Drinking water should be clean and clear.
  - b) Do you think drinking water must be treated.
  - c) Water should be kept in closed containers.
  - d) Pulses and cereals should be sun dried before eating.
  - e) The food should be stored in places free from pests.
  - f) Fly proofing method help to control infection.
  - g) Vegetables should be washed before cooking.
  - h) Food cooked in adequate amount of water restores nutrition.
  - i) Throwing away of excess stock depletes it of nutrients.
  - j) Tying your hair before cooking is essential.
  - k) Washing hands before cooking is essential.
  - l) Clean and washed utensils should be used in cooking.
  - m) Cooking utensils should be covered during cooking.
  - n) Iron utensils help to increase iron content of cooked food.



	c) Rarely	3
iv.	Drainage facility	
	a) Soakage pit	1
	b) To kitchen garden	2
	c) Disposed through drains	3
	d) Led to canals	4
v.	Waste disposal	
	a) Composting	1
	b) Burning	2
	c) Dumping	3
49.	Fuel used for cooking	
	a) LPG cylinder	1
	b) Kerosene	2
	c) Wood/any other	3
50.	Personal hygiene	
	Scoring pattern	
	Not aware and not practiced	1
	Aware but not practices	2
	Not aware but practiced	3
	Aware and practiced	4
	a) Brushing in the morning and before going to bed prevents tooth decay.	
	b) Daily bathing is essential for health.	
	c) Long nails collect dirt so it has to be cut short and kept clean.	
	d) Washing hands with soap and water after visiting toilets is a healthy practice.	
	e) Washing hand with soap and water before and after taking food prevents illness.	
	f) Sun drying of clothes kills germs and microbes.	
<b>V.</b>	<b>Medical facilities</b>	
51.	Do you avail the medical facilities?	
	YES-1	NO-2
	If yes, then	
	a) Government hospital	1
	b) Private hospital	2
	c) Primary health centres	3
	d) Homeopathic	4
	e) Ayurveda	5
	f) Pharmacist	6
	g) Quacks	7
	h) Self medication	8
	If no, then why	
	a) Lack of awareness	1
	b) Lack of money	2
	c) Spiritualism	3
	d) Any other reason	4
52.	Do the government organized any medical facilities through camp in your localities?	
	YES-1	NO-2
	If yes, then	
	a) Immunization programme	1
	b) Blood testing	2
	c) General health check up	3
	d) Polio and other vaccination	4
	e) Others	5
53.	Source of medicine	
	a) By doctor	1
	b) Medical shop	2
	c) Both	3
54.	Selection of doctors	
	a) Trained	1

- |   |      |
|---|------|
| b) Untrained  | 2    |
| c) Not matter   | 3    |
| 55. Condition and location of doctor  |      |
| a) Near and untrained   | 1    |
| b) Near and trained   | 2    |
| c) Far and trained  | 3    |
| 56. During the last one year whether any children of the household is a beneficiary of: |      |
| YES-1   | NO-2 |
| a) ICDS   |      |
| b) Mid day meal   |      |

**Government Health Services**

- |   |      |
|---|------|
| 57. Do you ever utilize a government hospital during last 2 years?  |      |
| YES-1   | NO-2 |
| 58. Do you have any complaints about the following regarding government health centres/hospitals which you and your family members have utilized? |      |
| YES-1   | NO-2 |
| a) Check up of patients   | 1    |
| b) Doctors behaviour  | 2    |
| c) Nursing care   | 3    |
| d) Bribery  | 4    |
| e) Favouritism  | 5    |
| f) Cleanliness of hospital  | 6    |
| g) Medical equipment  | 7    |
| 59. Record the opinion about test and treatment given during the stay in the hospital   |      |
| a) Good   | 1    |
| b) Fair   | 2    |
| c) Poor   | 3    |
| 60. Record the opinion about advice and information provided at the time of discharging from the hospital   |      |
| a) Good   | 1    |
| b) Fair   | 2    |
| c) Poor   | 3    |
| 61. What is your opinion about the accessibility of doctors if need arises during your stay in hospital?  |      |
| a) Good   | 1    |
| b) Fair   | 2    |
| c) Poor   | 3    |

**Private Health Services**

- |  |      |
|--|------|
| 62. Did you visited a private doctor in the last two years?  |      |
| YES-1  | NO-2 |
| If yes, did you go to  |      |
| a) Private hospital  | 1    |
| b) Private clinic  | 2    |
| c) Doctor's residence  | 3    |
| 63. Why did you go private doctor when free or concession treatment is offered in the government hospital? |      |
| YES-1  | NO-2 |
| a) Good treatment  | 1    |
| b) Better nursing care   | 2    |
| c) Near at home  | 3    |
| d) No need of waiting  | 4    |
| e) Cleanliness   | 5    |
| f) No medicines in government hospitals  | 6    |
| 64. Are you satisfied with the services rendered by the private clinics or hospitals?                      |      |
| YES-1  | NO-2 |
| 65. Have you availed benefit of any health care programme?   |      |
| YES-1  | NO-2 |

If yes then which health care programme?

### DIET SURVEY

#### Scoring Pattern

Not aware and not practiced	1
Aware but not practiced	2
Not aware but practiced	3
Aware and practice	4

#### 1. Food Purchase

- Seasonal fruits are more nutritious.
- Food purchased from the roadside vendors is not hygienic.
- Fresh food is more nutritious.
- Packed food items are not adulterated and are more safer.

#### 2. Food Storage

- Vegetables should be washed and cleaned before storing.
- Food should be stored in places free from infestation of pests.
- The container used for storing food items should be washed and dried.

#### 3. Food Serving

- The vessels used for serving should be clean.
- The food should be served in a clean surrounding.
- Washing hand before eating is essential.

#### 4. Food Purchasing

Criteria for Selection of Food	Codes
Cost	1
Quality	2
Freshness and keeping quality	3
Seasonal food	4
Locally available	5
Likes and dislikes of family	6
Ease of preparation	7
Any other	8

#### 5. Quantity of Food Purchase

S. No.	Food Items	Quantity of food purchase			
		Daily	Weekly	Monthly	Not at All
1	Cereals				
2	Pulses				
3	Milk and milk products				
4	Leafy vegetables				
5	Other vegetables				
6	Egg				
7	Fish/meat				
8	Roots and tubers				
9	Fruits				
10	Sugar/Jaggery				
11	Oil				
12	Salt				

#### 6. Did iodised salt is used in the household or not?

Yes- 1

No-2

## 7. Food Frequency Schedule

S. No.	Food Items	Daily	Weekly	Monthly	Not at All
1	Cereals				
2	Pulses				
3	Milk and milk products				
4	Leafy vegetables				
5	Other vegetables				
6	Egg				
7	Fish/Meat				
8	Roots and tubers				
9	Fruits				
10	Sugar/Jaggery				
11	Sugar				
12	Salt				

## 8. Food Preparation Techniques

S. No.	Food items	Method of Cooking						
		Open Boiling	Closed Boiling	Steaming	Stewing	Shallow Fry	Deep Fry	Roasting
1	Cereals							
2	Pulses							
3	Leafy vegetables							
4	Other vegetables							
5	Roots & tubers							
6	Egg							
7	Fish/ meat							
8	Milk							

## 9. Use of Labour Saving Equipments

Equipments	Availability	Usage
Pressure cooker		
Gas stove		
Kerosene stove		
Mixer & Grinder		
Non stick pan		
Kettle		

## 10. 24 hours dietary recall

Menu	Ingredients	Quantity (Number/Volume)
Breakfast		
Lunch		
Tea snack		
Dinner		

## 11. Are you satisfied with the present dietary pattern?

YES-1

NO-2

If no, where do you find difficulty?

- a) In food preparation 1  
b) In food purchasing 2

- |                |   |
|----------------|---|
| c) Storage     | 3 |
| d) Consumption | 4 |

**Clinical Nutrition Survey**

Name of Slum:

Name of the Respondent:

Age:

Sex:

- |    |                            |   |
|----|----------------------------|---|
| 1. | General Appearance         |   |
|    | a) Good                    | 1 |
|    | b) Fair                    | 2 |
|    | c) Poor                    | 3 |
|    | d) Very poor               | 4 |
| 2. | Eyes                       |   |
|    | a) Normal                  | 1 |
|    | b) Pale conjunctiva        | 2 |
|    | c) Bitots spot             | 3 |
|    | d) Night blindness         | 4 |
| 3. | Hair                       |   |
|    | a) Normal                  | 1 |
|    | b) Lack of lusture         | 2 |
|    | c) Thinness and sparseness | 3 |
|    | d) Dispigmentation         | 4 |
|    | e) Easy pluckability       | 5 |
| 4. | Lips                       |   |
|    | a) Normal                  | 1 |
|    | b) Angular Stomatitis      | 2 |
|    | c) Angular scars           | 3 |
| 5. | Teeth                      |   |
|    | a) Normal                  | 1 |
|    | b) Mottled enamel          | 2 |
|    | c) Dental carries          | 3 |
|    | d) Dental flurosis         | 4 |
| 6. | Gums                       |   |
|    | a) Normal                  | 1 |
|    | b) Spongy gums             | 2 |
|    | c) Bleeding gums           | 3 |
| 7. | Skin                       |   |
|    | a) Normal                  | 1 |
|    | b) Xerosis                 | 2 |
|    | c) Pellagrous dermatosis   | 3 |
| 8. | Muscular system            |   |
|    | a) Normal                  | 1 |
|    | b) Knock knees             | 2 |
|    | c) Bow legs                | 3 |

---

**Health and Nutritional Assessment Schedule for Children**

Name of Mother:

Name of Child:

Sex:

Age and date of birth:

1. I. Height :  
 II. Weight:  
 III. Mid upper arm circumference:  
 IV. Ordinal position of the child:
  - a) 1<sup>st</sup> 1
  - b) 2<sup>nd</sup> 2
  - c) 3<sup>rd</sup> 3
2. Birth spacing with previous child
  - a) 1 year 1
  - b) 2 years 2
  - c) 3 years 3
3. Birth weight
  - a) <2500gm 1
  - b) 2500-3000gm 2
  - c) 3000 gm 3
4. Immunisation details
  - a) Complete 1
  - b) Incomplete 2
  - c) Not at all 3
5. Initiation of breast feeding
  - a) Soon after birth 1
  - b) After 2-3 hours 2
  - c) 12-24 hours 3
  - d) 2-4 days or more 4
6. The first feed other than milk  
 YES-1 NO-2
7. Did you feed cholostrum to the baby  
 YES-1 NO-2  
 If no, reasons
  - a) Not good for infants 1
  - b) Elders advice 2
  - c) Infant cannot digest 3
  - d) Others 4
8. Type of feeding
  - a) Solely breast fed 1
  - b) Bottle fed 2
  - c) Both 3
9. Breast feeding was continued up to
  - a) 3 months 1
  - b) 6 months 2
  - c) 1 year 3
  - d) 2 years 4
  - e) 2 years or more 5
10. Do you sterilize bottle after each feed  
 YES-1 NO-2

11.

Type of weaning food given	Form	No. of serving/day
Cereals		
Pulses		
Fruits		
Vegetables		
Eggs		
Meat/fish		
Roots & tubers		

12. Occurrence of following diseases

Scoring Pattern

Frequently	1
Occasionally	2
Rarely	3

- Cold
- Cough
- Fever
- Vomiting
- Diarrhoea
- Jaundice
- Asthma
- Respiratory infection
- Worm infection and Small pox

13. Occurrence of vaccine preventable diseases

Scoring Pattern

Nil	1
Occasionally	2

- Chicken pox
- Measles
- Whooping cough
- Diphtheria
- Mumps

14. How often child eats fast food

a) Frequently	1
b) Occasionally	2
c) Rare	3

15. Dietary habits

a) Veg	1
b) Non-veg	2

16. No. of meals a day

a) 2 main meals	1
b) 3 main meals	2
c) May vary	3

17. What does your child like to have?

a) Home-made food	1
b) Fast food	2
c) Bakery products	3

18. Availability of PHC/ICDS

a) Available	1
b) Not available	2

19. Is your child a beneficiary of ICDS programme?

YES-1	NO-2
-------	------

20. Opinion regarding ICDS/PHC

a) Not satisfactory	1
b) Requires improvement	2

- c) Satisfactory 3  
 d) Good 4
21. Are you aware of ORS?  
 YES-1 NO-2
22. Type of treatment given to child
- a) Allopathic 1  
 b) Homeopathic 2  
 c) Ayurveda 3  
 d) Quacks 4  
 e) Self-medication 5  
 f) Any other 6

### Health and Nutritional Assessment Schedule for Women

Name:

Age:

1. General Information
- a) Weight:  
 b) Height:  
 c) Body Mass Index (BMI):  
 d) Waist:  
 e) Hip:  
 f) Waist/hip ratio:  
 g) Haemoglobin:  
 h) No. of children:  
 i) Last child birth:  
 j) Age at menarche:  
 k) Age at marriage:  
 l) Age at 1<sup>st</sup> child:                      2<sup>nd</sup> child:                      3<sup>rd</sup> child:                      Last child:
2. Birth spacing between children
- a) 1<sup>st</sup> and 2<sup>nd</sup> child  
 b) 2<sup>nd</sup> and 3<sup>rd</sup> child  
 c) 3<sup>rd</sup> and 4<sup>th</sup> child
3. Prenatal care  
 YES-1 NO-2  
 If yes,
- a) Regular check up 1  
 b) Iron tablets 2  
 c) T.T. 3  
 d) Calcium tablet 4
4. Place of delivery
- a) Government hospital 1  
 b) Private hospital 2  
 c) Home 3
5. Type of delivery
- a) Normal 1  
 b) Caesarean 2
6. Problems if any at the time of delivery  
 YES-1 NO-2  
 If yes, specify
- Incidence of miscarriages YES-1 NO-2  
 Incidence of abortion YES-1 NO-2  
 Incidence of infant mortality YES-1 NO-2
- If yes, reason
- a) Prematurity 1  
 b) Respiratory 2  
 c) Diarrhoea 3

d) Malformation		4	
e) Cord infection		5	
f) Birth injury		6	
g) Unknown		7	
7. Postnatal care			
YES-1			NO-2
8. Haemoglobin levels:			
Anaemic			
YES-1			NO-2
9. Goitre grade			
a) Normal		1	
b) Grade I		2	
c) Grade II		3	
d) Grade III		4	
e) Toxic goitre		5	
10. Problems of glands			
Thyroid			
YES-1			NO-2
Parotid			
YES-1			NO-2
Lymphnodes			
YES-1			NO-2
11. Other problems			
Metabolic related	YES-1		NO-2
a) Hypertension			
b) Cancer			
c) Diabetes			
d) Cardiovascular disease			
12. Reproductive health	YES-1		NO-2
a) Vaginal discharge			
b) Polycyst ovary			
c) Frequent micturition			
13. Other minor ailments	YES-1		NO-2
a) Abdominal pain			
b) Backpain			
c) Asthma			
d) Migraine			
e) Thyroid			
f) Lymphnode			

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