

# **A Study on Life Style and Disease Pattern of Slum Dwellers in Dhaka City**

This dissertation is submitted for the partial fulfillment of the  
requirement for the degree of Bachelor of Pharmacy



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## **Declaration by the Research Candidate**

I, **Suma Rani Shil**, hereby declare that the dissertation entitled “**A study on life style and disease pattern of slum dwellers in Dhaka city**” submitted by me to the Department of Pharmacy, East West University, in the partial fulfillment of the requirement for the award of the degree. All of the research works are carried out by me during 2017, under the supervision and guidance of **Meena Afroze Shanta**, Senior Lecturer, Department of Pharmacy, East West University and the thesis has not formed the basis for the award of any other degree/diploma/fellowship or other similar title to any candidate of any university.

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## **Certificate by the Supervisor**

This is to certify that the thesis entitled “**A study on life style and disease pattern of slum dwellers in Dhaka city**” submitted to the Department of Pharmacy, East West University, in the partial fulfillment of the requirement for the degree of Bachelor of pharmacy was carried out by **Suma Rani Shil**, ID# 2013-3-70-027, under the supervision and guidance of me.

The thesis has not formed the basis for the award of any other degree/diploma/fellowship or other similar title to any candidate of any university.

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## **Endorsement by the Chairperson**

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# Dedication

DEDICATED TO MY  
WHOLE FAMILY

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# List of Abbreviation

**CUS-** Centre for Urban Studies

**GoB-** Govt of Bangladesh

**Uk-** United Kingdom

**AIDS-** Acquired Immunodeficiency Syndrome

**UN-** United Nation

**UNESCO-** United Nations Educational Scientific and Cultural Organisation

**TV-** Television

**Don't-** Do not

**UNDP-** United Nations Development Programme

**HDI-** Human development index

**BDHS-** The Bangladesh Demographic and Health Survey

**SMA-** Statistical Metropolitan Areas

**PUD-** Peptic Ulcer Disorder

## Abstract

Dhaka is the most densely populated city of Bangladesh. People migrate from rural areas towards Dhaka for their livelihood and thus lead gradually to create slums. Usually people living in slums face unhealthy conditions and also it leads to pollute the environment. It is evident that the disease states of the inhabitants are strongly affected by lifestyle. The aim of the study is to find the relation between the life style of these people and diseases, they usually suffer. Participants are randomly selected from different areas of Dhaka city like Miradip, Badda, Keraniganj, Doyaganj, Aftabnagar etc. Smoking habits, sanitation type, water treatment systems, food habits are largely related to asthma, diarrhea and skin diseases. Most of the slum dwellers use tubewell water for all purposes of their work, thus density of population, unhealthy life condition, unhealthy sanitary systems, lack of physical activity leads them to suffer by different diseases like Diarrhea (25 %), Hypertension (11%), Skin Disease (49%) are the common diseases in the slum dwellers. 57 % slum dwellers seek professional help for disease condition. If this practice increases along with the hygienic life style then disease rate will decrease. Slum dwellers are not even properly aware about vaccination. If any step can be taken for aware themselves about their life style, importance of vaccination etc, then the disease rate can be decreased at a significant rate.

**Key words:** Slum Dwellers, Food Habit, Physical Activity, Sanitation, Hygiene, Disease, Vaccination

# **Chapter: 1**

## **Introduction**



## 1.1 Slums of Dhaka: An overview

Bangladesh is one of the most densely populated country in the world. Evidence shows that there was a startling increase in urban population- from 1951 to 2011, it has increased by about 18 folds (Islam , 2013). Some estimates show that the urban population constitutes about 30% of the total population. By 2050 it will constitute 50% of the total population (Howlader,2011). In Bangladesh, total population of the six major cities is 15.5 million and total slum population is 5.4 million (Nahid *et al.*,2015). Among all the cities, Dhaka is the most growing mega-city in the world, with an estimated 300,000 to 400,000 new migrants, mostly poor, arriving to the city annually. Most migrants come from rural areas in Dhaka city in search of opportunities which can improve their living standard and provide new livelihood options for millions. Their contribution to the country's economic growth is significant, as they provide much needed labor to production, services, and other sectors. This migration, however, also adds remarkable strain on an already crowded city with limited inhabitable land , limited infrastructure, and a low level of public services. Then, subsequently slum creates in government owned or private vacant land with crowded living conditions, unhygienic surroundings and lack of basic amenities such as garbage disposal facilities, water and sanitation. Slums in Dhaka city have been growing rapidly since 1971. Several surveys on slum growth in Dhaka, conducted by Centre for Urban Studies (CUS) recorded slum populations 275,000 in 1974, 718,143 (2,156 slums) in 1991, 1.5 million (3007 slums) in 1996 and 3.4 million (4,966 slums) in 2005 (CUS, 2005). Trend of growth shows that slum population increased two times more than previous count and it has been increasing since 1991 (World Bank,2017).



Figure 1.1: Kamrangirchar slum of Dhaka (Julie Remy,2010)

## 1.2 Definition of slum

Generally, slum are the extreme density of the neighborhood where low income people, most living under the poverty line with limited access to clean water, basic healthcare and electricity. The World Bank, in a survey report that was conducted in collaboration with the Housing and Settlement Directorate, Govt of Bangladesh (GoB) and CUS , defined a slum as a residential area where more than three hundred people live in one acre (0.405 hectars) of land. The living condition of slum dwellers is really vulnerable. They are deprived of many facilities like primary health care facilities, pure water, education facility etc. Most of the slum dwellers suffer from very common diseases like skin diseases, diarrhoea etc. The children living in the slum also most frequently suffer from malnutrition. The walls and roofs of slum houses are generally made of straw leaves, Gunny bag, polythene paper, bamboo, a tin shed house etc. The physical and hygienic conditions of such houses are far below those of a common urban residential area. Generally, this segment of people are distressed and forced to live in such unhygienic condition due to economic reason. They choose the slum to live, because they are maximum landless. In the majority of slums, up to 20 - 100 families use one toilet and only on payment. An article published on 13 September 2001 in the Daily Jugantor commented that “the sewerage facilities provided by Dhaka WASA and Dhaka City Corporation is only for 30 per cent citizens of the city and the remaining 70 per cent are deprived of these facilities” (BBS ,1999).

### 1.2.1 Classification of slums

Slums can be divided into three groups:

1. Unauthorized occupation of government or semi-government lands
2. Living in thatched houses made of papers, polythene, tin etc, built on unauthorized vacant land near railway lines or on the footpath or by side of the main roads.
3. Living in unauthorised private lands.

### 1.2.2 Characteristics of slums

The main characteristics of slum population are listed below:

- (i) High rate of poverty
- (ii) High incidence of unemployment
- (iii) Huge extent of urban decay
- (iv) Breeding grounds for social problems like crime, drug addiction, alcoholism etc

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- (v) High rates of mental illness and suicide etc
- (vi) Low level of economic status of its residents
- (vii) Inadequate infrastructural facilities
- (viii) Acute problem of malnutrition (Garner & Thaver, 1993).

### **1.3 Global view of slum condition**

Slums were common in the 19th and early 20<sup>th</sup> centuries in the United States and Europe. New York City is believed to have created the world's first slum, named the Five Points in 1825, as it evolved into a large urban settlement. More recently slums have been predominantly found in urban regions of developing and undeveloped parts of the world, but are also found in developed economies. Slum creates many obstacles in the development of a country (Khalilur *et al.*, 2015).

When consider on international situation regarding slums, it is very significant. Late in 2003 the United Nations reported that one billion people, approximately one third of the world's urban dwellers and a sixth of all humanity live in slums. And it predicted that within 30 years that figure would have doubled a third of the current world population. During the 1990s the urban population across Asia, Africa and South America grew by a third. There at least 550 million slum dwellers in Asia, 187 million in Africa, 128 million in Latin America and the Caribbean and further 54 million in the world's richest countries. Slums punctuate almost every city of the world. This has become a universal phenomenon accompanying with urban growth. Sri Lankan experience on slums is discussable and it is one of current topics of national policy planners. The ratio of slums will increase day by day with chronic problems. As existing data showed, slums are continuously on the increase. Of the total housing stock about one half belongs to middle and income whiles the balance half belongs to low-income population. The low income housing stock has been subdivided in to several categories depending on the nature of the structure. According to survey on low-income resettlements conducted by the Ministry of Urban Development & Housing in 1998/99, sub categories of low-income settlements were identified.



Figure1.4 : Dwellings in Kibera, Nairobi Kenya (ca. 2008)

Throughout the world today, a wide range of people live in slums, in a rich diversity of tenure, housing and employment types. The areas provide accommodation for urban workers of all kinds and are the sites of enterprises that have customers throughout the city. Slums provide low-cost housing and low-cost services for rapidly expanding low-income urban populations, and also serve as networks of social support for new migrants to the city. Early slum improvement efforts were a response to outbreaks of contagious diseases that were believed to originate in slums. There is a long literature linking housing deprivation with ill health later in life; even during the 1950s, morbidity rates in urban UK were higher than in rural areas. Many millions in slums suffer unhealthy living conditions, resulting in shorter life and chronic illness. The poorer general health of slum dwellers and the lack of access to medical attention increase their likelihood of dying from epidemic diseases such as AIDS and tuberculosis, while poor sanitation exposes them to waterborne diseases. About 37 per cent of urban households in the developing world have piped water, 15 per cent have sewerage and 60 per cent have electricity. The levels of household connections to networked infrastructure are major indicators of urban adequacy and increase rapidly with city development. In least developed countries, only 8 per cent of wastewater is treated and only 12 per cent of solid waste is collected.

A study, led by global health experts from Warwick Centre for Applied Health Research and Delivery, University of Warwick, UK, has recently looked into the dynamics that govern the lives and health problems of slum dwellers worldwide. The study is part of a series on slum health produced in collaboration with United Nations Human Settlements Programme (UN-Habitat), University of Warwick, African Population and Health Research Centre, International Institute for Environment and Development, United Nations University and the Federal University of Minas Gerais. Experts in this study have attempted to draw lines between the health conditions of poor population and that of slum dwellers, which is not necessarily the

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same. The experts reckoned that the health conditions arising in slum population are largely contributed by the environmental conditions shared by the individuals. For instance, as the entire slum settlement is deprived of clean water and sanitation facilities, it is highly probable that all or more of the individuals living in this area will suffer from similar health conditions like cholera or typhoid. Experts found that millions of people have been destined to live in slums for over a period of 100 years and yet the health concerns of these inhabitants of slums remain neglected by the authorities. The data available on the population and the health concerns of the slum dwellers also remain limited due to the lack of national surveys based on censuses in majority of the countries with large slum populations. These population figures remain high in sub-Saharan Africa (where 56% of the urban population lives in slums), in regions of southeast Asia and southern Asia. According to the United Nations Educational Scientific and Cultural Organisation (UNESCO), a slum is an urban space that is a “contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services”. It is estimated that the growth of slum population is likely to double by year 2030, particularly in the middle-income and low-income countries, which makes it an alarming situation for the health experts from these countries. People living in slums are in a bad economic and social shape. Paying for their illnesses is not possible for them, as it is already hard enough to earn a day’s living in slums.

The central role in triggering health concerns for these populations is posed by malnutrition in children, reduced breastfeeding, respiratory problems as a result of exposure to toxic fumes emitted by burning fuels for cooking and heating purposes, insufficient water availability, sanitation, draining and rubbish dumping issues. Furthermore, the population’s ignorance of getting rid of infection breeding reservoirs, high crime rates, fire injuries and extreme weather conditions are also significant contributing factors to increasing the health problems. Collectively, these factors account for the spread of many communicable and non-communicable diseases which include a vast list of health conditions and diseases such as diarrhea, hookworm, cholera, typhoid, leishmaniasis, leptospirosis, dengue, pneumonia, malaria and tuberculosis. Thus this study on the health problems of slum dwellers focus on health issues and socioeconomic status and try to attract the government in improving the condition of slum dwellers worldwide (healthunits.com, 2016).

#### 1.4 Living condition of slum dwellers in India

According to Government sources, the Slum Population of India have exceeds the population of Britain. It has doubled in last two decades. According to last census in 2001, the slum-dwelling population of India had risen from 27.9 million in 1981 to 61.8 million in 2001. Indian economy has achieved a significant growth of 8 percent annually in last four years, but there is still large number of people nearly 1.1 billion still survives on less than 1 \$ (around 46 INR) in a day. Increase in Indian Population over a period of time has also resulted in slum population growth.

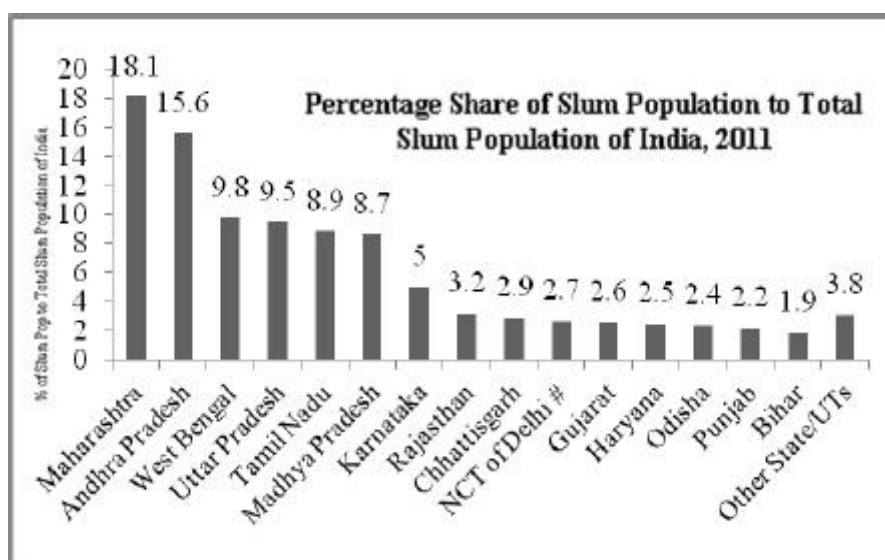


Figure 1.5(a) : Primary Census Abstract for Slum, 2011, Office of the Registrar General & Census Commissioner, India.

This table represent the percentage share of slum population to total Slum population of India 2011. According to the table the biggest percentage share of the slum population compare to the total slum population of India is, Maharashtra having 18.1 % it was less than the 2001. Due to the government initiatives and good governance and better policy implementation slums has reduced in compared to census 2001. If we consider Andhra Pradesh having 15.6% which is higher than the census 2001, in 2011 census West Bengal got 3rd position having 9.8% and Uttar Pradesh has got 4th position with the value of 9.5% . On the basis of the this table we can concludes that the number of statutory and slum reported towns were increasing day by day. It is not a good signal for the development of the country. There is need for the effective plans and policies for the better quality of the life(Bijendra,2014).

There are a range of slums in India, starting with shacks, made of cardboard and tin sheets on Mumbai and Kolkata streets, to organized slums like Dharavi where residents pay pretty high

rents to slumlords for a tiny amount of space. It's common for a family to live 10 to a room. Often several people are working, so it's not an income problem. The slum room might have a refrigerator, bottled gas stove and even an air conditioner for the blazing summer. All these count as luxuries, not essentials, in India. Every home will have a TV with a dish or fancier connection. What is most difficult is the total lack of privacy. Often the women have to queue up for hours to fetch water. And worst of all, most have to queue up for a long time to use a row of public toilets and to bathe. Most urban Indians, even the poorest, bathe every day if they can. It's essential in a climate where summer temperatures can reach 40 degrees and it's hot, humid and sticky all through the year. In Kolkata and Mumbai, the slum dwellers and homeless people bathing at a roadside water hydrant in full view of the passing public ( newint.org,2016).



Figure1.5(b): Dharavi Slum,Mumbai,( Mark Jacobson,2007)

The living condition of slum dwellers in different places of India are given below:

**Dharavi slum Mumbai:** Mumbai “The Dream city” hold the biggest slum area in India known as Dharavi. Asia’s largest slum, Dharavi, is spread over an area of 1.75 km along the Mahim river in central Mumbai. Dharavi is just one of many slum areas in city of Mumbai.

**Bhalswa slum Delhi:** In ”The Heart of India” the Slum population was considered as 20% of the total population of Delhi, It also has largest child labours. These slum tend to bank of river jamuna. Slum dwellers from various parts of Delhi have been resettled to Bhalswa. Delhi Government is thinking to launch a survey to prepare a data base of slum dwellers in the city to help them. Delhi has become one of the most unsafe Indian city for women, due to the large population and crimes.

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**Nochikuppam slum Chennai:** “The city of flyovers” has Nochikuppam slum with 1,300 huts where around 5 thousand people live below poverty level and they don’t have enough money for two meals a day.

**Basanti slum kolkata:** “The City of Joy” Kolkata has slum area known as Basanti slum, it is one of the major slum areas in kolkata. One third of Kolkata’s population, lived in 2011 registered and 3500 unregistered slums.

**Rajendra Nagar slum Bangalore:** “The garden city” Bangalore alone hold 570 slums form total of around 2000 slums in State. It is estimated that about 20% of Bangalore population reside in slums. The families living in the slum are not ready to move into the temporary shelters, saying it is unjust and risky to live under a flyover. As per the latest comments from people of Bangalore, Rajendra Nagar Slum does not exist now, all the slum dwellers has been rehabilitated.

**Indiramma Nagar Hyderabad:** “The City of Nizam” Around 624689 peoples live in slums area of Hyderabad. There is very little land available for all the people’s live in 104 identified and 24 unidentified slums in Hyderabad.

**Saroj Nagar slum Nagpur:** “The Orange city” Nagpur has 424 legal slum area’s, Saroj Nagar is just one of the 424 slums in the city. In Nagpur, approximately 40 % of the population live in slums. These slums are home to over 1,42,000 people and cover about 1,600 hectares of prime land. Due to struggle for land in Maharashtra, it was making second largest slum area in Nagpur after Dharavi Mumbai.

**Mehbullahpur slum Lucknow:** “The City of Nawabs” Lucknow’s population includes large numbers of poor people, many of who live in slums. 20000 persons living in 22 of the 460 slums in Lucknow city. Many people are migrated Lucknow from the different part of the nearest district for daily wages.

**Satnami Nagar slum Bhopal:** “The City of Lakes” Bhopal has many slums area, Satnami Nagar is one of the oldest slums in Bhopal. Ruhai Nagar and Shanti Nagar are first two slums area in Bhopal to be declared open-defecation. Peoples of Bhopal live on streets and these slum provide them shelter and other facility to survive.



**Parivartan slum Ahmadabad:** Approximately 440000 people live in slums within the city. Ahmadabad is home to a large population of poor peoples living on the river banks. River side slums in Ahmadabad are about 40 years old(walkthroughindia.com,2017).

### 1.5 Slum of Bangladesh: An overview

Bangladesh is the 5<sup>th</sup> densely populated country in the world with 1.37 percent population growth per year (UN, 2012 and GOB, 2013). About 156 million people live in this country including 47 million poor and 7.8 million slum people. In addition, it is a “Low human development county” and ranked 147 with Human development index (HDI) score 0.512 (UNDP, 2013, Hossain, 2014). Basically, Slum population increases for eight reasons such as river erosion, uprooted, driven out, abandoned, insufficient income, insecurity, for job and others. Among the seven divisions of Bangladesh, the worse situation has seen in Dhaka, the capital city of Bangladesh, where about 4.28 million, (about 55% of total) people live in slum. The second highest proportion slum dwellers (20%) live in Chittagong, the second largest city of Bangladesh followed by Sylhet (8.3%), Rajshahi (7.1%), Khulna (5.7%). Only 3.9%, the lowest percentage, live in Barisal division [ Fig 1 and 2] ( Basharat, 2014).

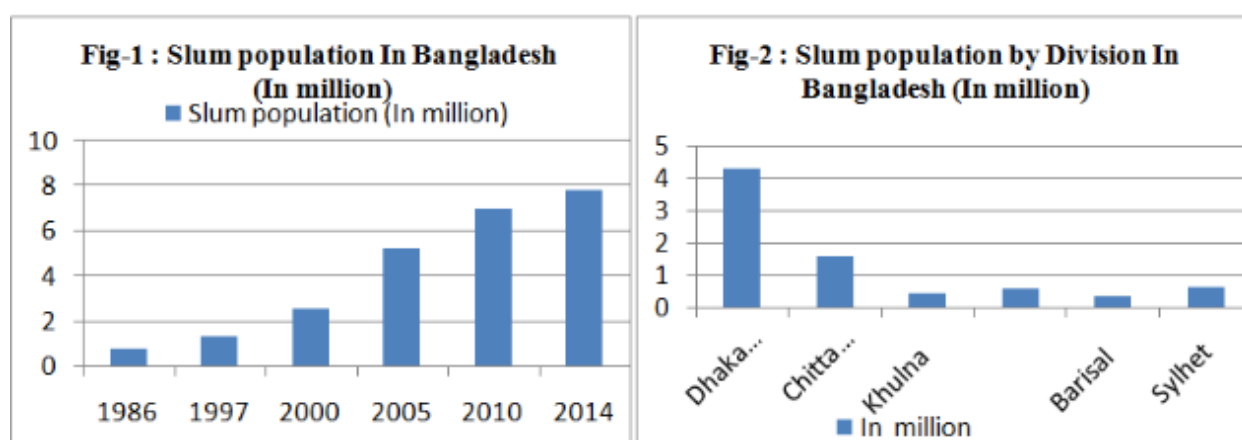


Figure1.6: Slum Population in Bangladesh

### 1.6 Reasons for migration of people towards urban areas

The migration of people from rural to urban areas is the main reason of the growing slum population in Dhaka city. ‘Urban attractions’ and ‘rural distractions’ has gradually persuaded people to migrate throughout the last decade. The upward trend of the rural population contributes to the downward land-man ratio. As a result, landless and jobless people on the breadline are increasing day by day. In addition natural calamities like flood, river erosion,

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cyclone etc. have forced people of affected areas to migrate to the city. Some social events like village politics, clanism etc. also act as ‘rural distractions’ and encourage people to migrate. On the other hand, employment opportunity, better security and better for education along with other social developments act as ‘urban attractions’. Marriages between urban males and rural females and some other social and economic factors are a catalyst for migration.

#### Reasons for Migration Towards Dhaka City

Reasons	Percentage
Economic	57.1
Environmental disasters	25.0
Personal or familial	08.9
Social or political	01.0
Others	08.0
Total	100.0

Figure 1.7: ‘Bangladesh Vougolik Samikkhya’, Page- 187  
(opinion of 11,124 respondents from 7 different surveys)

Usually, ‘attractions’ are always greater in the bigger cities. These ‘attractions’ are not only due to the size of the cities, but also for good communication systems and other facilities like job opportunities that are available in the cities. These are some of the major reasons for migration. Dhaka is the primate city in Bangladesh according for over 30% of the total GDP. It is pulling rural migrants faster and larger than any other cities in Bangladesh. Findings showed that, 56% people migrated to Dhaka city for economic reasons. There are also some push factors working in the process of migration to the cities, specially to Dhaka city. Now-a-days maximum slum dwellers are one kind of environmental migrants. The often natural disasters: flood, drought, cyclones, riverbank erosion destroys the agricultural outcomes every year. While Bangladesh is an agro-based country these disasters are much painful for the farmers and they are obliged to go to the cities. The job sector of rural areas are not much strong so people are pushed to the cities. And for many other people demonstration effect is big enough to push them to the cities.

Until the early nineteen nineties, majority of the slums were located on public lands. The percentages of slums on private lands were less. Things began to change in the nineties. The government started to evict many slums from public properties. Open private lands were still

available. Private land owners started to rent out the lands to slum dwellers as the return on these lands were handsome because of high densities. Thus in 2006, 77% of slums were on private lands.

The Bangladesh Demographic and Health Survey (BDHS) is a periodic study of the population and urban areas are surveyed including the slum areas. Some findings of the survey can be mentioned here. Slum land was owned by a land owner or Bosti (slum) owner for 83%, and rent collected for permission to build a bamboo shelter to use as a home. Land owners and Bosti owners are not thought to pay government taxes and are not accountable for the conditions or safety of the slums. All families lived in one-room dwellings, with construction usually of bamboo frame, fencing and roof. An average of five people lived in each room, and some families had over eight individuals in one room. Female, adults and children tended to work as housekeepers, labourers or in the garment piecework, while male adults and children tended to work as rickshaw pullers, laborers, brick breakers, drivers or carpentars. The average income per family was 3725 Taka per month and the average expenditure was 3218 Taka per month. However many families reported that expenses greater than income and dependence on loans for survival. Expenditures included rent, food, education, cloths, electricity, water, wood and health care.

The situation of these slums is not very satisfactory. Most respondents (89%) did not feel that they lived in a hygienic environment, and 93% felt that the slum had led to disease or ill health in their families. The most desirable place to live was felt to be in their village of origin (57%), while others dreamed of living in higher-class places in the city (14%), a place more quiet (14%) or free of mosquitoes (5%). Only 6% were happy in their current location. Evils described were unclean latrine facilities (30%), harassment by slum owners and need to pay bribes (10%), lack of employment (32%), mosquitoes (86%), extremes of heat (5%), lacking roof (11%), harassment of women (7%), lack of available fuel/gas (17%) and lack of food (3%). Barriers preventing to a move to a more desirable location were stated as a lack of funds (91%), lack of land (11%), inability to find work (10%), lack of government assistance (14%), illiteracy (2%) and large family size (1%). A fifth of slum households are missing at least 3 of their basic needs. According to an UNESCO report, education figures for slums in Bangladesh's capital Dhaka are among the worst in the South-Asian county. The report entitled, "Education for All Global Monitoring Report 2010, Reaching And Marginalized", which was launched in January from the UN Headquarters in New York, revealed schools run by non-governmental organizations play an important function in slums in Dhaka. Childhood immunization in Dhaka slum

households has been reported at (51-76)%. In the survey 89% reported childhood immunization, though records for each child were not polled. The rate of substance use and gambling is very alarming( Basharat,2014).

### 1.7 Factors influences the living condition of slum dwellers

A set of indicators is used to analyze living conditions and the life style of urban poor living in slums. Socio-economic factors including income, expenditure and education influence food habit and knowledge about hygiene. Socio-economic factors entail individual's ability to have adequate and nutritious food as well as water treatment practice for safe drinking water. Environmental sanitation is characterized by household's latrine type and waste disposal system, while children are easy victim of unhygienic environment.

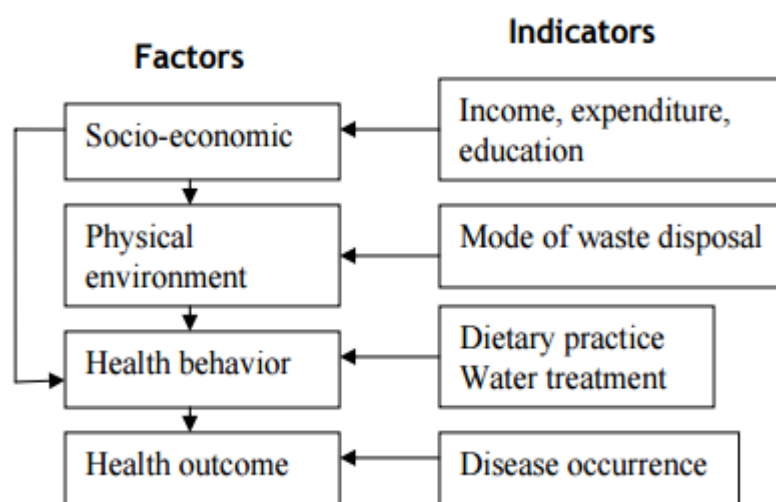


Figure 1.7: Conceptual framework ( Cohen et al., 2003)

Socio-economic factors like income, expenditure and education are analyzed to depict households ability and knowledge about dietary practice and prevalence of disease occurrence among children.

**Education:** Education has significant influence on knowledge about food habit, nutrient contents and hygiene. Thus parent's educational attainment has important implications for children's diet, sanitation and health status. Based on survey data, 60% female and 56% male parents have no education. Though, only 4% female and 10% male parents have higher education and 36% female and 34% male parents have some sort of primary education. Also half of the children don't go to school.

**Income:** According to survey data, 63% of households have income less than Tk. 5000 and 37% have income Tk. 5000-<10,000. The sampled populations in survey area represent lower income group according to income group categorized in urban area.

**Expenditure:** A major portion of households' income is spent on food items following expenditure on nonfood items and house rent. Survey data reveals that a major share of their income is spent on food (average monthly expenditure Tk. 3232) followed by house rent (Tk 933 on average) and non-food items (Tk 872 on average) respectively.

**Consumption pattern:** According to respondents, children are provided with three meals in a day. But inadequate quality and lack of diversity of food are matter of concern in food habit. Consumption pattern of slum dwellers depict that rice, potato, vegetable and edible oil are consumed on daily basis. Food composition sometimes is only rice with potato or peas or fish which are cheap to them. But access to protein rich animal product (milk and milk product, meat or poultry, eggs) is very low among the poor. They can consume them mainly on monthly basis or sometimes on special occasion like Eid festival. According to households these are expensive food item and most of them can not afford it. Though, a large number of households can manage fish in weekly basis, but the quality of fish is relatively low. Also, most of them replied eating fruits on weekly basis. In this case, they can afford mainly banana which is relatively cheaper than other seasonal fruits.



Figure 1.8: Slum condition in Bangladesh(Tribune editorial,2014)

## 1.8 Causes behind slum creation

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Usually it is claimed that, a large number of poor people come to the divisional cities and adjacent paurashavas for livelihood and many other purposes, which highly contribute to create slums. In the slum census of 1997, firstly it was tried to find out the key reasons of migration to slum areas.

**Table-1:** Reason for coming to slum(as % of total households)

River Erosion	17.2
Uprooted	12.53
Driven out	2
Abandoned	1.22
Meager income	19.97
Insecurity	2.43
For job	39.53
Others	5.12
Total	100
Total households	334431

The eight reasons founded for migrated to slum areas in which 39.53% of slum households for looking job followed by insufficient income, River erosion, uprooted and others etc ,but the recent data is not available(wordpress.com,2011).

**1.9 Table-2: Total number of slums in Bangladesh**

Years	Number of slums and squatter clusters	Number of slum households	Slum population
1986	—	176745	831645
1997	2991	334431	1,391,459
2005	9048	1043329	5233217

The slum area census 1986 covered the three Statistical Metropolitan Areas (SMA), Chittagong, Dhaka and Khulna including Paurashavas and city and counted 176745 households in slums whereas this figure was recorded as 259244 in Census of slum areas and Floating Population 1997, for these same areas. With some variation, Mapping and Census of urban Slum of Bangladesh, 2005 accounted it as 977891 for the city corporation areas of these cities.

Furthermore, the number of population living in these areas was founded as 831645, 1063010 and 4876453 in the census of 1986, 1997 and 2005 respectively. Moreover, the Number of slums and squatter clusters in the same areas were recorded as 2991 in 1997 while it increased to 7300 in 2005 (wordpress.com,2011).

### 1.10 Table-3: Number of slums in Dhaka city

years of survey	Number of slums and squatter clusters	Number of slum households	Slum population
1974	—	—	275,000
1986	—	121328	—
1991	2,156	—	718,143
1996	3,007	—	1500000
1997	1579	185917	754866
2005*	4966	673883	3286770

Due to the variation in the definition of slum, the figures of the table ill matched for different years, but table depicted the tremendous increase in the slum, slum household as well as Slum population in Dhaka city (wordpress.com,2011).

### 1.11 Number of slums in Bangladesh: by division

**Table-4:** Number of slum and cluster between 1997 and 2005 census

City	1997	% of total	2005	% of total
Dhaka Mega city	1579	52.79	4966	54.9
Chittagong SMA	186	6.22	1814	20
Khulna SMA	202	6.75	520	5.7
Rajshahi SMA	84	2.81	641	7.1
Barisal	*		351	3.9
Sylhet	**		756	8.3
14 cities	293	9.8	***	***
100-Paurashavas	647	21.63	***	***
Total	2991	100	9048	100

\*Included with Khulna\*\* Included with Chittagong ,Not coverage

According to the report of the Census of slum areas and Floating Population 1997, the largest number of slum situated in Dhaka city followed by 100-Paurashavas and 14 cities respectively. While in 2005, Dhaka remained the first followed by Chittagong, Rajshahi SMA and Barisal accordingly.

In addition to that, the report confirmed that, 1579 slums and cluster were situated in Dhaka SMA whereas this figure reached at 4966 in 2005 with a broad definition of slums. The percentages of these numbers recorded as 52.9 and 54.9 respectively. Between 1997 and 2005, the percentages of slum in Chittagong SMA, Khulna SMA and Sylhet fluctuated in the range of 5 to 8. In 2005 census, 641 slums founded in Rajshahi SMA while it was only 84 in 1997.



The data insure that, the expansion of slums is not confined not only to divisional cities but also in the urbanized areas and Paurashavas(wordpress.com,2011).

### 1.12 Number of slum households and their % between 1986 and 2005 census

**Table-5:** Number of slum households and their % between 1986 and 2005 census

City	1986	%(total)	1997	%(total)	2005	%(total)
Dhaka Mega city	121328	68.65	185917	55.59	673,883	64.6
Chittagong SMA	30854	17.45	45143	13.5	266,182	25.5
Khulna SMA	24563	13.9	28184	8.43	37,826	3.6
Rajshahi SMA	—	—	6998	2.09	27,665	2.6
Barisal	***	***	*	*	19,460	1.9
Sylhet	***	***	**	**	18,313	1.7
14 cities	—	—	24448	7.31	***	***
100- Paurashavas	—	—	43741	13.08	***	***
Total	176745	100	334431	100	1,043,329	100

\*Included with Khulna\*\* Included with Chittagong\*\*\* Not coverage

During 1986, the number of slum households was 176745 in the three divisional cities including Paurashavas, while this figure increased and reported at 334431 in the six divisional Cities including Paurashavas and some urbanized areas, called SMA.in the census on the slums of six city corporation in 2005, this number recorded as1, 043, 329.however, Dhaka still occupied the first position in terms of living slum household, which was 68.65 and 64.6% in 1997 and 2005 respectively. Chittagong SMA secured the second position followed by Khulna

SMA, Rajshahi SMA and sylhet containing 25.5%, 3.6%, 2.6%, 1.9% and 1.7% respectively (wordpress.com,2011).

### 1.13 Percentage of male and female in distribution of population between 1986 and 1997 census

**Table-6:** % of male and female in distribution of population between 1986 and 1997

City	1986	1986	1986	1997	1997	1997
City	Total population	% of male	% of Female	Total population	% of male	% of Female
Dhaka Mega city	575604	52.75	47.25	745866	54.66	53.82
Chittagong SMA	138282	58.58	41.42	188839	14.05	13.07
Khulna SMA	117750	52.5	47.5	119305	8.05	9.15
Rajshahi SMA	***	***	***	29766	2.11	2.17
Barisal	***	***	***	*	*	*
Sylhet	***	***	***	**	**	**
14 cities	***	***	***	109012	7.77	7.9
100-Paurashavas	***	***	***	189670	13.39	13.88
Total population	831645	53.69	46.31	1391458	51	48.99

In 1986, the total population in slum was 831645 with 53.69 % and 46.31% of male and female respectively in three divisional cities with adjacent Paurashavas.while in 1997.this figure reached at 1391458 with 51% and 48.99 % of male and female respectively in six divisional cities with adjacent Paurashavas and urban areas. The slum population figured out as 5233217 in 2005 for six divisional cities(wordpress.com,2011).

### 1.14 Population density: slum area and overall city, 2005

**Table-7:** Population Density: Slum Area and Overall City, 2005

City	person per acre area	per slum	person per acre city total
Dhaka	891		121
Chittagong	1032		94
Khulna	536		82
Rajshahi	272		39
Sylhet	626		52
Barisal	541		29
all cities	831		95

The density figure reflects the miseries of slum people. The average population density in slums were 831 persons per acre in 2005. Density varied from 272 persons per acre in Rajshahi to 1,032 in Chittagong. Dhaka had the second highest density at 891 persons per acre. The overall gross population density for Dhaka was less than 121 persons per acre. Thus, the population density in slums there was at least 7 times higher than the average for the city as a whole. In Chittagong, the population density in slum areas was 11 times that of the overall city (wordpress.com, 2011).

### 1.15 Housing structure and condition of slum

**Table-8:** Housing structure (percentage of households)

Housing style	1986	1997	2005
Jhupri/Shacks/Mud	20.55	41.41	11.3
Bamboo structure/ Tong	44.66	0	0
Tin shed	30.48	28.33	0

Tong	0	8.57	0
Chhai	0	17.69	0
Pucca	0	0.91	0
semi pucca	0	3.09	42.4
Kutchha flimsy structure	0	0	44.8
Dilapidate old buildings	0	0	1.1
Others/better quality	4.31	0	0.5
Total	100	100	100

The Housing structure of slum dwellers is very poor. According to the report of the slum census-1986, 44.66% households lived in Bamboo structured houses followed by Tin shed 30.48% and Jhupri/Shacks/Mud 20.55%. However, in 1997, Jhupri dominated housing structure by capturing the highest portion 41.41% and reduced to 11.3% in 2005. Conversely, 44.8% households lived in Kutchha housing followed by semi pucca 42.4% and old buildings 1.1% respectively (wordpress.com, 2011).

### 1.16 Ownership of agricultural land

The alarming indicator is that, with the course of time, the slum households are becoming landless with an increasing trend. In 1986, the percentage of landless people was 78.08 which were reached to 83.47 in 1997. As depicted from the diagram. Consequently, the slum people live in the land of Govt. or private organization. As data shows that, in 2005, the majority portion of slum land, 88.6% was owned privately followed by government. (9.3%) and others (2.2%) respectively. whereas these figures were counted as 51.92%, 43.83% and 4.25% for government (wordpress.com, 2011).

### 1.17 Rental status of slums

In 2005, 73.9% of slum households live in rented land while it was 63.33% in 1986. Conversely, 63.33% of slum households were lived in rent-free land whereas it was reduced to 11.74% in 2005. It is bad news that, only 14.5% households lived in their own land in 2005.

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**Table-9 : Rental status of slums**

Year	1986	1997	2005
Owner		44.54	14.5
Rented	63.33	48.45	73.9
rent free/others	36.67	7.01	11.7

### 1.18 Sources of light

For lighting the housing unit, 70.99% of households used kerosene in 1986, while it was reduced to 27.59% and only 7% in 1997 and 2005 respectively. conversely, 28.51% households depended on electricity for lighting in 1986, whereas it has increased to 57.7% and 91.10% in 1997 and 2005 accordingly. Furthermore, a tiny portion of households depends on other sources for lighting such as 1.10% in 2005 compared to 0.16% in 2005 (wordpress.com,2011).

### 1.19 Sources of fuel

The slum dwellers usually use straw leaves, gas etc. as fuel for preparation of their meals. Wood is still the main sources of the fuel in the slum areas. the data states that, in 1986, the majority percent (71.60%) of the slum household used wood as fuel followed by 10.60% straw/leaves/cowdung, 7.44% gas, 4.79% husk and 3.38% kerosene etc. But the census report-2005 claimed that, gas has become the second sources of fuel in the slum and 44.6% of households depend on gas. It was not available in Khulna, Rajshahi and Barisal. In Dhaka, 81.2% of clusters and 57.6% of households in slums had access to cooking gas while in Chittagong and Sylhet gas was available to only 27.9% and 16% (wordpress.com,2011).

### 1.20 Toilet facility

It is highly alarming that, the toilet and sanitation facilities are absolutely unsafe as well as unsatisfactory. The three pie diagrams depicting toilet facilities show that, unsafe and unhealthy toilet facilities occupied the majority percent of toilet in the slums. such as temporary (79.45%) ,Kancha (53.80%) and pit (52.8%) in 1986,1997 and 2005 respectively. even open space were used and still using as toilet which accounted 8.99% and 4.1% in 1997 and 2005

respectively. while the safety toilets were few in numbers such as sanitary (20.55%) and sanitary (7.93%),pucca(20.14%) in 1986 and 1997 respectively.

In addition to that, latrines linked to sewers and septic tanks and water sealed latrines are considered safe from a hygienic standpoint. Only 28.8% of slum households had access to one of these three types of latrines in 2005. Dhaka slum residents had the best access to safe latrines (35.6%) while those in Sylhet and Barisal had very poor access (only 2.1% and 0.4%, respectively) for the same time. Pit latrines, a variety widely regarded as unsafe, were common in slum areas. In almost all slums, latrines were usually shared by two or more households. In 13.4% of slums, one latrine was shared by 11 or more families (wordpress.com,2011).

### 1.21 Sources of drinking water

The census report-1997 states that, the 55.42% of slum households used Tube-well as the sources of their drinking water followed by municipal tap 21.59%, others 15.35% and river/canal 2.88% respectively. Only 1.01% households were collected drinking water from the ponds.

Conversely, 61.10% households were getting their drinking water from the municipal taps followed by tube-well 37% and others 1.90% respectively as reported in slum census-2005(wordpress.com,2011).

### 1.22 Literacy rate of slum people

**Table-10: Literacy of slum people by locality 1986 and 1997**

City	1986	1997
Dhaka Mega city	12.61	14.35
Chittagong SMA	16.48	16.99
Khulna SMA	15.08	16.67
Rajshahi SMA	***	13.36
Barisal	***	*
Sylhet	***	**
14 cities	***	14.66

100-Paurashavas	***	12.53
National	13.6	14.66

Literacy refers to the ability to write a letter. The literacy rate of slum's population was 14.66% where the male literacy rate was 17.88 and female literacy rate was 11.32% respectively, which was slightly higher than that of 1986 figures. But it was significantly smaller than the literacy rate of 32.4% in 1991 census. It appears that literacy rates very low in slum areas, 1% of slum households, respectively (wordpress.com, 2011).

### 1.23 Employment scenario

A person is termed as employed who is engaged in some gainful work. In slum areas, most of the adults are found to be engaged in some activities in exchange of some benefits either in cash or kind. The census report 1986 figured out that, 40.98% of the slum population was employed where 65.53% was male and 11.91% was female while 59.02% people including children and student was unemployed due to having no specific job. Moreover, the employment rate slightly increased to 47.88% while unemployment rate was 52.12%. Among 52.12%, 4.71% were not working, 8.60% were students, 0.71% were begging and others 38.10%, who had no specific jobs, but were seeking to job. The reported data claim that, unemployment rate is very high among the slum population and almost all of the employed persons were engaged in informal sector. It will be cleared from the list of job structure of slum population as given below (wordpress.com, 2011).

### 1.24 Income pattern and poverty rate in slums

**Table-11:** Households monthly income pattern by city (percentage of households)

City	<2000 tk	2001-3000tk	3001-4000tk	4001-5000tk	above 5000 tk	Number of households
Dhaka	3.8	19.6	34.5	27.6	14.6	673,883
Chittagong	21	36.8	27.6	11.6	2.9	266,182
Khulna	34.4	54.3	9.4	1.5	0.3	37,826
Rajshahi	8.8	52.1	33.9	4.7	0.5	27,665

Sylhet	0.8	1.9	22	69.3	5.9	18,313
Barisal	44.6	44.8	9.9	0.6	0.1	19,460
all cities	10.7	26.8	29.6	23.7	9.1	1,043,329

The census report-2005 explained that, 90.8% slum people lived below the urban poverty line (tk.5000 as estimated by the CUS study team for May 2005) with 37.5% having incomes below Tk. 3,000 per month. Most of households (29.6%) income range was 2001-3000tk followed by 2001-3000tk (26.8%), 4001-5000tk (23.7%) and <2000 tk (10.7%) respectively. on the other hand, only 9.1% of households had the income of tk.5000. Besides, poverty was very high in the slum households of Barisal and accounted that,99.9% people live below the urban poverty line of tk.5000.even 44.6% had income below tk.2000.Khulna (99.7%) occupied the second position in the slum poverty followed by Rajshahi (99.5%), Chittagong (97.1%) and Sylhet (94.1%) respectively.Dhaka was slightly better off, with 14.6% having incomes above the poverty line and slum poverty 85.4% with 23.4% having incomes that fell below the hardcore poverty line(wordpress.com,2011).

### 1.25 NGO coverage of slums

About three-fourths of the slums (71.5%) received services from one or more NGOs. 13.1% and 58.4% of clusters received services from one and more than one NGOs respectively. Whereas 28.5% clusters did not receive any service from NGOs. Besides, by division, Rajshahi received the highest services followed by Barisal, Dhaka, Khulna, Chittagong and sylhet respectively. The figures were 86%, 81.2%, 58.5%, 51.3%, 50.4% and 40.7% respectively as reported by slum census 2005(wordpress.com,2011).

**Table-12:** Percentage of slums covered by NGO programs (percentage of clusters)

NGO coverage	Dhaka	Chittagong	Khulna	Rajshahi	Sylhet	all cities
one NGO	11.3	7.2	27.1	7	34.8	13.1
more than one	58.5	50.4	51.3	86		
None	30.2	42.4	11.5	7	24.5	28.5
don't know	0	0	0	0	0	0



Total	100	100	100	100	100	100
total slum	4966	1814	520	641	756	9048

## 1.26 Illness profile & health practice

### 1.26.1. Smoking, alcohol, and drug abuse

Smoking of cigarettes or biri was predominant among men in slum areas (60 percent), followed by District Municipalities (51 percent). Smoking of cigarettes or biri begins at early age in Bangladesh and increases with age; by age 15-19 slightly above a third of men (35 percent) in slums and District Municipalities were already smokers and across all ages the prevalence of smoking was consistently lower by 12 to 15 percentage points among non-slum than slum men. Smoking was more prevalent among the poorest men and those having no education. Biri smokers tended to have more intense habits than cigarette smokers. Rates of ever use of drugs or alcohol were identical across slum and slightly higher among men in District Municipalities (17 percent). Current use of drugs or alcohol by men was less than five percent across domains (Angeles *et al.*, 2006).

### 1.26.2. Common illness

Illness is a common cause of crisis faced by slum dwellers, but the type of health shock varies. The major illnesses were joint pain or back pain, peptic ulcer disorders (PUD), dysentery, diarrhoea, fever, cough, typhoid, skin diseases and scabies, hypertension, heart disease, tuberculosis, ringworm, jaundice, tumours, cancer, pregnancy-related complications, asthma, hydroceles, eye problems, dental complications and injuries from road accidents. There were seasonal variations in diseases, but fever, diarrhea, dysentery and jaundice were common around the year. During winter, coughs, fevers, pneumonia, chicken pox, scabies and asthma were more prevalent. During the summer months, fever, diarrhea, dysentery and chicken pox were common. In the rainy season, fever, diarrhea, cholera, scabies, coughs and colds were frequent. Common acute illnesses were jaundice, typhoid, pneumonia, pregnancy-related problems, tuberculosis, while common chronic illnesses included asthma, gastric, cancer, tumours, hydroceles, hypertension and heart disease. Based on the quantitative study, the numbers of common diseases were recorded from the slum dwellers in Dhaka city (Baten *et al.*, 2013).

### 1.26.3 Health related challenges

Most slum dwellers faced the constant threat of a health-related shock. They had a higher prevalence of illness and a lower capacity to access proper treatment in time. Although there was some access to different types of health services, nothing is cheap in a mega-city like Dhaka, especially not for the extreme poor (Baten *et al.*, 2013).

### 1.26.4 Health seeking behavior

Even though they are residents of Dhaka, many slum dwellers did not have access to the range of modern health facilities within the city. Public, private and NGO sectors provided health services that are not always affordable for the extreme poor. They were also sometimes unable to properly utilize services because of poor information or a lack of awareness. Low literacy levels, in particular, among urban slum dwellers hindered access to healthcare. Due to these limitations on access and affordability, and the fact that living conditions meant that they were more likely to become ill, many of the urban extreme poor visited other, less effective, service providers (Baten *et al.*, 2013).

## 1.27. Significance of the study

The significance of the study is to evaluate the the living condition of the slum dwellers in Bangladesh. Among Bangladesh, Dhaka is one of the most densely populated city. The city alone contains more than one-third (36.4 %) of the total urban population. Besides, most of the headquarters of important government offices, trade bodies, and other metropolitan facilities are loacted here and that's why most of the migrants move towards this Dhaka city. As a result this rapid migration causing creation of slum in different areas of Dhaka city. Thus these slum people often end up in illegal settlements on precarious lands with major enviornmental concern. It affects in the improvement of the country, socio economic status of the country. The slum dwellers often deprive of better sanitary system, pure drinking water, health seeking behaviour etc. Their unhealthy life style affect the environmental condition of the country. They deprive of different government or NGO providing diet programme, health care facilities also. As a result these slum dwellers become obstacles in the development of Bangladesh. On the other hand, a country can never be developed by keeping a large portion of people in dark. Thus this study will help to assess the socio-economic status,daily activity,disease condition of the urban slum population of the Dhaka city.

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**1.28. Purpose of the study**

The purpose of the study is to gain a better understanding of life style of slum dwellers in different areas of Dhaka city. Also to understand the role of the living condition,daily activity,family status,food intake,sanitation systems on their disease condition.

# **Chapter: 2**

## **Literature Review**

## **2.1 Quality of life style of slum dwellers (with special reference to Sri Lanka)**

This report examines the major characteristics of urban slum dwellers. In case of social transmittance, some anti-social phenomena have been occurred. Especially in this modern world, there are different kinds of social phenomenon. Poverty, suicide, prostitution, alcoholism, malnutrition, child deviancy, child abuse are most affected social problems which the present society have to face in these decades. According to several studies, poverty is the main and center problem among them. Because of this center problem, many other related problems have arisen. These social effects directed to create many social issues such as unemployment and under employment, malnutrition, illness, low income dwellers as slum and shanties, prostitution, abortions, criminals, and other social and health related problems etc. On the other hand these social experiences help to derive new social problems. Therefore, this study focuses to explore urban slum residences. It researched slum resident's life style through quality of life social indicators in this study. As consequences, it makes a platform to discuss and make arrangements to uplift their quality of life (Wasantha ,2015).

## **2.2 Socio-economic conditions of slum dwellers: A theoretical study**

The socio economic condition of the slum dwellers is generally poor because of the lack of basic social amenities; functional skills, proper education, source of the income, hygiene and health resources. However, slum dwellers directly or indirectly play an important role in nation building. With this point of view the study of slum dwellers becomes important. This paper attempts to demonstrate the theoretical ideas relating to socio-economic conditions of slum dwellers and its reasons and to extend appropriate measures for the improvement in the conditions of slum dwellers. Since, slum dwellers are the stock of the potential human resource, it can be developed through skill enhancement programmes initiated by the government and through appropriate public action relating to social provisions and redistribution social amenities. This paper is conceptual in nature and based on detailed literature collected from various sources like books, research articles, NSSO reports, Census of India etc. Lastly, this paper suggests the effective measures to minimize the problems and raise the living conditions of the slum dwellers( Brijendra Nath ,2016).

## **2.3 Slum rehabilitation in the context of urban sustainability : a case study of Mumbai, India**

In the last two decades, migration from villages and small towns to metropolitan areas has increased tremendously in India. This leads to the degradation of urban environmental quality a

and sustainable development especially in the metropolitan cities. The problems faced by the people living in the urban areas of India have become major concerns for the government over the last two decades. Slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety. India is one of the fastest developing countries with many metropolitan cities (e.g. Mumbai, Pune, Bangalore, Hyderabad, Delhi and Chennai). To explore the effect of rehabilitation of slums on urban sustainability, Mumbai was selected as a case study. Compared to the other metropolitan cities in India, Mumbai is one of the biggest metropolitan regions and capital of the state of Maharashtra with many slums varying in sizes.

In addition, every year millions of rupees are being spent to resettle and rehabilitate slums to make Mumbai sustainable. It is reported that around 6 percent of the total land holds nearly 60 percent of the total Mumbai population (CBC, 2006). From 1980 onwards, the rate of migration and the sprawling nature of slums into the city has become a major issue, although many organisations are working towards development of Mumbai, the conditions are not conducive to achieving urban sustainable environment as most of the organisations are not working on a united front. Also, various researchers have reported that to maintain the pace of sustainable urbanisation, a holistic approach to sustainable development needs to be considered. Considering today's poor urban environmental quality in Mumbai, there are many projects under development and execution to improve the poor conditions. Also, the World Bank has funded many projects with the primary aim of improving the city's land transport, health and education which affect thousands of families. The majority of families affected by urban development projects are located in slum areas which are under consideration for resettlement and/or rehabilitation. The aim of this research is to examine slum areas and their effects on sustainable urban development. To accomplish the above aim, a case study based approach, engaging a series of face-to-face interviews, was used. As a part of this research, an urban development project funded by the World Bank to achieve urban sustainability in Mumbai Metropolitan Region (MMR) was explored. Also, several visits to other slums and rehabilitated areas were conducted to identify the quality of life in slums and rehabilitated areas. The data collected during the face-to-face interviews, was used for descriptive analysis considering various aspects (i.e. social, educational) of urban sustainability. Through this research, the reasons for slums and problems related to slums were explored. During the research, it is revealed that some people still think that urbanisation is responsible for unsustainable development and they are not in favour of resettlement and rehabilitation. This suggests that to achieve successful urban

an sustainability, other issues such as employment, education and general awareness are also required along with low cost mass housing( Amey *et al.*,2009).

#### **2.4 A study on the lives of slum dwellers of urban Lahore**

A slum is a rundown area of the city characterized by substandard housing and other basic necessities of life. This study is carried out to analyze the quality of life, extent of poverty, health and hygiene conditions amongst the slum dwellers of Urban Lahore, Pakistan. The target population is stratified according to socio-economic status. This cross sectional study included 150 respondents from urban slum areas of Lahore, Pakistan. Data is collected through a structured questionnaire. The results of the study revealed that the average income of the slum dwellers is above the poverty line of Pakistan. The average monthly income of slum dwellers varies with respect to slum area. The infant mortality rate amongst the slum dwellers is lower than that of Pakistan; however the fertility rate is quite high. Almost hundred percent of the women reported that their children were vaccinated against Polio and majority were satisfied with the food and health facilities. Insufficient water, sanitation facility and lack of access to electricity were the main problems reported. Awareness about health, safety and hygiene of Slum dwellers is considerably low due to inadequate education( Kalsoom *et al.*, 2014).

#### **2.5 The socio-economic condition of female slum dwellers: a study on slums in Dhaka**

Bangladesh is a land of grueling poverty in terms of economic sense. The country lacks significant amount of natural resources except 150 million populations. Dhaka is the fastest growing mega-city in the world. Annually, the city draws an estimated 300,000 to 400,000 mostly poor migrants who provide critical employment for the city's industries and services. Most migrants come from rural areas in search of opportunities, which can provide new livelihood options for them. As one walks through Dhaka, the pervasive poverty is evident, as is the inequality between rich and poor. In 2010, the population of the city of Dhaka has projected at 17.6 million people, with up to 60% in the slums. The poor mainly live in slums scattered throughout the city, with close to 80 percent of slums located on privately owned land creating considerable institutional challenges in terms of basic service provision. The article explores the socio-economic condition of females in slum area of Dhaka City. The finding of the study is social economic condition of female in slum area of Dhaka city of Bangladesh( Shadia , Farhanaz 2015).

## **2.6 Socio-economic status of slum dwellers: A case study of Uttara periphery, Dhaka**

The present study was an attempt to assess the living status of slum dwellers at Uttara, periphery, Dhaka. A slum is a heavily populated urban informal settlement characterized by substandard housing, squalor, most lack reliable sanitation services, supply of clean water, reliable electricity, and other basic services. Analysis showed that the average money spend for food and groceries was Tk.2,757.41 (44.86%) whereas the average monthly house rent including utilities was Tk.1,968.33 (32.02%). It was note that educational expense of children was Tk.555.00 (9.03%). per month while cost for health care per month was Tk.457.5 (7.44%). It was observed that they live in unhygienic surroundings. In the slum area, the youngest and adult age group (0-24 years) had morbidity rate of 30.8% followed by population in the age group 35-39 years (17.9%). Morbidity was lowest (5.1%) for the population belonging to age group 30-34 years, followed by morbidity of population aged 40 and above (each group has morbidity rate 12.8%). Slum people were found to be engaged in day labourer, small job services, rickshaw pulling, and little business(Md. Khalilur *et al.*,2015).

## **2.7 Assessing the livelihood of slum dwellers in Dhaka city**

The present study was an attempt to determine the factors affecting the livelihood of the socioeconomic improvement of migrants and to analyze the causes of rural-urban migration in slum areas. Slum areas have no available formal education facilities and slum people were found to be engaged in rickshaw pulling, day labourer, petty business, small job services etc. Analysis showed that migration and taking in micro credit were beneficial for the slum dwellers. Receiving and utilizing micro credit income level, consumption, expenditure and socio-economic status of the slum dwellers improved to some extent. Due to participation of slum dwellers in NGOs, their economic, social and decision making improved substantially. Credit disbursement through NGOs with integrated approach could bring positive changes in the life of poor slum women as well as their community. Findings showed that Fifty six per cent people migrated to Dhaka city for economic reason. Factors of migration had a significant contribution of rural urban migration and also significant livelihood improvement has taken place due to micro credit. At the individual level, the women were benefited in terms of mobility and skill, self confidence, widening of interests, access to financial services, build own savings, competence in public affairs and status at home and in the community that lead a better awareness for enhancing women's empowerment. However, there is a need for proper training for sustainable result in the long run( Alamgir *et al.*,2014).



## **2.8 Health care seeking behavior of slum-dwellers in Dhaka city**

The slum population, whether slums are legally created or not and whether the dwellers live on the formal sector occupations or not, should get the basic amenities of life, including healthcare, for the benefit of the entire population of cities. The need for formulation of appropriate policy and proper implementation thereof for rapid improvement of health in the cities, especially in the slums of the cities, is urgent. That in turn requires information and evidence about the constraints on both demand and supply sides of healthcare use in the urban slums. The pertinent issue of this study was what are the determinants of low demand for healthcare from the qualified providers in the slums of Dhaka city. The purpose of this study was to address the demand side of the issue using a household survey on slum population in the largest concentration of slums in the country- Dhaka city. The survey assessed the level of demand for health care and access to health care from qualified providers, and identified the determinants of health care seeking behavior. The results of this study will be useful for formulating the appropriate policies to increase the demand for health care as well as access to health care so that use of health care by the slum-dwellers rises to the desired level( Nahid *et al.*,2015).

## **2.9 Do the slum dwellers enjoy the basic constitutional and economic rights as a citizen in Bangladesh?**

Bangladesh is a country of about 156million people including nearly 7.81 million of slum people. This paper investigates 28 years data for 1986- 2014 periods on the living standard of slum dwellers of Bangladesh. It presents the different forms of deprivations, sufferings and miseries of slum people from basic needs including social, constitutional and economic rights. More specifically, the wretchedness of slum dwellers in housing, drinking water, sanitation, food intake, healthcare, education, employment, income patterns, social status and security, economic and public assistance has been explored in this paper. In addition, poverty scenario and services of social organization among slum people has been focused in this paper. Finally, it recommends some policies to improve the living conditions of slum dwellers in Bangladesh( Basharat , 2014).

## **2.10 Sustainable urban development of slum prone area of Dhaka City**

Dhaka, the capital city of Bangladesh, is one of the densely populated cities in the world. Due to rapid urbanization 60% of its population lives in slum and squatter settlements. The reason behind this poverty is low economic growth, inequitable distribution of income, unequal

distribution of productive assets, unemployment and underemployment, high rate of population growth, low level of human resource development, natural disasters, and limited access to public services. Along with poverty, creating pressure on urban land, shelter, plots, open spaces this creates environmental and ecological degradation. These constraints are mostly resulted from the failures of the government policies and measures and only Government can solve this problem. This is now prime time to establish planning and environmental management policy and sustainable urban development for the city and for the urban slum dwellers which are free from eviction, criminals, rent seekers and other miscreants( Sinthia, 2013).

# **Chapter: 3**

## **Materials & Methods**

### **3.1 Types of the study**

It was a prospective study. It was attempt to measure the understanding of life style of slum dwellers in different areas of Dhaka city, environmental effect in their living condition, prevalence of diseases occurring and to establish the differences of their improvement which differs from slum to slum.

### **3.2 Place of Study**

The study was conducted in slums of different areas of Dhaka city like Meradia, Aftabnagar, Keranigonj, Doyagonj, Badda.

### **3.3 Study population**

In this study, Targeted population was general people aged between 20-70 years

#### **3.3.1 Inclusion criteria of the cases**

- i) Slum dwellers
- ii) People aged between 20-70 years

#### **3.3.2 Exclusion criteria of the cases**

- i) People below 20

### **3.4 Sample Size**

Sample size of the study was 200.

### **3.5 Study Period**

The duration of the study was about six months that started from December 2016 to May 2017.

### **3.6 Data Collection Method**

This paper consisted of multiple choice questions. An English language survey was developed based on information drawn from relevant literatures pertaining to life style of slum dwellers in urban areas in some developing countries. The English language survey was delivered in Bengali language to the slum dwellers for their better understanding. Questionnaires are covered to understand the reasons of diseases, how living condition acting on disease, response against disease etc.

### **3.7 Questionnaire Development**

The pre-tested questionnaire was specially designed to collect the simple background data and the needed information. The questionnaire was written in simple English language in order to avoid unnecessary semantic misunderstanding but delivered in Bengali language to the slum dwellers. The Questionnaire was developed based on the study of different journal papers to study the influence of life style on the diseases, and as well as to study response against disease in Bangladesh. Survey questionnaire form has mainly different parts.

- Personal information
- Food habits
- Bad habits
- Daily activity
- Sanitation
- Daily hygiene
- Disease conditions & response
- Vaccination

### **3.8 Sampling Technique**

In this study random sampling was followed.

### **3.9 Data Analysis**

After collecting, all the data were checked and analyzed with the help of Microsoft Excel 2010. The result was shown in bar, pie and column chart and calculated the percentage of the study.

# **Chapter: 4**

## **Results & Discussions**

## 4.1. Personal information

### 4.1.1. Age distribution

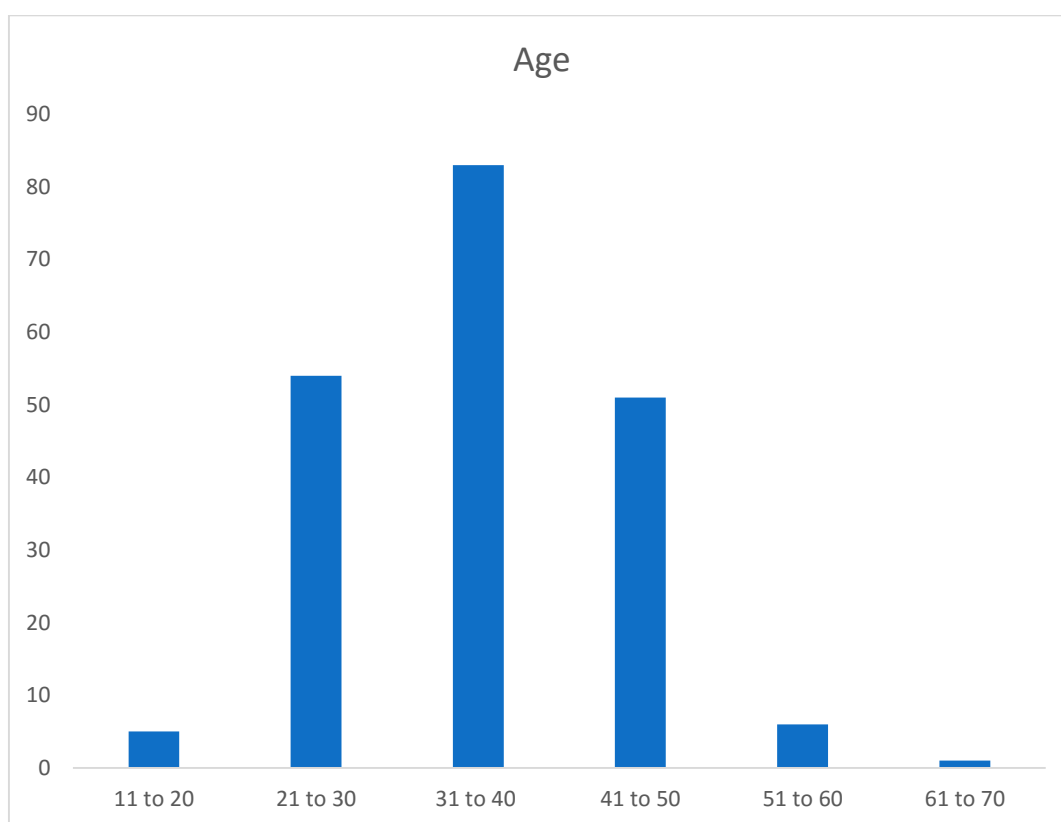


Figure 4.1.1. Graphical representation of age distribution

- Most of the responded were between age of 20-50 years in different urban areas.
- 5 % responders of urban areas were between age ranges of 11-20 years.
- 6 % urban responders were between 51-60 years range.
- Above 60-70 years there were 1 % urban responders from that range.

#### 4.1.2. Gender ristribution

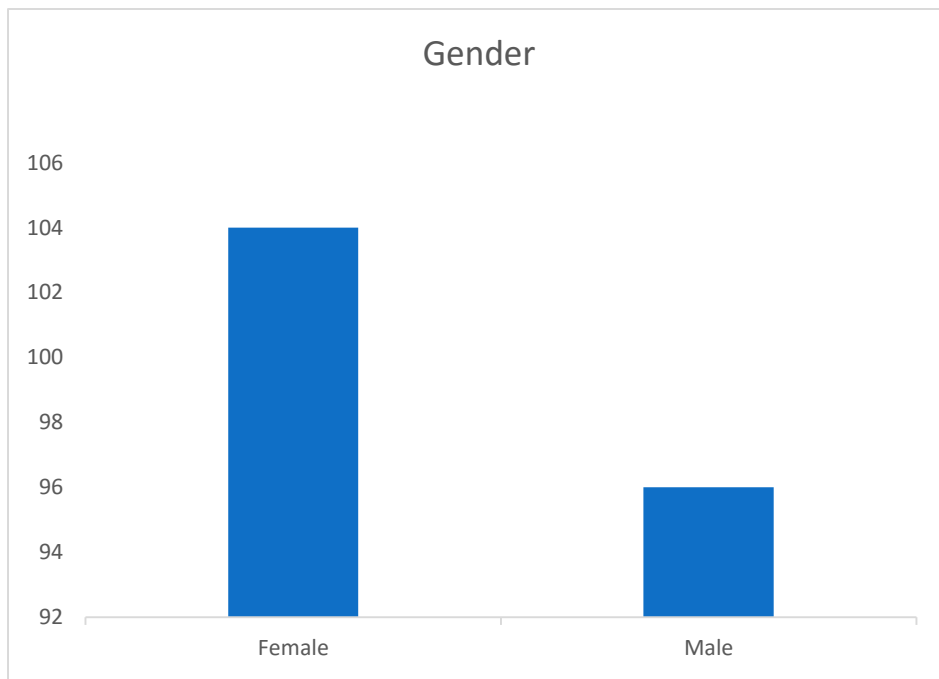


Figure 4.1.2 : Graphical representation of gender distribution

- Most of the responders were Female About 52 % in different urban slum areas.
- 48 % responders were male.



### 4.1.3. Living area distribution

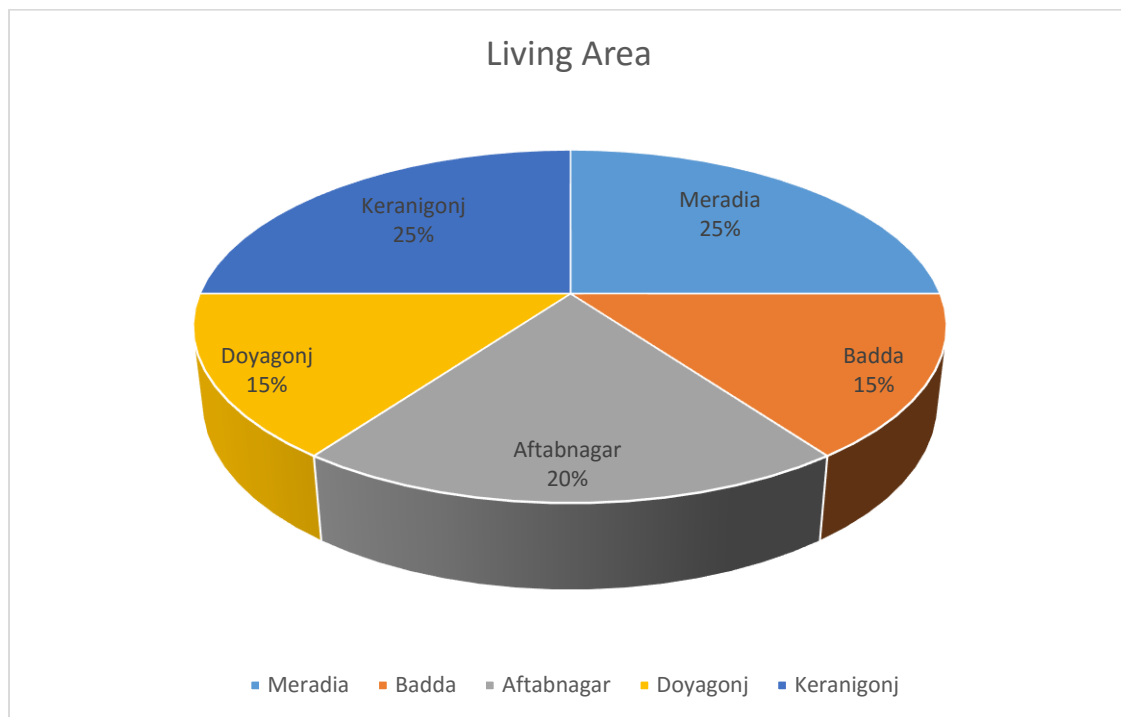


Figure 4.1.3 : Graphical representation of living area

- 25 % responders were from Keranigonj areas.
- Meradia areas also represent 25 % responders.
- In Badda area, The responders were about 15 %.
- Aftabnagar area represents 20 % respondents.
- Doyagonj area represents 15 % respondents.

#### 4.1.4 Monthly family income distribution

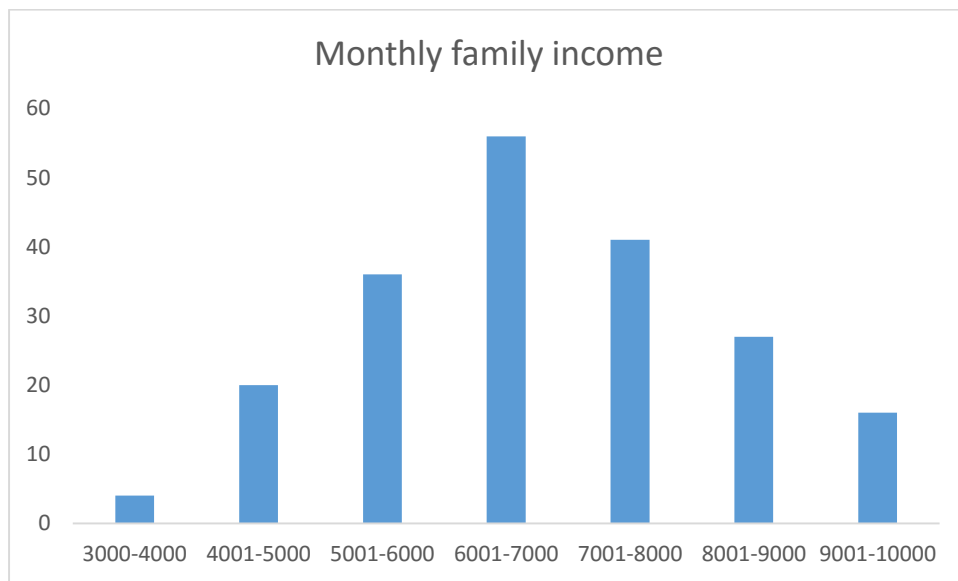


Figure 4.1.4 : Graphical representation of monthly family income

- Most of the responders have monthly family income between 6000-8000 range.
- 18 % responders have monthly family income between 5000-6000 range.
- 13.5 % responders have monthly family income in the range between above 8000-9000.
- 10 % responders have monthly family income of about 4000-5000.
- 8 % responders have monthly family income between 9000-10000.

#### 4.1.5. Education distribution

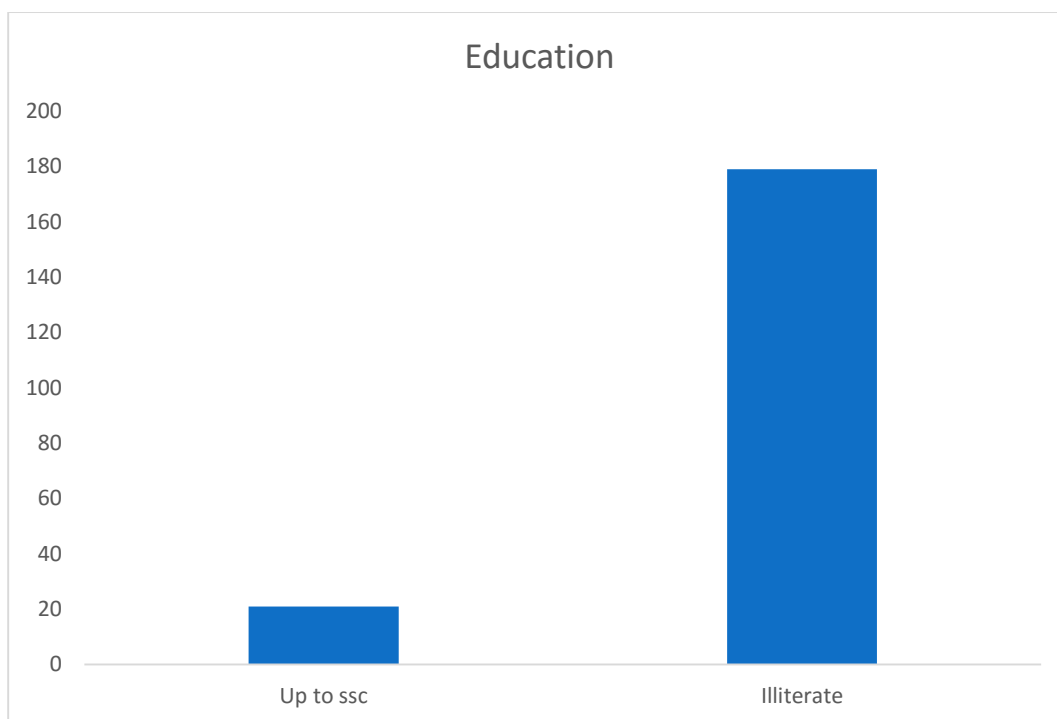


Figure 4.1.5 : Graphical representation of education

- 89.5 % participants among different slum dwellers were illiterate.
- Only 10.5 % responders in different slum areas have qualification about under S.S.C or up to S.S.C

#### 4.1.6. Occupation distribution

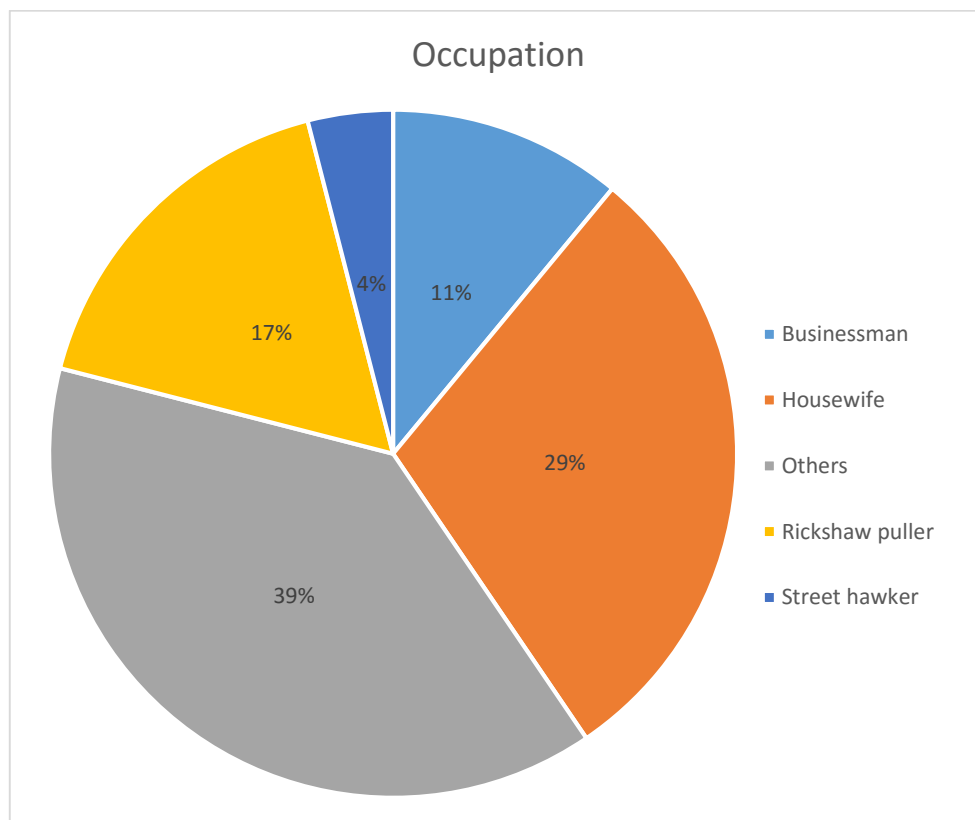


Figure 4.1.6: Graphical representation of occupation distribution

- In urban slum area, 29.5 % respondents were housewife and 38.5 % respondents were in other occupations like garment workers, housemaid etc. 11 % respondents were businessman, 17 % were rickshaw puller and 4 % were street hawker.

#### 4.1.7. Marital status distribution

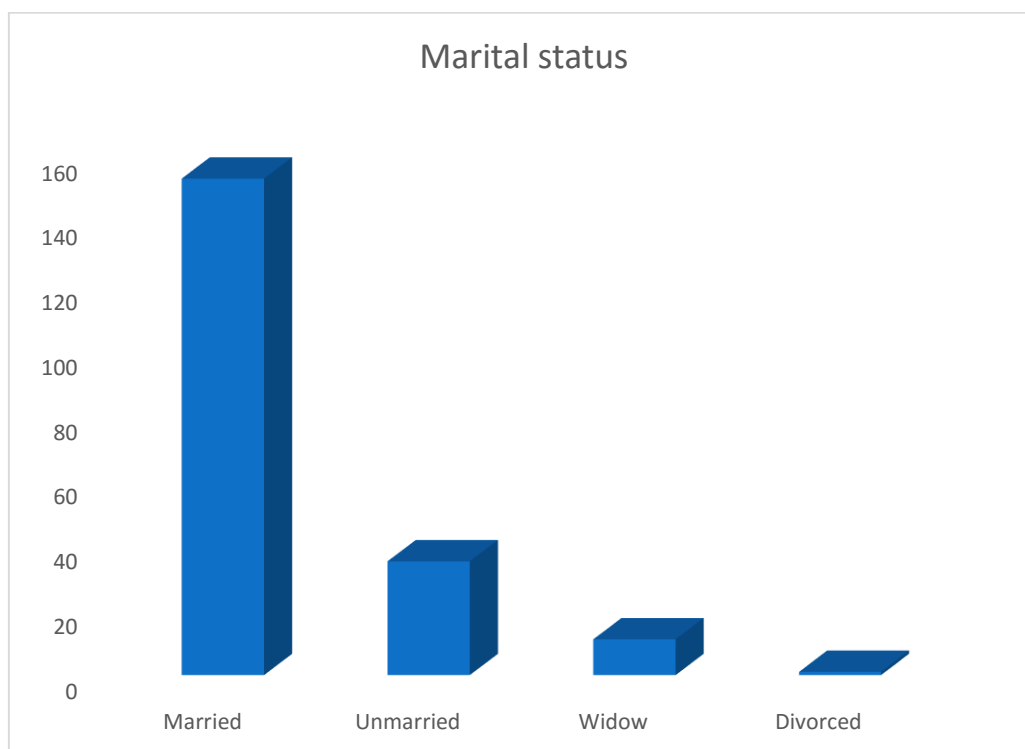


Figure 4.1.7: Graphical representation of marital status

- Among urban slum area, most of the respondents were married around 76.5 %.
- 17.5 % respondents were unmarried.
- 5.5 % respondents were widow.
- 0.5 % responders were widow.

#### 4.1.8. Blood pressure distribution

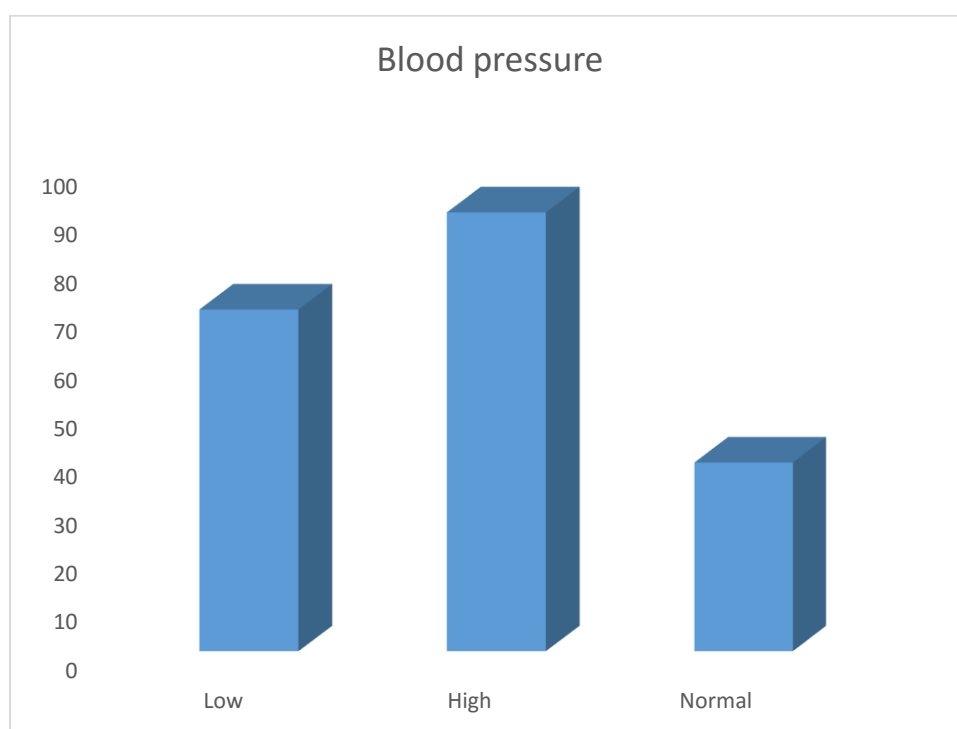


Figure 4.1.8 : Graphical representation of blood pressure

- About 35.25 % responders were with low pressure, 45.25 % responders were with high pressure and 19.5 % were with low pressure in urban slum areas.

## 4.2 Food, Drinks & Habits

### 4.2.1 Rice intake

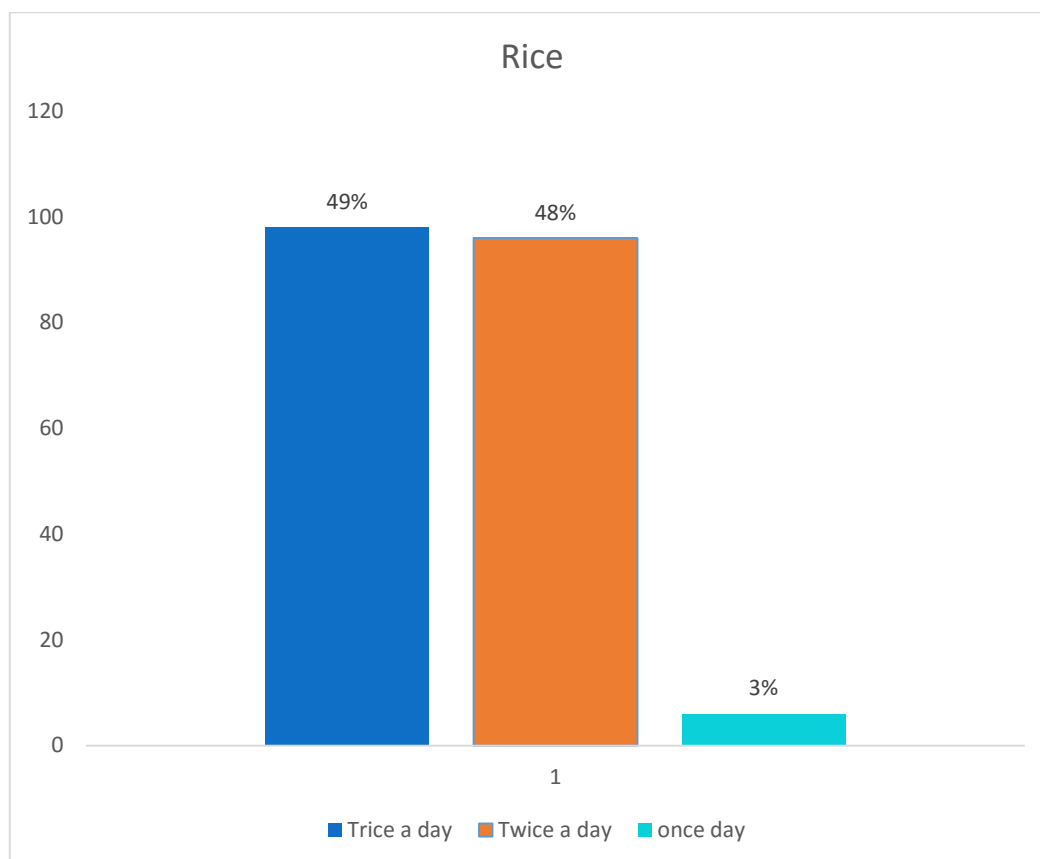


Figure 4.2.1: Graphical representation of rice intake

- Among all the responders about 49 % were found taking rice trice a day, 48 % were found taking rice twice a day and 3 % responders were found taking rice once a day.

### 4.2.2 Bread intake

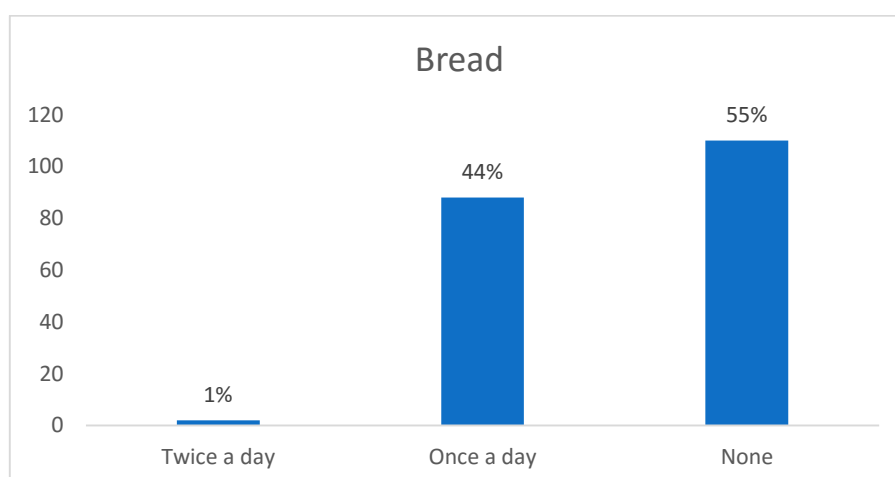


Figure 4.2.2 : Graphical representation of bread intake

- In slum area, 55 % responders were found taking no bread in a day, 44 % responders were found taking bread once a day and 1 % were found taking bread twice a day.

### 4.2.3 Vegetables intake

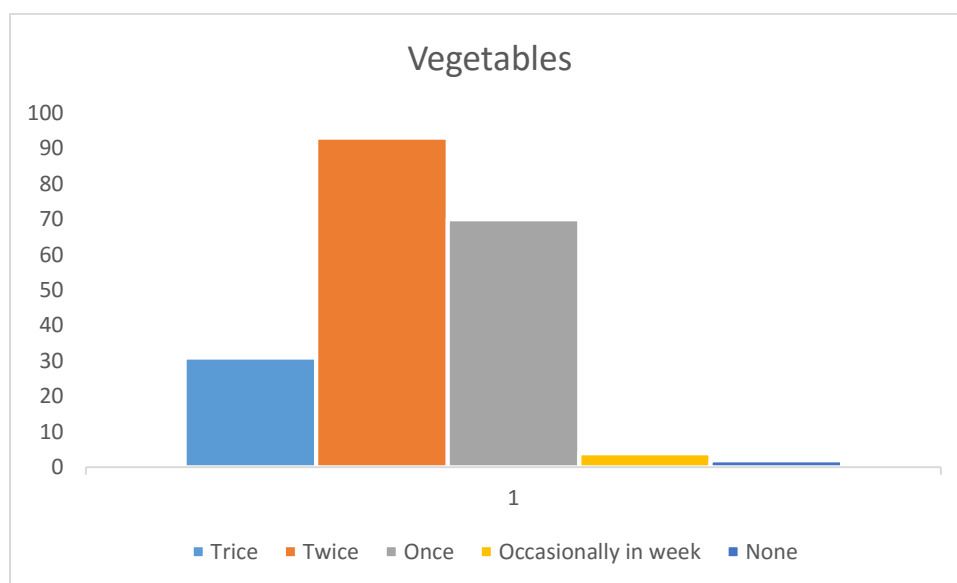


Figure 4.2.3 : Graphical representation of vegetables intake

- In slum, 15.5 % responders were found taking vegetables trice a day, 46.5 % responders were found taking vegetables twice a day, 35 % were found taking once a day, 2 % were found taking vegetables occasionally and 1 % were found taking no vegetables in a day.



#### 4.2.4 Meat intake

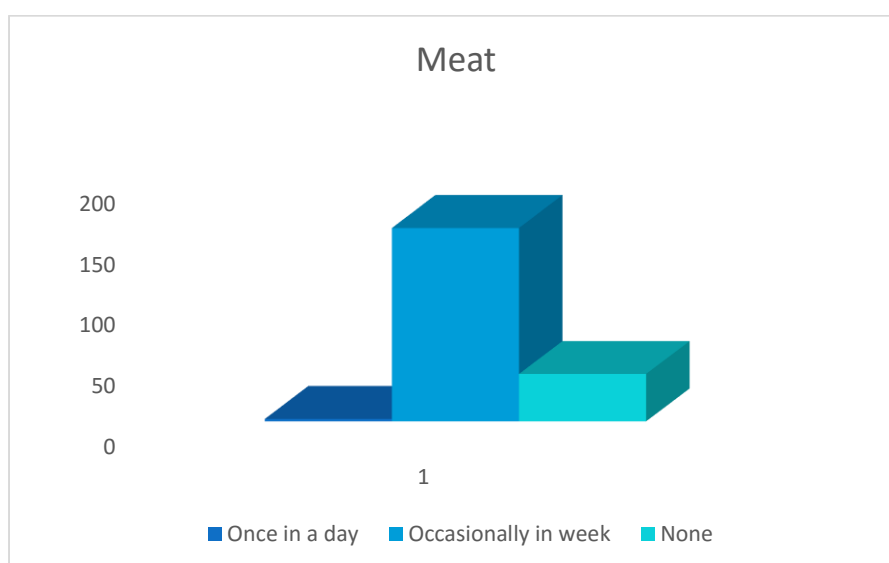


Figure 4.2.4 : Graphical representation of meat intake

- 79.5 % responders were found taking meat occasionally, 19.5 % were found taking no meat in their meal and 1 % were found taking meat once a day.

#### 4.2.5 Fish intake

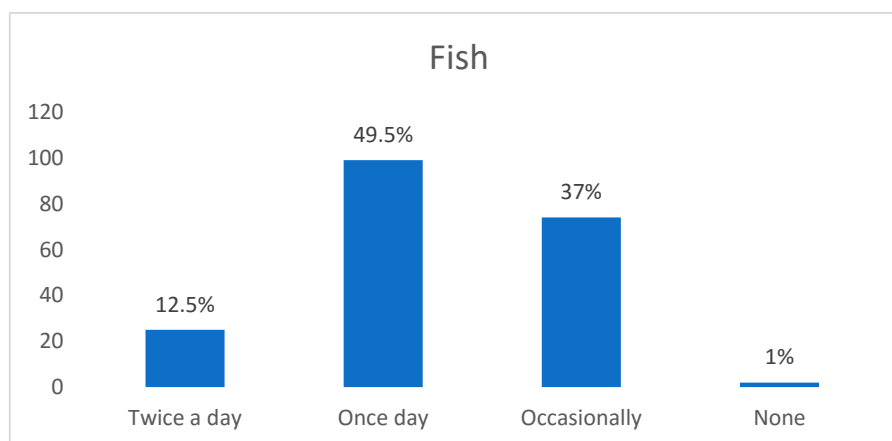


Figure 4.2.5: Graphical representation of fish intake

- In slum areas, 49.5 % responders were found taking fish once a day, 37 % were found taking fish occasionally, 12.5 % were found taking fish twice a day and 1 % were found such people who don't take fish in their meal.

#### 4.2.6 Egg intake

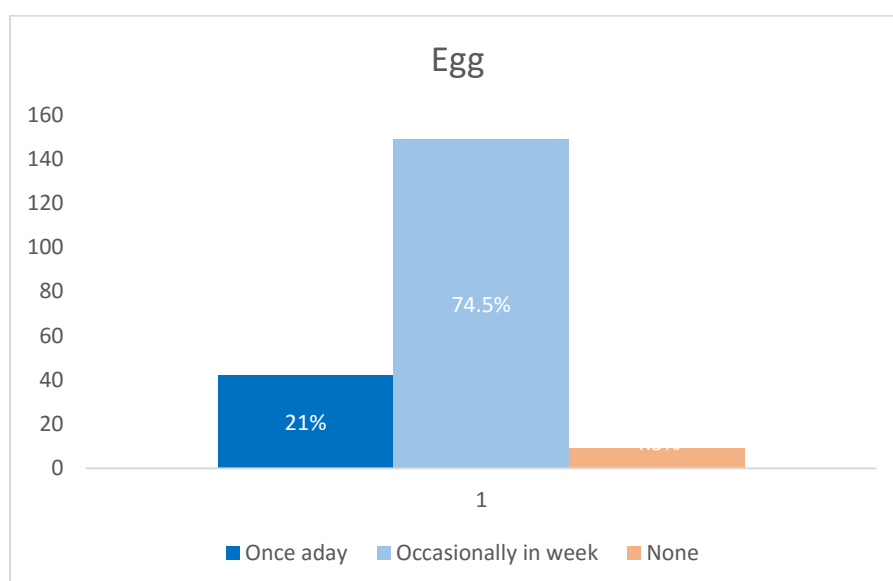


Figure 4.2.6: Graphical representation of egg intake

- In slum areas, most of the respondents were found taking eggs occasionally about 74.5 %,21 % responders were found taking egg once a day and 4.5 % were found taking no eggs in their meal.

#### 4.2.7 Salt intake

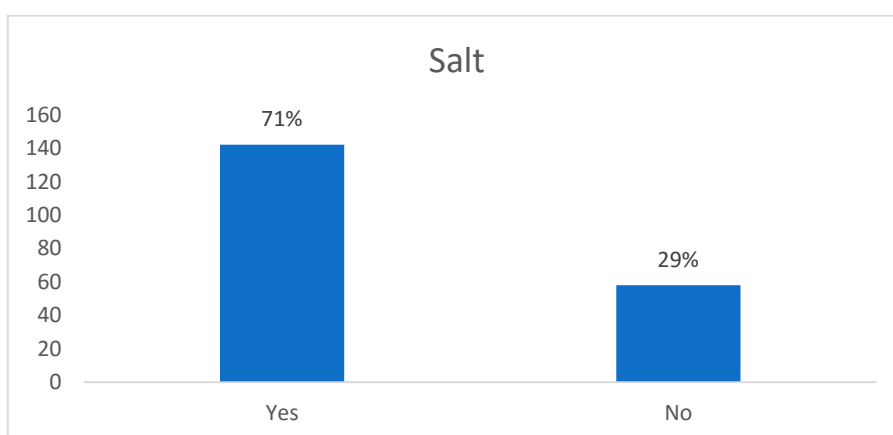


Figure 4.2.7: Graphical representation of salt intake

- In slum areas, raw salt was taken by 71 % responders and 29 % responders were not taken.

#### 4.2.8 Fast food intake

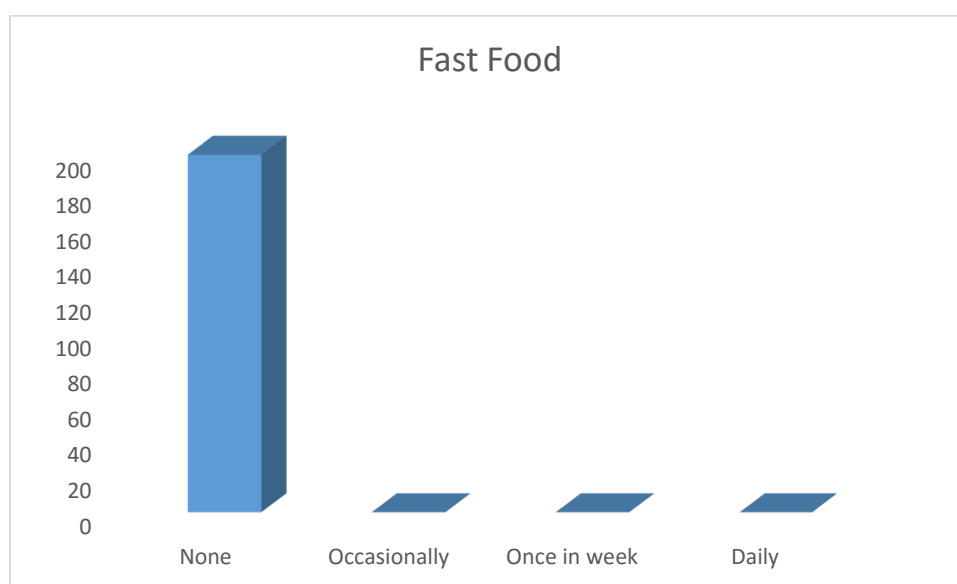


Figure 4.2.8: Graphical representation of fast food intake

- In slum areas, There were found no respondent who take fast food.

#### 4.2.9 Street food intake

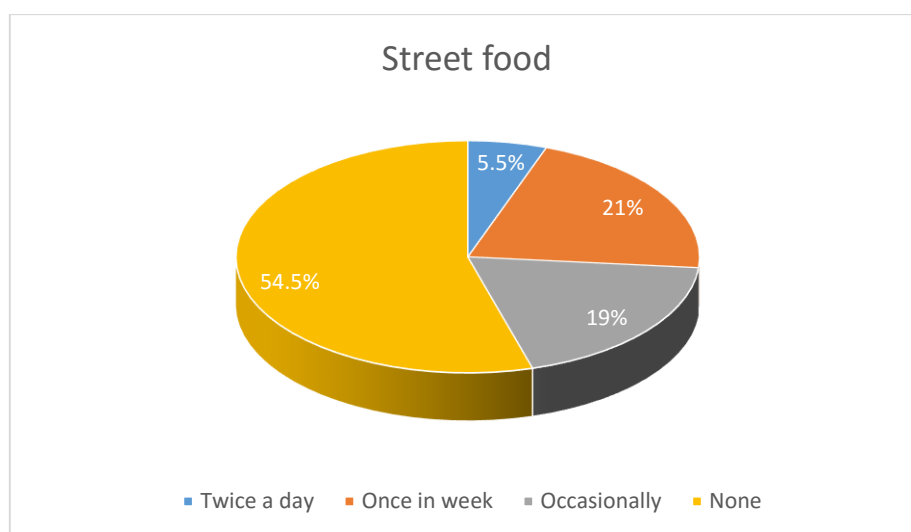


Figure 4.2.9: Graphical representation of street food intake

- In slum areas, There were found 5.5 % responders who take fast food twice a day, 19 % responders were found taking fast food occasionally, 21 % were found taking once in week and the rest of the respondents were found taking no street food which was about 54.5 %.

#### 4.2.10 Drinks consumption

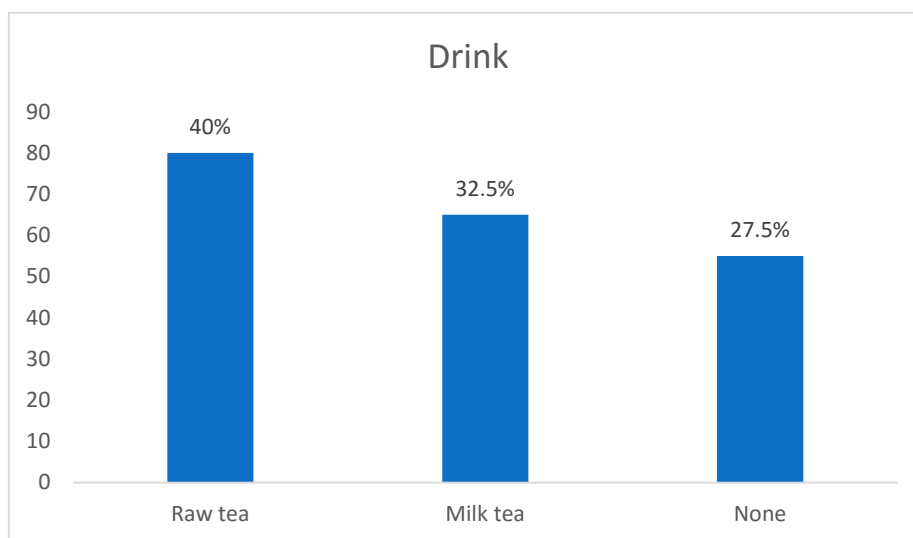


Figure 4.2.10: Graphical representation of drink consumption

- In slum areas, There were found about 40 % responders who take raw tea, 32.5 % were found taking milk tea and 27.5 % were found taking no drinks.

#### 4.2.11 Bad habits

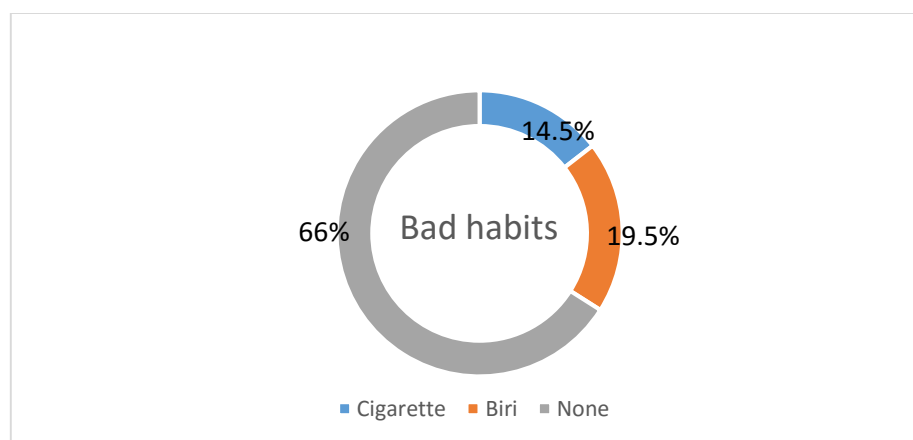


Figure 4.2.11: Graphical representation of bad habits

- In slum areas, There were found 19.5 % responders who take biri, 14.5 % were found taking cigarette and 66 % were found taking no such things.

### 4.3 Daily Activity

#### 4.3.1 Physical Exercise

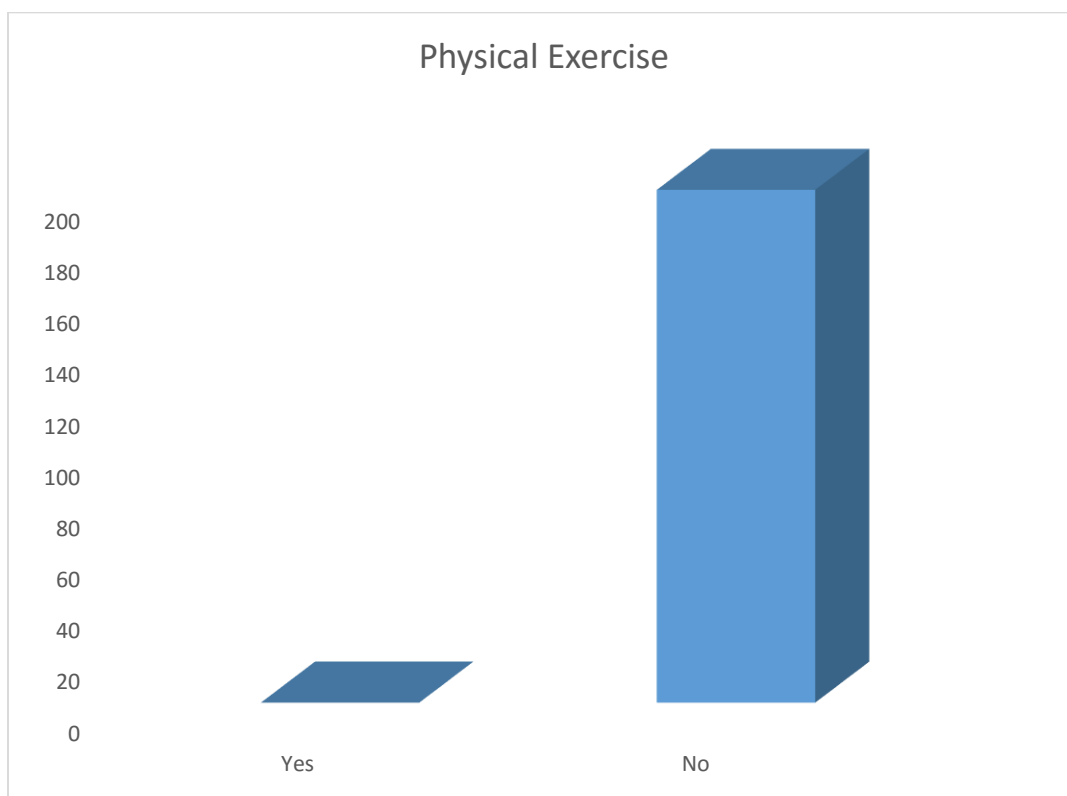


Figure 4.3.1: Graphical representation of physical exercise

- In slum areas, there were found no respondents who take physical exercise.

### 4.3.2 Sleeping period

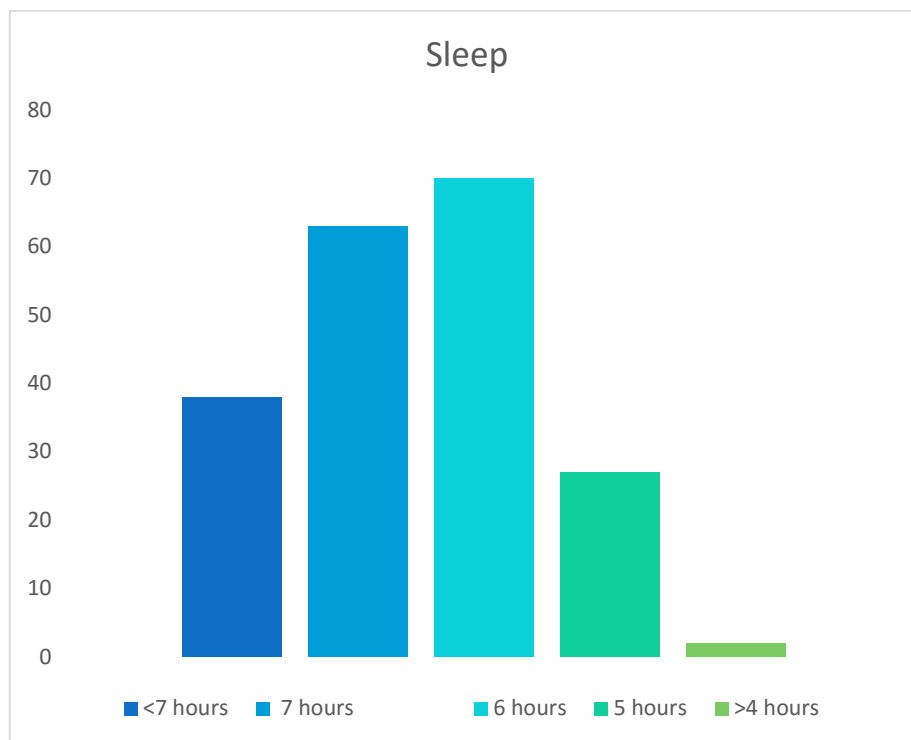


Figure 4.3.2 Graphical representation of sleeping period

- In slum areas, most responding sleeping hour was 6 hours, which was about 35 %
- For 7 hours, there were about 31.5 %
- For < 7 hours, there were about 19 % respondents.
- For 5 hours, there were about 13.5 % respondents.
- For >4 hours, there were about 1% responders in slum areas.

### 4.3.3 Working hours

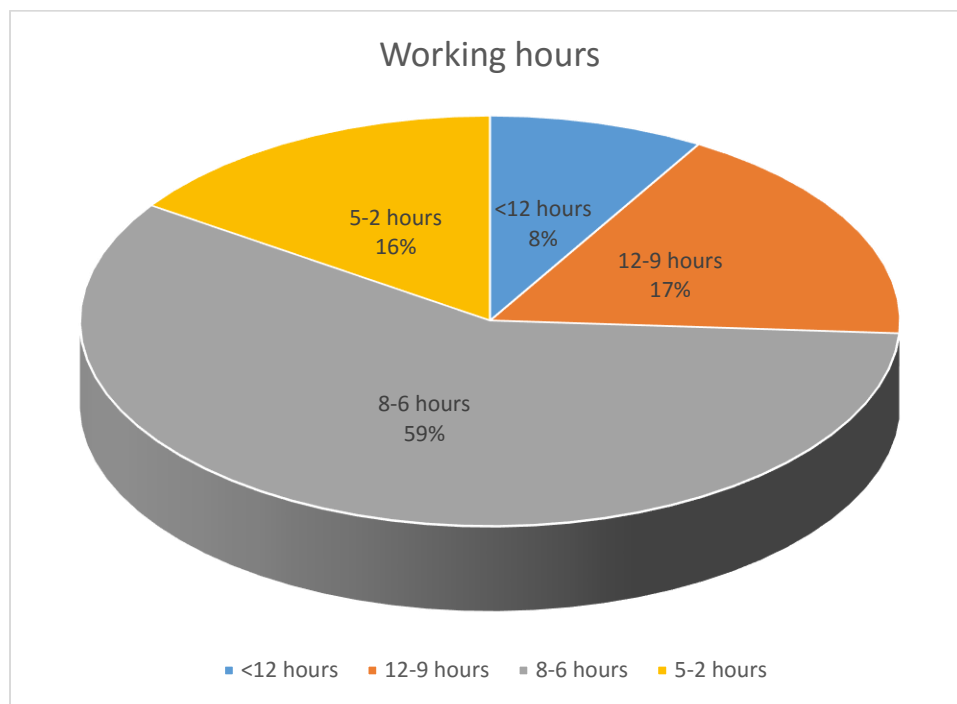


Figure 4.3.3: Graphical representation of working hours

- In slum areas, There were about 59 % responders who work 8-6 hours in a day, 17 % responders work 12-9 hours in a day, 16 % responders work 5-2 hours in a day and 8 % responders work <12 hours in a day.

#### 4.3.4 Free time activity

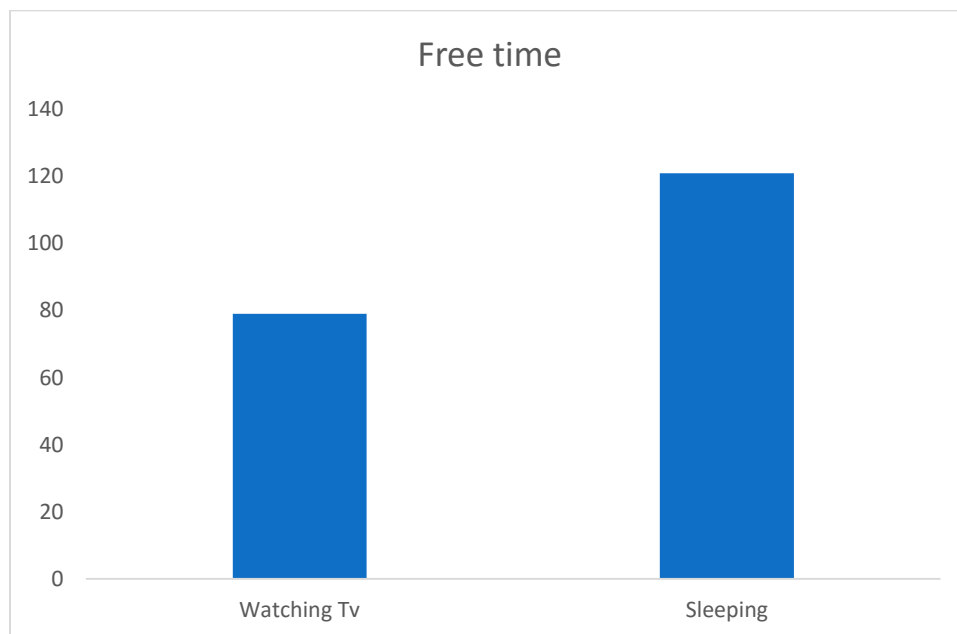


Figure 4.3.4: Graphical representation of free time activity

- In urban slum dwellers, 121% responders pass their free time by sleeping and 79 % responders pass their free time by watching tv.



#### 4.3.5 Participation in diet program

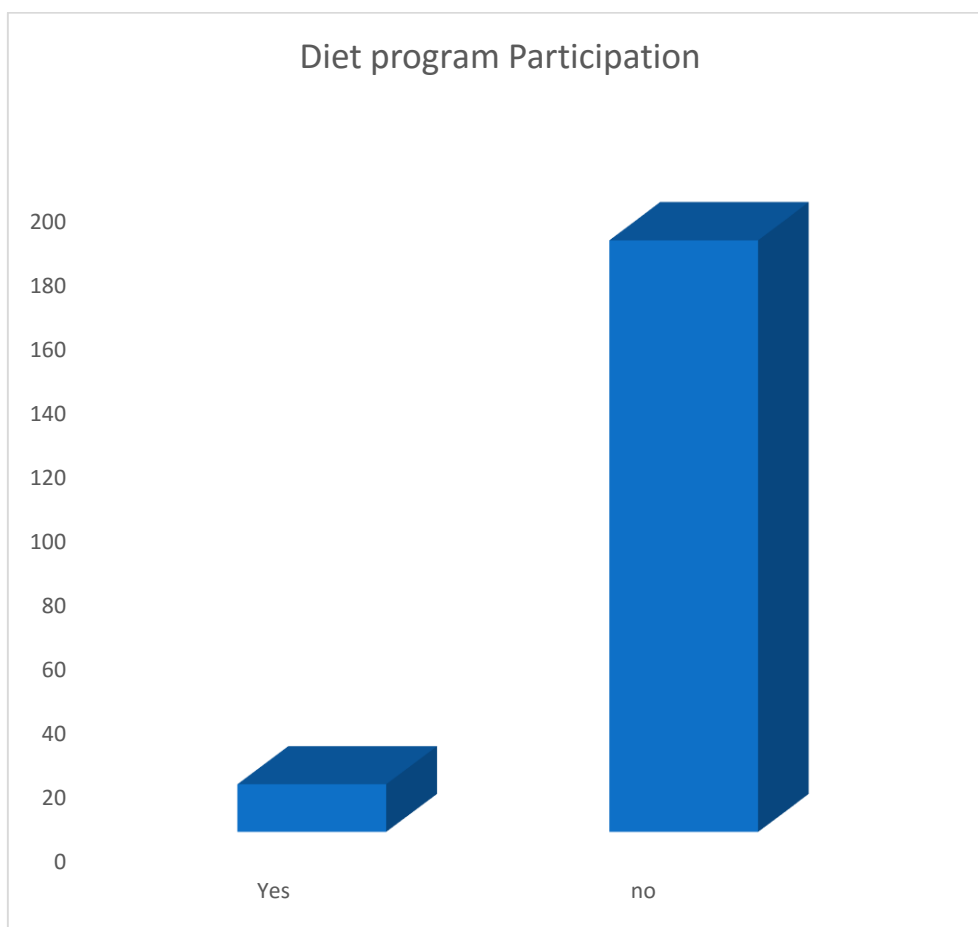


Figure 4.3.5: Graphical representation of participation in diet program

- In slum areas, Participation in diet program are yes for 7.5 % responders and no for 92.5 % responders.

#### 4.3.6 Duration of diet program participation

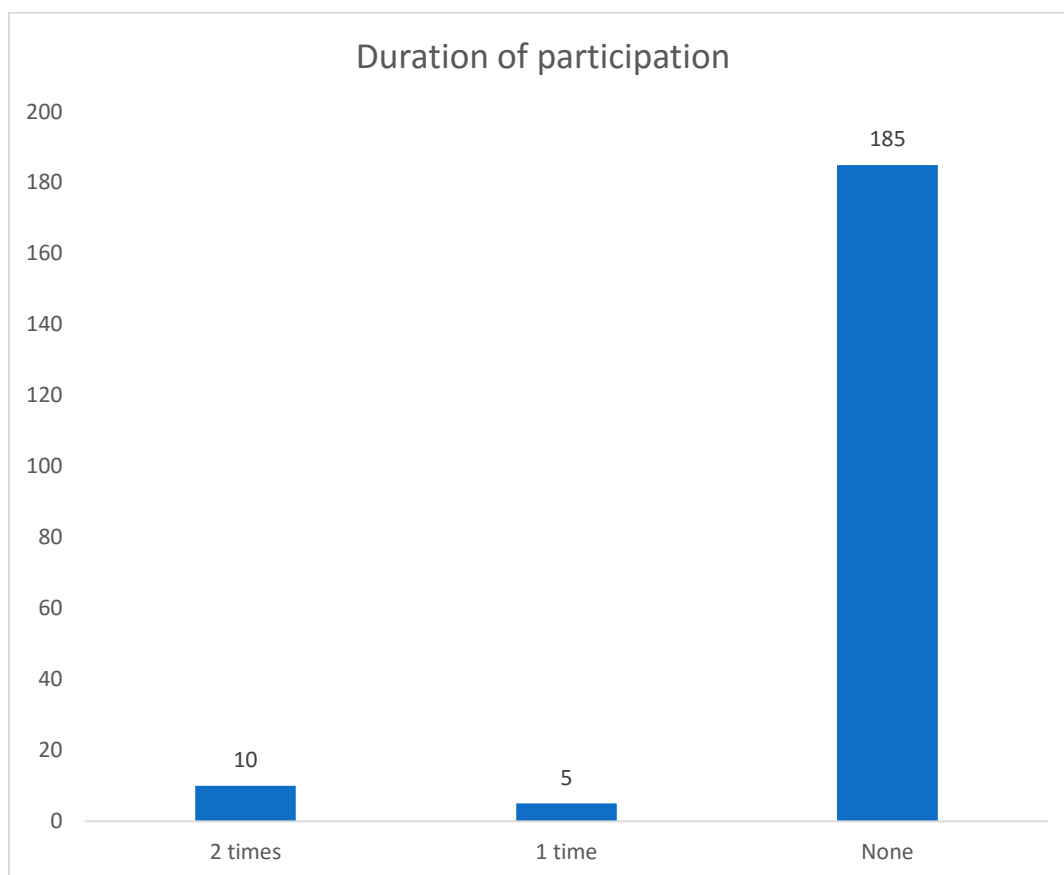


Figure 4.3.6 : Graphical representation of duration of participation in diet program

- In slum areas, 5 % of the responders are found who attain two times diet program, 2.5 % responders were found who attain one time diet program and 92.5 % responders were found who had never attain any diet program.

### 4.3.7 Reasons for participating in diet program

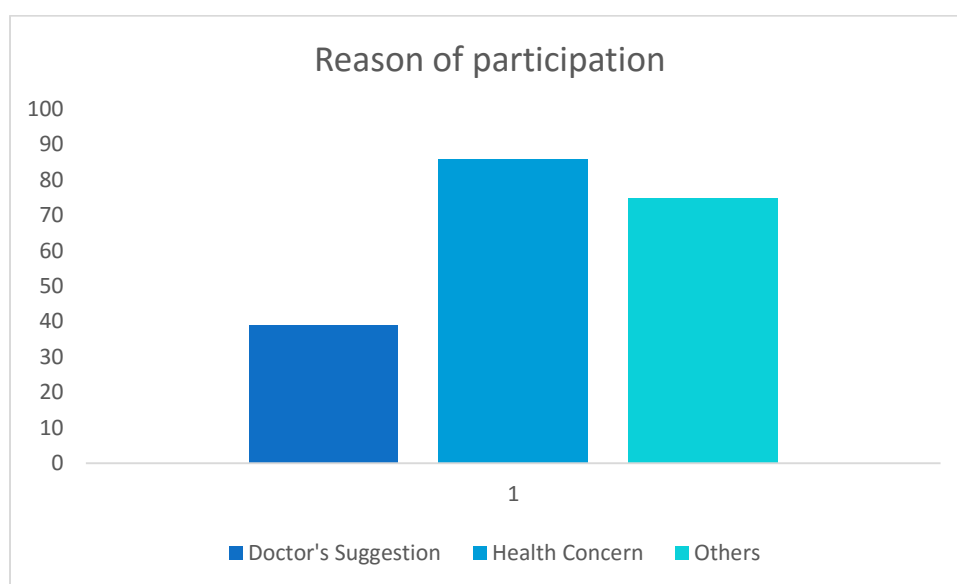


Figure 4.3.7 : Graphical representation of reasons of diet program

- People attended any diet program through doctor's suggestion were about 39 %, 86 % people attended diet program for their health concern and 75 % people were found attending diet program for other reasons.

## 4.4 Family Status

### 4.4.1 Family Size

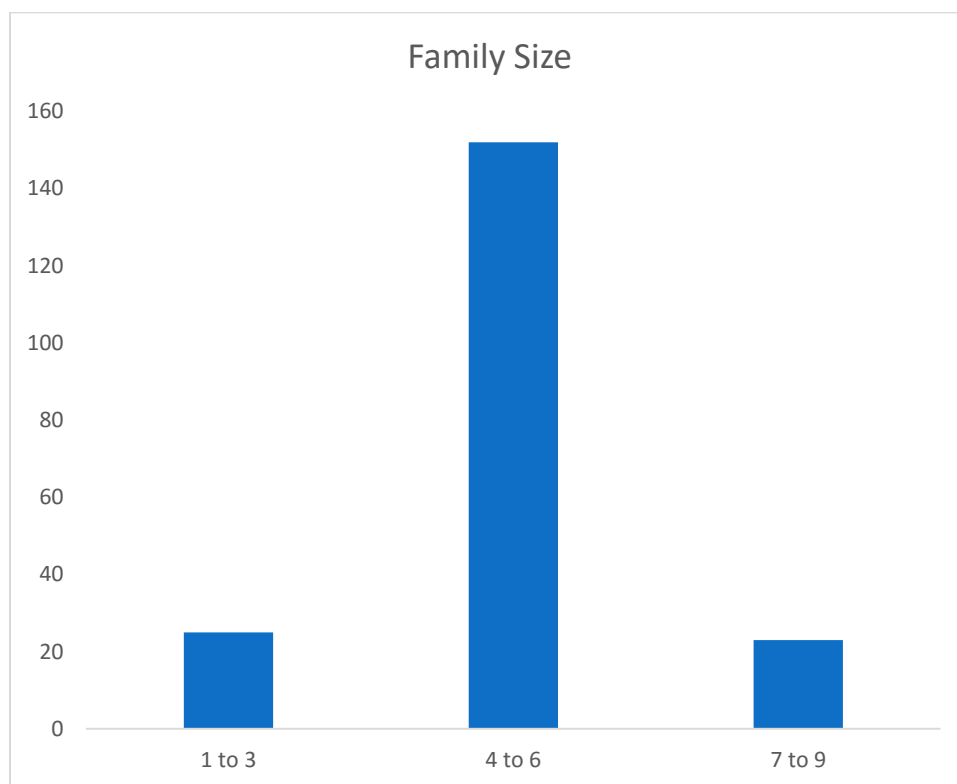


Figure 4.4.1: Graphical representaion of family size

- In slum areas, Most of the families consist of 4 to 6 members which is about 152%
- 25 % families consist of 1 to 3 members
- 23 % families consist of 7 to 9 members.

#### 4.4.2 Members live in per room

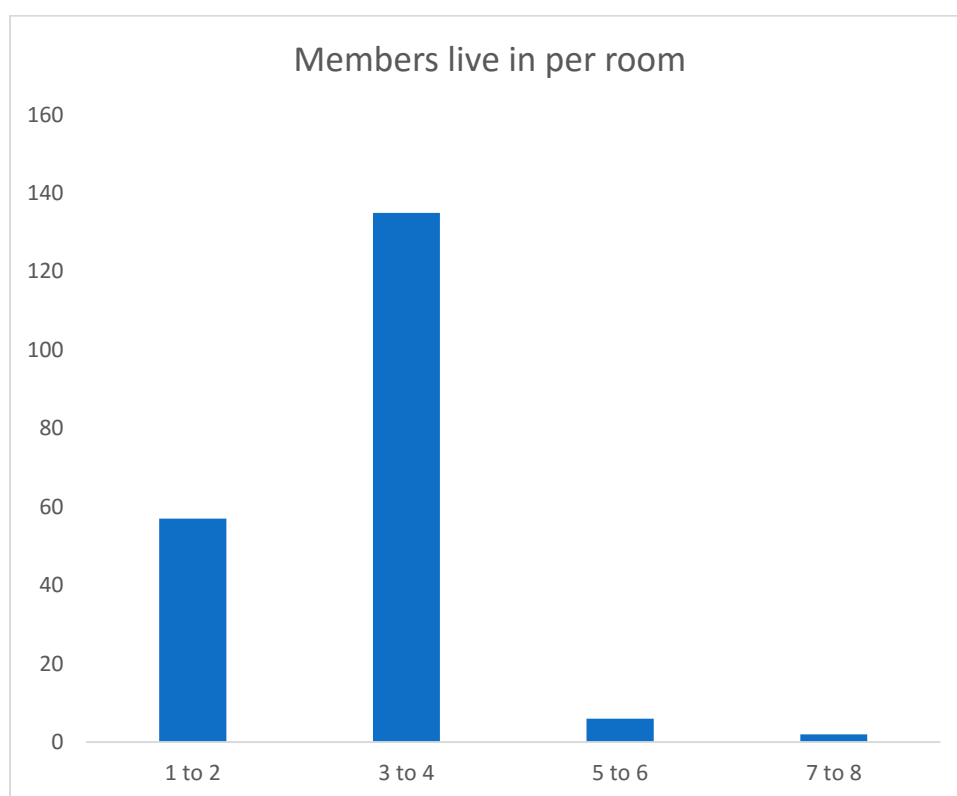


Figure 4.4.2: Graphical representation of members live in per room

- In slum areas, Most of the cases, 3 to 4 members live in per room which represents about 135 %.
- In 57 % families, 1 to 2 members live in per room.
- In case of 6 % families, 5 to 6 members live in per room.
- In 2 % families, 7 to 8 members live in per room.

## 4.5 Sanitations & Hygiene

### 4.5.1 Source of drinking water

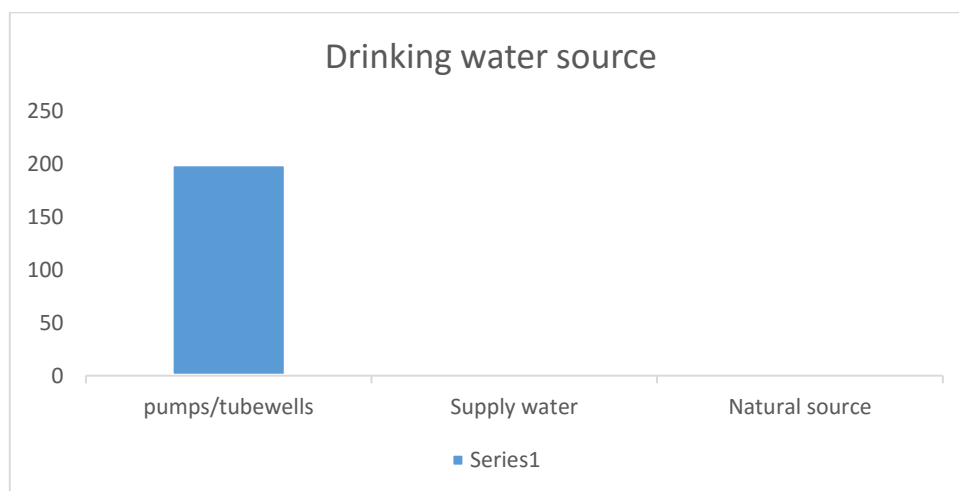


Figure 4.5.1: Graphical representation of sources of drinking water

- In slum areas, All the slum dwellers in different areas use tubewell as a source of their drinking water.

### 4.5.2 Treatment of drinking water

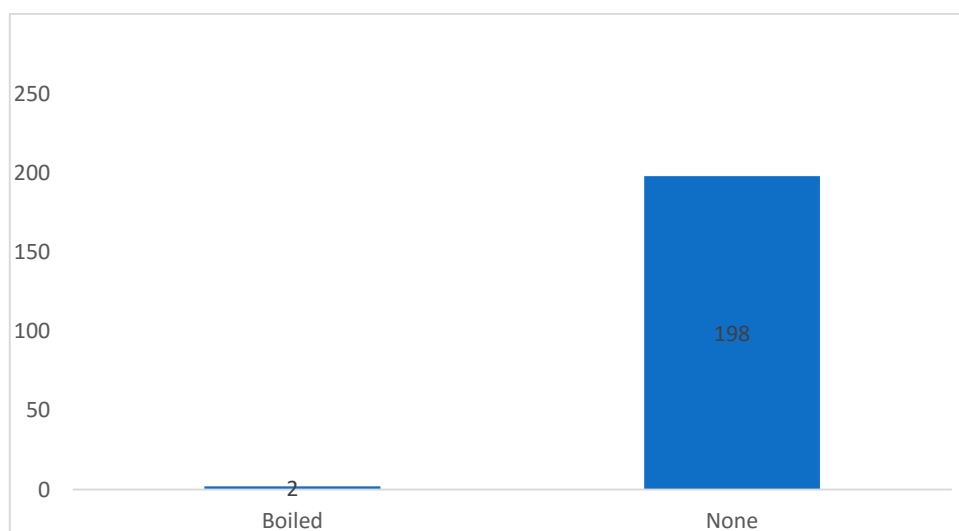


Figure 4.5.2: Graphical representation of treatment of drinking water

- In different slum areas, only 1 % responders treated their drinking water with boiling and about 99 % responders did not treat their water with anyway.

### 4.5.3 Source of water for other purposes

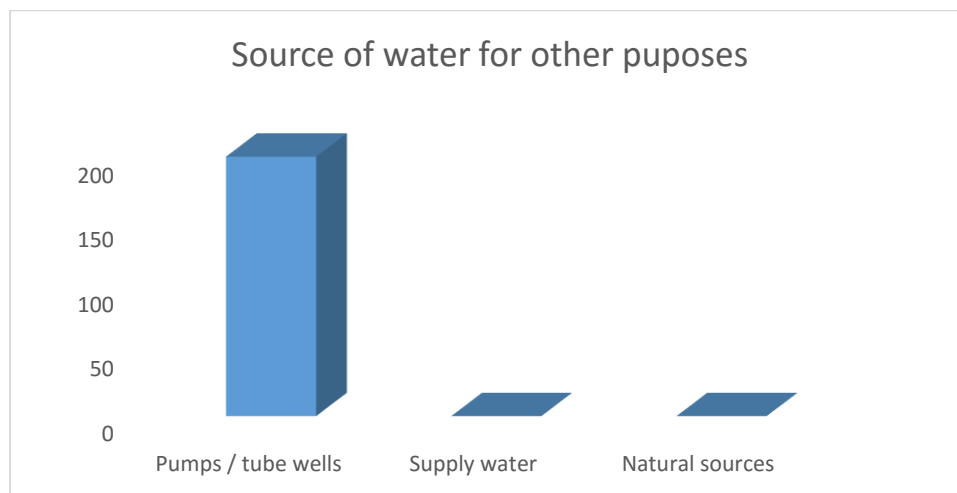


Figure 4.5.3: Graphical representation of source of water for other purpose

- In slum areas, All the slum dwellers used tubewell for all puposes.

### 4.5.4 Sanitation Types

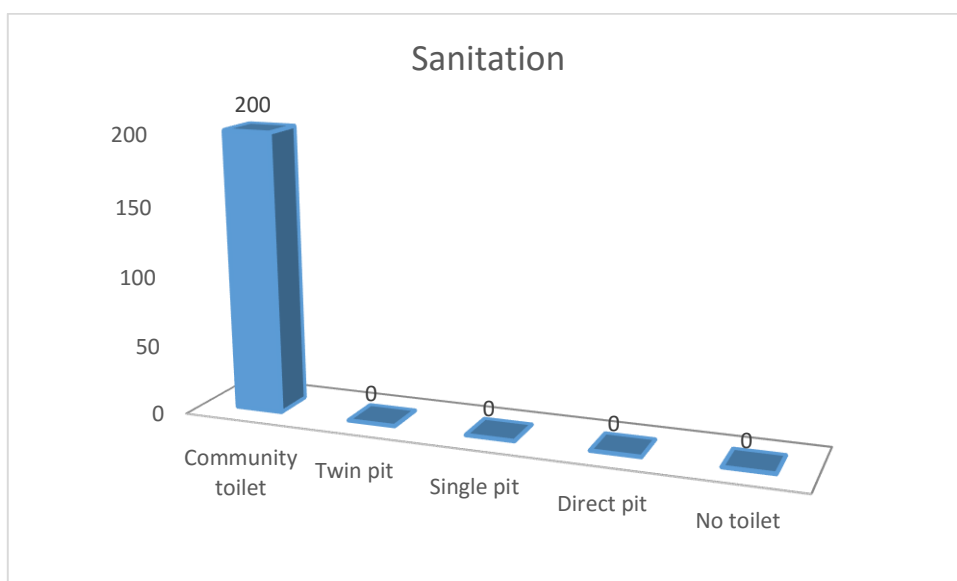


Figure 4.5.4:Graphical representation of sanitation types

- All the slum dwellers of different areas used community toilet for the purpose of sanitation.

#### 4.5.5 Washing hands before taking food & after using toilet

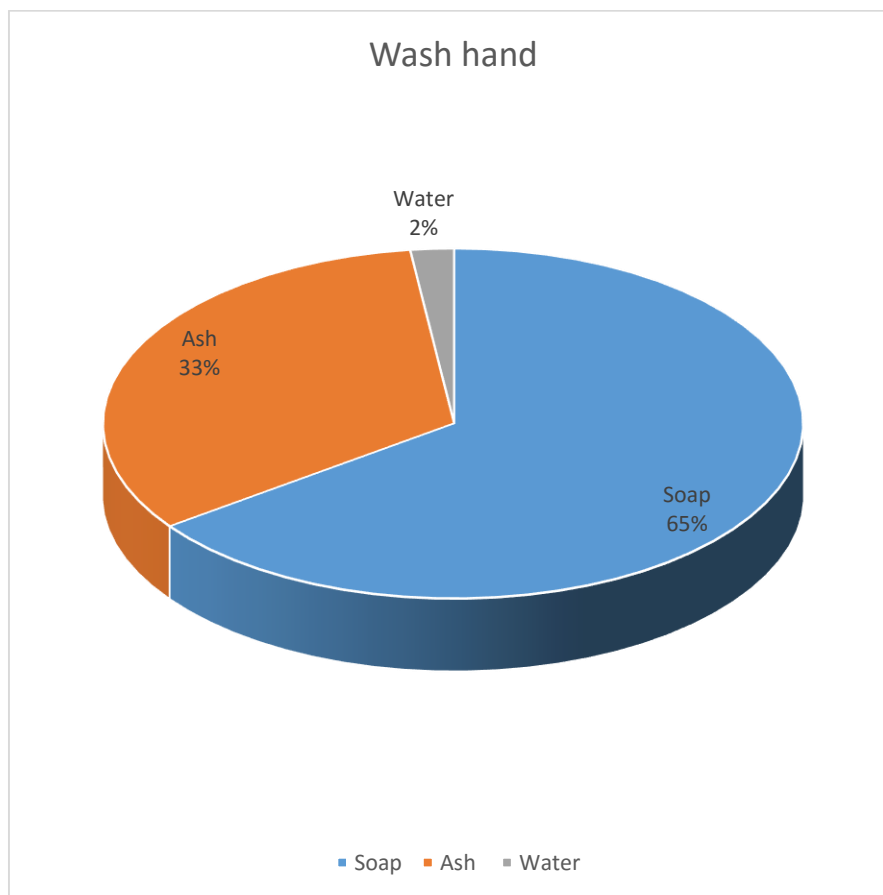


Figure 4.5.5: Graphical representation of washing hands before taking food & after using toilet

- In slum areas, 65 % of the responders used soap for washing their hands before taking food and after using toilet.
- 33 % responders used ash for washing their hands.
- 2 % responders used only water for washing purpose.



#### 4.5.6 Habit of cutting nails

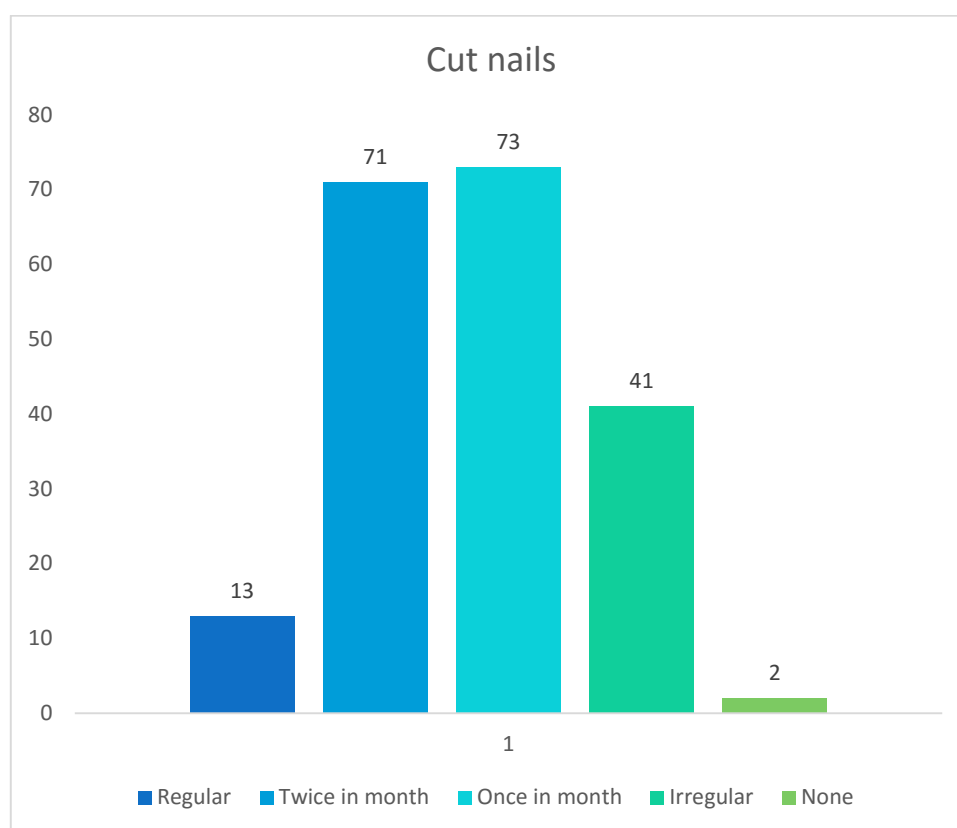


Figure 4.5.6: Graphical representation of cutting nails

- 36.5 % responders cut their nails once in month.
- 35.5 % responders cut their nails twice in month.
- 20.5 % responders were irregular in cutting their nails.
- 6.5 % people were regular in cutting their nails
- 2 % people didn't cut their nails.

#### 4.5.7 Habit of brushing teeth

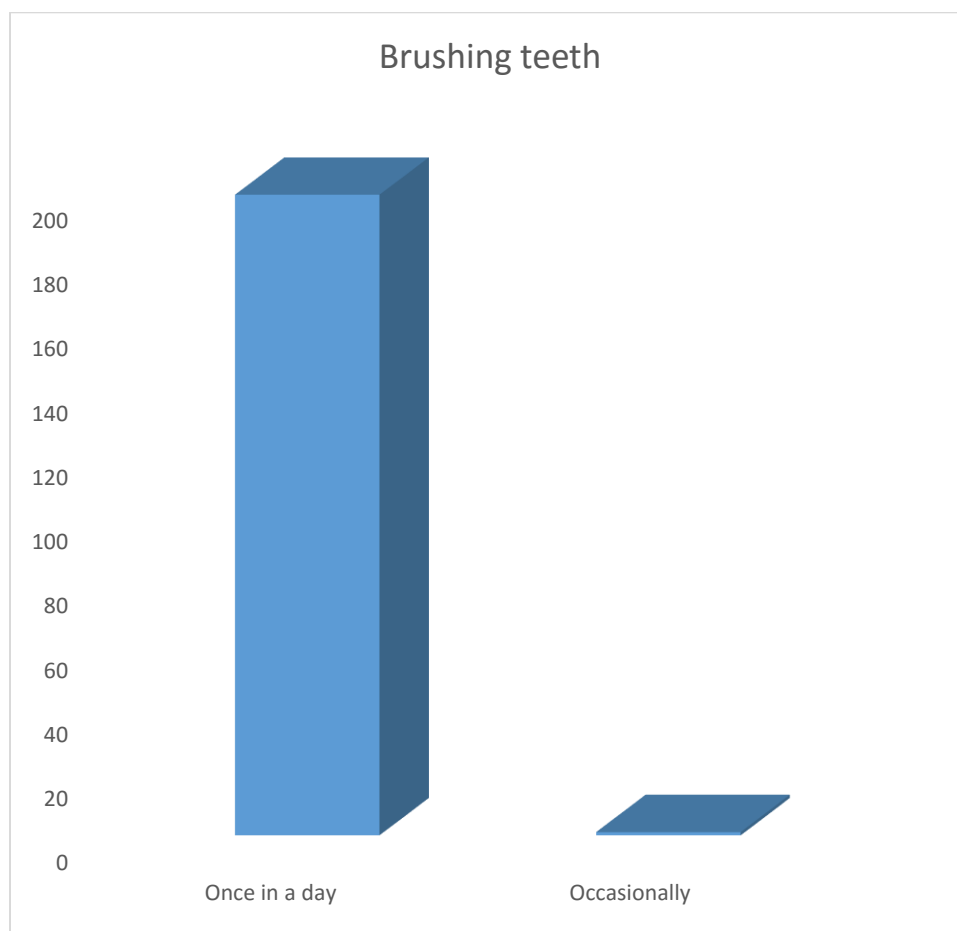


Figure 4.5.7: Graphical representation of brushing teeth

- In slum areas, 199 % responders brush their teeth once in a day and 1 % responders brush their teeth occasionally.

#### 4.5.8 Habit of taking bath

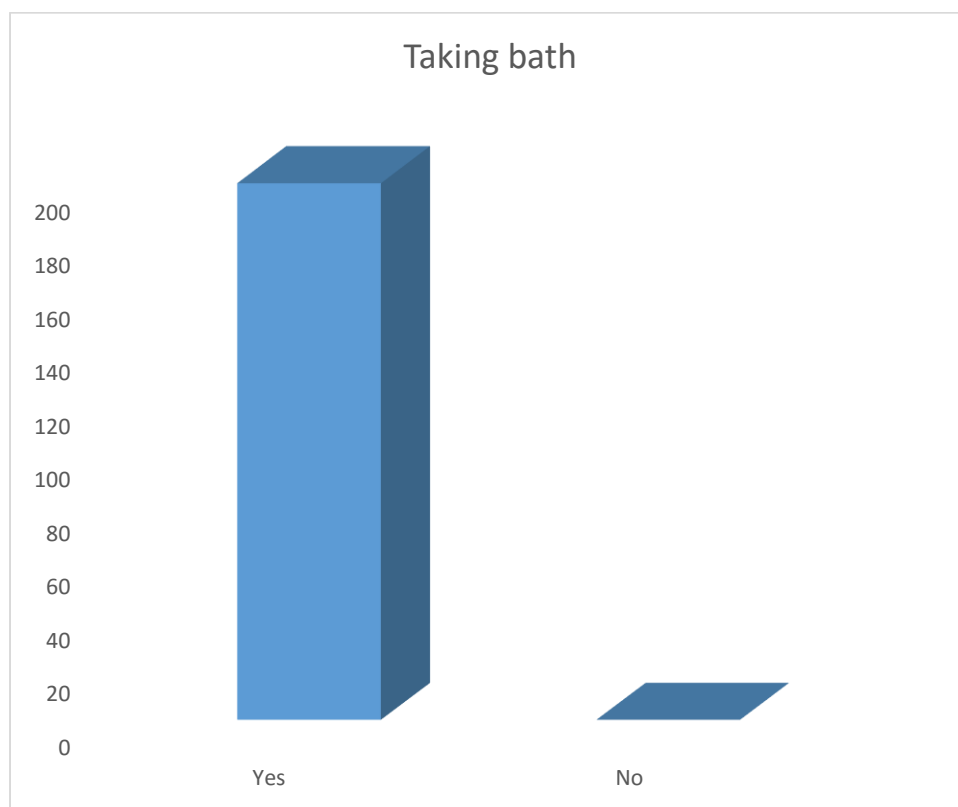


Figure 4.5.8: Graphical representation of taking bath

- In slum areas, all the responders take shower once in a day.

## 4.6 Diseases, Medication & Vaccination

### 4.6.1 Diseases occur in last year

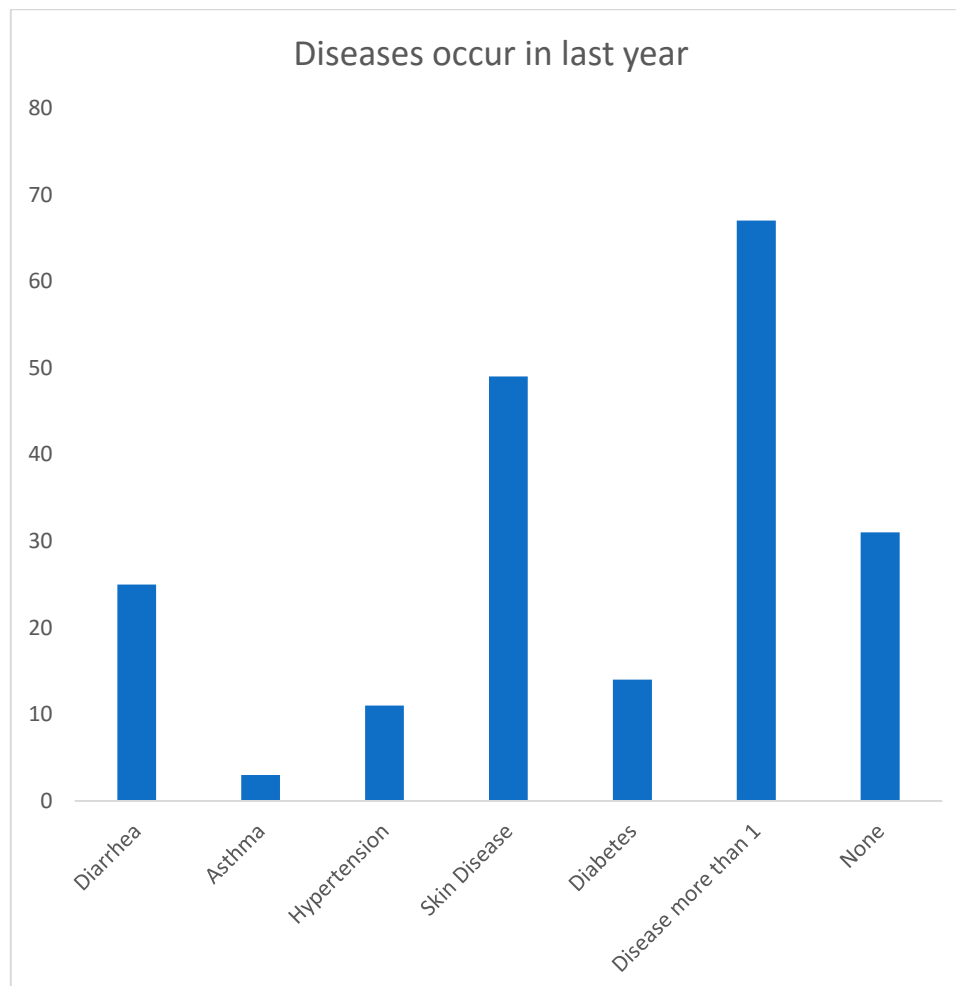


Figure 4.6.1 : Graphical representation of diseases occur in last year

- In slum areas, most prevalence disease was skin disease. About 49.0 % responders suffered from skin diseases in last year.
- 24.5% responders suffered from diarrhea in last year.
- 12.5 % responders suffered from diabetes whereas 5.5 % responders suffered from hypertension whereas 1.5% responders suffered from asthma.
- About 33.5 % responders suffered from more than one disease in last year.
- And 15.5 % responders didn't face any diseases in last year.

#### 4.6.2. Action was taken against diseases

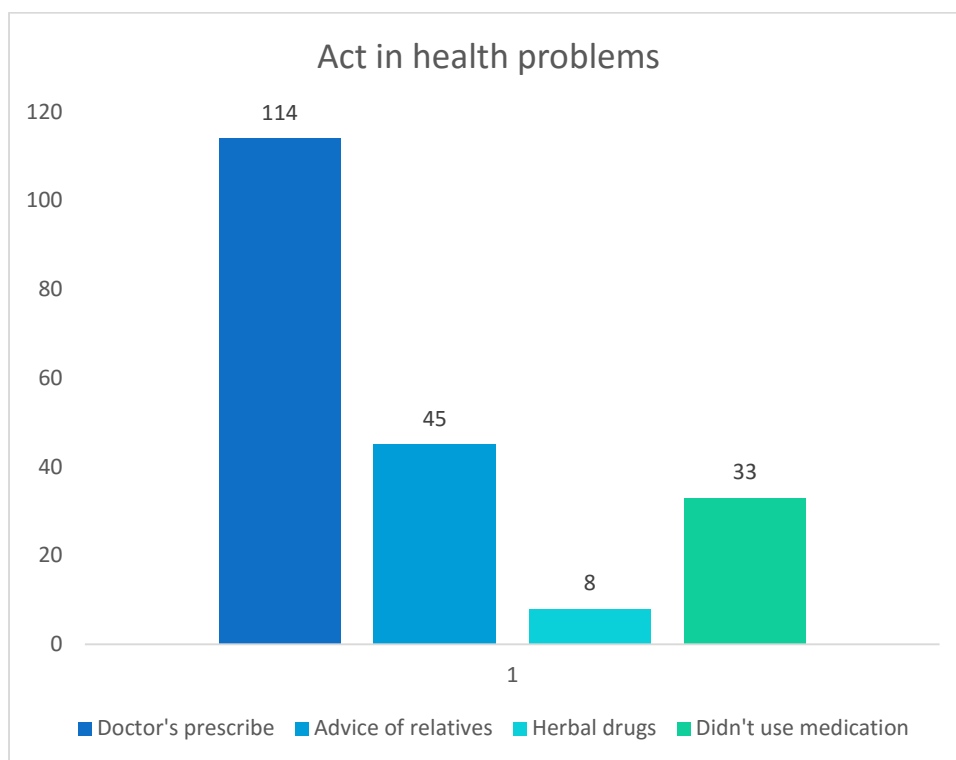


Figure 4.6.2: Graphical Representation of Action against Diseases

- 57 % responders asked for professional help to take action against any diseases.
- 22.5 % responders were asked advice from their relatives to take action against any diseases.
- 4 % responders used herbal drugs against their diseases.
- 16.5 % responders didn't take any medication against any diseases.

### 4.6.3. Reasons for professional help seeking

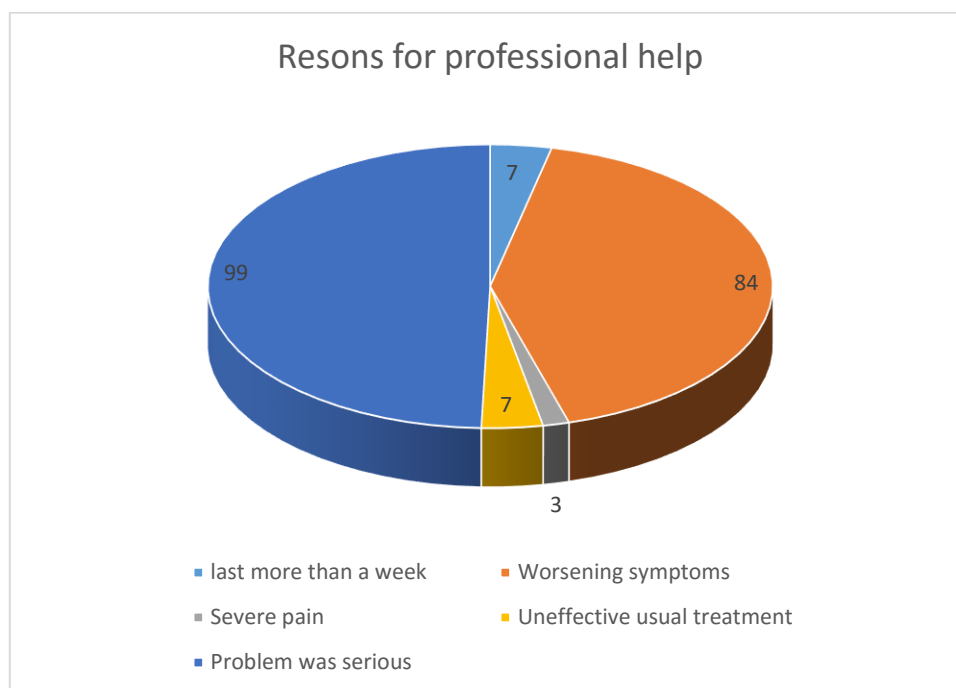


Figure 4.6.3: Graphical representation of reasons of professional help seeking

- Among slum dwellers, 49.5 % responders were seeking professional help when problem became serious.
- 42 % responders were seeking professional help when they faced worsening symptoms.
- 3.5 % responders preferred for professional help when they suffered from more than a week or as well as because of ineffective treatment.
- 1.5 % responders were seeking professional help in the presence of severe pain.

#### 4.6.4. Vaccination for Different Diseases

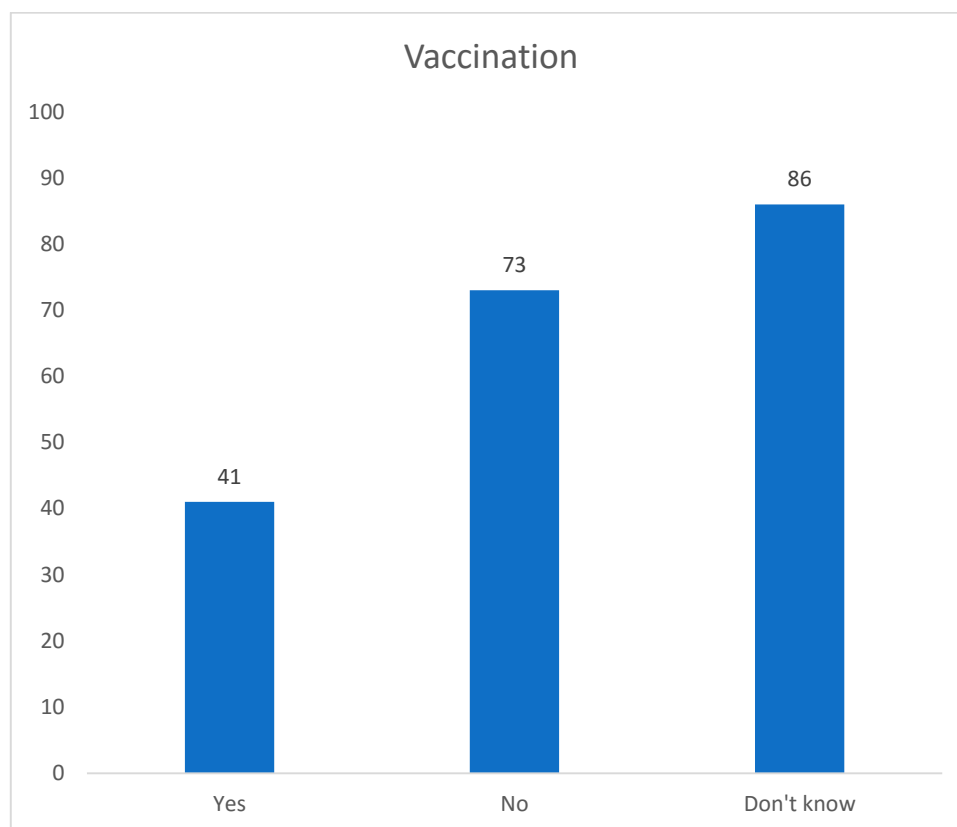


Figure 4.6.4: Graphical Representation of Vaccination for Diseases

- Among different slum areas, 36.5 % responders didn't take any vaccine and 43 % responders didn't have any knowledge about their vaccination.
- 20.5 % responders had claimed that they had taken vaccine but they don't have any idea about them or they don't know the name of vaccine.

## Discussions

In developing countries like Bangladesh health is a great concern for peoples living under poverty line. Lifestyle of the slum dwellers in cities is very unhygienic. So their pattern of diseases is different from other non slum dwellers. In our study we have found that most of the slum dwellers (about 100 %) usually drink water without any proper treatment as well as they use tubewell water for other puposes also such as for bathing, washing cloths etc. So they suffer from several skin diseases in most of the cases ( about 24.5%) as well as suffer from diarrhea (12.5 %). They face more than one diseases in every last year because of their unhealthy sanitation practice. In our study we have also found that slum dwellers intake a higher amount of raw salt in their meal as a result it increses their blood pressure. And they in most of the cases also suffer from hypertension (5.5 %). Slum peoples are mainly affected by diarrhea, hypertension and skin diseases, asthma etc. All this diseases are strongly related to their lifestyle and living conditions. Asthma (1.5 %) occurs in many people due to smoking habits. Most of the slum dwellers are chain smoker. Biri (19.5 %) and cigarettes (14.5%) are the most common tobaccos in rural areas. Diarrhea is one of the most common diseases among the rural people as a lot of people use water of natural sources for drinking and other purposes. Also in most case rural people don't treat drinking waters (99 %). So this causes severe gastrointestinal problems like diarrhea. Also the habit of washing hands before taking food and after using toilet properly is less common in slum dwellers. This habit also causes a lot of health risks like diarrhea, worms and skin diseases. A significant number (20.5 %) of slum dwellers don't cut their nails regularly. Eating street food also can be responsible for diarrhea as it is made in very unhygienic condition. Slum people take too much street food, this habit may also be responsible for sufferinf from several diseases.

In our study we have found that a significant number of slum dwellers (36.5%) didn't take any vaccination and another significant number (43%) do not know whether they vaccinated or not.



**Chapter: 5**

**Conclusion**

## **5. Conclusion**

In our study in the lifestyle of the slum dwellers it is evident that disease states of the inhabitants are strongly affected by lifestyle. Smoking habits, sanitation type, water treatment systems largely related to asthma, diarrhea and skin diseases. This kind of disease are very common in peoples living in different slums. Our study found these very basic causes of health hazards which can be easily minimized by creating awareness among the peoples. People have practice of self-medication instead of seeking professional help. Professionals can suggest about a hygienic living condition and life style. In this context both government and non-government organization should work to develop the current situation by providing necessary awareness programs in both the rural and urban areas of Bangladesh.

**Chapter: 6**

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## Annexure

### Life Style of Slum Dwellers

#### Part 1

Please put a tick (✓) where applicable

Age: \_\_\_\_\_ Years, Gender: Male / Female, Occupation: \_\_\_\_\_, Living area: \_\_\_\_\_,

Education Level: Primary/ Up to SSC/ College & University/ Illiterate, Occupation:

Businessman/Serviceholder/Teacher/Others/Rickshaw puller/Street hawker, Marrital Status:

Married/ Unmarried/ Divorced/ Widow, Monthly Family Income: \_\_\_\_\_,

Blood Pressure: \_\_\_\_\_

#### Part 2

**Q1. How often do you take rice?**

- a. Trice a day      b. Twice a day      c. Once a day      d. None

**Q2. How often do you take bread?**

- a. Trice a day    b. Twice a day    c. Once a day    d. Occasionally in week    e. None

**Q3. How often do you vegetables?**

- a. Trice a day    b. Twice a day    c. Once a day    d. Occasionally in week    e. None

**Q4. How many times do you take meat in your meal?**

- a. Trice a day    b. Twice a day    c. Once a day    d. Occasionally in week    e. None

**Q5. How often you take fish in your meal?**

- a. Trice a day    b. Twice a day    c. Once a day    d. Occasionally in week    e. None



- a. > 12      b. 12 - 9      c. 8 - 6      d. 5 - 2      e. < 2

**Q15. What do you do in your free time? ( If 'b / c / d', than how many hours do you spend on it?)**

- a. Sports   b. Watching TV   c. Computer   d. Mobile browsing   e. Sleeping

( half hour / 1 hour / 2hours / 3 hours / 4 hours )

**Q16. Have you ever participate in any diet program?**

- a. Yes                      b. No

**Q17. How many times do you participate in diet program?**

- a. 4              b. 3              c. 2              d. 1              e. None

**Q18. Why do you participate in diet program?**

- a. To lose weight   b. Doctor's suggestion   c. Health Concern   d. Others

#### **Part 4**

**Q19. Family size: \_\_\_\_\_ members.**

**Q20. Members live in per room: \_\_\_\_\_ members.**

**Q21. What is the source of your drinking water?**

- a. Pumps / Tube wells   b. Supply Water                      c. Natural Source & Others

**Q22. How do you treat your drinking water?**

- a. Boiled      b. Filtration      c. Filtration after boiling      d, None



**Q23. What is the source of water which used for other purpose than drinking?**

- a. Pumps / Tube wells   b. Supply Water   c. Natural Source & Others

**Q24. What kind of sanitation do you use?**

- a. Community toilet   b. Twine pit   c. Single pit   e. Direct pit   e. No toilet

**Q25. Do you wash your hands before taking food & after using toilet? (If 'Yes', then give tick mark on what you use to wash)**

- a. Yes   b. No

(Soap / Ash / Soil / Water)

**Q26. How often do you cut your nails?**

- a. Regular   b. Twice in month   c. Once in month   d. Irregular   e. None

**Q27. Do you brush your teeth properly? (If 'Yes', then give tick on how many times)**

- a. Yes   b. No

(Once in day / Twice in day / every time after eating / occasionally)

**Q28. Do you take bath properly? (If 'Yes', then give tick on how many times)**

- a. Yes   b. No

(Once in day / Twice in day / Alternate day / Once in week / Occasionally)

## Part 5

**Q29. Did you suffer from any of the following diseases last one year (If ‘Yes’ then give a tick mark on the diseases)?**

- a. Yes                      b. No

(Diarrhea / Obesity / Asthma / Hypertension / Arthritis / Insomnia/ Skin Disease/  
Diabetes)

**Q30: In the past year, how did you act in case of the following health problems:**

**(Diarrhea / Obesity / Asthma / Hypertension / Arthritis / Insomnia/ Skin Disease/  
Diabetes)**

- a. I used medication according to the advice that the doctor had given me in the past when I had such symptoms
- b. I used medicine by myself or by advice of my relatives
- c. Friends and media
- d. I used herbal drugs
- e. I didn't use any medications

**Q31: In the past year, what were the reasons for seeking professional help?**

- a. Symptoms last for more than a week
- b. Symptoms were worsening
- c. Presence of severe pain
- d. Usual treatment was not effective
- e. Side effects
- f. When you think that problems were serious
- g. In case of mental problems

**Q32. Are you vaccinated for any diseases? (If ‘Yes’, than for which diseases you take the vaccine?)**

- a. Yes                      b. No                      c. I don't know

(Tetanus / Polio / Hepatitis A / Hepatitis B / Diphtheria / Rotavirus / Influenza / Pneumococcal / Rubella / Chickenpox)