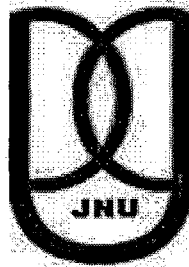


**MORBIDITY IN UTTAR PRADESH-ITS LEVELS, PATTERNS AND
DETERMINANTS: A REGIONAL ANALYSIS**

Dissertation submitted to Jawaharlal Nehru University
In partial fulfillment of the requirements
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MASTER OF PHILOSOPHY

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DEDICATED
TO
MY BELOVED DAD

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Chapter I

Introduction

Chapter I

Introduction

1.1 Introduction

The enjoyment of the highest attainable standard of health is one of the most fundamental rights of every human being without distinction of race, religion, and political belief, economic or social condition.

(Preamble of the constitution of the World Health Organisation)

The most ambitious definition of health is that proposed by W.H.O in 1948, "health is the state of complete physical, mental, and social well being and not merely the absence of disease or infirmity".

Good health is the fore most need and desire of the mankind. All the developmental activities are cantered on achieving healthy living that in turn would contribute towards promotion of a healthy society, in keeping in line with this need the article 47 of the directive principal of the state policy of the constitution of India directs the state to raise the level of the nutrition and standard of living as also improve the public health. Accordingly the state government are primarily responsible to ensure formulation and enforcement of measure for raising the standard of living of its people (Constitution of India).

Health care is one of the three basic facilities a human being requires the other being education and old age protection with a most important difference that health care is needed at certain stages of the life. Every human being born in this world has a legitimate desire to live in the healthy world and to raise healthy children. In this regard everyone is in the need of health protection throughout lives from birth to till

death, at one time or the other. Therefore health has always been considered a basic human right throughout the world.

Health for all by the year 2000 AD was a national goal set by the Indian policy makers over 20 years ago in Alam Ata. Since then a lot of planning, effort and public expenditure has been devoted to improve the human health both in rural and urban parts of India. The spread and accessibility of modern medicine has also improved substantially across the country.

There has been a remarkable improvement in raising the level of living of population in India over the past few decades. The achievements are clearly reflected by several social indicators like rise in literacy, per capita income and reduction in mortality especially in child and infant mortality. India achieved remarkable improvement in food production due to this achievement; significant per capita food availability has increased. The rise in the level of food availability has enhanced the nutrition level of the people, which lead to low mortality especially in vulnerable groups. So many health indicators like infant mortality rate, child mortality rate, life expectancy, maternal mortality rate show continuous improvement (India Development Report).

After the improvement in health status, the focus is shifting from mortality to morbidity. The main reason behind is that, better health conditions in terms of mortality and life expectancy do not show the whole picture of the population health. The simple example of this is Kerala in India, where Mortality is found very low but the reporting of morbidity is found very high, even highest in all states of India. Therefore morbidity is increasingly considered as a significant indicator of human well being and attracting the focus of social scientist (Kumar B.G).

However there are no reliable and comparable estimates of morbidity over a period of time found in India. There is no specific survey conducted which present the morbidity situation of India. Some survey organizations collected the morbidity data as a part of their survey, like NFHS (National Family Health survey), RCH

(Reproductive and Child Health) and NSSO (National Sample Survey Organisation), NCAER (National Council of Applied Economic Research) etc.

1.2 Issues on the Measurement of Morbidity

Morbidity is a state of ill health or sickness. There is considerable disagreement among researchers on how to define and measure morbidity since it is highly subjective and based on perception and reporting. The concept 'morbidity' has more than one meaning and it is complex, multidimensional and difficult to define and measure because it has strong cultural character which permits their meaning to change over time and space (Johansson).

The 'Cultural Conditioning' hypothesis proposed by Johansson emphasises that what is regarded as 'Good Health' could vary systematically across the society; individuals from more educated, wealthy and socially advanced groups are highly sensitive to the limitation imposed by their health status and reporting of morbidity rate could be higher for these groups of people. Hence the morbidity measures based on self reported morbidity may not provide appropriate estimates for policy purpose. A more objective way of measuring morbidity is through clinical diagnosis of the illness (Johansson).

1.3 Social model of Morbidity

The medical model of illness tends to focus on finding the fault of illness within the individual. Once detected, the assumption is that it can be treated and the individual will return to a normal state. Our present health care system is curative rather than preventive. The social model was put into action early in the 19th century, when improved sanitation was a main social policy. McKeown (1976) argues that the main reason for decline in infectious diseases in the late 19th and 20th century was not

the medical response to the problem but the social response, particularly improved sewage disposal and the supply of cleaner water to homes. In short the social model of illness focuses on living standard as the key to improving health and living standard can improve through education as well as improving the material quality of health.

1.4 Determinants of Morbidity

Health is multifactorial. The factors which influence health lie both within the individual and externally in the society in which he or she lives. It is truism to say that what man is and to what disease he may fall victim depends on a combination of two sets of factors his genetic and the environmental factors to which he is exposed. Those factors interact and those interact may be health promotions or deleterious. Thus conceptually, the health of individuals and whole community may be considered to be the result of many interactions (K. Park).

1.5 Approaches of the determinant of Morbidity

Over the 50 years, there have been important shifts in the manner in which the determinants of health can be identified

- (i) Biomedical approach
- (ii) The lifestyle approach
- (iii) Socio-economic approach
- (iv) Population health approach

The biomedical approach emerged towards the end of the nineteenth century based on bacteriological discoveries. The paradigm is still dominant. It is based on the strength of the molecular and genetic sciences and main objective of this approach is search for cause of specific diseases in individuals and their constituent parts. Due to its etiological approach, this approach is not suitable for our study.

The life style paradigm asserted that the positive health was not attainable for the majority of population through concentration of public health funds on personnel services. This approach emphasises on the role of individual's life style in determining health status.

Socio-economic paradigm emphasized the role of factors outside the health care sector and in particular the social and economic determinants of health. This view did not get wide spread acceptance outside of public health and health promotion community but in developing countries this approach is widely accepted due their broad social and economic inequalities. In our study this approach is applied.

Population health approach opposed individual health status, this approach suggest that health in human society is powerfully influenced by the wealth generating capacity of a nation and the manner in which this wealth is distributed. This model accepted that the major determinants of health status are cultural, social and economic factors as both individual and population levels and these factors are independent of medical care input at the population level.

1.6 Morbidity Condition in India

This heading provides the important findings of the NSSO 60th Round Survey on 'Morbidity and Health Care'. Morbidity prevalence is measured as the number of persons reporting ailment during 15 day period per 1000 persons. It is termed as Proportion of Ailing Persons (PAP). Result revealed that a difference of one percentage point in the PAP between rural and urban areas. The rate differed between the male and female population by one percentage point in urban India.

Morbidity are found to be higher for children and much higher for the older age groups, the lowest being the PAPs for the youth (age 15-29 years). While 12 to 15 percent of persons in age group 45-59 reported ailments, the proportion was as high as 28 and 37 percent for the aged persons in rural and urban areas, respectively. The rural-urban differentials are also significant among the aged. The comparison of the

survey estimates of morbidity rates, with those of the previous NSS Round (52nd Round 1995-96) shows that the PAP has increased by 3 and 4 percentage points in the rural and urban areas, respectively. The increase in PAP over time is probably due to increased health consciousness over time and consequently, improvement in the self reporting of ailment by the informants (NSSO Report No-507).

1.7 Objectives

The broad objectives of this study are:

- To assess the levels of morbidity prevailing in different regions of Uttar Pradesh by different socio-economic and demographic groups.
- To determine the pattern of diseases for those persons ailed during the reference period in each region of Uttar Pradesh.
- To examine the impact of socio-economic and demographic factors on morbidity in different region of Uttar Pradesh.

1.8 Hypotheses

There are several hypotheses which have been formulated based on the literature review, showing relationship between socio-economic and household conditions with morbidity. These hypotheses are given below:

- There is negative relation between morbidity and education, household size and standard of living.
- People belonging to lower social strata will show higher morbidity in comparison to those belonging to higher social strata in terms of caste, ethnicity or religion.
- Morbidity prevalence would be higher in rural areas than in urban areas.

1.9 Data Source

In general, morbidity studies rely on two types of data, namely general household or health surveys and statistics gives utilization of health services obtained from hospitals, health institutions or health insurance records. In a developing country like India, the utilization information is incomplete since not all people seek medical services in the vent of illness. Moreover, the medical services are provided by the public and private institutions and the illness records particular treated in private institutions are difficult to obtain. Hence morbidity estimates are mostly based on household/community survey data. Morbidity questions in a health survey can be framed in many ways. The important point is to generate information which can be compared over space and time. Moreover, the reliability of survey based estimates of morbidity depends upon how close is the association between the self reported health status and clinically confirmed state of health. The data for this study comes from the NSS survey.

The NSSO provides information on various aspects which are of importance to the country. The NSSO was set up by the Government of India in 1950 to collect socio-economic data employing scientific sampling methods. The NSSO covers different subjects such as employment and unemployment, consumer expenditure, land holdings, livestock enterprises, debt and investment, social consumption, morbidity and disability, etc., through household surveys. The NSS is a continuous survey in the sense that it is carried out in the form of successive "rounds" each round usually of one-year duration covering several topics of current interest in a specific survey period. The survey program conforms to a cycle over a period of ten years and some being repeated once in five years.

The NSSO surveys on morbidity, health expenditure, health care services utilization and nutrition are useful sources of data related to health. Morbidity has been covered in nine rounds. The NSS made its first attempt to collect information on morbidity in the 7th round (1953-54) and the subsequent three surveys on the subject

from the 11th to 13th round (1956-58). A full scale survey on morbidity was conducted for the first time during the 28th round (1973-74). Since then, the NSSO had not undertaken any separate survey on morbidity and the collection of data on morbidity became a part of the decennial surveys on social consumption carried out in the NSS 35th round(1980-81), 42nd round (1986-87) and 52nd round (1995-96).

The survey of the NSSO 60th round conducted in 2004, related to “*Household Consumers’ Expenditure*”, “*Employment and Unemployment*” and “*Morbidity and Health Care*”. Information related to morbidity, problems of aged persons, utilization of health care services and expenditure on medical treatment, hospitalization, health schemes, nature of ailment, duration of hospitalization and medical services was collected in the survey.

1.10 Methodology

In this study the differentials in morbidity rates across the socio-demographic and economic groups are examined using the individual and household level data from the NSSO 60th round survey on ‘Morbidity and Health Care’ conducted in 2004. Morbidity rate is expressed as its proportional extent in the population during specified time period that is 15 days for this survey. In the survey it is termed as PAP ‘*Proportion of Ailing Persons*’ reporting ailment during a 15 day period per 1000 persons while it is termed as ‘*morbidity prevalence rate*’ in this study.

<p>Morbidity Prevalence Rate = No of persons reporting ailment in the sample during 15 days prior to survey per 1000 population of this area</p>

The study of a casual relationship between a dependent variable and one more independent variables becomes more useful when the relationship is defined in terms of a mathematical form. Bivariate relationship has been observed between the factor of Ailing and all Characteristics of the individuals and households. First it examined with the help of cross tabulation. A cross tabulation is that, where each row or column has frequency or percentage distribution of one variable for observation following within a specific category of the other variable. Cross-tabulation shows the variable of one of the variables in relation to another variable.

Multivariate logistic regression analysis has been used to measure the net effect of back ground variable on the response variables. The response variable are dichotomous in nature i.e. No = 2 and Yes =1 (Recoded 'No=0' and 'Yes=1').

The response variables in this study are dichotomous in nature, taking 1 or 0 as value. Most commonly used approaches to estimate these types of models are:

- (a) The Linear Probability Model (LPM)
- (b) The Probit model
- (c) Te Logit model or logistic regression model (Gujrati, 1995)

Among all this three mentioned above, Logoistic regression model is most suites while explaining a dichotomous variable (Rutherford and Choe 1993).

The basis for of logistic regression is:

$$P = \frac{1}{1 + e^{-Z}} \dots\dots\dots (1)$$

Where P= Estimated Probability

Z= the predictor variable and

e= base of natural logarithm with a value of 2.7183.

As can be seen from the logistic curve predictor variable has the largest effect on P, when P=0.52. Value of P decreases in absolute magnitude as P approaches 0 or 1 after simplifying equation (1). We get,

$$\text{Logit } Z = \frac{P}{1-P} \dots\dots\dots (2)$$

The quantity (P / 1-P) is called odds, and the quantity log (P / 1-P) is called the log odds or logit of P, so, equation (2) becomes,

$$\text{Logit } P = Z \dots\dots\dots (3)$$

If we presume Z as a function of predictor variables X_1, X_2, \dots, X_n . We can write,

$$\text{Logit } P = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_n X_n \dots\dots\dots (5)$$

The coefficient b_i represents the additive effect of one unit change in predictor variable X_i on the logs odds of the response variable. Whereas one unit increases in, X_i holding other predictor variables constant, multiplies the odds by the exponent of b_i . For this reason the quantity exponent of b_i is called the odds ratio i.e. ratio between the old value and the new value of the odds. In any logistic regression odds ratio are interpreted and not 'b' because exponent of b_i is more readily understandable. Exponent of b has been interpreted in our data analysis to show the effect of one unit change in the predictor variables on the odds of the response variables showing the ailing.

1.11 Organization of Dissertation

The dissertation has been organized as follows. After mentioning the objectives, data sources and methodology the introductory chapter, a review of literature presented in the chapter II. Chapter III deals with the morbidity levels and differentials by different socio-economic and demographic characteristics in different regions of Uttar Pradesh. Chapters IV reveal the disease pattern in each region of Uttar Pradesh and inter-regional comparison among them. Chapters V examine the major factors influencing the morbidity reporting in each region of Uttar Pradesh and inter regional comparisons among them. Last chapter VI includes summary and conclusion of the results.

Chapter II

Review of Literature

Chapter II

Review of Literature

2.1 Introduction

The study of morbidity has received considerable attention in the Indian context. Various study conducted on the morbidity levels, disease pattern, and utilization of health care services and determinants of health. The present chapter deals with various studies on morbidity and gives general concepts of morbidity and how the approaches are changed with time and space. Review of literature on morbidity is classified into three segments namely levels and prevalence of diseases, pattern of ailments and socio-economic and demographic correlates of morbidity.

2.2 Levels and differentials of Morbidity

Bhatnagar and Gupta (1982) examined the morbidity levels in Uttar Pradesh, study showed that the period prevalence rate of communicable diseases in Uttar Pradesh was found to be 119.7 per thousand populations, there were 1.08 communicable diseases are found on per morbid person. Study revealed that morbidity was significantly higher in young person below 14 years age and in those without spouse.

Ramamani Sundar (1992) studied the health status of the people of India. This study was based on the household survey of medical care conducted by the National Council of Applied Research (NCAER) in May-July 1990. The sample consisted of 18102 households, spread over 21 states and union territories of the country. A multistage stratified sampling design was used to select the sample household covering both rural and urban areas of the country. The survey results revealed remarkable sex differential in the prevalence rate of medically treated illness and in the cost of treatment. Some differences were also observed between the rural and urban households especially in the distance traveled to seek medical aid for the

disease. The survey found disparities in the morbidity rate type of treatment of illness and in the cost of treatment among households belonging to different economic status.

Abusaleh Sharrif and Anil Gumber (1999) presented the study based on National Council of Applied Economic Research (NCAER) survey on medical care in 1993. Study revealed that the child mortality has alone contributing nearly 54 percent of DALYs lost, the percentage ranged between a low of 23 in Kerala and to a high of 64 in Rajasthan and Uttar Pradesh.

Shasikant Bhide and Ramamani Sundar (1991) examined the health situation of command area of Indira Gandhi Nahar Project (IGNP). This study was based on a survey of sample households in three district of the command area of the Rajasthan Canal. From the seventy villages a sample of 893 household was selected. The information on illness and expenditure on treatment was collected for the month of July. The variation across the three districts indicated a relationship between income and the incidence of the diseases. Ganganagar district with the highest level of per capita income also has the highest level of incidence of the diseases. In Ganganagar and Bikaner districts the government facilities account for about 30 and 69 percent of illness episodes treated while in Jaisalmer where the irrigation is the least, the government facilities account for about 90 percent. The bulk of expenditure is on fees and medicines followed by transport. The lowest economic group have higher incidence of diseases than the middle income category.

Abusleh Shariff (1995) examined the socio economic differential of morbidity in the country (India). The study extensively was based on the survey of medical care which is conducted by National Council of Applied Economic Research (NCAER) during 1993. A total of 6354 and 12339 urban household across all the states of India were covered in this survey. The lowest sample was drawn from the Uttar Pradesh. A substantial variation in morbidity by age found both in urban and rural areas. On the whole there is a J shaped relationship between age and morbidity. The morbidity prevalence rates (MPR) have been lower in urban areas in all ages excepting those less than five and sixty years and above. The relationship between occupation and morbidity were also expected direction with the wage labors reporting the highest

morbidity among the worker category. MPR has been found to be relatively low for Muslims both in rural and urban areas. For schedule castes and schedule tribes in rural areas. 34 percent of all reported sickness has been categorized as infectious and 28 percent as non infectious. The incidence of infectious sickness in southern states has to be found lowest at about 29 percent but highest in the west at 43 percent followed by 40 percent in the eastern states. The central states of Uttar Pradesh, Madhya Pradesh, Orissa, Rajasthan, and Bihar have recorded high incidence of fever. The hospitalization rates were almost twice among the highly educated households in rural areas as opposed to the least educated. Schedule castes and schedule tribes have used the hospitalization services less and the result was significant at below 10 percent level. Age of the sick person seems to have no effect on the choice of place of treatment.

P.Satya Sekhar (1997) studied the morbidity picture of Andhra Pradesh. Study used National Sample Survey Organization (NSSO) data of 42nd round, which was collected during 1986-87. The data was collected from a random sample of households listed in villages in rural areas and urban blocks in urban areas. The study covered about 976 households in the rural areas and 581 households in urban areas for inpatient care study and 1605 household in rural areas and 909 households in urban areas for the study of outpatient. The study show the morbidity rate was 37.6 and 44.3 per 1000 person for rural males and females respectively as compared to 30.5 and 35.8 per 1000 person in urban areas. On the other hand, morbidity of treated sickness was 30.9 and 28.0 in rural and urban areas respectively. The morbidity rates by regions of Andhra Pradesh indicate above state average figure in Rayalseema and Coastal Andhra Pradesh. The incidence rates of hospitalization recorded s 8.3 and 8.6 per 1000 person in rural and urban areas respectively. The average cost of per illness episode showed a tendency to rise from the lower to the higher monthly per capita expenditure (MPCE) fractile group.

Anil Gumber (1997) studied the burden of ill health and cost of ill health in India. The data used for this study was National Council of Applied Economic Research (NCAER) and NSS (1986-87) survey. This study basically compared the

morbidity and health condition prevailing in country between the NCAER and NSS. Study showed interstate variation in both rural and urban morbidity rates were quite high. There is no clear pattern in the differences in morbidity rates across states. All survey confirms that the reported level of morbidity in rural areas was the highest in Kerala and the lowest in Gujarat. Compared to the NSS, The much higher level of illness reported in the NCAER survey. The annual hospitalization rates showed a positively sloping or J shaped curve with age and U shaped pattern for other illness. The multivariate analysis suggested the probability of an ill person not seeking treatment is higher among females.

P.Duraisamy (1998), analyzed the morbidity levels, differentials and its determinants in Tamilnadu. Study was based on the NSS 1986-87 survey data. The age and sex specific distribution of illness by type also presented and the determinants of morbidity at the individual level were analyzed. The households in rural and urban areas have been selected using a multistage random sampling method. In Tamilnadu, the survey covered 480 villages and 432 urban blocks. Analysis showed that the overall morbidity prevalence rate per thousand populations is 28 in rural areas and 32 in urban areas. The perception and reporting of the state of health seems to be better in the urban areas than in the rural areas. The morbidity prevalence rate was high in the 0-4 age group. The morbidity prevalence rates are higher among males 29 per thousand populations compared to females 27 per thousand populations in rural areas but there is no gender difference in urban Tamilnadu.

Ramamani Sundar and Abhilasha Sharma (2002) observed the pattern of morbidity and health care utilization by the urban poor living in slums and resettlement colonies in Delhi and Chennai and compared the health status of the two segments. Study was based on households survey conducted by National Council for Applied Economic Research (NCAER) during April-July 2000. A sample of 2000 poor and low income households living in the slum cluster and resettlement colonies i.e. 1000 households each in Delhi and Chennai were selected for the study using a stratified random sampling procedure. Study revealed that the monthly prevalence of morbidity (acute and chronic) has worked out to be 104 episodes per thousand population in

Delhi and 83 per thousand populations in Chennai. The morbidity rates were much lower for the population living in the settlement colonies, compared with rates for the slum dwellers.

T.R.Dilip (2002) examined the level of morbidity and hospitalization in Kerala. The study was based on the National Sample Survey Organization (NSSO) 52nd round. The survey included 24401 people from 4928 households. Age and seasonality had considerable effects on the morbidity of individuals. The burden of ill health was higher in rural areas than in urban areas. People who were more likely to have a better lifestyle had a higher level of morbidity and hospitalization. Regional differences were seen, with levels of morbidity and hospitalization higher in the comparatively developed regions of southern Kerala than in northern Kerala. Factors like physical accessibility of healthcare services and capability to seek health care services could create artificial differences in morbidity and hospitalization among different sub groups of population in Kerala.

N.Audinarayan and J.Sheela (2002) examined the prevalence of physical disabilities, their differential and determinants based on the data collected from the 750 old persons (aged 60 plus years) selected from the nine rural and six urban clusters of Tamilnadu state of India. Finding of the study revealed 47 percent of the elderly population in the study area was suffering from one or other forms of physical disability. Physical disabilities included visual hearing, walking, teeth and other conditions.

Dilip C Nath and Amal K Deka (2007) examined the health problems and their correlates of the elderly population in Assam. Data for this study was collected through a survey during 1998 collected under the Guwahati University. Altogether 1005 elderly persons of age 60 years and over were interviewed. Study showed that about 63 percent male and 68 percent female elderly suffering from eye problem. The prevalence of joint pain is more in case of male than that of females. Study indicates that there was significant gender difference in mobility of outside the state, joint pain, cough, eye, and health comparison compared to health at age 50.

Sinha and Deshmukh (2008) studied the epidemiological correlates of nutritional anemia among children in rural Wardha. Seven hundred seventy two children between 6-35 months of age were studied for anemia by cluster sampling method. Mean Hemoglobin level was 98.5 plus or minus 12.9 gm/L. Prevalence of anemia was 80.3 percent. Only 1.3 percent children had severe anemia (hemoglobin less than 70 gm/L).

2.3 Pattern of Diseases and Utilization of Health Care Services

Bhatnagar and Gupta (1982) found that Communicable diseases were highly prevalent in the Uttar Pradesh. The leading cause of this morbidity was due to ascariasis that shared one fifth of total ailments.

P.Satya Sekhar (1997) studied the morbidity picture of Andhra Pradesh. The study was based on NSSO's 42nd round, which conducted during 1986-87. The reporting of the ailments under inpatient care indicates that about 50 percent of illness in the 0-4 age group in rural areas is due to waterborne diseases, about 47 percent each in rural and urban areas of 15-39 age group suffered from Gastric ulcer. The ailment reported in different region showed that at the state level waterborne diseases and those communicable through heredity were the two most important causes of sickness.

P.R.Sodani and S.D.Gupta (1998) presented the pattern of the health care expenditure in tribal areas of Rajasthan. The study was based on data collecting during the months of June and August 1996. A multistage sampling design was adopted; the three major district of TSP (Tribal Sub Plan) regions i.e. Banswara, Dungarpur and Udaipur were selected for the study. 225 households were selected each from rural and urban areas for the TSP. The study revealed a high dependence on the traditional practitioners among the person who have undergone any type of treatment in the rural areas while in urban areas on public health facilities. There was a substantial rural urban differential in the average expenditure per illness episode during the reference period of 12 weeks. The study also revealed that rural people have significantly more burden of almost all components of indirect expenditure compared to urban areas.

D.Nandan and B.N.Saxena (1997) studied the morbidity pattern among women of Uttar Pradesh. The study was based on the primary survey of the two districts of Uttar Pradesh namely Agra and Farrukhabad covering 206 villages and 51,186 households. Sample proportion technique was used for analysis of the data. Study revealed that over 47.5 percent of women reported excessive vaginal discharge, around 22 to 27 percent of women suffered from general morbidity, predominant being fever; cough, cold, malaria, diarrhoea and anemia. High level of maternal mortality was reported in the areas, representative figure 582 and 972 per lakh live births. Over 50 percent deaths occurred at home, leading causes of maternal mortality were hamorrhage, retained placenta, sepsis, anemia, jaundice and tetanus.

Rajaratnam J, Abel R, Duraisamy S and John KR (1997) examined the morbidity pattern and utilization of health care services in a rural population of Tamilnadu. The study was based on the the primary survey that include 1440 persons from three panchayats of K.V.Kuppam block of North Arcot Ambedkar District in Tamilnadu. Results revealed that 57.3 percent persons did not have any illness during 1990-91. The period prevalence of infective and parasitic disease was found to be 21.9 percent with an average of three episodes. Services rendered by private practitioners wee utilized by 59 percent of the households and 79 percent of the households had used allopathic treatment at some time. The average per capita per annum health expenditure was Rs. 89.9(Rs 449 per household). This increased significantly with increase in the household size and per capita income.

Ramamani Sundar and Abhilasha Sharma (2002) observed the pattern of morbidity and heath care utilization by the urban poor living in slums and resettlement colonies in Delhi and Chennai and compared the health status of the two segments. In both the cities people seems to suffer more from the infectious diseases, these account for 51.7 percent and 58.5 percent of the total number of reported illness episodes in Delhi and Chennai respectively. For nearly 13 percent of the reported illness episodes in Delhi and 8.4 percent in Chennai, the sample population sought no treatment. The most important cause for not seeking treatment turns out to be illness not considered serious. In both the cities, for nearly 48 percent of the illness episodes (non hospital)

treatment was sought from government hospital which includes municipality dispensary and public hospital.

T.R.Dilip (2003) examined the prevalence of morbidity, hospitalization, disabilities and chronic condition in elderly population of Kerala. This study was based on the data on elderly collected by National Sample Survey Organization (NSSO) during its 52nd round survey 1995-96 on survey on health care. Result revealed that the prevalence of degenerative and chronic conditions were more prevalent among old-old than in the young-old category. Females were prone to different kind of physical disabilities than males. Chronic ailments joint problem and blood pressure were higher for females whereas the chronic condition like cough, piles, heart disease, urinary problems and diabetes were more among males.

Meena Gopal and Lakshmi Lingam (2002) critically reviewed the morbidity condition of women in India during 1990-2000. The study was basically depended on the different technical papers. Study critically reviewed the some ailments of women like tuberculosis, malaria, filarisis, leprosy in communicable disease group while coronary heart diseases (CHD), hypertension, blood pressure, osteoporosis, cancer in non communicable disease group. Some focus has given to mental health among women. In this study epistemological issue were arose and critically evaluated.

Y.Uppal and S.Garg (2006) examined the health seeking behavior among men in an urban slum. A total of 268 males residing in urban slum of Delhi were interviewed to study their socio-economic demographic characteristics perceived reproductive morbidity and source of health care facilities utilized by them for reproductive morbidity during the last six months preceding the survey. The study revealed that the majority of the sample respondents were in the age group of 20-29 years and 154 were married. Out of 268 males, 64 (23.9%) had some kind of perceived reproductive morbidity, of which 25(39.1%) did not seek any treatment from any health care facility. Of those who sought any treatment more than half (56.5%) preferred informal sources like chemist, quakes, tantriks, friends and relatives. The study revealed that the socio-demographic factors contained age, religion, literacy, economic status, family type, marital status, working status,

migration have influence on reproductive morbidity. Reproductive morbidity included burning micturition, itching of private parts, scrotal swelling, urethral discharge, genital ulcer, infertility and any others morbidity condition.

Pushpanjal Swain and M.Hemanta Meitei (2004) studied morbidity status of widows in India. The study was based on the data of National Family Health Survey (NFHS) conducted throughout India during 1998-99. NFHS 2nd included four major morbidity conditions of widows i.e. Asthma, Tuberculosis, Jaundice and Malaria. The study revealed that the prevalence of Asthma, T.B and Malaria was higher among the widows and increased rapidly with age compared to currently married women. Jaundice was most prevalent among the younger women compared to older widows and the ones in the age group 60 and above suffered the least. In the state wise comparison Andhra Pradesh had higher prevalence of these four diseases among widows than the national average.

Arindam Das and H.C.Srivastava (2006) studied the factors governing utilization of maternal health care. The data for this study has been taken from the Reproductive and Child Health (RCH) round first. The study was based on a total 8732 women drawn from Karnataka and 37072 women chosen from Uttar Pradesh. Study revealed that in Uttar Pradesh, urban women has taken full Anti Natal Care (ANC) than their counterparts, while the situation was found reverse in case of Karnataka. In Uttar Pradesh, the percentage of women who receive full ANC was below 10 in almost all cases with little exception like, highest level of education of women, women with delivery complications. Major chunk of women, who opt for safe delivery were from the group experienced any problem related with pregnancy, any sort of delivery complications and who received full ANC. In Karnataka similar result obtained but fundamental difference was that the number of women receiving full ANC and opting safe delivery was much higher than that of Uttar Pradesh.

Vandana Dave (2007) studied the health problems of rural women and health facilities available in the village and utilization of these facilities by rural women in Haryana. Stratified random sampling was used to collect data. The sample of the study was selected from Kurukshetra district of Haryana. About 340 respondents were

selected randomly. Study revealed that between the age group of 18 to 35 years, a majority of women (60 percent) were suffering from Giddiness and General weakness, 60 percent were suffering from Backache and 52 percent from any type of Gynecological diseases. After studying the health facility utilization pattern of rural women, it was observed that only 15 percent women were going to the sub centre or any other government dispensary of the village and 13 percent women were going to the government hospital of the nearby town. While a majority of women (40 percent) preferred to go to the R.M.P of the village. The study revealed that a majority of women belonging to the general class were usually seeking help from the private doctors of nearby town while lower class women preferred going to the R.M.P of the village. It was also revealed by the study that poor and schedule caste pregnant women neither went for any ANC nor took iron-folic acid tablets during their pregnancy.

Singh and Prabhadevi (2006) examined the waterborne morbidities in Thanga village of Manipur. A total 200 families were asked to recall the illness present during the last one week. The result revealed that out of total 1254 individuals, 132 were reported suffering from waterborne diseases such as Diarrhoea (34.84 %), Worm Infestation (27.27%), Typhoid Fever (21.20%) and Jaundice (16.66%).

2.4 Determinants of Morbidity

M. Bhatnagar and S. C. Gupta (1982) studied the determinants of morbidity especially for communicable ailments. The social class and education status were found to have negative association with the morbidity, however the sex did not show any influence on the morbidity.

Abusaleh Sharrif and Anil Gumber (1999) presented the study based on National Council of Applied Economic Research (NCAER) survey on medical care in 1993 of Rajasthan and Uttar Pradesh. Result showed incidence of illness and hospitalization increased with the monthly per capita expenditure (MPCE) class. The schedule caste and schedule tribes reported lower level of hospitalization which is largely due to their in access to health care services. All those reported sickness not

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seek treatment at all, the proportion tend to be higher in rural areas than in urban areas. Study also proposed minimum of 2.5 percent of the gross domestic product (GDP) allocated to health and health care services. Logistic regression analysis showed the tendency to not seeking medical treatment was higher in illiterate than educated people, as the household size increased, the tendency to not seeking medical treatment advanced.

P.Duraisamy (1998), analyzed the morbidity levels, differentials and its determinants in Tamilnadu. Study was based on the NSS 1986-87 survey data. The age and sex specific distribution of illness by type also presented and the determinants of morbidity at the individual level were analyzed. The interesting finding on the morbidity marital status association is that morbidity among the never married is much lower relative to the other groups. The morbidity of the schedule castes and schedule tribes population was slightly lower than other caste group. There is inverse relationship between household size and morbidity prevalence rate. A majority of untreated cases 53 percent in the rural and 59 percent in the urban areas indicate that ailments were not serious enough for seeking treatment. The second important reason for untreated illness is lack of finance.

Anil Gumber (2001) examined the differentials in the incidence of injury, morbidity and associated cost of treatment across population groups. Injury clustering by age and sex is evident from the household health care utilization survey data and risk factors of getting injury are found to be higher among poor households and those living in urbanized zones. The analysis was based on the all India household survey on the utilization of health services for treatment of illness and injury taken by the NSSO. The multistage sampling procedure was followed to select about 43000 rural and 30000 urban households. To identify risk factors associated with injury than other diseases, the logistic regression analysis was attempted whereas for the determinants of the financial burden on households for injury treatment, OLS regression analysis was used. The study revealed that the fatality, disability and severity are much higher for injury than for other diseases. In contrast to other diseases, injury patient in the five states of India relied more on public sector institutions. About three fourth of all

injuries involving hospitalization and one fourth of non hospitalization based injuries were treated by public sectors. In India children of school going age, particularly in urban areas face a higher risk of sustaining injury.

Ramamani Sundar and Abhilasha Sharma (2002) observed the pattern of morbidity and health care utilization by the urban poor living in slums and resettlement colonies in Delhi and Chennai and compared the health status of the two segments. The morbidity rates were much lower for the population living in the settlement colonies, compared with rates for the slum dwellers. The prevalence rate of illness increases with the increase in the household income in Chennai whereas in Delhi, it forms an inverted U shaped curve.

Indrani Gupta and Arindam Dutta (2003) analyzed the inequities prevailing in health care sector in India. This study was based on the National Sample Survey Organization (NSSO) 52nd round survey on medical care. The data included individual and households and the sampling was based on several variables like states, rural-urban, village etc. Study revealed that acute illness were negatively linked with economic status for the rural households as for urban households, the relationship was in the opposite direction. In overwhelming majority still preferred to use private facilities for hospitalization in India, in both rural and urban areas. The multinomial logit estimates for choice of facility indicated that compared to private facility choice, higher income both tend to reduce the likelihood of seeking care in the government facilities. Schedule Castes and Schedule Tribes have a higher probability of seeking care in the government facility and education also seems to be positively influencing seeking care in the government sectors. Income positively influences medical treatment expenditure, while the presence of insurance negatively influences it.

N.Audinarayan and J.Sheela (2002) examined the prevalence of physical disabilities, their differential and determinants based on the data collected from the 750 old persons (aged 60 plus years) selected from the nine rural and six urban clusters of Tamilnadu state of India. Logistic regression analysis showed that likelihood of physical disabilities increased significantly with an increase in age. Elderly persons who lived in urban areas have significantly lower proportion (0.56) of

physical disability as compared to their rural counter parts. It was also observed that elderly people who belong to the higher socio-economic class were found to have lesser disabilities.

Pushpanjal Swain and M.Hemanta Meitei (2004) studied morbidity status of widows in India. The study was based on the data of National Family Health Survey (NFHS) conducted throughout India during 1998-99. NFHS 2nd included four major morbidity conditions of widows i.e. Asthma, Tuberculosis, Jaundice and Malaria. Factors such as household standard of living, living arrangement and life style variables like smoking, demonstrated a strong association with the prevalence of Asthma and T.B. Diseases like Asthma, T.B. and Malaria were much higher among those living in distressful conditions. Rural widows were two times more likely to suffer from Malaria than their counterparts.

Michael Koeing and Rob Stephenson (2006) examined the impact of physical and domestic violence on self reported morbidity among married women of reproductive age (15-45) in Uttar Pradesh. The data used for the study was based on the Perform System of Indicator Survey. A logistic regression model fitted with experiencing symptoms of Gynecological morbidity as the outcome. Women whose husband reported sexual violence only had significantly higher odds of reporting symptoms of Gynecological morbidity relative to the non violence group. Women who experiences both sexual and physical violence are the most likely to report Gynecological morbidity.

Dilip C Nath and Amal K Deka (2007) examined the health problems and their correlates of the elderly population in Assam. Data for this study was collected through a survey during 1998 collected under the Guwahati University. Altogether 1005 elderly persons of age 60 years and over were interviewed. To measure the impact of the predictor variables on the outcomes logistic regression was used. Study revealed that per capita household income was positively correlated with health. Elderly having sanitary latrine and tapped water were healthier than the elderly of not having the sanitation and tapped water.

Singh and Prabhadevi (2006) examined the waterborne morbidities in Thanga village of Manipur. A total 200 families were asked to recall the illness present during the last one week. Study showed that low literacy rate, low economic status, unavailable portable drinking water, ignorance, poor hygienic practices and cultural practices associated with consumption of drinking water etc, were found to be the determinants of high incidence of morbidity in the village.

Sinha and Deshmukh (2008) studied the epidemiological correlates of nutritional anemia among children in rural Wardha. Seven hundred seventy two children between 6-35 months of age were studied for anemia by cluster sampling method. The univariate analysis showed that anemia is significantly associated with age of the child, education of mother and father, occupation of father, socioeconomic status, birth order and nutritional status as measured by weight for age. The final model suggested that only educational status of the mother, occupation of the father, birth order and nutritional status of the child were significantly associated with anemia.

Chapter III

Levels and Differentials in Morbidity in Uttar Pradesh

Chapter III

Levels and Differentials in Morbidity in Uttar Pradesh

3.1 Introduction

The differentials in morbidity rates across the socio-demographic and economic groups are examined using the individual and household level data from the NSSO 60th round survey on 'Morbidity and Health Care' in 2004. Morbidity rate is expressed as its proportional extent in the population in some specified time period that is 15 days for this survey. In the survey it is termed as PAP '*Proportion of Ailing Persons*' reporting ailment during a 15 day period per 1000 persons while it is termed as '*morbidity prevalence rate*' in this study.

Morbidity rate (PAP) are not strictly the '*Prevalence Rates*' as recommended by the Expert Committee on Health Statistics of the WHO. WHO defines prevalence rate as the ratio between the number of spells of ailment suffered at any time during the reference period and the population exposed to the risk. It measure the frequency of illness prevailing during the reference period, whereas Morbidity rate (PAP) gives the number of persons reporting ailments during a 15 day period per 1000 persons.

3.2 Morbidity Levels in Uttar Pradesh

Table 3.1 shows that morbidity prevalence rate per thousand populations is 102 in Uttar Pradesh. The overall morbidity prevalence rate per thousand populations is 100 in rural areas and 109 in urban areas. Male morbidity prevalence rate is found 95 per thousand populations, while it is found 109 per thousand populations for female. Female morbidity rate is higher than male in both rural and urban areas, but the gender morbidity gap found much wider in urban areas.

Table 3.1 Morbidity prevalence Rates (per thousand) in Uttar Pradesh

Morbidity Prevalence Rate	Rural	Urban	Total
Male	96	93	95
Female	105	126	109
Total	100	109	102

Figure 3.1 Morbidity Prevalence Rate (per thousand) by Type of Residence in Uttar Pradesh

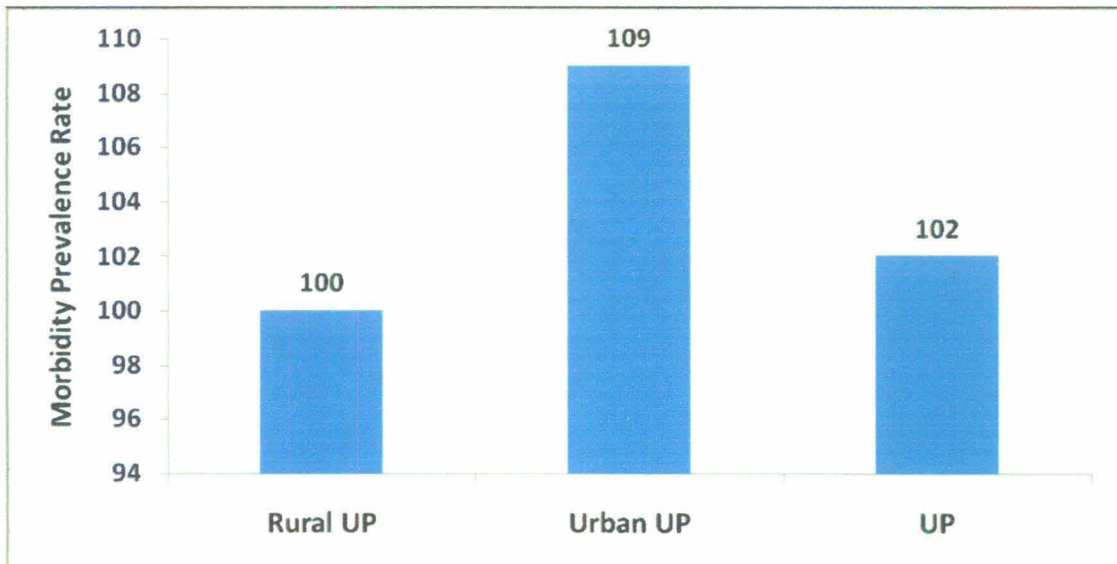
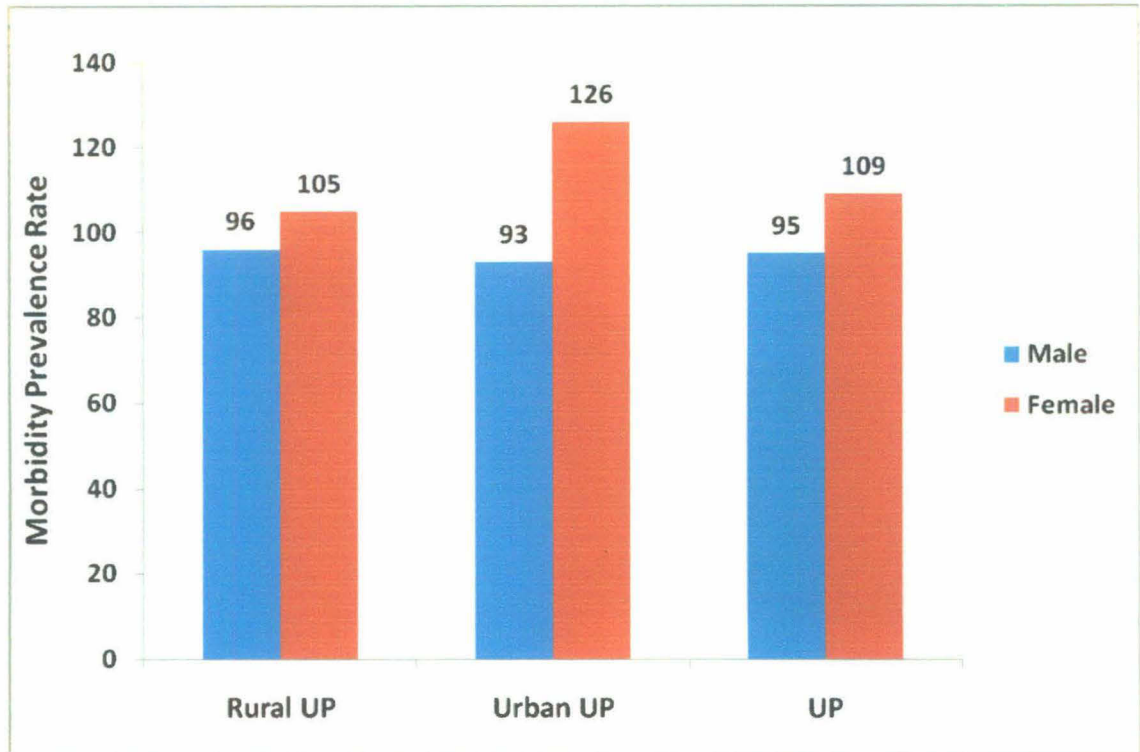


Figure 3.2 Morbidity prevalence rate (per thousand) by Sex in Uttar Pradesh



3.3 Levels of Morbidity by Age Groups in Uttar Pradesh:

Any study relating to a human population remains incomplete unless its age-sex composition is known before its specific characteristics are examined. Thus, the distribution of population by age group and sex certainly helps in easy understanding of the results, particularly the study of various indicators of morbidity. Figure 3.3 shows that the morbidity prevalence rate is high in the 0-14 age group, decline with age up to 30 years and then starts to increase thereafter displaying the commonly reported 'U' shaped relationship. The morbidity prevalence rate is much higher in the higher age groups.

The morbidity prevalence rate of female is much higher than male's morbidity prevalence rate in all age groups. The lowest morbidity prevalence rate is found in the 15-29 age groups, especially for male population. Female morbidity prevalence rate in 0-14 age group is found much lesser than male's morbidity prevalence rate. The cause behind it is ignorance and lower social status of female Childs, another cause may under reporting of diseases.

Figure 3.3 Morbidity Prevalence Rate by Age Groups and Residence in Uttar Pradesh

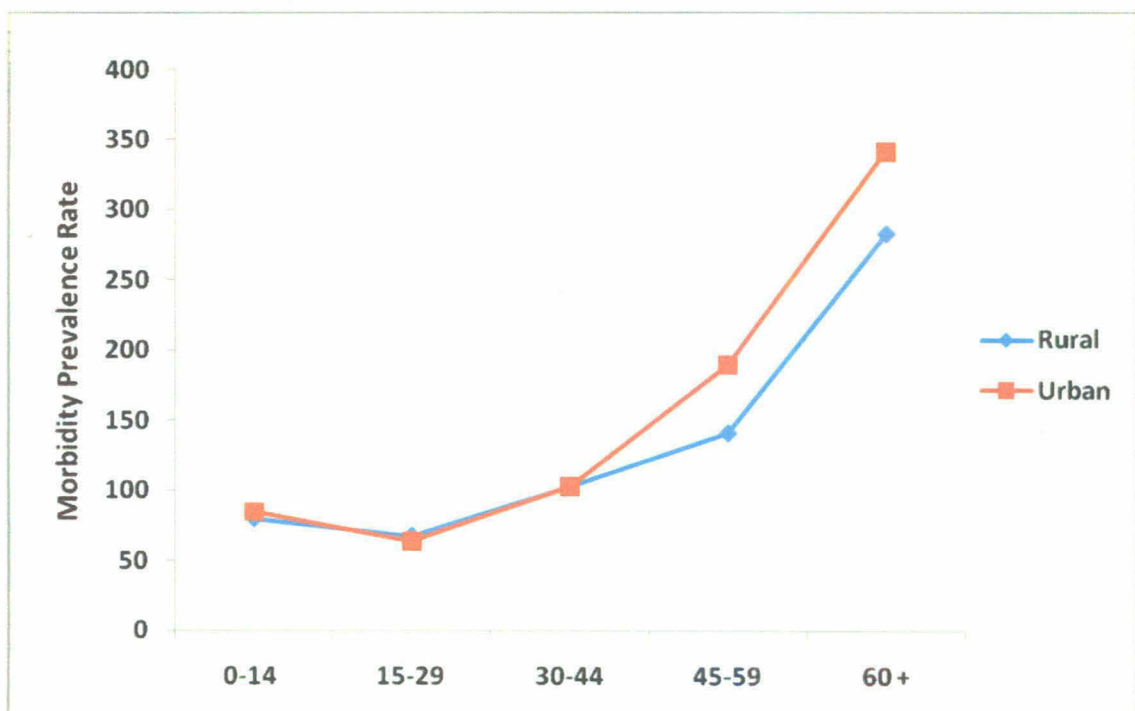


Figure 3.4 Morbidity Prevalence Rate by Age Groups and Sex in Uttar Pradesh

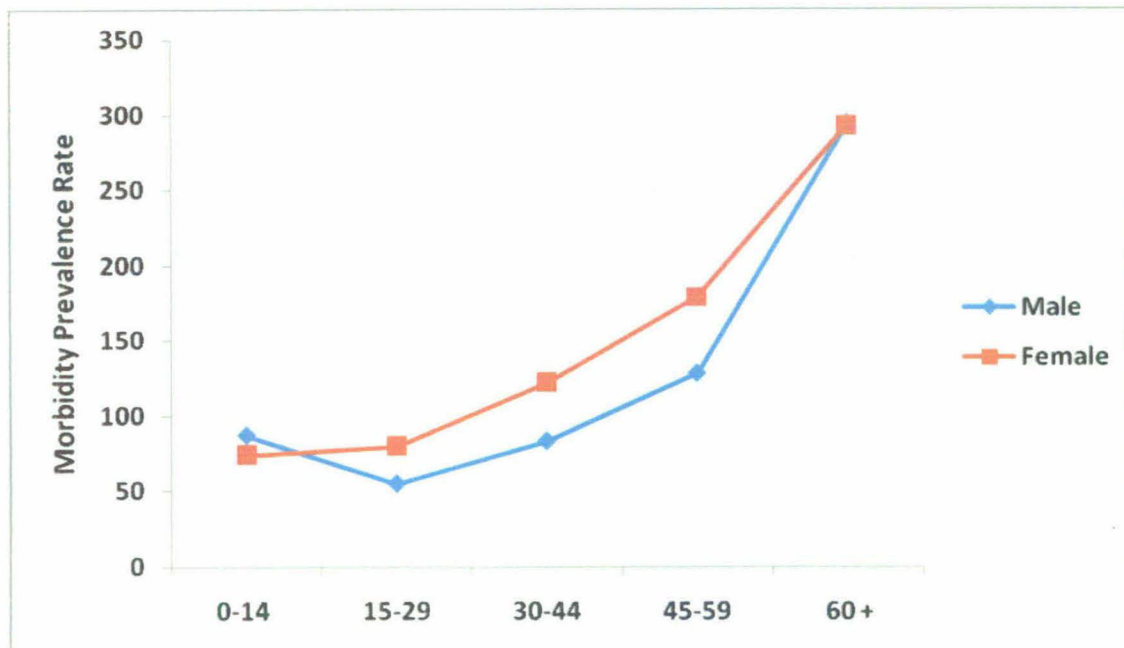


Table 3.2 Morbidity prevalence rate by Age Groups in Uttar Pradesh

Age Groups	Rural			Urban			Total		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
0-14	87	73	80	88	8	85	87	74	81
15-29	55	81	68	54	77	64	55	80	67
30-44	87	118	118	69	138	103	83	122	103
45-59	120	163	163	150	239	190	128	179	152
60 +	292	273	283	305	377	342	294	293	293

3.4 Levels of Morbidity by Marital Status in Uttar Pradesh

Marital status of an individual plays very important role in the health of that individual. In this study marital status is classified in three categories, namely never married, currently married and widow or divorced. Result shows that there are large variations in morbidity level among these categories. In Uttar Pradesh, generally it is found that people who belong to never married category have lower morbidity than those belong to either currently married or widow/divorced category.

Table 3.3 presents that male have lower morbidity than female in both rural and urban area in all the marital categories. Widows or divorced people have extremely high morbidity for both gender, the level of such kind of morbidity is found nearly three times greater than people who belong to never married category.

Table 3.3 Morbidity Prevalence Rate by Marital Status in Uttar Pradesh

Marital Status	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Never Married	81	73	77	76	76	76	80	73	77
Currently Married	108	120	114	111	156	133	109	127	118
Widow or Divorced	223	261	246	209	336	299	221	276	256
Total	96	105	100	93	126	109	95	109	102

3.4.1 Regional Pattern of Morbidity Prevalence Rate by Marital Status

Figure 3.5 presents that Western Uttar Pradesh and Central Uttar Pradesh show higher morbidity prevalence than Southern Uttar Pradesh and Eastern Uttar Pradesh in all the marital categories. A common fact comes that rural areas have lower morbidity than urban areas; there is only a one region which shows reverse result that is Central Uttar Pradesh, where morbidity prevalence rate is higher in rural areas than urban areas in each category of marital status.

Table 3.4 states that Unmarried populations have lowest morbidity in each region of Uttar Pradesh in comparison to their counter parts, which vary from 49 per thousand in Eastern Uttar Pradesh to 102 in Western region. The morbidity rates for currently married population are found generally similar which varies from 106 per thousand to 134 per thousand for male and from 120 per thousand to 189 per thousand for female. The large dip in the morbidity rates are found in Eastern Region of Uttar Pradesh, where it is found 72 per thousand for male and 75 per thousand for female.

Figure 3.5 Morbidity Prevalence Rate in Different region of Uttar Pradesh by Marital Status

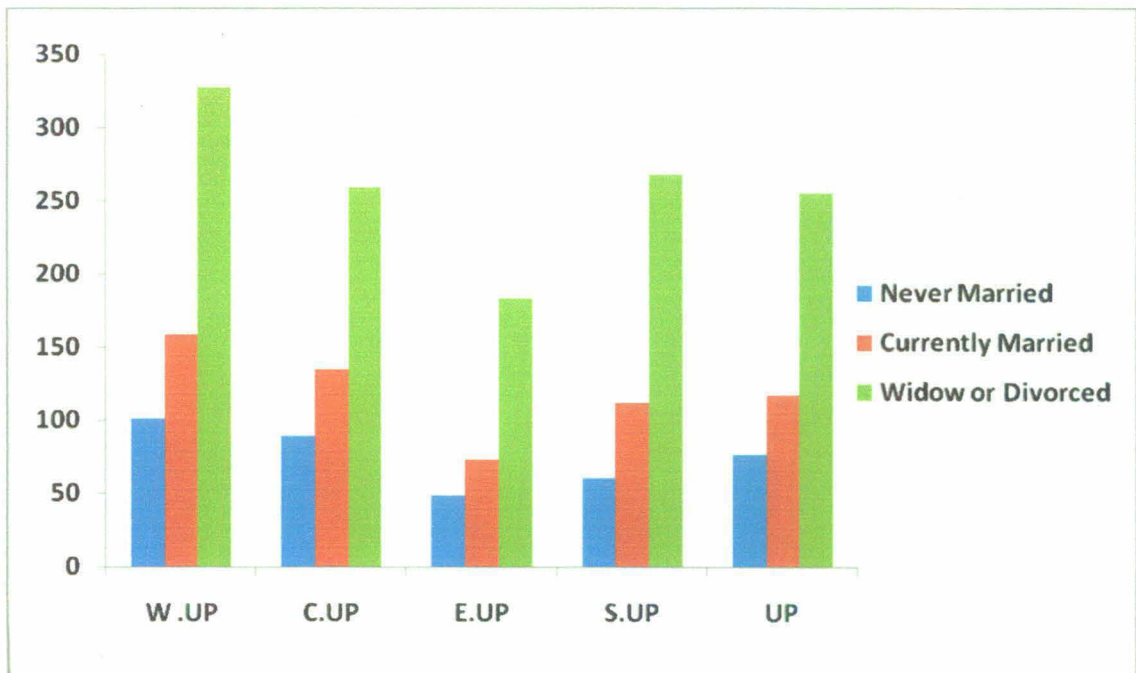


Table 3.4 Morbidity Prevalence Rate in Different region of Uttar Pradesh by Marital Status

Education	Western UP		Central UP		Southern UP		Eastern UP	
	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	169	165	138	139	91	125	77	78
Up to Primary	101	99	67	100	82	62	50	37
Middle	108	102	97	104	81	113	38	73
Secondary and above	119	112	118	123	63	61	61	79

One of the major causes of lower morbidity in youth is age because most of the never married people belong to young age group; therefore probability of being morbid is much lesser than those people who belong to other marital status category. Moreover, the illness suffered by the never married may not get accurately reported because, irrespective of its severity, any reporting of illness might have an unfavorable impact on the marriage prospects of the person. Widow and divorced people have extremely higher morbidity rate than other category due to their old age and their dependency on other people.

3.5 Levels of Morbidity by Education in Uttar Pradesh

Education level of any society reflects their social development and the condition of health particularly in some age groups like child age and old age. Therefore education is considered as important determinants of social well being. There seems to be an inverse relationship between the level of education and morbidity. The study shows that morbidity prevalence rate is found much higher in illiterate and highly educated populations.

Figure 3.6 shows that the extent of Morbidity Prevalence is much greater in illiterate population, which is nearly one and half times of Morbidity Prevalence of people who are having primary, middle or secondary education. In this study education level is categories in four categories, namely illiterate, up to primary, middle and secondary plus.

Figure 3.6 Distribution of Morbidity Prevalence Rate by Education in Uttar Pradesh

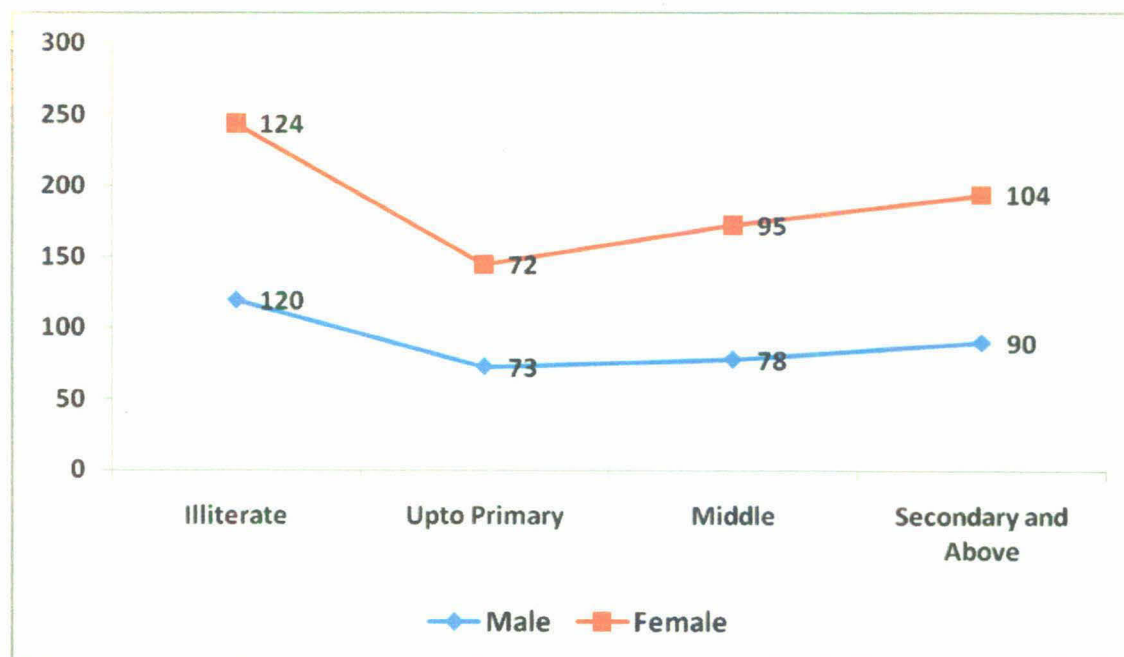


Table 3.5 shows that Morbidity Prevalence rate among illiterate are 120 per thousand and 133 per thousand in rural and urban areas respectively. While for the middle and primary level educated people have much lesser morbidity level. Morbidity Prevalence Rate among secondary and above passed people found is 84 per thousand and 109 per thousand in rural and urban areas respectively.

Table 3.5 Levels of Morbidity Prevalence Rate by Education and Residence in Uttar Pradesh

Education	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Illiterate	120	121	120	117	146	133	120	124	122
Up to Primary	76	63	71	60	104	79	73	72	73
Middle	75	90	79	88	109	96	78	95	83
Secondary and above	81	92	84	105	114	109	90	104	95
Total	96	105	100	93	126	108	95	109	102

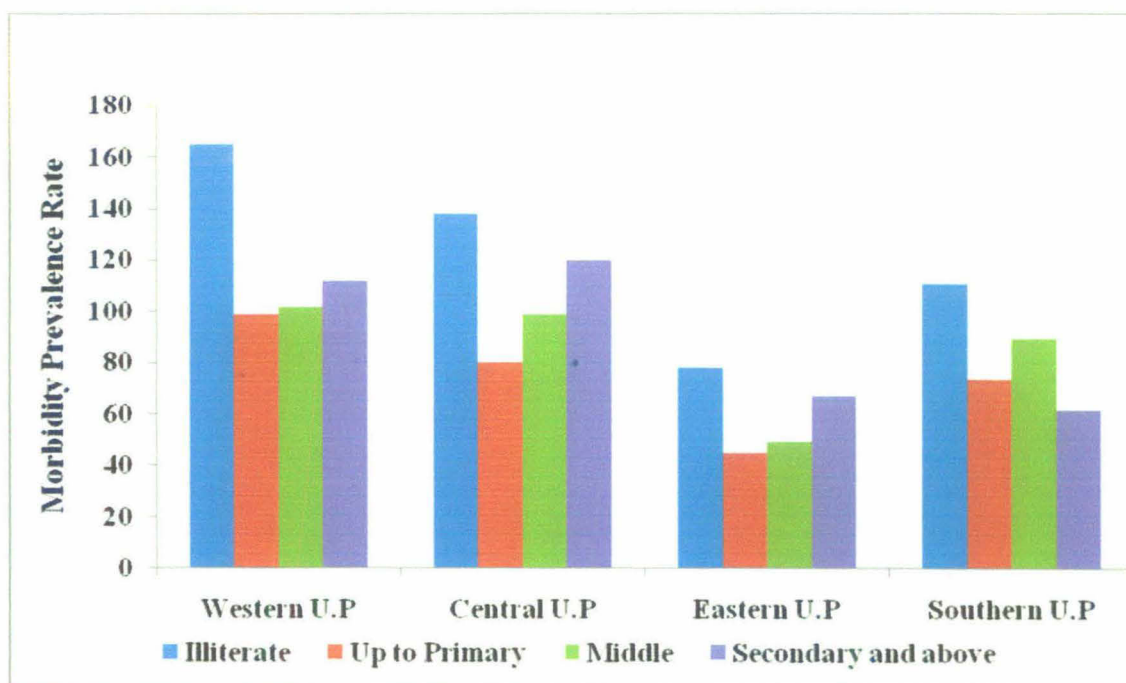
3.5.1 Regional Pattern of Morbidity Prevalence Rate by Education

There is huge variation found in Morbidity Prevalence by regions of Uttar Pradesh. Table 3.6 shows that Western region has highest morbidity in all educational categories, while lowest morbidity reporting in Eastern region of Uttar Pradesh. Central Uttar Pradesh shows higher morbidity in rural areas for both genders, it is only a region which has higher morbidity in rural areas than urban areas, while all other regions of Uttar Pradesh have lower morbidity in rural areas than urban areas.

Table 3.6 Morbidity Prevalence Rates in Different regions of Uttar Pradesh by Education

Education	Western UP		Central UP		Southern UP		Eastern UP	
	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	169	165	138	139	91	125	77	78
Up to Primary	101	99	67	100	82	62	50	37
Middle	108	102	97	104	81	113	38	73
Secondary and above	119	112	118	123	63	61	61	79

Figure 3.7 Distributions of Morbidity Prevalence Rates in Different Regions of Uttar Pradesh by Education



Western Uttar Pradesh has highest morbidity prevalence among males for all categories of education level, while Central Uttar Pradesh shows same kind of result for females. Eastern Uttar Pradesh has lowest morbidity level among both male and female for all categories of education. The result reveals contradictory condition, in illiterate and highly educated people; both show greater morbidity prevalence rates. The cause behind it is that, illiterate people having higher probability to being sick due to their low level of sanitation and ignorance of treatment of diseases. While people having higher education reported high morbidity prevalence due to their good awareness level about perception of diseases.

Another important thing comes out about the relationship between morbidity prevalence rate and education that is 'U' shape relation, in this pattern illiterate and higher educated people having extremely higher morbidity, while people having up to primary and middle level education have lesser morbidity than other categories.

3.6 Levels of Morbidity by Religion in Uttar Pradesh

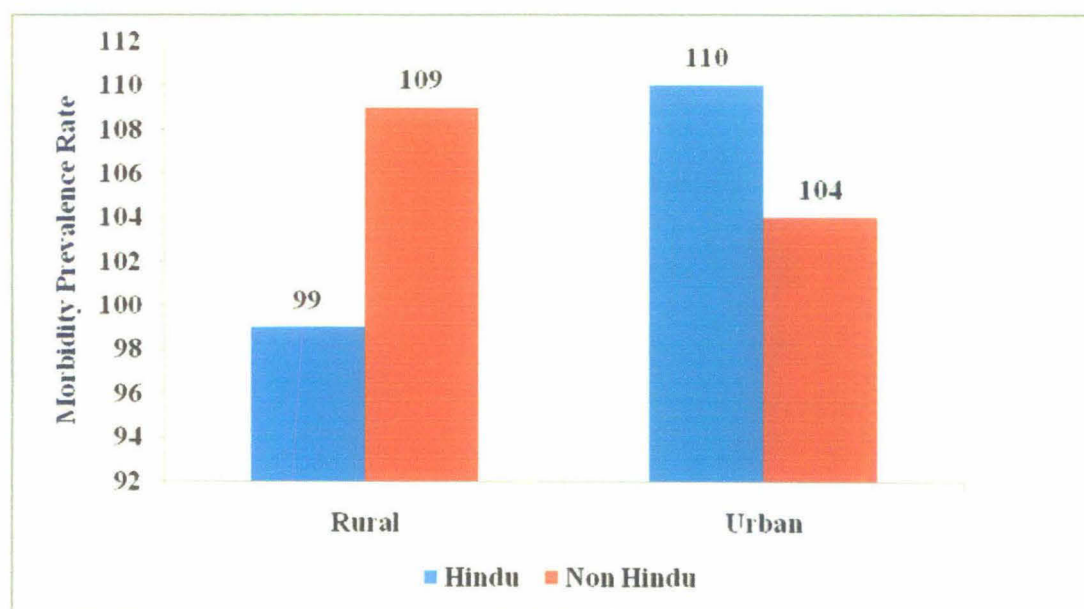
Within any given place, different levels of morbidity are frequently found among the various ethnic or religious groups. The observed variations among religious groups probably reflect mainly differences in such factors as socio-economic status and accessibility of health facilities and services. Result obtained from the Table 3.7 states that Non Hindus have higher morbidity than Hindus, but the variation in morbidity magnitude between them are not much, Hindus has 101 per thousand while non Hindus having 107 per thousand morbidity rate.

The interesting fact is that morbidity prevalence rate among Hindu and Non Hindu women n of urban areas have higher morbidity than Hindu women of rural areas while reverse condition is obtained for non Hindu women.

Table 3.7 Distribution of Morbidity Prevalence Rate by Religion in Uttar Pradesh

Religion	Rural			Urban		
	Male	Female	Person	Male	Female	Person
Hindu	94	104	99	94	128	110
Non Hindu	107	110	109	90	121	104

Figure 3.8 Morbidity Prevalence Rate by Religion and Residence in Uttar Pradesh



3.7 Levels of Morbidity by Land-Holding in Uttar Pradesh

The area of landholding, a proxy for the wealth of the households, shows a somewhat negative association with morbidity. Area of land holdings is categories in two categories, those having less than one hectare and other one having more than one hectare land holding. The estimates from Table 3.9 shows that the overall morbidity prevalence rate per thousand population is 104 for those having less than one hectare land area, while 95 for those having more than one hectare land in Uttar Pradesh. Morbidity prevalence rate among those having less than one hectare is higher than their counter parts in both rural and urban areas.

Table 3.9 Distribution of Morbidity Prevalence Rate by Size of Land Holding in Uttar Pradesh

Size of Land Holding	Rural		Urban	
	Male	Female	Male	Female
Less than 1 Hac	96	108	92	127
More than 1 Hac	96	93	102	101

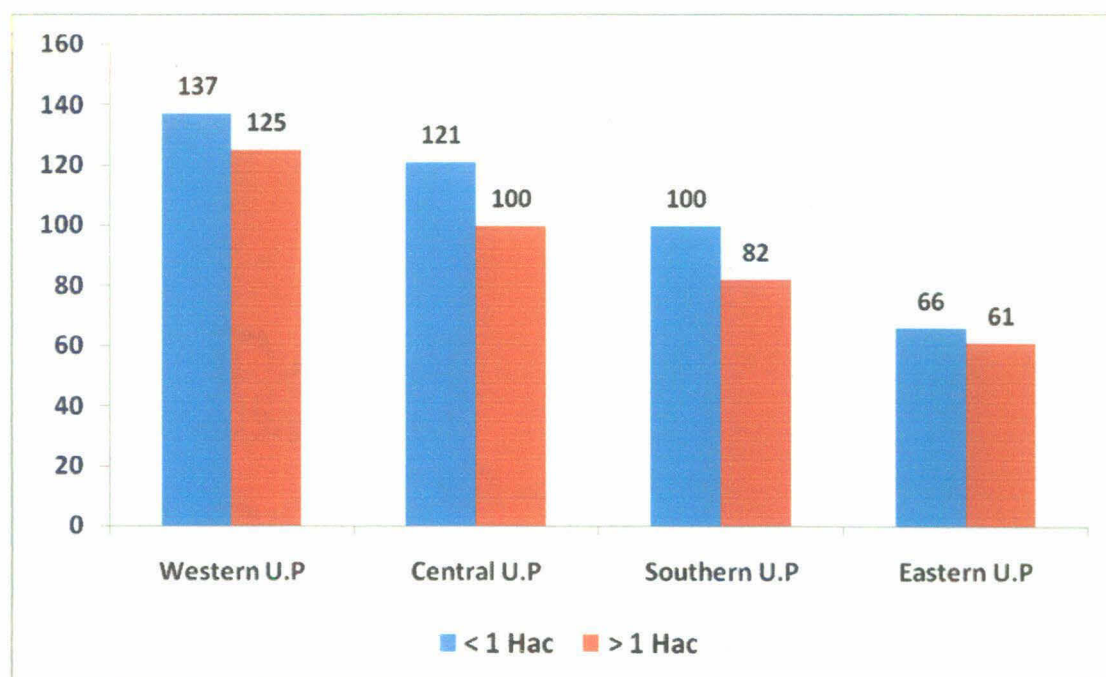
3.7.1 Regional Pattern of Morbidity Prevalence Rate by Land Holding Size

Figure 3.9 presents that there is specific pattern emerged that shows the morbidity prevalence rate of persons having less than one Hectare land is higher than persons having more than one hectare land. The difference between morbidity rates of male persons having less than one hectare land and male having more than one hectare land is very low in rural areas. Female morbidity rate shows greater difference not only in rural area but also in urban area for both category of land holding.

All the regions of Uttar Pradesh have higher morbidity in female category those having less than one hectare land holding. Western Uttar Pradesh shows higher morbidity level while Eastern Uttar Pradesh shows very low morbidity level. The

interesting finding on the morbidity-land holding size association is that morbidity among males is higher than females in rural areas those having more than one hectare land while such kind of relation not seems in urban areas. The results show higher morbidity level in those people having low land size; the small size of land may reflect the low economic status, which leads to less accessibility to health care services, treatment avoiding behavior and higher chance to being sick.

Figure 3.9 Morbidity Prevalence Rates in regions of Uttar Pradesh by Size of Land Holding



3.8 Levels of Morbidity by Social Group in Uttar Pradesh

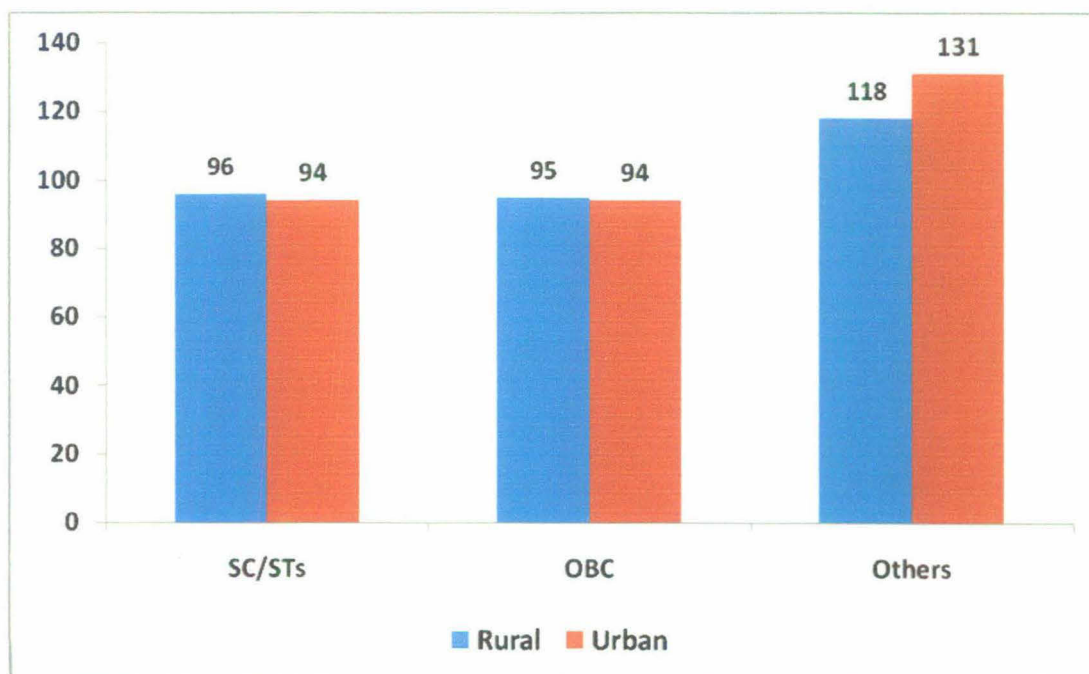
Indian society is a caste oriented society; the Indian caste system is intensely hierarchical resulting in several social and economic problems. People belong to schedule caste and schedule tribes are not considered equal in social status as upper caste people. In this study focus has been given to trace out the health condition of them. For study purpose castes are classified in three categories namely Schedule

Caste/Schedule Tribes, Other Backward Caste and Others. Schedule Tribes population clubbed with Schedule caste due to low number of cases. Table 3.10 reveals that Morbidity Prevalence rate among Schedule Castes is lower than other caste (General). Morbidity prevalence rates among Schedule castes and Other Backward Castes are similar in both rural and urban areas, while others have higher morbidity in urban areas than rural areas.

Table 3.10 Distribution of Morbidity Prevalence Rate by Social Groups in Uttar Pradesh

Social Groups	Rural		Urban		Total	
	Male	Female	Male	Female	Male	Female
SC/STs	91	101	92	96	91	100
OBC	90	102	84	106	89	102
Others	120	116	104	162	115	131

Figure 3.10 Morbidity Prevalence Rate by Social Groups in Uttar Pradesh

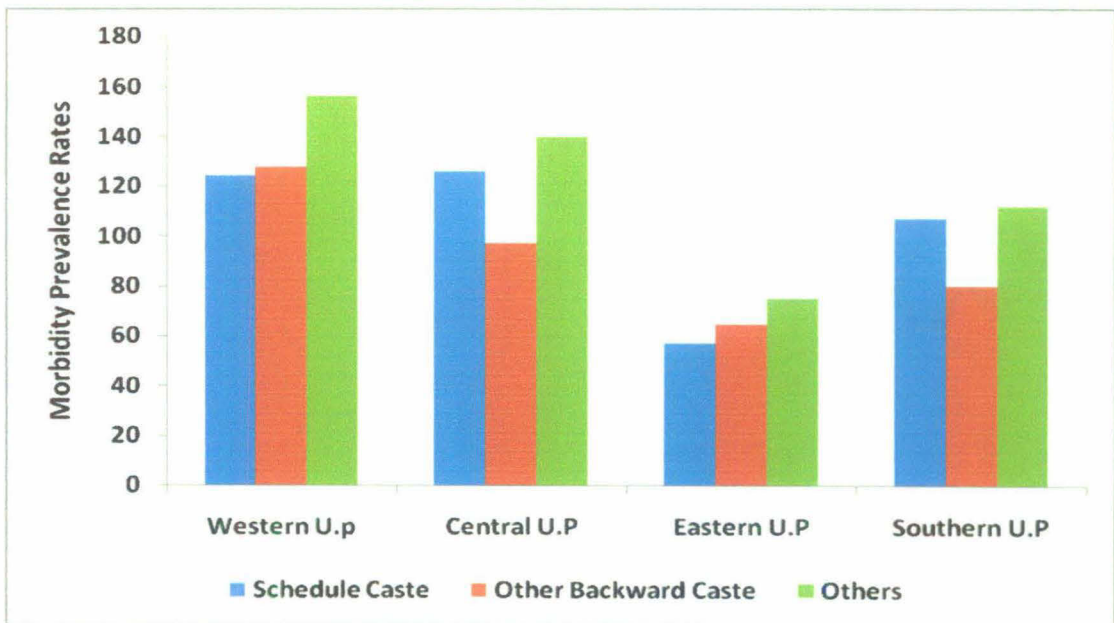


Female morbidity is higher than males in all social groups. There is no greater difference found between morbidity levels of males and females for Schedule Castes and Other Backward Castes populations. Morbidity prevalence rates among Other Backward Caste's males are lower than males belong to other social groups.

3.8.1 Regional Pattern of Morbidity Prevalence Rate by Social Groups

Western Uttar Pradesh has higher morbidity rates than all other regions of Uttar Pradesh while Eastern Uttar Pradesh shows lowest morbidity levels among all the regions of Uttar Pradesh. Population belongs to other category has higher morbidity rates than all other social groups while people belongs to Schedule castes has lowest morbidity rates among all the regions of Uttar Pradesh. Southern Uttar Pradesh and Central Uttar Pradesh show a different picture of morbidity where lowest morbidity rates found in Other Backward Castes. In urban areas, Western Uttar Pradesh and Central Uttar Pradesh have lower morbidity rates among males and females of Other Backward Castes than Schedule Cates and Others Castes. In rural areas, such situation founds only in Southern Uttar Pradesh.

Figure 3.11 Distribution of Morbidity Prevalence Rates in different regions of Uttar Pradesh

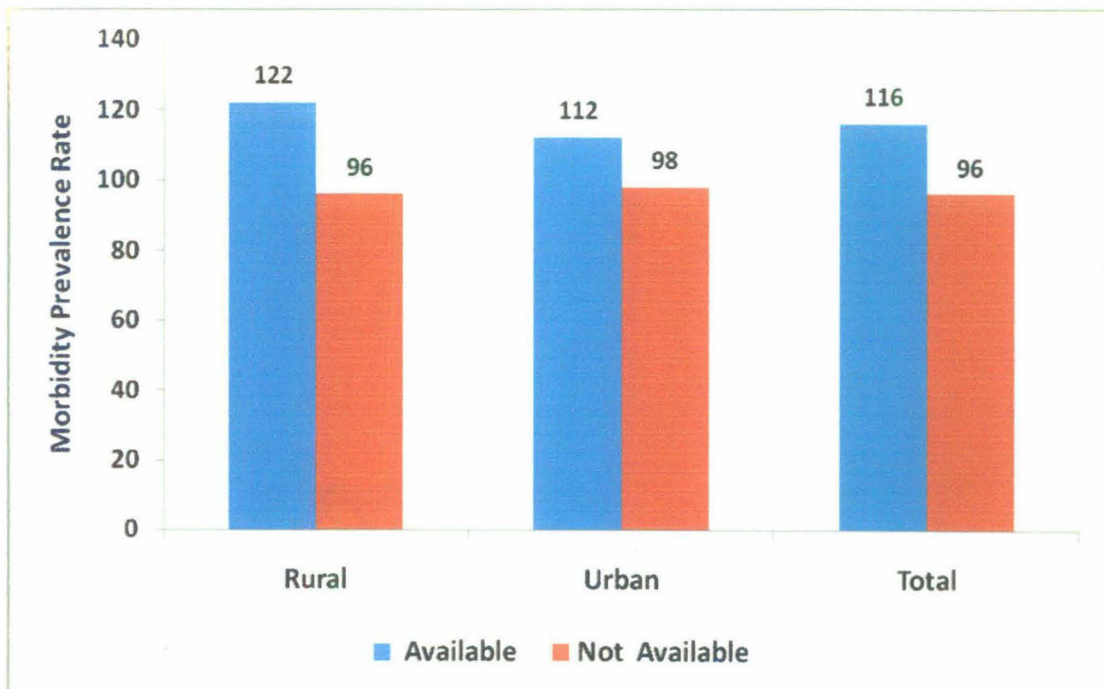


3.9 Levels of Morbidity by availability of Toilet in Uttar Pradesh

Availability of toilet facility in household represents the better hygiene condition and less chance to being sick from communicable diseases. It improves the sanitation level of household. It is understood fact that those household having toilet facility, the morbidity rate found much lesser than those households do not have toilet facility. Survey gives various categories of toilet facility like service latrine, pit, flush system etc. for the study, two categories have been selected namely toilet facility available and not available.

Figure 3.12 states that those people availing toilet facility have higher morbidity prevalence than those have not toilet facility. In rural and urban Uttar Pradesh, same situation is found. Female's morbidity rate higher than males for both categories of toilet availability.

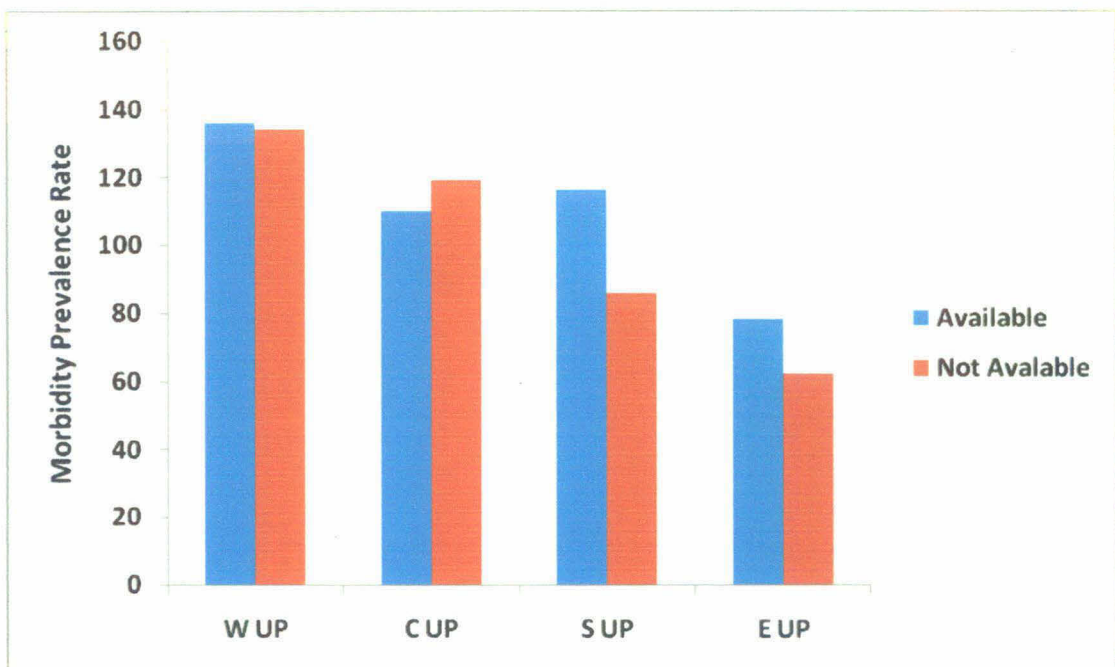
Figure 3.12 Morbidity Prevalence Rate by Availability of Toilet Facility in Uttar Pradesh



3.9.1 Regional Pattern of Morbidity Prevalence Rate by Availability of Toilet Facility

All the regions of Uttar Pradesh show similar kind of results as for Uttar Pradesh whole. Figure 3.13 show that Western Uttar Pradesh shows higher morbidity than all other regions of Uttar Pradesh. Rural morbidity is higher than urban areas for all regions of Uttar Pradesh. Those households have toilet facility generally reported higher morbidity than those have not toilet facility. Southern Uttar Pradesh shows different picture where those household having toilet facility have lower morbidity than those households not availing toilet facility in rural areas.

Figure 3.13 Distribution of Morbidity Prevalence Rates in different regions of Uttar Pradesh by Availability of Toilet Facility



In urban areas of Southern Uttar Pradesh morbidity rate difference found very wide for both categories of availability of toilet facility, those households having toilet facility have morbidity rate 146 per thousand population while those have not toilet facility morbidity rate found is only 45 per thousand population. It is considered that

those households having toilet facility are more aware about sanitation than those households not having toilet facility, more awareness about health caused non ignorance of diseases and higher reporting of morbidity.

3.10 Levels of Morbidity by Source of Cooking in Uttar Pradesh

Source of cooking is considered as an important determinant of morbidity, pure and non pollutant fuel led lower morbidity among population. For the study source of cooking classified in two categories, namely Liquid Petroleum Gas (LPG) and other, that includes Coal, Wood Chips, Dung Cake, Kerosene Oil, etc. In Uttar Pradesh nearly 15 percent household use LPG and remaining 85 use other source of cooking, this broader category consists with 57 percent from Woods and 26 percent from Dung Cake.

Figure 3.14 Morbidity Prevalence Rate by Source of Cooking in Uttar Pradesh

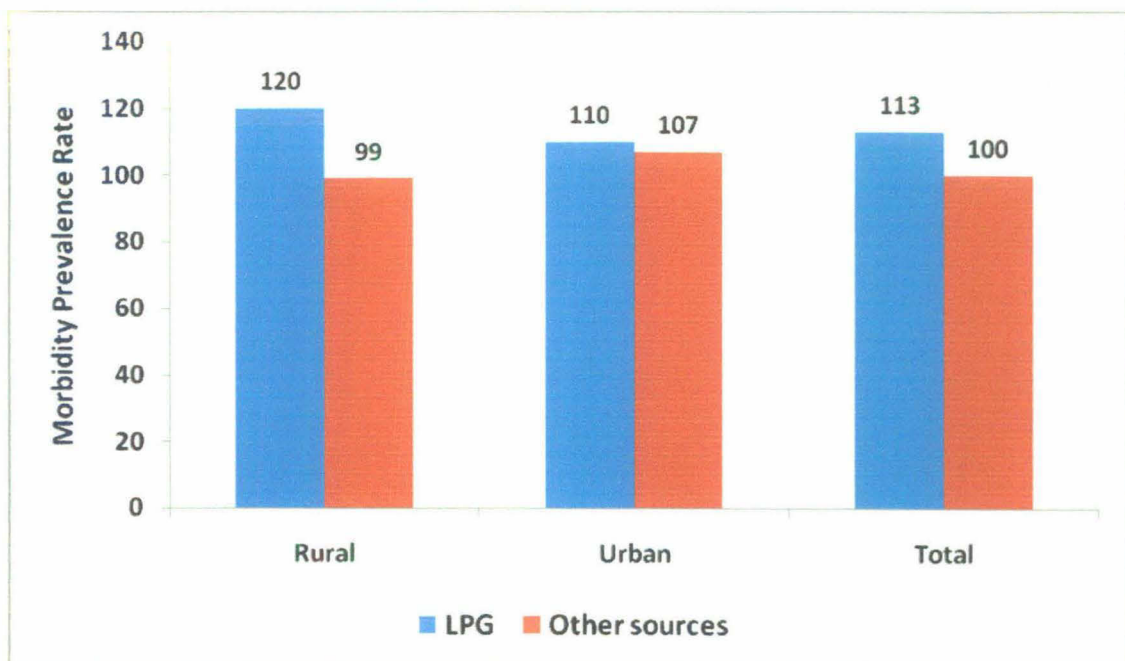


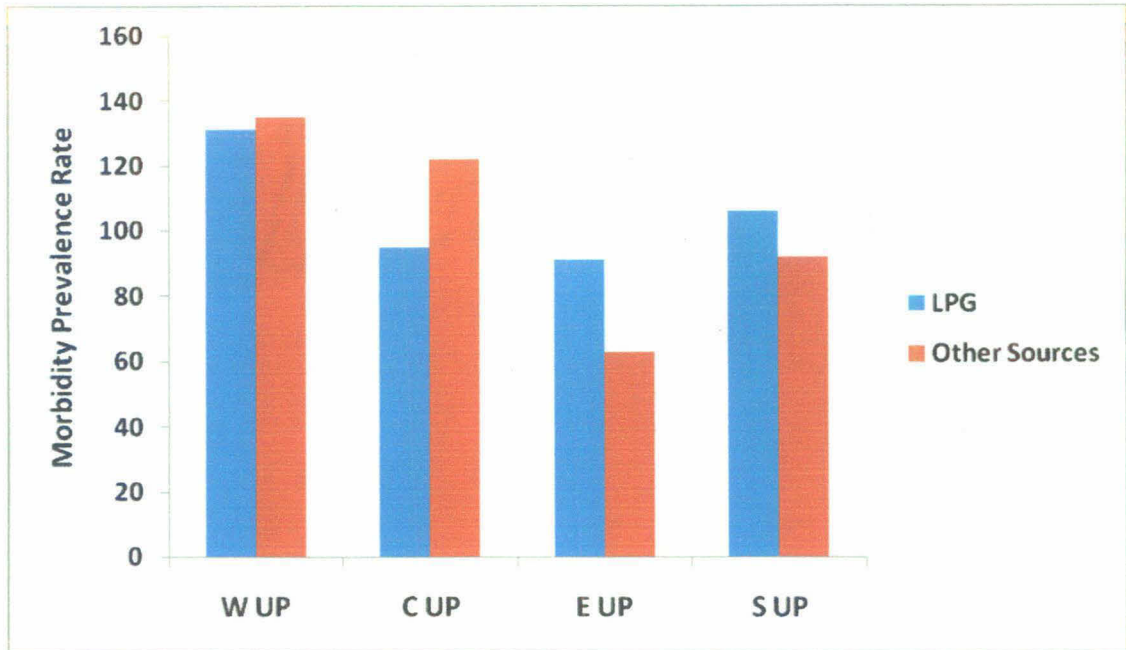
Figure 3.14 presents that those households using LPG as source of cooking have higher morbidity than those households using other sources of cooking. In LPG users, morbidity rate found higher in rural areas than urban areas. While those households using other sources of cooking have higher morbidity rates in urban areas than rural areas. Male morbidity is higher than female morbidity in rural areas in those households using LPS as source of cooking.

3.10.1 Regional Pattern of Morbidity Prevalence Rate by Source of Cooking in Uttar Pradesh

Regional pattern of morbidity by source of cooking shows that all the regions show higher morbidity in LPG users. The only exception of this is Southern Uttar Pradesh, where LPG users have lower morbidity than other sources users. By type of residence, Western and Central Uttar Pradesh have higher morbidity in rural areas than urban areas, while Eastern and Southern Uttar Pradesh show reverse condition. Extreme low morbidity reported in rural Southern Uttar Pradesh, where it is found 8 per thousand populations for males and 15 per thousand populations for females.

Pattern obtained from the Figure 3.15 clearly shows that LPG users have higher morbidity levels than users of other source of cooking. The results reveal that LPG users reported higher morbidity due to good perception about health; it is commonly found that those households using LPG as source of cooking belong to high economic status. In rural areas, educated and economically sound households use LPG as source of cooking rather than Woods, Dung Cake or Coal users.

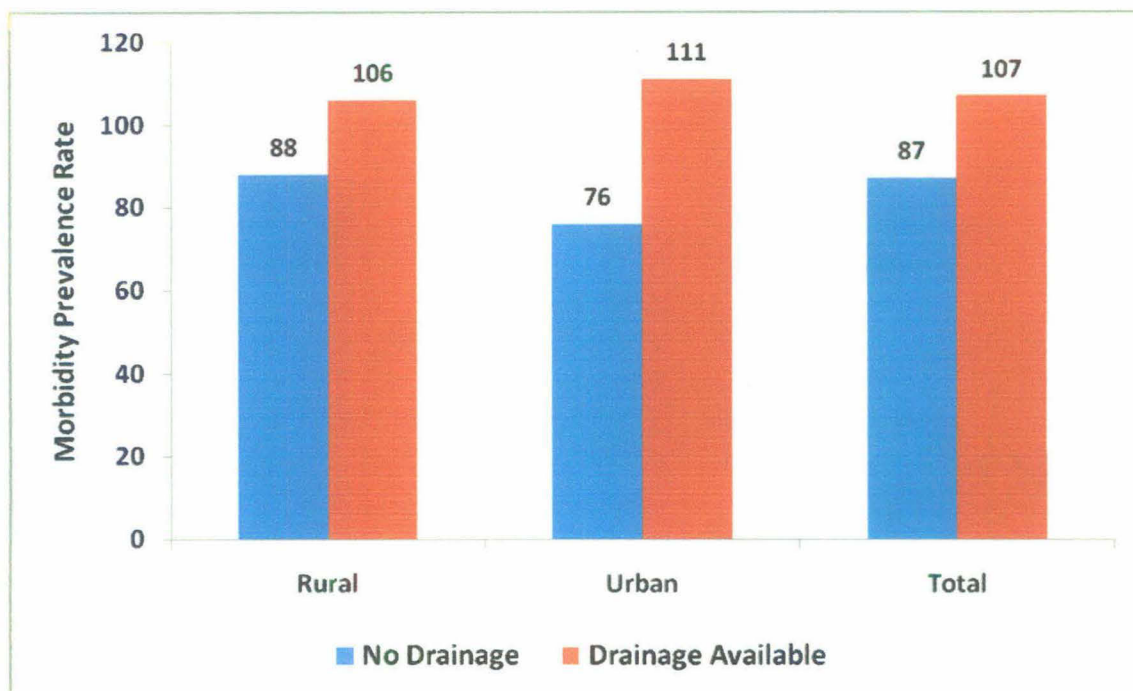
Figure 3.15 Distribution of Morbidity Prevalence Rates in different regions of Uttar Pradesh by Source of Cooking



3.11 Levels of Morbidity by type of Drainage in Uttar Pradesh

Type of drainage not only reflects the living condition of households but also has a bearing on the health condition of the members of the household. Poor drainage of the household leads to higher chance to being sick, because it creates unhygienic condition in the household. In survey a question asked about drainage and type of drainage categorized in many categories like, open drainage, Covered drainage, Kuccha drainage, Pucca drainage and No drainage. Type of drainages classified in two categories, namely no drainage and drainage available in this study. In Uttar Pradesh, 92 percent household of urban areas and 70 percent household of rural areas having drainage facility.

Figure 3.16 Morbidity Prevalence Rate by Availability of Drainage in Uttar Pradesh



Those households having drainage facility reported higher morbidity than those have no drainage facility in both rural and urban areas. By type of residence, those households having no drainage facility have higher morbidity in rural areas than urban areas. Overall female morbidity is found higher than males in both rural and urban areas for both type of drainage category.

3.11.1 Regional Pattern of Morbidity Prevalence Rate by Availability of Drainage in Uttar Pradesh

Regional pattern present a mixed picture of morbidity prevalence by type of drainage. Table 3.11 shows that Western Uttar Pradesh shows higher morbidity prevalence for those households which have no drainage facility; another special fact about this region is that rural morbidity is higher than urban region for both categories of drainage. Central Uttar Pradesh shows those households having no drainage facility having higher morbidity rate than those availing drainage facility. Central Uttar

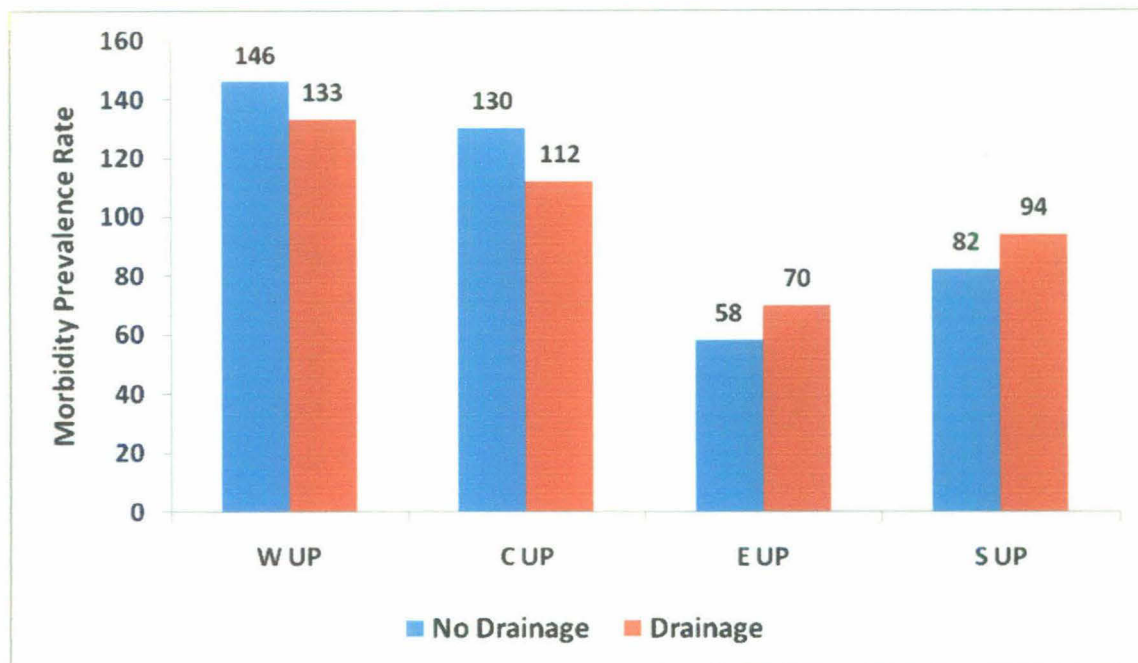
Pradesh also reported higher morbidity rates in rural areas in comparison to urban areas.

Table 3.11 Distribution of Morbidity Prevalence Rates in different regions of Uttar Pradesh by Availability of Drainage Facility

Drainage Facility	Western UP		Central UP		Southern UP		Eastern UP	
	Male	Female	Male	Female	Male	Female	Male	Female
Not Available	150	141	121	140	55	62	77	87
Available	121	146	104	121	67	73	83	102

Eastern Uttar Pradesh reported lowest morbidity in both rural and urban areas, in this region those households having drainage facility having higher morbidity than those households not having such facility. Extremely low morbidity found in Southern Uttar Pradesh for both genders in urban areas, those have not drainage facility, it is found 18 per thousand population for male and 36 per thousand population for female.

Figure 3.17 Morbidity Prevalence Rates in different regions of Uttar Pradesh by Availability of Drainage



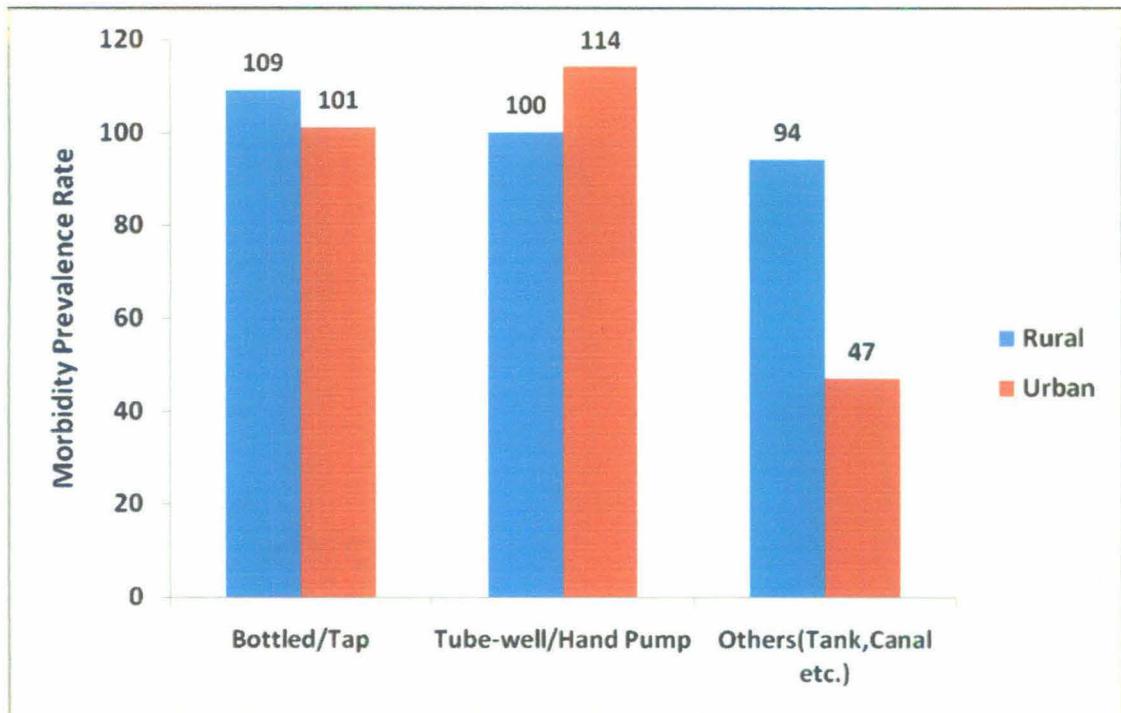
3.12 Levels of Morbidity by Source of Drinking Water in Uttar Pradesh

The quality of water used for drinking is a very important determinant of health condition. The source from where drinking water is collected by household roughly indicates its quality and thus awareness of the households of the need for drinking water of proper quality. The most prevalent source, in the rural areas, is found to be tube-well/ hand pump. Next in importance, as reported, are tap and pucca well.

The proportions of households reporting the use of drinking water for the major part of the year from three sources are 82 percent, 12 percent and 6 percent, respectively in Uttar Pradesh. In this study three categories are made for source of drinking water, namely Bottled/Tap Water, Tube-well/Hand pump and others that includes Tank/Pond, River/Canal etc. Study reveals that those households using

bottled/tap water as source of drinking water have higher morbidity prevalence than those households using tube-well/hand pump or other source of drinking water.

Figure 3.18 Morbidity Prevalence Rate by Source of Drinking Water in Uttar Pradesh



Lowest morbidity prevalence found in those households using other sources as source of drinking water. In rural Uttar Pradesh, male morbidity found higher than female for those households using bottled/tap water as source of drinking water. Male morbidity also found higher than female for other sources of drinking water in rural areas as well as in urban areas.

3.13 Summary

Chapter third deals with Morbidity Level and its differentials in Uttar Pradesh and its regions. This section examined the Morbidity Prevalence among population groups by socio, economic and demographic factors. Result obtained from the data reveals that Uttar Pradesh has a higher morbidity than other states of India. In Uttar Pradesh, Morbidity Prevalence Rates are found much higher in Urban Uttar Pradesh than Rural Uttar Pradesh. Females have high morbidity than males in all aspects. Morbidity Prevalence Rate increases as the age increased and it gives a 'U' shape curve in which both ends of curve show extreme morbidity in children and aged people. Unmarried people reported low morbidity as compared to married people, very high reporting of morbidity reported by widowed and divorced people. Education gives different picture of morbidity; it gives a mirror image 'J' shape curve, which shows morbidity is found higher in illiterate people, as the level of education increases, reporting of morbidity decreased but in morbidity also found high at higher education level. At regional level, morbidity found much higher in Western Uttar Pradesh, while morbidity is reported very low in Eastern Uttar Pradesh.

Chapter IV

Pattern of Morbidity in Uttar Pradesh

Chapter IV

Pattern of Diseases in Uttar Pradesh

4.1 Introduction

As discussed earlier, there are noticeable intra and inter region differences found in the prevalence of morbidity by socio-economic groups in both rural and urban areas. Quite likely, the pattern of various diseases would be different in these regions of Uttar Pradesh. For the purpose of study ailments are classified in different groups, the classifications of the ailments are as follows.

4.2 Classification of diseases

The reported sicknesses do not entirely constitute clinically confirmed diseases. However most of the sickness for which treatment was sought, the patient and other household member would have known the name of the disease from the doctors and Para medical personnel. Thus the reporting of the diseases in fact presents a combination of self perceived and clinically identified sickness. The reporting of the clinically identified morbidity is also a subjected to the recall and reporting errors.

A total of 42 ailments are listed in the survey. For the purpose of the study, some of the ailments have been grouped into categories. For example, heart diseases and hypertension have been grouped as cardiovascular diseases. However, some ailments such as, diseases of skin, goiter, diabetes mellitus, under nutrition, anaemia, and sexually transmitted diseases have been only listed. Since some ailments have not been grouped and others have not been grouped into manageable categories, the 42 ailments have been classified so that a meaningful analysis can be conducted.

In order to group the ailments we have used the latest classification of disease by World Health Organization (WHO, 2007). We have used the International

Classification of Diseases (ICD), 10th version, to group the ailments and the WHO category and the ailments included in the category are as follows:

I. Infectious and Parasitic Diseases: Diarrhea/Dysentery, Warm Infection, Amoebiasis,

Hepatitis/Jaundice, Skin Disease, Malaria, Mumps, Eruptive, Diphtheria, Tetanus, Filariasis /Elephantiasis, Whooping Cough.

II. Neoplasm: Cancer and other Tumors.

III. Endocrine, Nutritional and Metabolic: Goiter, Diabetes Mellitus, Under Nutrition, and Anaemia.

IV. Neuro-Psychiatric disorders: Gynaecological disorder and Psychiatric disorder.

V. Diseases of eye and adnexa: Conjunctivitis, Glaucoma and Cataract.

VI. Circulatory System Diseases: Heart Diseases and Hypertension.

VII. Respiratory System Diseases: Tuberculosis, Bronchial Asthma and Ear/ Nose/
Throat Ailment.

VIII. Digestive System Diseases: Gastritis/Gastric or Peptic Ulcer.

IX. Genitourinary System Disease: Sexually Transmitted Diseases, Diseases of
Kidney/Urinary System, Prostatic Disorder.

X. Accidents and Violence: Accident/Injuries/Burns/Fractures and Poisoning.

XI. Others: Locomotor's, Blinds, Speech Hearing and Diseases of Mouth/Teeth/Gum,
Other Diagnosed ailments and other Undiagnosed ailments.

The individual ailments account for only a small proportion of total ailments reported. For the study purpose, these ailments are clubbed into broad groups. The ailments are classified on the basis of International Classification of Diseases (ninth revision) developed by the World Health Organization (WHO) in 1977. The classification is one adopted by the World Bank to compute the DALY (Disability Adjusted Life Years) to measure the global burden of diseases. The ailments are broadly classified into three categories; (i) communicable (ii) non communicable (iii) injuries. The fourth category, namely 'others' is added in this study to include the NSS items coded as 31(fever of unknown origin), 41(other diagnosed ailments) and 99(other undiagnosed ailments). Ailments which are distributed in different categories are as follows,

(i) Communicable Diseases- Diarrhoea/dysentery, Gastritis or peptic-ulcer, Worm infestation, Amoebiasis, Hepatitis/jaundice, Tuberculosis, Bronchial Asthma, Tetanus, Malaria, Mumps, Diphtheria, Whooping cough, Tetanus, Filariasis/Elephantiasis, Sexually Transmitted Diseases

(ii) Non Communicable Diseases- Heart Disease, Hypertension, Disorder of Joints and Bones, Disease of Kidney/urinary system, Prostatic Disorders, Gynecological disorders, Neurological disorders, Psychiatric disorders, Diabetes mellitus, Under nutrition, Anaemia, Cancer and other tumours, Diseases of mouth/teeth/gum

(iii) Accidents and Injuries- Accidents, Injuries, Burns, Fractures, Poisoning

(iv)Others - Unknown Fevers, Other Diagnosed ailments and other undiagnosed ailments, Disabilities

4.3 Pattern of Morbidity in Uttar Pradesh

In Uttar Pradesh, those people who have reported illness during the reference period are classified in four types of illness groups. Each group of illness contained specific kind of ailment. Figure 4.1 presents the picture of morbidity in Uttar Pradesh by type of illness. The share of communicable diseases in Uttar Pradesh is 33.9 percent. The non communicable diseases accounts for about 26 percent of illness. About 12 percent of the illnesses are due to injuries and accidents while other kinds of diseases accounts 25 percent of illness in Uttar Pradesh. Others category included those ailments which are undiagnosed, diagnosed and fever of unknown origin.

Figure 4.1 Distribution of type of illness in Uttar Pradesh

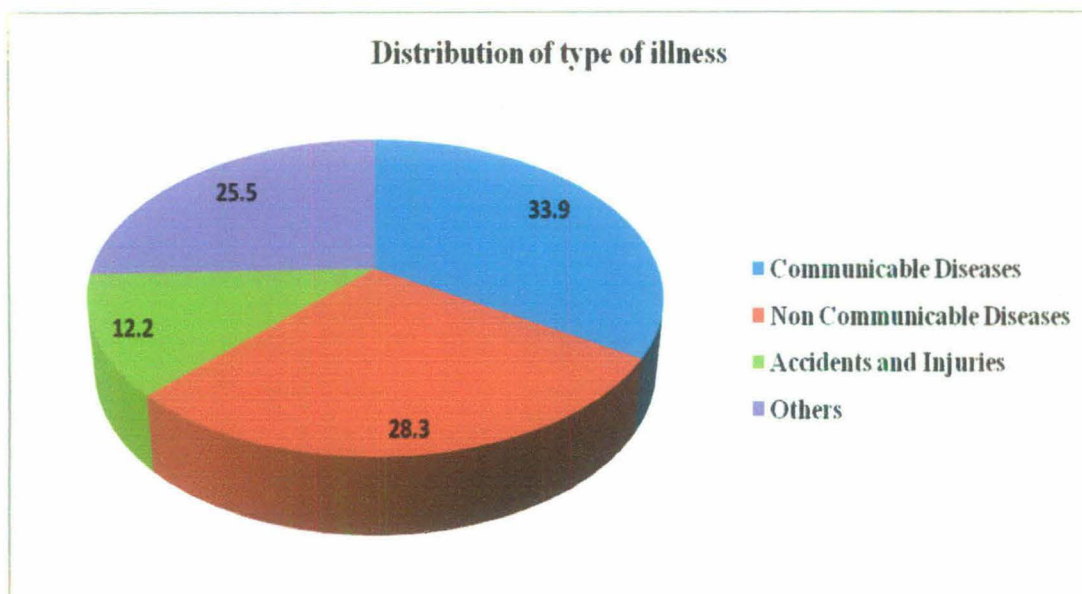


Table 4.1 presents the distribution of sick persons according to ICD-10 classification. Results show that infectious and parasitic diseases are very common in Uttar Pradesh, where it shared 22 percent in total sickness cases reported. Diarrhoea and gastritis accounts more than 70 percent of these group. Others category diseases hold second position in terms of share in total; the figure for this category is 21

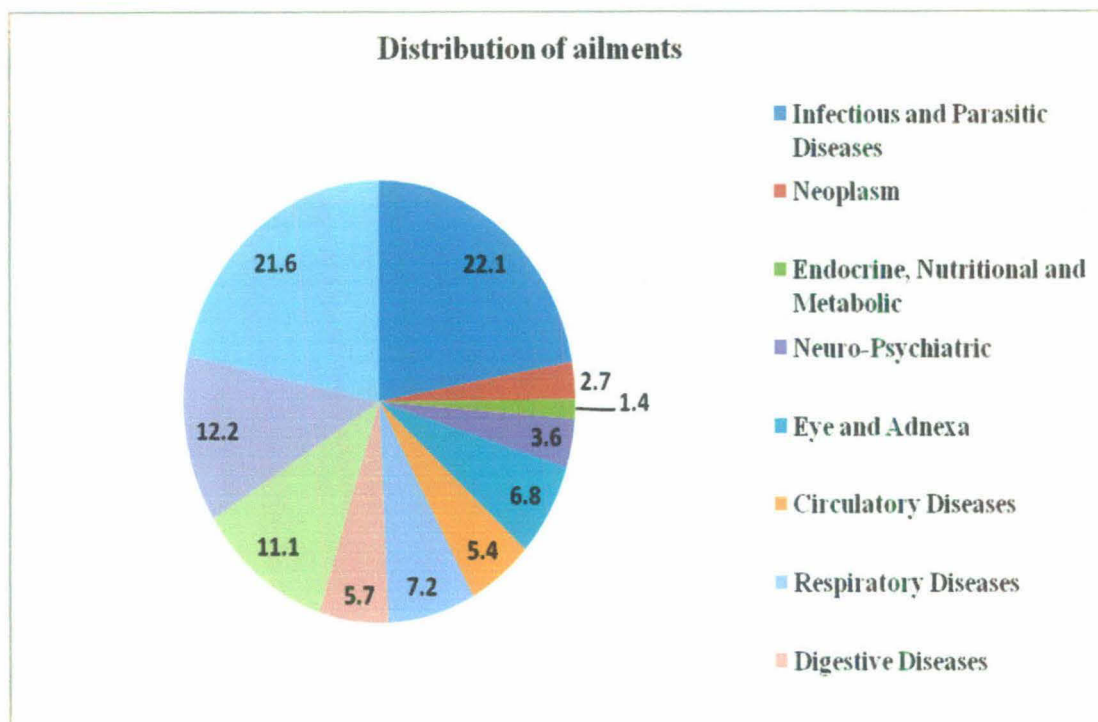
percent, major contribution in this group by fever of unknown origin. The incidence of Accidents and injuries is 12 percent, which holds third rank. Genito-urinary diseases have high incidence and shared 11 percent of total illness.

In the Genito-Urinary diseases major share accounts by diseases of kidney and urinary system, this accounts more than half of total ailments of this disease group. Respiratory diseases accounts about 8 percent of total reported ailments. Eye and related problems have great shared in all reported illnesses. Digestive and circulatory diseases account 5.7 and 5.4 percent of total reported ailments. Endocrine and neoplasm disease have lower contribution among total reported diseases. About 4 percent of the morbidity reporting is due to Neuro-Psychiatric diseases.

Table 4.1 Distribution of ailments according to ICD-10 classification in Uttar Pradesh

Disease Group	Disease Group Description	Percentage
I	Infectious and Parasitic Diseases	22.1
II	Neoplasm	2.7
III	Endocrine, Nutritional and Metabolic	1.4
IV	Neuro-Psychiatric	3.6
V	Eye and Adnexa	6.8
VI	Circulatory Diseases	5.4
VII	Respiratory Diseases	7.2
VIII	Digestive Diseases	5.7
IX	Genito-Urinary	11.1
X	Accidents and Violence	12.2
XI	Others	21.6

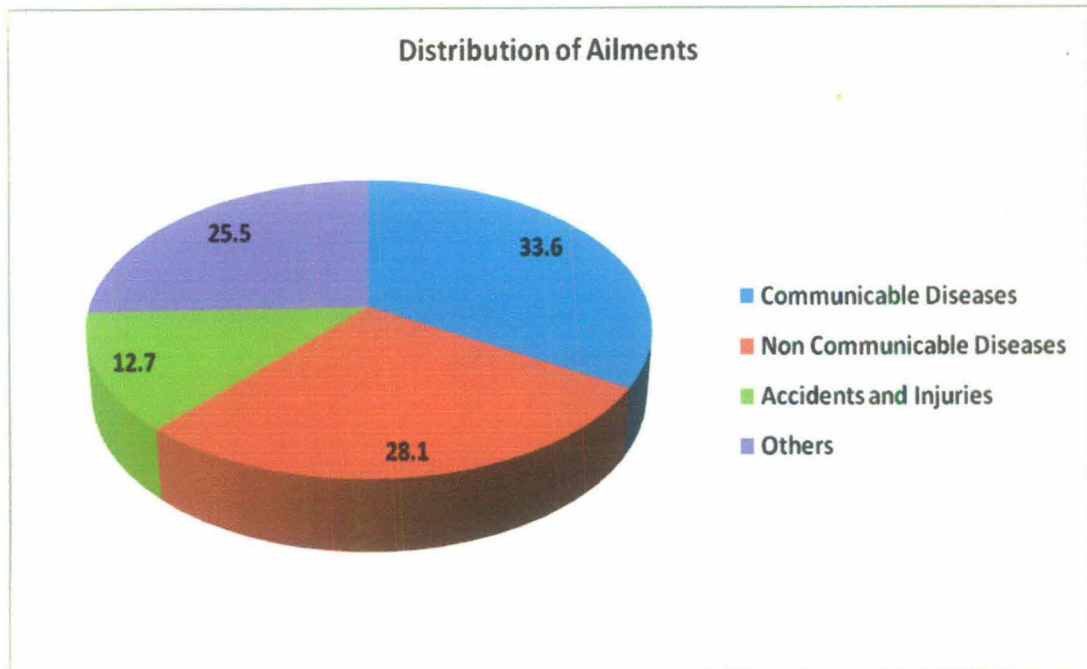
Figure 4.2 Distribution of ailments according to ICD-10 Classification in Uttar Pradesh



4.4 Pattern of Morbidity in Rural Uttar Pradesh

Figure 4.3 presents the distribution of ailments in broad categories of diseases in Rural Uttar Pradesh. Figure shows that there is no huge differences in diseases distribution, all type of diseases show same results as shown in Uttar Pradesh. Communicable diseases accounts 33.6 percent of total reported ailments; this figure for the Uttar Pradesh was 33.9 percent of the total reported illnesses. Non communicable diseases share 28.1 percent of total ailments reported. The variation from the Uttar Pradesh is only 0.2 percent. The little change is found for accidents and injuries related ailments, in which 0.5 percent variation found from Uttar Pradesh. Other diseases group has same share as in Uttar Pradesh.

Figure 4.3 Distribution of type of illness in Rural Uttar Pradesh



The pattern of diseases according to ICD-10 classification is given by Table 4.2, which presents the share of different ailments groups in Rural Uttar Pradesh. Table reveals that about twenty two percent of illnesses categorized as others, in which major share hold by fever of unknown origin. Infectious and parasitic diseases account more than twenty percent of total reported sicknesses.

In comparison to Uttar Pradesh, infectious and parasitic diseases are found lesser in Rural Uttar Pradesh. Respiratory, Digestive and Neo-Plasm diseases are found more than Uttar Pradesh while those ailments that have reported lesser than Uttar Pradesh are eye and circulatory diseases.

Table 4.2 Distribution of ailments according to ICD-10 classification in Rural Uttar Pradesh

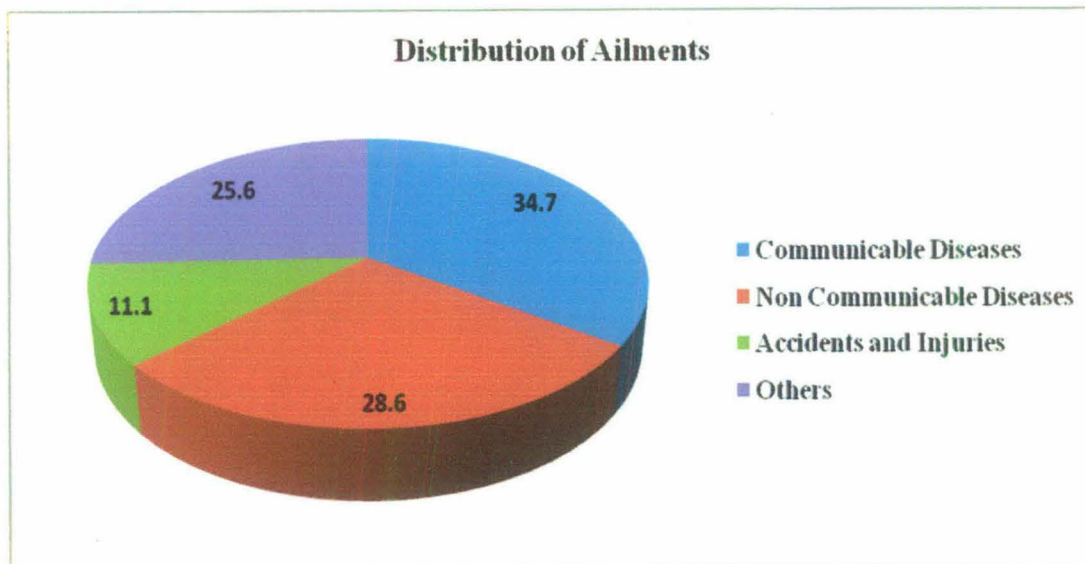
Disease Group	Disease Group Description	Percentage
I	Infectious and Parasitic Diseases	20.4
II	Neoplasm	3.0
III	Endocrine, Nutritional and Metabolic	1.5
IV	Neuro-Psychiatric	3.6
V	Eye and Adnexa	5.7
VI	Circulatory Diseases	4.7
VII	Respiratory Diseases	7.8
VIII	Digestive Diseases	6.0
IX	Genito-Urinary	11.9
X	Accidents and Violence	12.7
XI	Others	22.7

4.5 Pattern of Morbidity in Urban Uttar Pradesh

Urban Uttar Pradesh has different picture of morbidity. The diseases pattern of Urban Uttar Pradesh presents in Figure 4.4, that shows communicable diseases has larger share among all diseases, about 35 percent ailments reported as communicable diseases in Urban Uttar Pradesh, while in Rural Uttar Pradesh the share of communicable diseases of total ailments was 33 percent. High population density and pollution are the major cause behind high share of communicable diseases in Urban Uttar Pradesh. Other type of diseases like non communicable diseases and accidents are found same as in Rural Uttar Pradesh.

Table 4.3 presents the pattern of disease in Urban Uttar Pradesh according to ICD-10 classification. Results show that infectious and parasitic diseases are higher in Urban Uttar Pradesh than Rural Uttar Pradesh. Disease related to Genito-urinary has lower share, the figure for this kind of ailments is 9.4 percent while it was 11.9 percent for Rural Uttar Pradesh.

Figure 4.4 Distribution of type of illness in Urban Uttar Pradesh



Eye problems are found more in urban Uttar Pradesh than in Rural Uttar Pradesh, the cause behind is Urban People are more aware to report illness and take it seriously as compared to Rural Uttar Pradesh. Genito-urinary diseases are found much lesser in Urban Uttar Pradesh than Rural Uttar Pradesh. This may be due to poor hygiene and unawareness among rural people.

Table 4.3 Distribution of ailments according to ICD-10 classification in Urban Uttar Pradesh

Disease Group	Disease Group Description	Percentage
I	Infectious and Parasitic Diseases	26.3
II	Neoplasm	2.0
III	Endocrine, Nutritional and Metabolic	1.3
IV	Neuro-Psychiatric	3.7
V	Eye and Adnexa	9.4
VI	Circulatory Diseases	7.1
VII	Respiratory Diseases	5.8

VIII	Digestive Diseases	4.9
IX	Genito-Urinary	9.4
X	Accidents and Violence	11.1
XI	Others	18.9

4.6 Morbidity pattern in Different regions of Uttar Pradesh

There is large variation found at regional level in Uttar Pradesh, Table 4.4 presents that communicable diseases are found more common and more dominant than other diseases. About thirty five percent diseases are reported due to this group. Central Uttar Pradesh reported highest morbidity from communicable diseases among all regions of Uttar Pradesh while Western Uttar Pradesh shows lowest morbidity from this disease group. Non communicable diseases account sixteen to thirty three percent of reported illness. The amazing figure are obtained from Western Uttar Pradesh and Southern Uttar Pradesh, where extreme values are obtained for non communicable diseases, on one side Western Uttar Pradesh shows highest percentage of non communicable diseases, on other side Southern Uttar Pradesh presents lowest non communicable diseases among all regions of Uttar Pradesh.

Table 4.4 Pattern of Diseases in different regions of Uttar Pradesh

Disease Group	Western U.P	Central U.P	Eastern U.P	Southern U.P
Communicable	30.3	39.4	34.9	35.0
Non Communicable	33.3	24.5	26.6	15.8
Accidents and Injuries	9.7	15.8	12.9	14.0
Others	26.7	20.4	25.6	35.2

Accidents and injuries account ten to sixteen percent in total reported ailments. The higher value of this category means higher chance of disability and high DALY. Western Uttar Pradesh shared about ten percent of total ailments reported due to accidents and injuries. Central Uttar Pradesh and Southern Uttar Pradesh also have high share due to this category. Others diseases which mainly include fever of unknown origin contribute about twenty to thirty five percent of total reported illnesses. Low awareness and poor perception toward health are prime cause of high reporting of illnesses due to this group.

It is generally consider that economic and socially developed region has higher share of non communicable diseases than communicable diseases in total diseases (omran). This shows that Western Uttar Pradesh is much ahead on the path of health transition while Southern Uttar Pradesh is far behind in the race of health transition.

Figure 4.5 Pattern of type of diseases in Different Regions of Uttar Pradesh

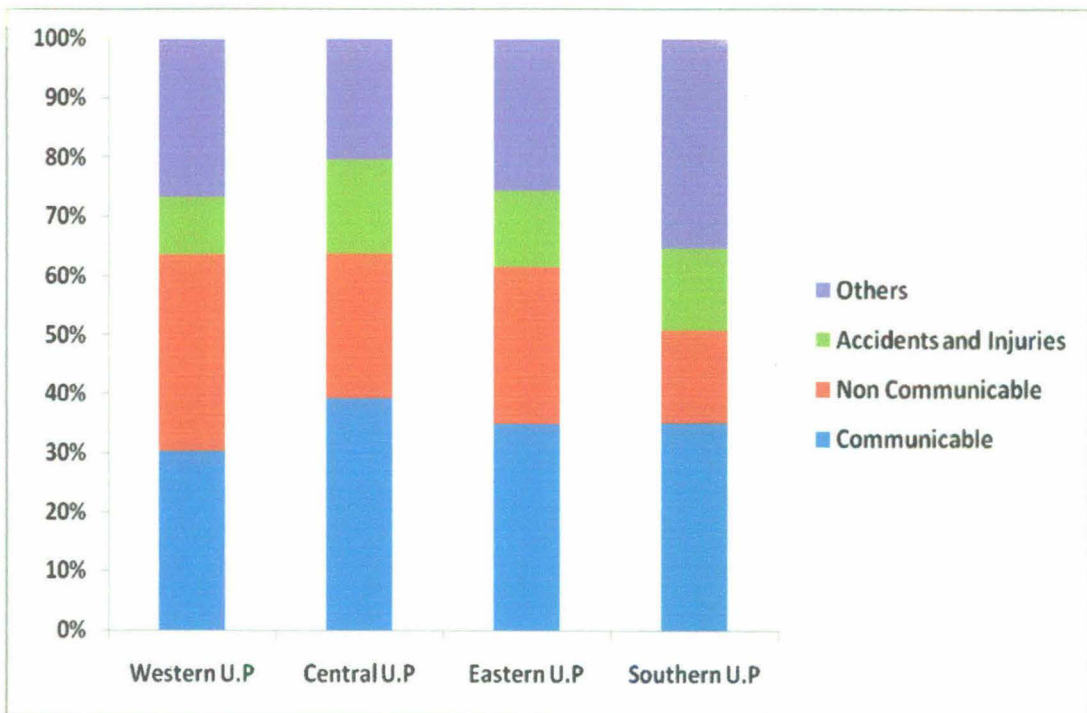


Table 4.5 presents that infectious diseases are highly prevailed in Central Uttar Pradesh, where it share twenty six percent (one fourth) of all reported ailments. Eastern Uttar Pradesh shows lowest proportion, which is about twenty one percent. Western Uttar Pradesh also has lower share, where it is found about twenty two percent. Genito-urinary diseases have great variation among regional level. The share of Genito-urinary in total ailments is the highest in Western Uttar Pradesh, followed by Eastern Uttar Pradesh and Central Uttar Pradesh, the lowest share is found for Southern Uttar Pradesh

Table 4.5 Pattern of diseases in different regions of Uttar Pradesh

Disease Group Description	Western U.P	Eastern U.P	Central U.P	Southern U.P
Infectious and Parasitic Diseases	21.5	20.5	25.9	23.1
Neoplasm	2.8	2.3	3.8	1.5
Endocrine, Nutritional and Metabolic	2.0	1.2	0.9	0.9
Neuro-Psychiatric	2.9	3.7	4.3	5.7
Eye and Adnexa	5.0	7.6	8.3	9.5
Circulatory Diseases	7.2	4.6	3.7	2.7
Respiratory Diseases	7.9	6.2	7.4	7.7
Digestive Diseases	6.3	6.2	4.6	2.4
Genito-Urinary	13.2	12.0	7.3	5.0
Accidents and Violence	9.7	12.9	15.8	14.0
Others	21.5	22.7	18.0	27.6

Circulatory diseases accounts for about three to seven percent of total ailments, Western Uttar Pradesh reported highest illness due to circulatory diseases while lowest morbidity reported due to circulatory diseases in Southern Uttar Pradesh. Respiratory diseases show similar result for all regions of Uttar Pradesh, the share by this category

vary between 6.2 to 7.9 percent. Accident and violence show larger variations for region to region, like in Western Uttar Pradesh it shares only 9.7 percent while Central Uttar Pradesh shows highest share that is 15.8 percent of total ailments. The share of digestive diseases in Western Uttar Pradesh and Southern Uttar Pradesh are 6.3 and 2.4 percent respectively that is highest and lowest in all regions of Uttar Pradesh.

Endocrine diseases are found majorly in Western Uttar Pradesh, while other regions have little shared that is less than one percent. Diseases which are categorized in other disease group share more than 18 percent of total ailments. The contribution by this group is more than 27 percent in Southern Uttar Pradesh in total reported ailments. Eye problems have greater share in Southern Uttar Pradesh, while it is found lowest in Western Uttar Pradesh.

Disease pattern of Uttar Pradesh at regional level clearly indicates that Western Uttar Pradesh has good health condition where share of non communicable diseases is very high in comparison to other regions, while Southern Uttar Pradesh presents poor health condition where communicable diseases are prevailed majorly. Accidents and injuries are reported very less in Western Uttar Pradesh in comparison to other regions. Reporting and awareness about Genito-urinary diseases in Western Uttar Pradesh is much better than the other regions, which mean social development is high in Western Uttar Pradesh.

4.7 Pattern of Morbidity by type of ailment and age Groups

In view of the very close relation between age and risk of being morbid, age may consider the most important demographic variable in the analysis of morbidity. No other general characteristic of the patient or of the event offers so definite a clue as clue as to the risk of morbidity. Table 4.6 presents that the communicable diseases are concentrated in the younger age groups, about 47 percent of the sick children aged 0-4 suffer from communicable diseases. Age the age increases, the percentage share decreased but rise again in higher ages. The lowest share of communicable diseases is

found in 15-39 age groups. The highest percentage of communicable diseases in sick people is found in age 60+.

Table 4.6 Distribution of Diseases by Type of Ailments and Age Group

Type of Ailment	Age Groups				
	0-4	5-14	15-39	40-59	60+
Communicable	46.9	30.6	26.3	31.0	49.5
Non Communicable	9.8	17.4	32.7	35.2	28.1
Accidents and Injuries	10.5	15.5	12.4	13.4	9.3
Others	32.8	36.4	28.6	20.4	13.1

Table 4.6 also indicates that the non communicable diseases are concentrated in older age groups, especially in 15-39 and 40-59 age groups. It indicates that as the age increases, the probability of being morbid by non communicable diseases increased.

Figure 4.6 Patterns of Ailments Groups by Age Groups in Uttar Pradesh

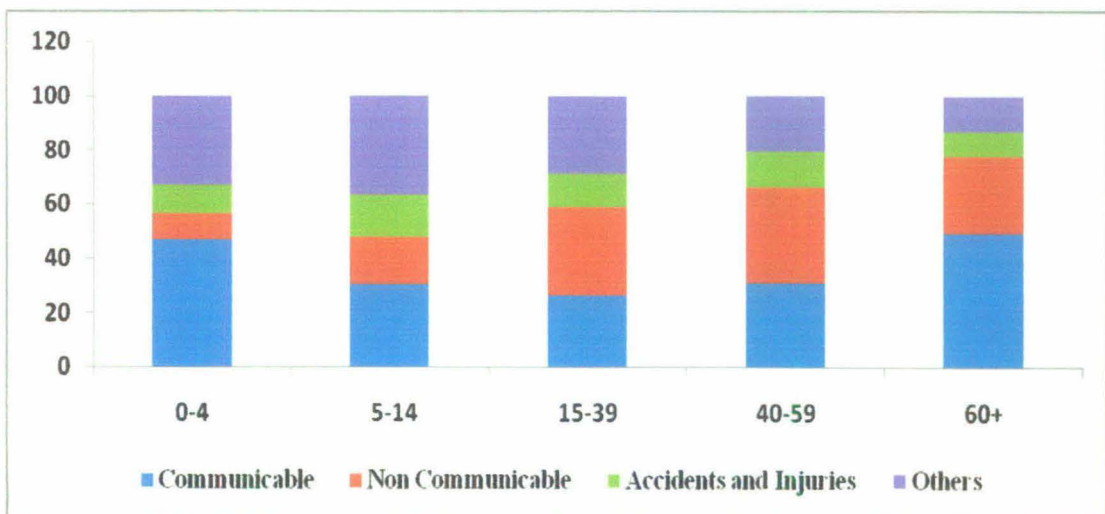


Table 4.7 Pattern of diseases by type of ailments and age group according to ICD-10

Disease Group Description	0-4	5-14	15-39	40-59	60+
Infectious and Parasitic Diseases	48.0	43.3	17.6	13.7	12.1
Neoplasm	2.6	1.0	2.2	4.9	1.9
Endocrine, Nutritional and Metabolic	0.7	3.2	1.4	1.4	1.1
Neuro-Psychiatric	2.5	4.0	4.3	2.4	4.5
Eye and Adnexa	0.4	0.9	0.6	8.0	29.3
Circulatory Diseases	0.8	0.4	3.3	10.3	9.9
Respiratory Diseases	9.1	5.6	7.2	7.3	6.7
Digestive Diseases	2.5	3.0	6.2	8.1	4.9
Genito-Urinary	0.8	1.9	19.0	11.0	6.1
Accidents and Violence	10.5	15.5	12.4	13.4	9.3
Others	22.0	21.2	25.9	19.5	14.1

Table 4.7 shows that distribution of different ailment groups in Uttar Pradesh by age groups, the different ailments groups are classified according to ICD-10. Estimates show that infectious diseases are concentrated in younger age group especially in 0-4 age. As the age increases share of infectious diseases goes down. It lucidly shows that the chance of being sick becomes low as age increases. Eye related problems are concentrated in older age groups, especially in those people who are more than sixty years. Common problems of eye are Cataract, Conjunctivitis and Glaucoma. About thirty percent people of sixty plus age group have reported illness due to eye diseases.

Circulatory diseases also increase as age increases, in child age, share of circulatory diseases of total reported ailments is just one percent, while it increases to 10 percent in older age group. Genito-urinary diseases are mainly concentrated in 15-39 age groups; it accounts about 20 percent of total reported illnesses. Respiratory

diseases do not show clear pattern by age, yet concentration of respiratory diseases are found in child age, in which acute respiratory infection is commonly reported.

4.8 Pattern of Morbidity by Type of Ailment and Sex

Table 4.8 shows that communicable diseases are found more in males than females. The share of communicable diseases in total ailments for male and female are about 35 and 33 percent. While non communicable diseases are mainly found in females, about one third of reported cases of female morbidity are due to non communicable diseases.

Accidents and injuries are concentrated in males, about 18 percent of male sickness due to this group while females reported only 7 percent cases of all ailments due to accidents. This indicates that males are more prone to accidents than females, in Indian society males are found mainly in workforce and they have to visit outside the home so chance of facing accidents and injuries increases while females are generally work as housewives. Other disease group which included fever of unknown origin and undiagnosed ailments are more reported by females than males. It shows that perception of males towards ailments is much better than the females.

Table 4.8 Distribution of Diseases by Type of Ailments and Sex

Type of Ailments	Male	Female
Communicable	34.9	32.9
Non Communicable	23.6	33.0
Accidents and Injuries	17.5	7.0
Others	24.0	27.1

Figure 4.7 Pattern of Ailments Group by Sex in Uttar Pradesh

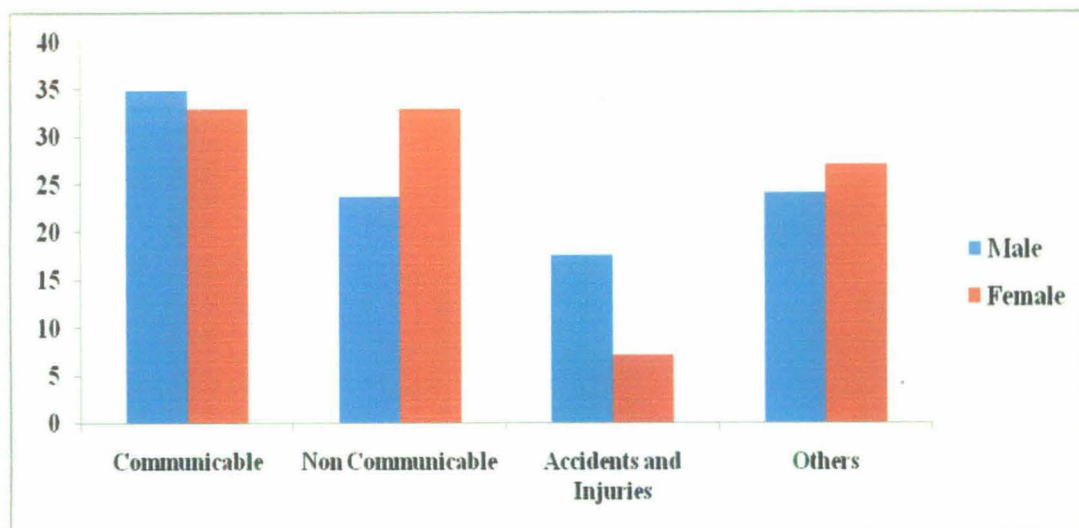


Table 4.9 presents the pattern of diseases according to ICD-10 by sex. Estimates reveal that Infectious diseases are concentrated in males, about 28 percent sick male are fall in this category while only 17 percent females have suffered from infectious and parasitic diseases. Diarrhoea and peptic ulcer share half of the reported illness due to infection and parasite (Appendix). Gynecological disorders are common ailments of females while Prostatic cancer is common problem of males in Genito-urinary disease groups. Other common diseases of this category are Kidney and Urinary diseases, Sexually Transmitted Diseases. Females are suffered more from Genito-urinary diseases than males, about one sixth sick females are fall in this category and about 13 percent females have suffered from Gynecological disorders while only six percent males have suffered from this category.

Circulatory disease, Digestive diseases and Respiratory disease do not show clear pattern by sex, the differential for these diseases are minimal. Endocrine problems are generally faced by females, in this disease category, major ailment is anemia. Low level of nutrition and anemia are commonly reported by females.

Accidents and injuries are concentrated in males, the amount of this group is twice found in males than females.

Eye problems are concentrated in females, about nine percent sick females are reported illness due to eye diseases. Glaucoma and Cataract problems of eye are commonly reported by females, the figures for both diseases are 3.5 and 5.0 percent of total reported ailments. Males reported more Conjunctivitis problem of eye than females, the amount is about twice of females. Ailment wise data is produced in Appendix 4.8, where proportions of all diseases are given by age.

Table 4.9 Pattern of Diseases by Type of Ailments and Sex according to ICD-10

Disease Group	Disease Group Description	Male	Female
I	Infectious and Parasitic Diseases	27.6	16.7
II	Neoplasm	2.3	3.1
III	Endocrine, Nutritional and Metabolic	0.9	2.0
IV	Neuro-Psychiatric	3.8	3.4
V	Eye and Adnexa	4.8	8.7
VI	Circulatory Diseases	5.2	5.6
VII	Respiratory Diseases	7.6	6.8
VIII	Digestive Diseases	4.9	6.5
IX	Genito-Urinary	6.2	16.0
X	Accidents and Violence	17.5	7.0
XI	Others	19.2	24.0

4.9 Type of illness Distribution According to Education

Table 4.10 presents that literate people are suffered much lesser than illiterate people by communicable diseases, about forty percent illiterate and thirty percent literate reported morbidity due to communicable diseases. Appendix A.9 reveals that about 11 percent illiterate sick people have reported illness from Diarrheal diseases while for literate this figure goes down up to only six percent. It shows education has a great influence on morbidity, the prevalence of communicable diseases decreases as literacy increased. Knowledge of hygiene and nutrition with preventive measures leads to low morbidity due to communicable diseases. Estimates show that non communicable diseases are concentrated in literate people, as presumed non communicable diseases found more in literate people than illiterate people.

Table 4.10 Pattern of Diseases by type of ailments and Education in Uttar Pradesh

Type of Ailments	Not Literate	Literate
Communicable	39.9	28.0
Non Communicable	25.8	30.8
Accidents and Injuries	10.8	13.7
Others	23.6	27.5

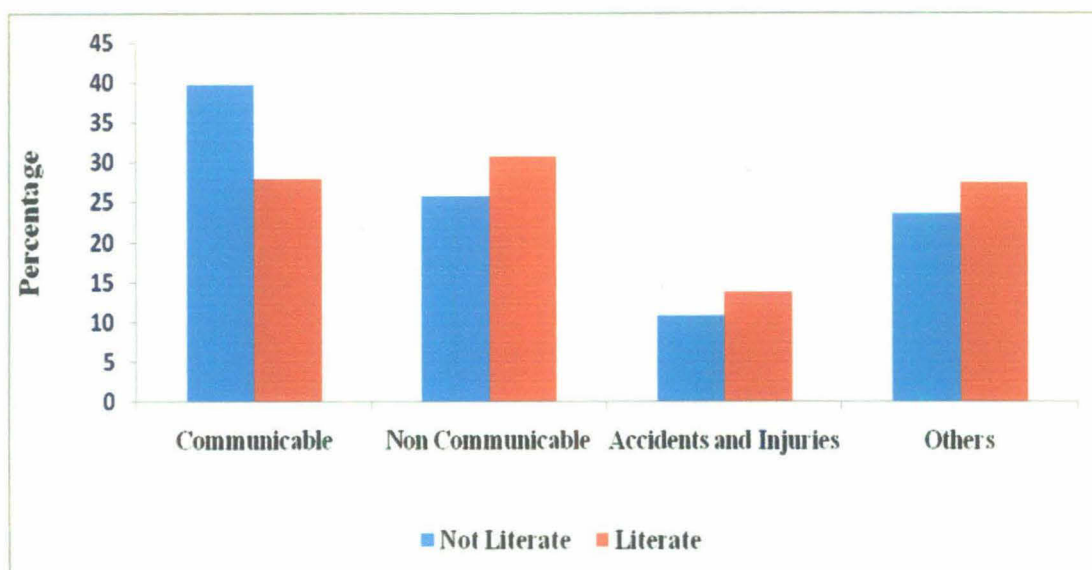


Table 4.11 Pattern of Morbidity by Type of Ailments and Education according to ICD-10

Disease Group	Disease Group Description	Not Literate	Literate
I	Infectious and Parasitic Diseases	25.2	19.2
II	Neoplasm	3.1	2.4
III	Endocrine, Nutritional and Metabolic	1.2	1.7
IV	Neuro-Psychiatric	2.7	4.5
V	Eye and Adnexa	8.9	4.7
VI	Circulatory Diseases	5.4	5.4
VII	Respiratory Diseases	8.3	6.2
VIII	Digestive Diseases	5.2	6.1
IX	Genito-Urinary	9.9	12.4
X	Accidents and Violence	10.8	13.7
XI	Others	19.4	23.7

Table 4.11 presents the distribution of ailments according to ICD-10 by education. The estimates show that the chunks of infectious and parasitic diseases are concentrated in illiterate people. About one fourth of sick persons who are illiterate suffered from infectious and parasitic diseases. Eye problems are concentrated in illiterate people, about 10 percent illiterates' sick due to eye problems, while only 5 percent literate people reported sickness. Literate people are more prone to accidents than those are illiterates. Neuro-Psychiatric Diseases are majorly found in literate people while illiterate people suffered less. Genito-urinary diseases are concentrated in literate sick people, the cause may be better reporting and not ignoring of the diseases. Circulatory and digestive diseases do not show substantial variation and found similar for both literate and illiterate

4.10 Summary

Chapter fourth deals with pattern of diseases in Uttar Pradesh and its different regions by socio-economic and demographic groups. This section examined how diseases are distributed in Uttar Pradesh and how much their share in total reported ailments. Estimates presents that communicable diseases share more than thirty percent of total reported ailments, in this disease group major share hold by Diarrhea, Tuberculosis and Gastritis or peptic ulcer. When we see the pattern of diseases at regional level, Western Uttar Pradesh has lowest share in total ailments by communicable diseases while Central Uttar Pradesh showed highest share, Eastern and Southern Uttar Pradesh also reported high share of communicable diseases in total reported ailments.

Rural Uttar Pradesh has lower share of communicable diseases than Urban Uttar Pradesh that is quite different from general perception. At gender level, infectious and parasitic diseases are found more in males than females, while females reported high morbidity due to Eye and Genito-urinary diseases. Accidents and injuries mainly concentrated in males, female are less prone to it. Pattern of diseases by age group shows that infectious and parasitic diseases are highly concentrated in

Younger age group especially in 0-4 age group. Circulatory and Eye ailments are concentrated in old age group especially in those who are more than sixty years. Genitor-urinary diseases are found mainly in 15-39 age groups. Literate people reported more Neuropsychiatric diseases than illiterate people, while infectious and parasitic diseases are highly reported by illiterate people.

Chapter V

Determinants of Morbidity in

Uttar Pradesh

Chapter V

Determinants of Morbidity in Uttar Pradesh

5.1 Introduction

The risk of morbidity is highly influenced by the individual and household characteristics like age, education, caste, religion and socio-economic status as well as environmental and community level characteristics. Since the various socio-economic and demographic characteristics simultaneously affects the health of the individuals, many often it is difficult to understand how far each factor contribute to it.

5.2 Data Source

In the present study we have used 60th round data on “*Morbidity and Health Care*”. The survey of the NSSO 60th round conducted in 2004, related to “*Household Consumers’ Expenditure*”, “*Employment and Unemployment*” and “*Morbidity and Health Care*”. Information related to morbidity, problems of aged persons, utilization of health care services and expenditure on medical treatment, hospitalization, health schemes, nature of ailment, duration of hospitalization and medical services was collected in the survey. These data provide an opportunity to examine the ailing and morbidity prevalence in Uttar Pradesh.

5.3 Preparation of the data for analysis

The soft copy of NSSO 60th round has been imported into SPSS (Statistical Program for Social Sciences) for statistical analysis. The data was collected using schedule number 25.0 during survey. In 60th round block-3 provides the household characteristics for the study. Demographic particulars of household members are given in block-4. One will be considered ailed if one has being sick during last 15 days of survey.

5.4 Statistical Tools

We have used SPSS (Statistical Package for Social Sciences) package for the statistical analysis of data.

5.5 Methodology

Human health or morbidity is mostly determined by several factors. In case of morbidity, besides the individual characteristics, the household and social level factors also influence the probability of individual to contract disease. Therefore it is necessary that determinants of morbidity are understood in a multivariate context. The multivariate techniques provide the opportunities to make clear distinction between the nature and types of factors interacting in determining the predictor variable.

- (i) Individual attributes- individual attributes consider the age, sex, education, relation to head, marital status and so on.
- (ii) Household level attributes- household level attributes such as household income, household size, and household occupation and so on.
- (iii) Socio-cultural attributes- this includes type of residence, religion, caste, level of sanitation, accessibility to safe drinking water, accessibility to health care facilities and so on.

5.5.1 Variable Selected for the Study

Dependent Variable

The dependent variable used in the logistic regression analysis is

- Whether ailing anytime during last 15 days

Independent Variables

Independent Variables are classified in three broad categories, to make clear distinction between the nature and types of factors interacting in determining the predictor variable.

(1) Individual Characteristics

- Age
- Sex
- Marital Status
- Education Level

(2) Household Characteristics

- House Structure
- Source of Drinking Water
- Water Treatment
- Type of Latrine
- Type of Drainage
- Land Holding
- Source of Energy for Cooking
- Household Size

(3) Socio-economic Characteristics

- Type of Residence
- Religion
- Social Group
- Labor Status

5.6 Statistical Techniques

Multivariate Logistic Regression analysis has been used in order to measure the net effect of predicted variable on the response variables. Multivariate logistic regression analysis has been used in order to measure the net effect of back ground variable on the response variables. The response variable are dichotomous in nature i.e. No = 2 and Yes =1 (Recoded 'No=0' and 'Yes=1'). The response variables in this study are dichotomous in nature, taking 1 or 0 as value.

5.7 Measurement of the Study Variables

Systematic and manageable categorization of variables is important for statistical analyses of ailing. Each category of a variable is assigned a unique code; but the codes do not bear any numerical values. The response and predictor variables are explained in the following section.

5.7.1 Response Variable

Response variable is dichotomous in nature. The question asked in survey was 'Whether ailing anytime during last 15 days'. The answer of this question was recorded in two categories namely, yes and no. for the purpose of analysis, these answers recoded in following manner

- Ailing 15 days before the survey

Yes = 1

No = 0

5.7.2 Predictor variables

The following predictor variables (independent variables) are considered in the study:

A. Individual Characteristics

Age

In general health deteriorates with increase of age. Any study relating to morbidity remains incomplete unless its age sex composition is known before its characteristics are examined. The categories of the age groups in report of NSSO 60th round are 0-14, 15-29, 30-44, 45-59 and 60 and above.

0-14 = 0

15-29 = 1

30-44 = 2

45-59 = 3

60+ = 4

Sex

Gender difference plays an important role in health. Thus we have selected sex as a particular variable as ailing depends on sex of the individual due to differential in biological immunity of sexes. In this study sex is coded as follows.

Male = 0

Female = 1

Marital Status

Marriage is the important social institution. It is important to study the variation of the ailing and hospitalization within marital status. In the survey the respondents have been asked about marital status- never married, currently married,

widowed and divorced/separated. For the purpose of analysis, widowed and divorced/separated people are clubbed into single category.

Never married = 0

Currently married = 1

Widowed/ divorced/separated = 2

Education Level

Education is highly correlated to ailing and hospitalization cases. In the survey general education level is mentioned in 11 categories i.e. not literate, literate-without formal schooling, below primary, primary, middle, secondary, higher secondary, diploma/ certificate course, graduate, post-graduate and above. For the study we have classified general education level into three categories i.e.

Illiterate = 0

Up to Primary = 1

Middle to and above = 2

B. Social-Economic Characteristics

Religion

India has many religious groups, and their different food habits, living style and living condition influencing disease. It is interesting to study the disease pattern among the different religious groups. So, we have included all the religion in the study. Religions mention in the NSSO report are Hinduism, Islam, Christianity, Sikhism, Jainism, Buddhism, Zoroastrianism and others. Because some religions are very low in percentages, for the analysis we classified religions into three groups:

Hindu = 0

Muslim = 1

Others = 2

Social Group

Caste is one of the important social factors to influence the health condition. Schedule caste and schedule tribes usually belong to lower strata of the society, low standard of living, low educational level and high poverty. Castes mentioned in the NSSO report are Schedule Tribe, Schedule Caste, Other Backward Caste and Others (General).

ST = 0

SC = 1

OBC = 2

Others = 3

Residence

Place of residence has been categorized as (i) urban and (ii) rural. In urban areas advanced medical facilities are more readily available than in rural areas. It is expected that residents of urban areas are healthier than those of rural areas. It is generally found that morbidity is higher in rural areas.

Rural = 0

Urban = 1

Land holding

Land holding is the most important status of an individual in rural areas. Minimum land holding in the survey reported is less than 0.005 hectare and the maximum is 8.00 hectares. For the analysis we have grouped land holding into two categories:

Less than 1 hectare = 0

More than 1 hectare = 1

Labour Status

Activity status in NSSO is the activity situation in which a person was engaged during reference period of 365 days before the survey. There are two statuses: labour force and not in labour force. Labour force includes self-employed (own account worker, employer, unpaid family worker), salaried, casual (in public works and other work), and seeking job. Attending educational institution, domestic duties, and collection of goods for domestic use, recipient of rent, pension, remittance, not able to work due to disability, beggars, prostitute and others falls under the not in labour force status. In this study we have been grouped labour force status as:

Labour force = 1

Not in labour force = 0

C. Household Characteristics

Type of Structure

Living places is also correlated to disease pattern. In the survey type of structure has five categories: pucca, semi-pucca, serviceable kutch, unserviceable kutch and no structure. For the analysis we have classified them into two categories- pucca (including semi-pucca), kutch (serviceable, unserviceable, and other structure).

Kutch = 0

Pucca = 1

Source of Drinking Water

There are many diseases, which are related to source of drinking water like diarrhoea. So, it is important to know the relationship between source of drinking water and ailing. In the survey major sources of drinking water are bottled water, tap, tube-well/ hand pump, tankers, pucca well, tank/ pond reserved for drinking, river/

canal and others. We have grouped all the source of drinking water in the study into three categories:-

Bottled and tap water = 0

Tube well/hand pump = 1

Other sources = 2

Type of Latrine

Availability of latrine in the residence is also a good indicator of the development. And it is related to health condition of the residence. We would like to study the relationship between type of latrine and ailing and hospitalization among household members. There are two types of conditions- latrine and no latrine. Within latrine four types of the latrine are reported i.e. service, pit, septic tank/flush system and others. We have categorized these into two groups:

Latrine = 1

No latrine = 0

Type of Drainage

Proper drainage in household is correlated to health condition of the residents. Therefore, we have taken type of drainage for study. In the report type of drainage are open kutchra, open pucca, covered pucca, under-ground and no drainage. We have classified into three categories- open (kutchra and pucca), covered (pucca and underground) and no drainage.

No drainage = 0

Open drainage = 1

Covered = 2

Source of Energy for Cooking

A relationship between source of energy for cooking and ailing and hospitalization among the household members has been reported in the literature. The sources of energy for cooking are coke, coal, firewood and chips, LPG, gohar gas, dung cake, charcoal, kerosene, electricity, others and no cooking arrangement. For the purpose of the study we have grouped these into two categories i.e. coke, coal, firewood and chips are in the first group and second group is LPG.

LPG = 0

Firewood and chip = 1

Water Treatment

In the survey the respondents were asked whether water is treated before drinking.

Yes = 1

No = 0

5.8 Determinants of morbidity in Uttar Pradesh

Table 5.1 states that at the state level, it can be observed that there is a falling and then an increasing trend in morbidity by age. Young and adult persons of 15-29 year have recoded lowest risk when compared to reference category of 0-14 years old. As expected the risk is nearly four times higher for those who are over 60 years of age. The incidence of morbidity which is high during infancy consistently declines and reaches a minimum by the age of 30 years and again rises. These results support the above figures and again conforms the J shaped association expected between age and morbidity. This association is highly significant. On the whole females have slightly advantage (5 percent) over the males. Schedule castes have advantage over the all other population. When compared with the reference category of Western Uttar Pradesh the relative risk for other regions of Uttar Pradesh are significantly low suggesting very high morbidity levels in Western Uttar Pradesh.

Table 5.1 Odds Ratios for Factors Affecting Morbidity in Uttar Pradesh

Explanatory Variables	B(Regression Coefficient)	Odds Ratio
Sex (Male)		
Female	.057	1.059*
Age(0-14)		
15-29	-.304	0.738*
30-44	.023	1.023*
45-59	.443	1.557*
60 +	1.205	3.336*
Marital Status (Never Married)		
Currently Married	0.198	1.219*
Widowed/Divorced	0.413	1.512*
Education (Illiterate)		
Up to Primary	-0.394	0.674*
Middle and above	-0.276	0.758*
Religion (Hindu)		
Muslim	-.028	0.972*
Others	-.389	0.678*
Social Group (Schedule Tribe)		
Schedule Caste	.423	1.527*
Other Backward Caste	.403	1.496*
Others	.705	2.025*
Residence (Rural)		
Urban	-.033	0.968*
Region (Western)		
Central	-.192	0.825*
Eastern	-.860	0.423*
Southern	-.432	0.650*

(Reference Category)

* Significant at 1% level

** Significant at 5 % level

5.9 Determinants of Morbidity in Rural Uttar Pradesh

Table 5.2 shows that the sex dummy variable has a negative and statistically significant effect on the probability of being ill. Female are less prone to being ill than male, result estimates that 16 percent less female were ill during the reference period.

Marital status has a positive and significant effect on the morbidity. Currently married people have 24 percent more chance of being sick than to reference category, while widowed and divorced people have 47 percent more probability of being ill. This clearly indicates the plight of widowed and divorced people and their poor accessibility to health care services.

Education has a negative and statistically significant influence on morbidity. People who are educated up to primary level having 8 percent less chance to being sick than reference category which is illiterate people. This percentage considerably increases to 17 percent for those people, who have middle or higher education.

Religion has a mixed influence on the morbidity. Those people who belong to Muslim religion have 9 percent more chance to being ill than Hindu population, while people who belong to other religion (Sikh, Jain, Buddhist etc.) have lower chance to being sick than reference category.

Age has a positive and significant effect on the morbidity. The odds ratios for the age groups 15-9, 30-44, 45-59 and 60+ are 32 percent, 99 percent, 2.8 times and 5.7 times respectively. Result proved the 'J' shaped curve between age and morbidity.

Household size has a negative and significant influence on the morbidity. Those households have 5-6 persons are 10 percent less likely to being ill, this percentage increases to 21 percent for those households that have 7-8 member. Those households have more than 9 members are 43 percent less likely to being ill than reference category. Result indicates that low reporting of morbidity by those

household that have more members than those households have fewer members. Other cause behind low reporting of morbidity is less knowledge about health of family members of head of households.

Schedule caste population are 96 percent more likely to being ill than Schedule Tribe population, while other backward caste and general population are also more likely to being sick than reference category. The odds ratios for the Schedule caste, OBC and others are 1.96, 1.95, and 2.22 respectively. All estimates are statistically significant. Lower morbidity among schedule tribes indicates that either they are less prone to sickness or low reporting of morbidity. First condition is not practically and biologically possible; therefore second assumption can be true for low morbidity among schedule tribes.

Those people having more than 1 hectare land holding are 8 percent less prone to being ill than those have less than 1 hectare land holding. It shows that people having greater landholding are more accessible and aware to health services and better living standard than those have small landholdings.

Availability of toilet significantly influences the morbidity. Those households having toilet facility are 38 percent more likely to reported morbidity than those households that have not toilet facility. It is commonly fact that in rural areas those households having toilet facility supposed to be economically sound and more aware about health than those have not enjoying toilet facility. Good perception toward health leads to higher reporting of morbidity that is the prime cause of higher morbidity among such households enjoying toilet facility.

Source of drinking water is an important determinant of morbidity. Those households using tube well and hand pump as source of drinking water are 11 percent less likely to being sick than those households using tap and bottled water as source of drinking water. All estimates are statistically significant. This result clearly indicates

those household using tap and bottled water as source of drinking water reported higher morbidity than other categories.

Source of cooking has a negative and statistically significant effect on reporting of morbidity. Those households using smoke full source of energy are less chance to being ill than those households using smokeless source of energy for cooking. In rural areas, LPG is generally used by economically good households and smoky fuel sources in poor households. The better perception towards health leads to high reporting of morbidity in such households that are using LPG as source of cooking.

Treatment of water dummy variable has a negative effect on the morbidity. Those households treating water for drinking are 11 percent less likely to being sick than those households not treating drinking water.

Type of household structure also influences the sanitation level of house. Population belongs to pucca houses are 10.5 percent less likely to report ill than population belong to kuccha houses. All estimates are statistically significant.

Table 5.2: Odds Ratios for Factors Affecting Morbidity in Rural Uttar Pradesh

Explanatory Variables	B(Regression Coefficient)	Odds Ratio
Characteristics of the ill person		
Sex (Male)		
Female	-.174	0.841*
Age(0-14)		
15-29	.282	1.326*
30-44	.691	1.996*
45-59	1.032	2.806*
60 +	1.745	5.723*
Marital Status (Never Married)		
Currently Married	.219	1.245*
Widowed/Divorced	.390	1.477*
Education (Illiterate)		
Up to Primary	-.087	0.916*
Middle and above	-.190	0.827*
Labor Status (Not in Labor Force)		
Labor Force	-.461	0.630*
Socio-Cultural Characteristics		
Religion (Hindu)		
Muslim	.087	1.091*
Others	-.254	0.775*
Social Group (Schedule Tribe)		
Schedule Caste	.676	1.965*
Other Backward Caste	.669	1.953*
Others	.799	2.223*

Household Characteristics		
Household Size (Less than 5)		
5-6	-.101	0.904*
7-8	-.243	0.785*
9 +	-.564	0.569*
Land Holding (Less than 1 Hectare)		
More than 1 hectare	-.084	0.920*
House Structure (Kuccha)		
Pucca	-.111	0.895*
Availability of Toilet (No)		
Yes	.324	1.383*
Source of Drinking Water(Tap Water)		
Tube well/Hand pump	-.117	0.890*
Others	-.058	0.944*
Source of Cooking (Smokeless)		
Smoke	-.007	0.993*
Treatment of Drinking Water (No)		
Yes	-.109	0.897*
Type of Drainage (No Drainage)		
Open Drainage	.212	1.236*
Covered Drainage	.239	1.269*

(Reference Category)

*** Significant at 1% level**

**** Significant at 5 % level**

5.10 Determinants of Morbidity in Urban Uttar Pradesh

There are significant variations obtained from estimates, Table 5.3 shows different picture of urban Uttar Pradesh. Some determinants of morbidity show reverse picture than rural Uttar Pradesh. In urban Uttar Pradesh females are 20 percent more likely to being sick than their counterparts, while in rural Uttar Pradesh males were more prone to being ill than females.

Marital status has a positive and significant influence on morbidity, in urban Uttar Pradesh widowed and divorced are 47 percent more likely to reported illness than never married population.

Age has a positive and significant effect on morbidity, urban Uttar Pradesh shows same kind of result as shown by rural Uttar Pradesh. Aged people are 6.3 times more prone to being sick than people belong to 0-14 age group, while, in rural areas this odds ratio was 5.7 times. The odds ratios for age groups 15-29 and 30-44 are 1.10 and 1.66, while in rural Uttar Pradesh these were 1.32 and 1.99 for respective age groups. It lucidly shows adult age group (15-44) in rural Uttar Pradesh are more likely to being ill than their counterparts of urban Uttar Pradesh.

Marital status variable shows similar result as obtained for the rural Uttar Pradesh. Currently married persons are 25 percent and widowed, divorced persons are 51 percent more prone to being sick than never married people, while in rural Uttar Pradesh this data were 24 and 47 percent. Never married people commonly belong to younger age, which is the prime cause behind low reporting of morbidity by never married person.

Education has negative and statistically significant influence on morbidity. In urban Uttar Pradesh people who are educated up to middle and higher are 3 percent less likely to being ill than those are illiterate while this figure increases to 17 percent

in rural Uttar Pradesh. The odds ratio for morbidity for those who have primary level education is 0.920.

Variable religion shows different picture from rural Uttar Pradesh. In rural Uttar Pradesh, Muslims are more likely to have disease than Hindus, while in urban Uttar Pradesh they are less prone to have a disease. People belong to other religion are 15 percent less chance to being sick than those people who are Hindu. This figure was 22 percent in rural Uttar Pradesh.

Social group has negative and significant effect on morbidity. People belong to Schedule Caste are 25 percent less likely to reported illness than people belong to Schedule Tribes, while odds ratios for Other Backward Caste and General(Others) are 0.676 and 0.977. It indicates that reporting of morbidity is very high in Schedule Tribes than other categories of social groups.

Household size has negative and significant effect on morbidity. As the size of households increased, reporting of being ill decreases. Such kinds of results are true for both areas, whether this is rural or urban. The odds ratios for those households which have 5-6, 7-8 and more than 9 members are 0.904, 0.785 and 0.569.

Land holding has negative and statistical significant effect on morbidity. In Urban Uttar Pradesh those household have more than one hectare land are 11 percent less likely to report illness than those have less than one hectare land holding. This figure decreases to 8 percent in rural Uttar Pradesh.

Independent variable type of house structure has positive influence on morbidity. Those household have pucca house structure are 11 percent more likely to report illness as compared to those households have kutchcha house structure while situation found reverse in rural Uttar Pradesh, where people living in pucca households are 10 percent less prone to being sick than people living in kuccha households.

Availability of toilet in households have positive effect on reporting of morbidity, those households having toilet facility, reporting by their resident are 21 percent more chance to report illness as compared to those people, who are not enjoying facility of toilet. The odds ratio for reporting morbidity was 1.38 for those household, that have toilet facility as compared to reference category, which is households having no toilet facility in rural Uttar Pradesh.

Source of drinking water has an important influence on morbidity. People using tube well or hand pump as a source of drinking water are 19 percent more likely to report sickness as compared to those people, who are using tap or bottled water as a source of drinking water.

Source of energy for cooking has a positive effect on the morbidity. People using smoky fuels are 19 percent more likely to being ill as compared to those people using LPG as source of cooking. In rural Uttar Pradesh, the condition found reverse where LPG users reported higher morbidity than users of other types of fuel for cooking.

Those household having open and covered drainage are 62 and 42 percent respectively more likely to report sickness as compare to those household having no drainage while in rural Uttar Pradesh these figures were 23 and 26 percent. In urban areas commonly no drainage found in slums and unorganized developed areas, where mostly peoples are illiterate and poor, such people reported low morbidity because low perception about health and ailment not considered serious.

Treatment of drinking water has a negative and significant influence on morbidity. People treated drinking water are 4 percent less likely to being ill as compared to those people, who are not treated drinking water. In rural Uttar Pradesh People treated drinking water are 10 percent less likely to report sickness as compared to reference category that is people, who are not treated drinking water.

Table 5.3: Odds Ratios for Factors Affecting Morbidity in Urban Uttar Pradesh

Explanatory Variables	B(Regression Coefficient)	Odds Ratio
Characteristics of the ill person		
Sex (Male)		
Female	.183	1.201*
Age(0-14)		
15-29	.094	1.099*
30-44	.508	1.661*
45-59	1.221	3.391*
60 +	1.848	6.350*
Marital Status (Never Married)		
Currently Married	.227	1.255*
Widowed/Divorced	.414	1.513*
Education (Illiterate)		
Up to Primary	-.083	0.920*
Middle and above	-.033	0.967*
Labor Status (Not in Labor Force)		
Labor Force	-.420	0.657*
Socio-Cultural Characteristics		
Religion (Hindu)		
Muslim	-.066	0.936*
Others	-.163	0.850*
Social Group (Schedule Tribe)		
Schedule Caste	-.286	0.751*
Other Backward Caste	-.392	0.676*
Others	-.024	0.977*

Household Characteristics		
Household Size (Less than 5)		
5-6	-.148	0.862*
7-8	-.254	0.775*
9 +	-.528	0.590*
Land Holding (Less than 1 Hectare)		
More than 1 hectare	-.117	0.889*
House Structure (Kuccha)		
Pucca	.106	1.111*
Availability of Toilet (No)		
Yes	.188	1.207*
Source of Drinking Water(Tap Water)		
Tube well/Hand pump	.173	1.189*
Others	-.412	0.662*
Source of Cooking (Smokeless)		
Smoke	.172	1.189*
Treatment of Drinking Water (No)		
Yes	-.042	0.959*
Type of Drainage (No Drainage)		
Open Drainage	.469	1.599*
Covered Drainage	.356	1.428*

(Reference Category)

* Significant at 1% level

** Significant at 5 % level

5.11 Determinants of Morbidity in different regions of Uttar Pradesh

Table 5.4 show that there are large variations among different regions of Uttar Pradesh for factors influencing morbidity. Sex is one of them; results reveal that females are less prone to being sick in Western Uttar Pradesh and central Uttar Pradesh, while situation find reverse in Eastern Uttar Pradesh and Southern Uttar Pradesh.

Variable age has significant influence on reporting of morbidity. Result clearly indicates that as the age increase, reporting of morbidity increased. J shape curve lucidly emerged for all the regions of Uttar Pradesh. All age groups are statistically significant and more prone to being sick as compared to 0-14 age group. There is only one region namely Southern Uttar Pradesh, where 15-29 age group reported less morbidity as compared to 0-14 age group. In all regions of Uttar Pradesh, old age group people are more prone to being ill. The higher chance to being sick is found in eastern Uttar Pradesh for old age group, where population belong to old age group are nearly 7.5 times more likely to have sick as compared to reference group (0-14), while reverse situation found in Southern Uttar Pradesh, where old age people are only two times more likely to reported ill.

Results also reveal that variable marital status of an individual has significant influence on morbidity. All regions of Uttar Pradesh show that widowed or divorced people are more likely to have diseased as compared to people belong to never married category. Widowed or divorced people of Southern Uttar Pradesh are most likely to being reported ill as compared to never married category in all regions of Uttar Pradesh.

There are mixed results found for different regions of Uttar Pradesh for variable education. Only in Western Uttar Pradesh, people who have primary level education are more likely to being sick as compared to not literate people, while people of all other regions who have primary level education are less likely to have diseased as compared to illiterate people. In Central Uttar Pradesh people who have higher education are more likely to reported morbidity as compared to illiterate people, while all other regions show reverse picture of it.

Labor status, a variable used in the analysis has negative and statistical significant relation to morbidity. People who are in labor force are less likely to have diseased as compared to those people, who are not in labor force. People, who are in labor force belong to Western Uttar Pradesh are 52 percent less prone to being sick during reference period of survey as compared to people, who are not in labor force.

There is mixed results found for variable religion for different region of Uttar Pradesh, like people who are Muslim are more likely to being ill as compared to Hindu people in Western Uttar Pradesh and Central Uttar Pradesh, while Muslim of Central and Southern Uttar Pradesh are less chance to being sick as compared to people belong to Hindu religion. People who belong to other religions (Sikh, Jain and Buddhism etc.) are less likely to have diseased as compared to Hindus except in Central Uttar Pradesh.

Social group has a significant influence on morbidity. People belong to Schedule Caste, Other Backward Caste and General Categories are less prone to being ill as compared to people belong to Schedule Tribe, such result is applicable for all regions of Uttar Pradesh except for Eastern Uttar Pradesh.

Result obtained from logistic regression for household size, indicates that those household have large number of members are less likely to being sick as compared to those household that have less members. It means as the household size increases, reporting of morbidity increased.

Treatment of drinking water plays a vital role on health of individual. Result says that those people who treat the drinking water before use are more chance to being ill as compared to those household that do not treat the water. People of Eastern Uttar Pradesh are 73 percent less likely to report morbidity who treat the drinking water before use as compared to those people, who do not treat water, while for Central Uttar Pradesh, this figure touches only 2 percent. People belong to Western and Southern Uttar Pradesh are more likely to reported illness as compared to reference category.

Type of drainage in household has positive and statistically significant effect on morbidity. Those household that have covered drainage are more likely to reported sickness as compared to those households having no drainage facility. This result

satisfied all regions of Uttar Pradesh except Central Uttar Pradesh. Open drainage households are more prone to report morbidity as compared to reference category for Western and Eastern Uttar Pradesh.

Landholding has negative and statistically significant effect on reporting of morbidity. All regions of Treatment of drinking water play a vital role on health of individual. Result says that those people who treat the drinking water before use are more chance to being ill as compared to those household that do not treat the water. People of Eastern Uttar Pradesh are 73 percent less likely to report morbidity who treat the drinking water before use as compared to those people, who do not treat water, while for Central Uttar Pradesh, this figure touches only 2 percent. People belong to Western and Southern Uttar Pradesh is more likely to reported illness as compared to reference category.

Type of drainage in household has positive and statistically significant effect on morbidity. Those household that have covered drainage are more likely to reported sickness as compared to those households having no drainage facility. This result satisfied all regions of Uttar Pradesh except Central Uttar Pradesh. Open drainage households are more prone to report morbidity as compared to reference category for Western and Eastern Uttar Pradesh.

Show that those people who have more than one hectare landholding are less chance to being sick as compared to those people who have no land. This indicates that larger landholding household has better economic status as well as better health. It leads to lower reporting of morbidity.

Type of House structure indicates the sanitation level of households, people who are living in pucca houses are less prone to being ill as compared to those people who are living in kuttcha houses.

Availability of toilet a variable also included in this analysis, results from logistic regression reveal that those households having toilet facility are more likely to reported sickness as compared to that household not enjoying toilet facility. Source of cooking has a significant influence on morbidity; people who are using woods, coal,

dung cake etc as a source of cooking are more chance to being sick as compared to people who are using LPG as a source of cooking.

Those people who are using tube well or hand pump as sources of drinking water are more likely to reported illness as compared to those households that are using tap water as a source of drinking water. People who are using other sources like river, canal, and ponds as sources of drinking water also are more prone to being sick as compared to reference category.

Table 5.4 Odds Ratios for determinants of Morbidity in Different Regions of Uttar Pradesh

Explanatory Variables	Western	Central	Eastern	Southern
Characteristics of the ill person				
Sex (Male)				
Female	0.787	0.986	1.071	1.087
Age(0-14)				
15-29	1.247	1.377	1.306	0.806
30-44	1.825	2.115	1.907	1.258
45-59	3.125	3.076	2.995	1.380
60 +	5.512	6.581	7.386	2.529
Marital Status (Never Married)				
Currently Married	1.585	1.066	0.947	2.105
Widowed/Divorced	1.890	1.166	1.148	4.540
Education (Illiterate)				
Up to Primary	1.035	0.886	0.887	0.958
Middle and above	0.844	1.099	0.909	0.672
Labor Status (Not in Labor Force)				
Labor Force	0.479	0.686	0.900	0.918
Socio-Cultural Characteristics				
Religion (Hindu)				
Muslim	1.047	0.792	1.164	0.909
Others	0.700	1.455	0.165	0.103

Social Group (Schedule Tribe)				
Schedule Caste	0.345	0.585	8.621	0.794
Other Backward Caste	0.378	0.495	8.750	0.599
Others	0.488	0.725	9.956	0.693
Household Characteristics				
Household Size (Less than 5)				
5-6	0.911	0.932	0.755	1.063
7-8	0.727	0.865	0.870	0.712
9 +	0.654	0.460	0.719	0.509
Landholding (Less than 1 Hectare)				
More than 1 hectare	0.864	0.786	0.805	0.987
House Structure (Kuccha)				
Pucca	0.983	0.811	0.909	9.510
Availability of Toilet (No)				
Yes	1.165	1.462	1.037	1.290
Source of Drinking Water(Tap Water)				
Tube well/Hand pump	1.104	1.203	1.225	0.613
Others	1.406	1.162	1.619	0.471
Source of Cooking (Smokeless)				
Smoke	1.188	1.373	0.665	1.125
Treatment of Drinking Water (No)				
Yes	1.245	0.987	0.368	1.842
Type of Drainage (No Drainage)				
Open Drainage	1.053	0.952	1.084	0.612
Covered Drainage	1.004	0.838	1.346	1.948

(Reference Category)

*** Significant at 1% level**

**** Significant at 5 % level**

5.12 Summary

Chapter fifth deals with determinants of morbidity in Uttar Pradesh and its regions. Chapter examined the socio-economic and demographic correlates of morbidity and their magnitude of impact on morbidity. Results show that females are more prone to being sick as compared to males in Urban Uttar Pradesh while in Rural Uttar Pradesh; males are more likely to have diseases as compared to females. At regional level, females are less prone to being ill as compared to males in Western Uttar Pradesh and Central Uttar Pradesh, the condition is found reverse in Southern Uttar Pradesh and Eastern Uttar Pradesh. Age has a positive influence on morbidity, higher ages people are more vulnerable to being sick than people of younger age group. Divorced or widowed and currently married people are more chance to being ill as compared to people belong to never married category. Those people who are in labor force are less likely to being ill as compared to those people who are not included in labor force. People who have more land are less chance to being sick as compared to those has small landholding. Other variables like source of cooking, toilet facility, type of house structure, source of drinking water and drainage do not show clear relation to morbidity.

Chapter VI
Summary and Conclusion

Chapter VI

Summary and Conclusion

6.1 Summary

In the recent past, the measurement of 'Morbidity' is being used increasingly as an indicator of the level of well being of the population in place of conventional indices like death and infant mortality rates that were used to measure social development and personal well being. Since morbidity is more common than death and infant mortality, it can also be measured cost effectively. So the study of morbidity becomes imperative in a subcontinent like India and in such state that has large area and population with substantial regional, rural-urban and social group differentials in the standard and quality of life.

The concept 'morbidity' has more than one meaning. It is complex, multidimensional and difficult to define and measure, because it has strong cultural character which permits its meaning to change over time and space. These conceptual and measurement issues relating to morbidity are discussed and the definition of morbidity is presented.

According to NSS 2004 survey, Uttar Pradesh has the high morbidity prevalence rate but there are not many detailed studies on the morbidity pattern in the state. The purpose of this study is to study the levels, differentials, patterns and determinants of morbidity in Uttar Pradesh. This study has filled that gap in terms of specific focus on Uttar Pradesh. This study attempts to study aspects of morbidity by analyzing the NSSO data collected during 2004.

Chapter third deals with Morbidity Level and its differentials in Uttar Pradesh and its regions. This section examined the Morbidity Prevalence among population groups by socio, economic and demographic factors. Result obtained from the data reveals that Uttar Pradesh has a higher morbidity than other states of India. In Uttar Pradesh, Morbidity Prevalence Rates are found much higher in Urban Uttar Pradesh

than in Rural Uttar Pradesh. Females have high morbidity than males in all aspects. Morbidity Prevalence Rate increases as the age increased and it gives a 'U' shape curve in which both ends of curve show extreme morbidity in children and aged people.

Unmarried people reported low morbidity as compared to married people, very high reporting of morbidity reported by widowed and divorced people. Education gives different picture of morbidity; it gives a mirror image 'J' shape curve, which shows morbidity is found higher in illiterate people, as the level of education increases, reporting of morbidity decreased but in morbidity also found high at higher education level. At regional level, morbidity found much higher in Western Uttar Pradesh, while morbidity is reported very low in Eastern Uttar Pradesh.

Chapter fourth deals with pattern of diseases in Uttar Pradesh and its different regions by socio-economic and demographic groups. This section examined how diseases are distributed in Uttar Pradesh and how much their share in total reported ailments. Estimates presents that communicable diseases share more than thirty percent of total reported ailments, in this disease group major share hold by Diarrhea, Tuberculosis and Gastritis or peptic ulcer.

When we see the pattern of diseases at regional level, Western Uttar Pradesh has lowest share in total ailments by communicable diseases while Central Uttar Pradesh showed highest share, Eastern and Southern Uttar Pradesh also reported high share of communicable diseases in total reported ailments.

Rural Uttar Pradesh has lower share of communicable diseases than Urban Uttar Pradesh that is quite different from general perception. At gender level, infectious and parasitic diseases are found more in males than females, while females reported high morbidity due to Eye and Genito-urinary diseases.

Accidents and injuries mainly concentrated in males, female are less prone to it. Pattern of diseases by age group shows that infectious and parasitic diseases are highly concentrated in Younger age group especially in 0-4 age group. Circulatory and Eye ailments are concentrated in old age group especially in those who are more than sixty years. Genitor-urinary diseases are found mainly in 15-39 age groups. Literate people reported more Neuropsychiatric diseases than illiterate people, while infectious and parasitic diseases are highly reported by illiterate people.

Chapter fifth deals with determinants of morbidity in Uttar Pradesh and its regions. Chapter examined the socio-economic and demographic correlates of morbidity and their magnitude of impact on morbidity. Results show that females are more prone to being sick as compared to males in Urban Uttar Pradesh while in Rural Uttar Pradesh; males are more likely to have diseases as compared to females.

At regional level, females are less prone to being ill as compared to males in Western Uttar Pradesh and Central Uttar Pradesh, the condition is found reverse in Southern Uttar Pradesh and Eastern Uttar Pradesh. Age has a positive influence on morbidity, higher ages people are more vulnerable to being sick than people of younger age group. Divorced or widowed and currently married people are more chance to being ill as compared to people belong to never married category. Those people who are in labor force are less likely to being ill as compared to those people who are not included in labor force. People who have more land are less chance to being sick as compared to those has small landholding. Other variables like source of cooking, toilet facility, type of house structure, source of drinking water and drainage do not show clear relation to morbidity.

6.2 Conclusion

Research on morbidity is rather scanty and yet it is a very important and useful indicator of the health status of the people. The concept 'morbidity' has more than one meaning. It is complex, multidimensional and difficult to define and measure because it has strong cultural character which permits its meaning to change over time and space.

The overall morbidity prevalence rate is 100 and 109 per thousand in rural and urban Uttar Pradesh. The prevalence rate of illness is higher among children and adults above 60 years compared to other groups. The high prevalence rate of illness among the aged population indicates the need for targeted health care schemes for the elderly. The morbidity prevalence rate of the never married persons is lower compared to others, which may be due to under reporting of illness among females particularly in rural areas. The morbidity prevalence rate is inversely related to the level of education and household size. The distribution of type of illness among age-sex groups suggests that the communicable diseases are concentrated in the younger age groups while the aged people suffer more from non-communicable ailments. Among the communicable diseases, diarrhoeal diseases and peptic ulcer are important source of sickness. In the case of non-communicable diseases cardio-vascular and respiratory diseases are major ailments. The determinants of morbidity prevalence show that males have a higher risk of being sick compared to female. Increase in age of the individual increases risk of being sick.

The analysis points to the need for targeted health interventions to reduce morbidity among children and aged persons. In general, improvement in education would reduce the extent of sickness among people. This study draws attention to the consequences of diseases and ill health in adults. Thus the present health policy needs to tackle, on the one hand, equity in health care for the vulnerable groups and on the other, to allocate sufficient resources for taking curative measure in meeting health needs.

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Appendix

Appendix

Distribution of Ailments by Sex in Uttar Pradesh

Ailments	Male	Female
Diarrhoea/dysentery	10.3	6.1
Gastritis/peptic ulcer	4.9	6.5
Worm Infestation	1.1	0.7
Amoebiasis	0.5	0.4
Hepatitis/jaundice	2.0	1.3
Heart Disease	4.4	3.4
Hypertension	0.8	2.3
Respiratory including ENT	2.6	2.4
Tuberculosis	3.7	1.9
Bronchial Asthma	1.3	2.6
Disorder of Joints and bones	2.9	1.6
Diseases of Kidney/urinary system	5.1	2.5
Prostatic Disorder	0.9	0.1
Gynaecological Disorder	0.1	13.1
Neurological Disorder	2.4	2.1
Psychiatric Disorder	1.4	1.3
Conjunctivitis	0.4	0.2
Glaucoma	1.8	3.5
Cataract	2.6	5.0
Disease of Skin	0.3	0.5
Goitre	0.0	0.0
Diabetes Mellitus	0.6	1.0

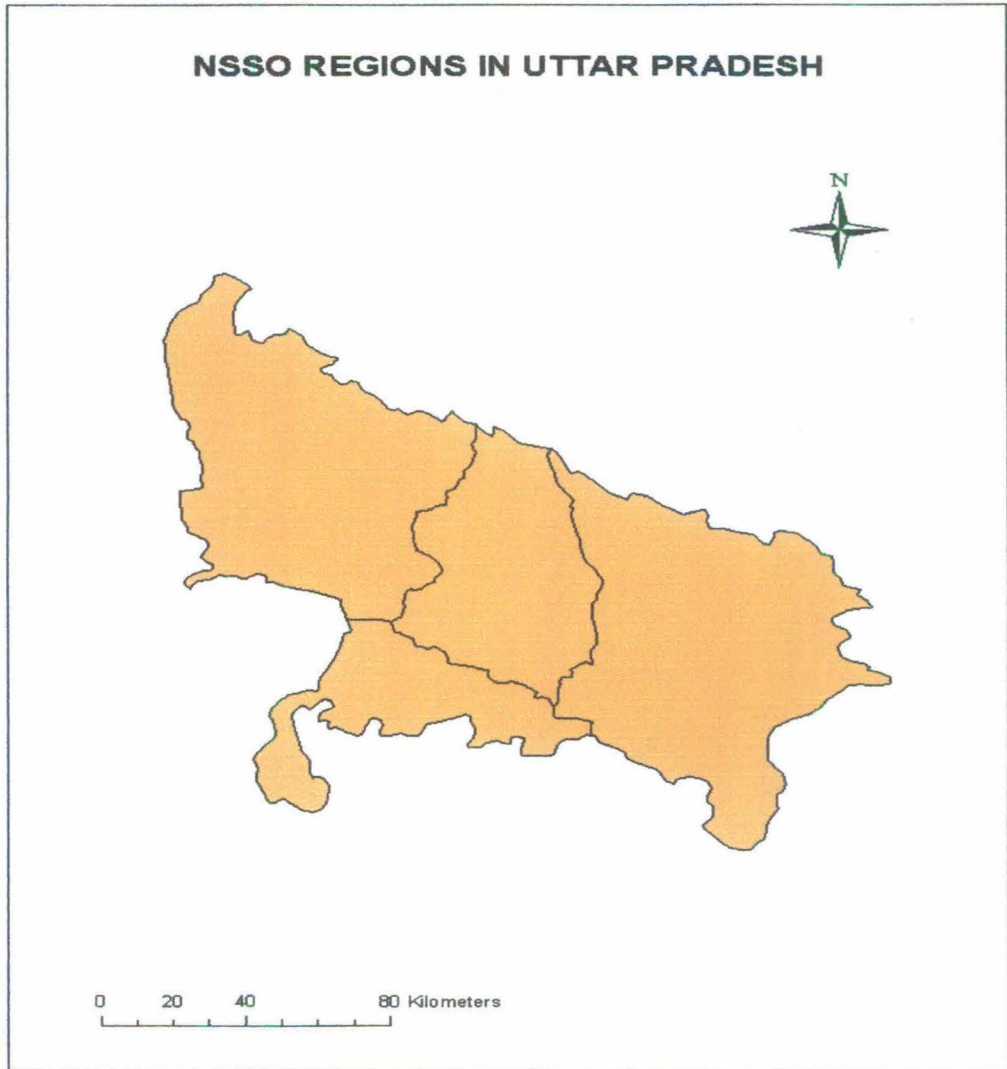
Under Nutrition	0.1	0.1
Anaemia	0.2	0.9
Sexually Transmitted Disease	0.1	0.4
Malaria	0.8	0.4
Eruptive	0.1	0.2
Mumps	0.1	0.1
Diphtheria	0.1	0.1
Whooping Cough	0.2	0.1
Fever of unknown origin	7.2	4.6
Tetanus	1.6	0.5
Filariasis/Elephantiasis	0.4	0.2
Locomotor	1.7	0.7
Visual including Blindness	0.5	0.4
Speech	-	0.0
Hearing	0.5	0.1
Disease of Mouth/Teeth/Gum	0.1	0.2
Accidents/injuries/burns/poisoning	17.5	7.0
Cancer and other Tumours	2.3	3.1
Other Diagnosed Ailments	15.5	19.9
Other Undiagnosed Ailments	1.3	2.6
Total	100.0	100.0

Distribution of Ailments by Education in Uttar Pradesh

Ailments	Not Literate	Literate
Diarrhoea/dysentery	10.6	5.8
Gastritis/peptic ulcer	5.2	6.1
Worm Infestation	0.8	1.1
Amoebiosis	0.3	0.6
Hepatitis/jaundice	1.9	1.4
Heart Disease	3.7	4.0
Hypertension	1.7	1.4
Respiratory including ENT	2.7	2.2
Tuberculosis	3.0	2.6
Bronchial Asthma	2.5	1.4
Disorder of Joints and bones	2.4	2.1
Diseases of Kidney/urinary system	3.1	4.5
Prostatic Disorder	0.2	0.8
Gynaecological Disorder	6.3	6.9
Neurological Disorder	1.8	2.7
Psychiatric Disorder	0.9	1.8
Conjunctivitis	0.2	0.4
Glaucoma	3.6	1.7
Cataract	5.0	2.6
Disease of Skin	0.4	0.4
Goitre	-	0.1
Diabetes Mellitus	0.3	1.3
Under Nutrition	0.1	0.1
Anaemia	0.7	0.3

Sexually Transmitted Disease	0.3	0.2
Malaria	0.3	0.9
Eruptive	0.2	0.1
Mumps	0.1	0.1
Diphtheria	0.1	0.1
Whooping Cough	0.3	0.1
Fever of unknown origin	5.6	6.2
Tetanus	1.7	0.4
Filariasis/Elephantiasis	0.4	0.2
Locomotor	0.6	1.8
Visual including Blindness	0.7	0.2
Speech	0.0	-
Hearing	-	0.2
Disease of Mouth/Teeth/Gum	0.1	0.2
Accidents/injuries/burns/poisoning	10.8	13.7
Cancer and other Tumours	3.1	2.4
Other Diagnosed Ailments	15.9	19.5
Other Undiagnosed Ailments	2.1	1.8
Total	100.0	100.0

Map 1.1 Regions of Uttar Pradesh classified according to NSSO



Composition of NSSO Regions in Uttar Pradesh

Western Uttar Pradesh

Saharanpur	Pilibhit	Agra
Muzzapharnagar	Shahjahanpur	Mathura
Bijnor	Farrukhabad	Etah
Moradabad	Kannauj	Etawah
Rampur	G.Buddhnagar	Mainpuri
J. Phulenagar	Bulandshahar	Badaun
Merrut	Aligarh	Bareilly
Baghpat	Firozabad	Auraiya
Ghaziabad	Hathras	

Central Uttar Pradesh

Kheri
Sitapur
Hardoi
Unnao
Lucknow
Rai Bareilly
Kanpur Dehat
Kanpur City
Barabanki

Eastern Uttar Pradesh

Pratapgarh

Kaushambi

Allahabad

Faizabad

Ambedkar Nagar

Bahraich

Shrawasti

Balrampur

S.R.Nagar (Bhadoi)

Gonda

Siddharth Nagar

Basti

S.Kabir Nagar

Maharajganj

Gorakhpur

Kushinagar

Deoria

Sonbhadra

Ballia

Azamgarh

Mau

Varanasi

Mirzapur

Jaunpur

Ghazipur

Chandauli

Southern Uttar Pradesh

Jalaun

Jhansi

Hamirpur

Lalitpur

Mahoba

Banda

Chitrakoot