

## A Survey Study on Disease Rate and Tendency of Taking Treatment of Urban and Rural People in Gaibandha District, Bangladesh

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**Abstract:** Ever rising prevalence of communicable and non-communicable diseases a major challenge for the health sector in Bangladesh. Gaibandha district under Rangpur division aggregate population is 23, 79, 255 of which males are 11, 69,127 and females are 12, 10,128 [2]. Among population aged 7 years and over, the literacy rate of this district is 42.8% (Both male and female) in which male 46.3% and female 39.5% [8]. There is a general hospital and six government hospitals and 54 family welfare centers, six Upazila health complex, one maternity and childcare centered tuberculosis clinic in Gaibandha. A community based cross sectional study was conducted among 200 urban and rural people in Gaibandha district within seven Upazila to determine the disease rate and tendency of taking treatment. At offline data were collected face-to-face interview of the selected respondents and also collected by online creating Google form. Almost all respondents gave history of illness of his/her family members during the preceding last six months. Various ages give different level of diseases with significant positive attitude except exorcism and magic treatment. The day-labors remain in risk zone with multi-disciplinary occupational diseases. Asthma is the leading occupational disease. High treatment seeking behavior in businessman is about 6.50% with complementary and traditional treatment. Another leading disease is gastrointestinal disease 8.5%. Sanitation is a big issue about 61.1% where government should give more concentration to improve this worst condition [1]. However, in this study the result found was elaborated throughout the study.

**Keywords:** Disease, rural, medicine, survey, Bangladesh.

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### RESEARCH PAPER

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### 1. INTRODUCTION

Disease rate or prevalence is a measure of disease that allows us to determine a person's likelihood of having a disease. Therefore, the number of prevalent cases is the total number of cases of disease existing in a population [4, 5]. Treatment tendency behavior is directly related to disease incidence, prevalence and complication. Early recognition of symptom, presentation to healthcare facilities, and compliance with effective treatment can reduce morbidity and thereby mortality. Appropriate health seeking behavior may help to plan treatment strategies and management upon diagnosis so that complication can be minimized and quality of life can be improved. It is a complex outcome of many factors operating at individual, family, and community level [6]. Treatment choices would involve many factors related to illness type and severity, sociodemographic characteristics, pre-existing lays believe about illness causation, accessibility of treatment available and their perceived efficacy and disease profile.

As for health care system, in almost all the developing countries the public and the private health sector coexist, complementing or conflicting with each other. These measurement data are rarely available. Mainly hospital data are available for disease pattern. Community based study can only reflect the true picture of disease pattern in a given community and what are their preference in seeking health care services. Episodes of illnesses are reported to be higher for poor people due to their living conditions and nutritional status. The high incidence of morbidity cuts their household budget both ways i.e. not only they have to spend large amount of resources on medical care but are also unable to earn during this period. One possible consequences of this could be pushing these families into a zone of permanent poverty. In Gaibandha multi-dimensionality of poverty at the significance is >0.01 and the 44.3% of the total population is poor [3]. We focused on three main themes, namely, reported illnesses, relevant healthcare-seeking behavior and health system experiences of urban and

rural people in Gaibandha district. Findings reveal that students, day-labor, businessman, farmer, housewife suffered from Asthma, Gastrointestinal disorder illnesses in the last 6 months; however, a majority did not visit formal facilities. They preferred visiting retail drug shops for advice and treatment or waited for self-recovery. Formal facilities were visited only when treatment from drug shops failed to cure them or they suffered serious illnesses or traumatic injury. Lack of awareness, financial constraints and fear of visiting formal facilities were some of the reasons mentioned. Those who visited formal facilities faced barriers like the cost of medicines and diagnostic tests, long waiting time and opportunity cost. The overall situation of health care system is poor in developing countries like Bangladesh due to inadequate access to modern health services and poor utilization. One of the public health challenges in Bangladesh is, therefore, to identify vulnerable groups and to provide them with needed preventive and curative health services. The poor of Gaibandha in Bangladesh are specially disadvantaged in accessing quality health care due to their marginalized position in society. In order to make the existing health-care delivery system more pro-poor, knowledge of their health seeking behavior is needed. Identification of individual factors that may facilitate or impede the effective use of health care services may help us to identify those who may be particularly vulnerable, and provide information that policy makers can use to target services to those in greatest need. Therefore, this study has been designed with expectation to determine the disease pattern and health seeking behavior in rural and urban of Gaibandha district in Bangladesh.

## 2. MATERIALS AND METHODS

### 2.1 Study Design and Settings

There are also some associated considerations in relation to statistical analysis. A very common approach in analysis of risk factors is to identify significant associations in univariate analysis, then put the significant associations into multivariate regression analysis, labeling those factors that remain significant as “independent” risk factors. Often this appears to be done without serious consideration of whether the risk factors make sense in terms of causal pathways, whether they are modifiable, whether they are accurately measurable, whether they are likely to be collinear, whether they could result from reverse causality, and how complete the list of variables is. All these considerations can affect the validity of regression analysis. Statistical analysis can be used more scientifically to address specific hypotheses about mediation by associated factors. For example, in considering the relationship between urban and rural differences, with education, and socioeconomic status (SES), it is possible to include SES and then the SES and education to see if there is a reduction in the strength of the association. This would be a sign that education mediates the influence of their attitude about disease and seeking treatment behavior in which they

mostly influenced. In general, stepwise procedures need to be increasingly used in analysis.

### 2.2 Study Population

Two hundred (200) were examined to assess the under lying factors a semi structured questionnaire was filled by the urban and rural people on both offline and online. Data was analyzed using SPSS. Frequency, % and mean and SD were calculated accordingly. Chi-square was applied and P value < 0.05 was considered statistically significant.

### 2.3 Data Collection

A semi-structured questionnaire was developed for collection of required information through Online. The online google form was pre-tested and necessary alteration and modification was made. Offline data inputted in excel sheet and collaborate with online data. All answered questions were checked for incompleteness (if any), correction (if required) and internal consistency to exclude missing or inconsistent data. The questionnaire was pretested before actual data collection and was modified accordingly. After data collection, 10% of the questionnaire was re-checked for the reliability and validity of the data. The purpose of the study was to identify the determinants that influences the study mostly. Questionnaire: it was divided into several sections and included questions about their demographic data (i.e. living place, age, sex, and educational status, socioeconomic status, conceptual knowledge, awareness) to collect and identify the data easily.

### 2.4 Statistical Analysis

The statistical analysis of the data was carried out by using software program SPSS (Statistical Package for the Social Sciences) version 29 and was done by the investigator. Data was coded, checked, cleaned, and edited properly before analysis. Chi-square test was performed to see the correlation of respondent's characteristics with positive and negative impacts.

## 3. RESULT AND DISCUSSION

The data comprised 200 populations on both online and offline platforms. The baseline characteristics of the participants, such as age, gender, educational status, living place, physical exercise, occupation, status, food habit, sanitation, smoker/nonsmoker, alcoholic/nonalcoholic attitude. In the table-1 a statistical compare between urban and rural people in Gaibandha district with the baseline characteristics. In the urban prevalence and incidence of diseases (during flood) are diarrhea 15.3% > jaundice 11.2% > chicken pox 10.6% > typhoid 9.4% > dengue 8.2% > cholera 7.6%. In the village diarrhea 17.6%. In urban the acute frequency of disease once in a month 23.9% and in village thrice in a month is about 21.3%. Long term disease is about 13.1% in city and heart disease, asthma, COPD is about 7%. The treatment seeking behavior like taking physician's advice 16% (urban) where village people go sometimes about 32.5%. Diagnosis tendency is 28.5% (urban) and village 15%. So people village are more vulnerable.

**Table 1: Demography of population**

Characteristics		Where do you live in?			
		City		Village	
		Count	Table N %	Count	Table N %
Gender	Female	55	27.4%	30	14.9%
	Male	60	29.9%	56	27.9%
Age	11-20	18	9.0%	6	3.0%
	21-30	56	27.9%	69	34.3%
	31-40	13	6.5%	3	1.5%
	41-50	10	5.0%	1	0.5%
	51-60	11	5.5%	2	1.0%
	61-70	7	3.5%	1	0.5%
	70+	0	0.0%	4	2.0%
Education	Illiterate	9	4.5%	0	0.0%
	Primary	7	3.5%	0	0.0%
	Secondary	12	6.0%	0	0.0%
	Higher secondary	14	7.0%	14	7.0%
	Undergraduate	18	9.0%	56	27.9%
	Graduate	55	27.4%	16	8.0%
Occupation	Apprentice Lawyer	2	1.0%	0	0.0%
	Business	18	9.0%	0	0.0%
	Day-labor	3	1.5%	0	0.0%
	Doctor	1	0.5%	0	0.0%
	Farmer	10	5.0%	0	0.0%
	House wife	11	5.5%	0	0.0%
	Job-on-desk	10	5.0%	6	3.0%
	Student	59	29.4%	61	30.3%
	Unemployed	1	0.5%	19	9.5%

**Table 2: Characteristics of people**

Monthly income/ socio status	No income	5	6.1%	15	18.3%
	10001-20000 taka	9	11.0%	0	0.0%
	20001-30000 taka	6	7.3%	0	0.0%
	31001-50000	7	8.5%	0	0.0%
	5000 taka	24	29.3%	0	0.0%
	50000+	2	2.4%	0	0.0%
Food habit	Nutritious food (vitamins, minerals)	67	33.3%	30	14.9%
	Unbalanced diet	47	23.4%	31	15.4%
	Unhealthy food	1	0.5%	25	12.4%
Are you?	Non smoker	114	56.7%	45	22.4%
	Smoker	1	0.5%	41	20.4%
Are you?	Alcoholic	8	4.0%	0	0.0%
	Non alcoholic	107	53.2%	86	42.8%
Issuing health insurance	Maximum have	55	27.5%	24	12.0%
	No	59	29.5%	62	31.0%
Concerned regarding sanitation	Always	88	44.9%	30	15.3%
	Sometimes	15	7.7%	0	0.0%
	3	11	5.6%	52	26.5%
Prevalence and incidence of diseases (during flood)	Chicken pox	18	10.6%	0	0.0%
	Cholera	13	7.6%	0	0.0%
	Dengue	14	8.2%	0	0.0%
	Diarrhea	26	15.3%	30	17.6%
	Diarrhea, Cholera, Typhoid	16	9.4%	0	0.0%
	Jaundice	19	11.2%	0	0.0%
	No disease	8	4.7%	9	5.3%
	8	0	0.0%	17	10.0%
Frequency of acute/short-term Diseases in a month	More	18	9.1%	0	0.0%
	No	49	24.9%	30	15.2%
	Once	47	23.9%	11	5.6%

**Table 3: Characteristics of diseases prevalence**

Are you Suffering from Chronic/ long-term diseases like	<b>Heart Disease, Asthma, Chronic Obstructive Pulmonary Disease (COPD)</b>	0	0.0%	14	7.0%
	High cholesterol	0	0.0%	11	5.5%
	No	59	29.6%	36	18.1%
	Others	0	0.0%	24	12.1%
Do you have high-blood pressure?	No	114	57.0%	48	24.0%
	Yes	0	0.0%	38	19.0%
Do you have diabetes?	No	114	57.0%	52	26.0%
	Yes	0	0.0%	34	17.0%
Do you face any complications of having contagious diseases during farming?	No	114	57.0%	47	23.5%
	Yes	0	0.0%	39	19.5%
Do you take Traditional and Complementary Medicine?	Always	15	7.5%	0	0.0%
	Never	40	20.0%	22	11.0%
	Sometimes	59	29.5%	32	16.0%
	When others treatment processes are cost effective	0	0.0%	32	16.0%
Do you belief in Exorcism and magic treatments?	No	114	57.0%	44	22.0%
	Yes	0	0.0%	42	21.0%
Do you face any restrictions of religious aspects /social aspects before taking treatment like	All	20	10.0%	0	0.0%
	Ignorance	16	8.0%	0	0.0%
	Lack of self-concern	19	9.5%	12	6.0%
	Never	59	29.5%	57	28.5%
	Superstitious of taking medicine	0	0.0%	10	5.0%

**Table 4: Treatment seeking behavior**

	<b>Superstitious of taking medicine, Ignorance</b>	<b>0</b>	<b>0.0%</b>	<b>7</b>	<b>3.5%</b>
Do you think environment pollution is one of the serious reasons of causing disease?	Maybe	33	16.5%	0	0.0%
	No	22	11.0%	2	1.0%
	Yes	59	29.5%	84	42.0%
Taking physician's advice / appointments	Always	32	16.0%	0	0.0%
	Frequently	23	11.5%	8	4.0%
	Never	0	0.0%	13	6.5%
	Sometimes	59	29.5%	65	32.5%
Strictly following of physician's prescription	Always	55	27.5%	29	14.5%
	Never	18	9.0%	1	0.5%
	Sometimes	41	20.5%	56	28.0%
Tendency of medical diagnosis	Interested	57	28.5%	30	15.0%
	Moderate	57	28.5%	14	7.0%
	Not interested	0	0.0%	42	21.0%
Influence of quack's advice	Maximum	34	17.0%	0	0.0%
	Minimum	21	10.5%	25	12.5%
	Moderate	43	21.5%	5	2.5%
	Never	16	8.0%	56	28.0%
Frequency of taking medicine	Irregular	39	19.5%	0	0.0%
	Regular	16	8.0%	26	13.0%

### 3.1 Occupation Disease Prevalence

It appears from the figures age remain in worst conditions in prevalence line. Suffering maximum level 11-20 age 5.47%, 21-30 age 11.47%, 31-40 age 4.48%, 41-50 age 5.47%, 51-60 age 1%, 61-70 age 2.49% and

70+ age people suffering 1.99% that is relatable with their working activities. Gaibandha is district where environment is a big issue especially in urban area. 21-30 age people work outside mostly than other age people. So the prevalence is mostly associated with age 21- 30.

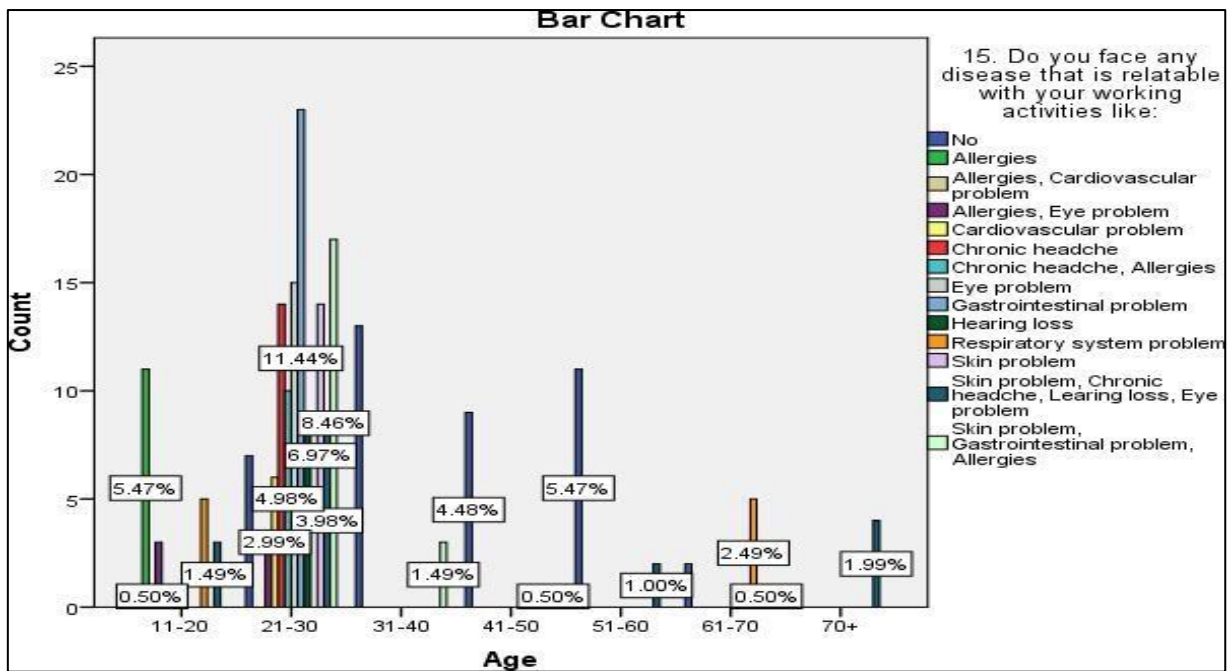


Figure 1: Prevalence of occupational disease according to age

### 3.2 Prevalence and Incidence of Diseases (During Flood)

Gaibandha is a district where most area are flooded about almost two times in a year. Maximum people are farmer and suffer a lot. During flood they always lost their works, make temporary house these are

always just in-front flood line. There are no government’s facilities to provide accommodation to improve the life about three months of these poor affected people. As a result, they suffering from various diseases. According to prevalence and incidence they are Diarrhea> cholera>chicken pox>typhoid.

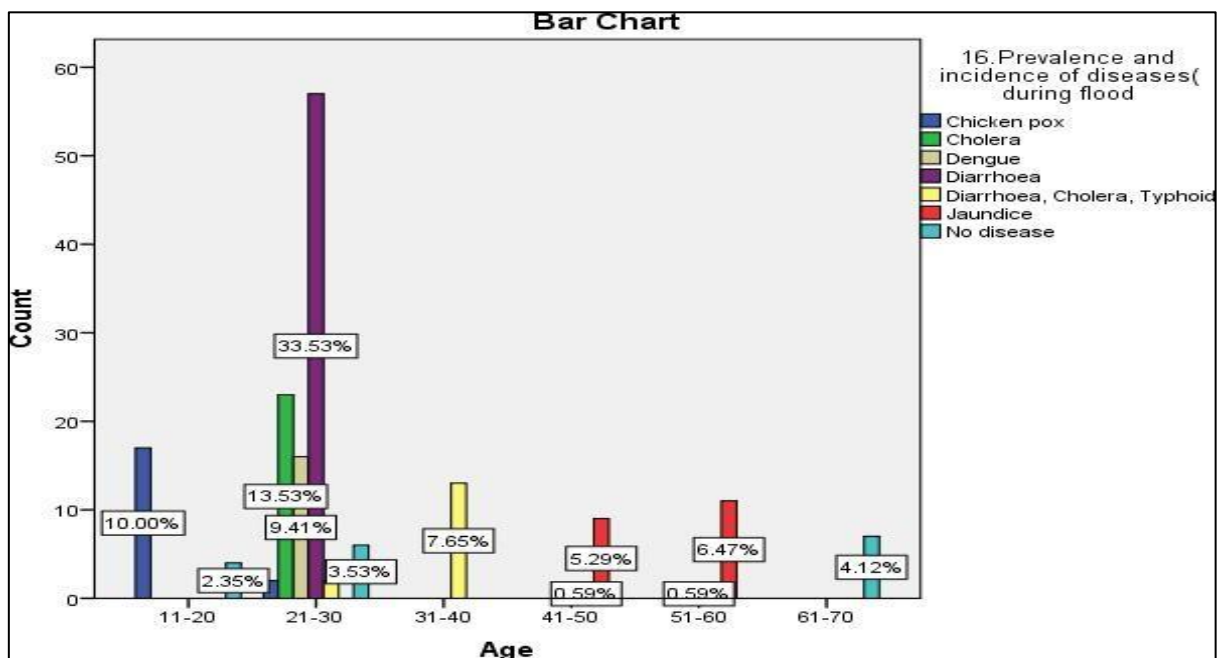


Figure 2: prevalence of disease during two times flood per year

### 3.3 Frequency of Acute/Short-Term Diseases in a Month

Acute diseases that occurs within short period of time. But this conditions in a month maximum people

of this survey responses negative and some are affected once, thrice and some are more in a month. Most dangerous fact that the age below under age 11 they are suffering more than thrice in a month.



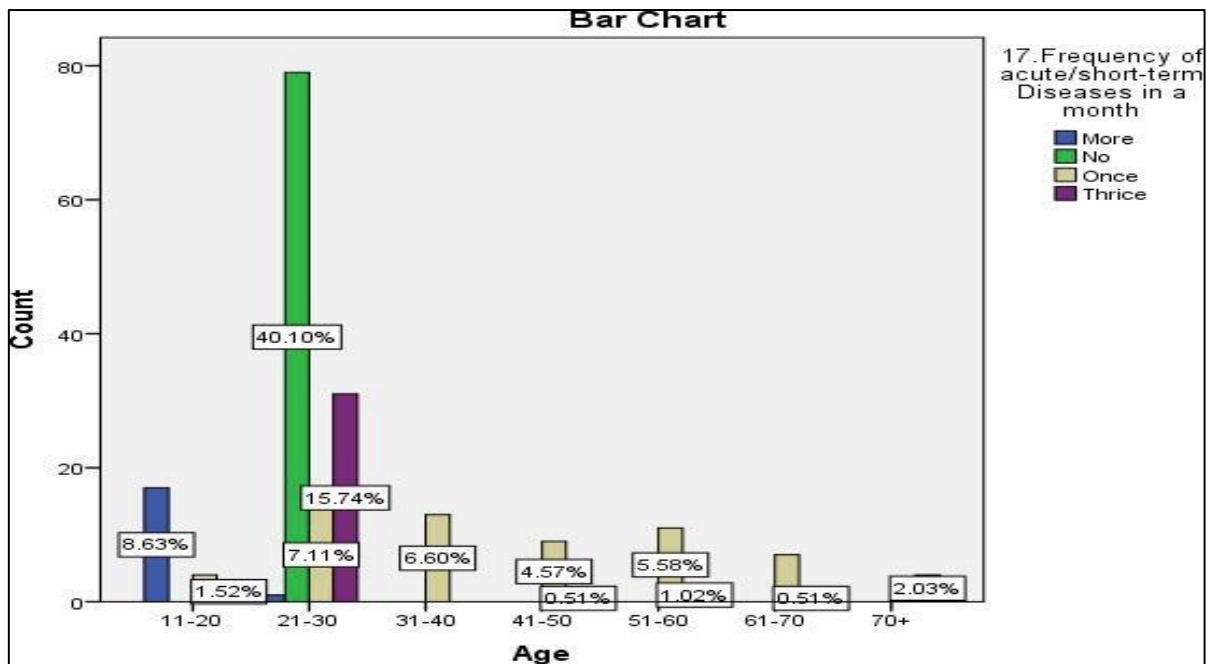


Figure 3: frequency of acute disease according to age

**3.4 Chronic Disease**

This survey collects the data of chronic diseases from last 6 months of the population. Among these most

occurring disease is Asthma that most affected by age 21-30.

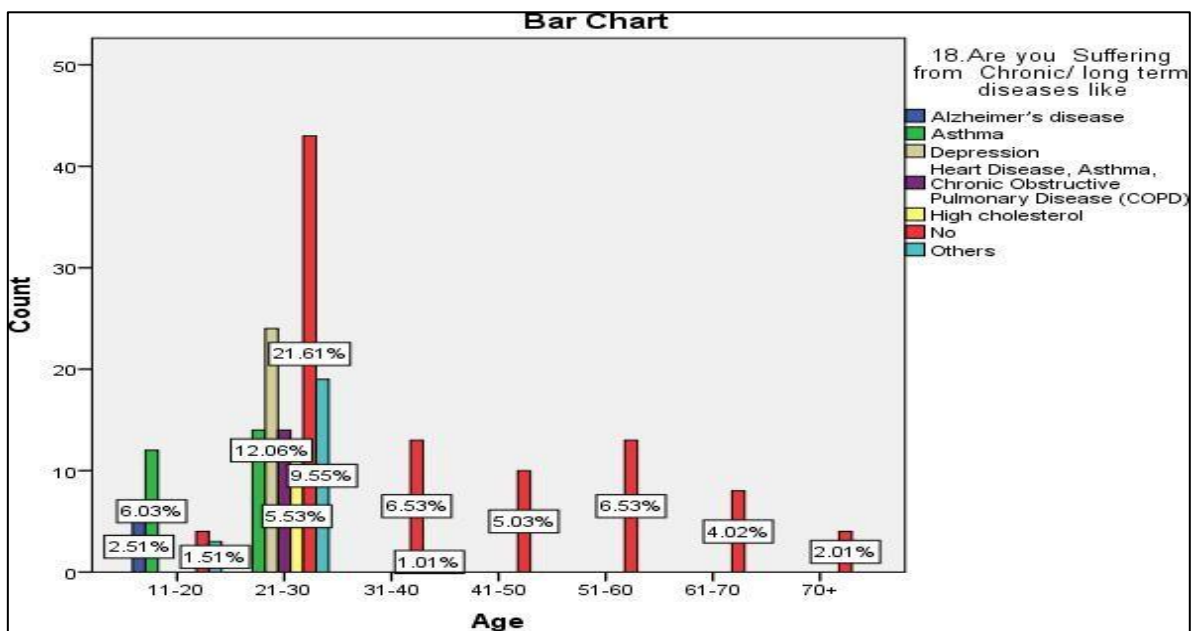


Figure 4: frequency of chronic disease according to age

**3.5 Food Habit**

In Gaibandha the people live in urban region take unhealthy food is about 15.5% > 12.4% (village). So the urban people remain in high risk associated with disease prevalence but their treatment seeking behavior

is high. But overall nutritious food taking behavior is high in city than village about 33.3%.

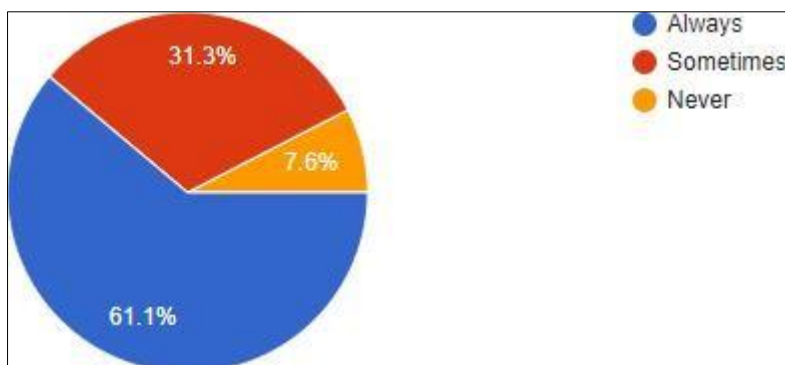
**Table 5: food habit among people**

		Where do you live in?			
		City		Village	
		Count	Table N%	Count	Table N%
Food habit	Nutritious food (vitamins, minerals)	67	33.3%	30	14.9%
	Unbalanced diet	47	23.4%	31	15.4%
	Unhealthy food	1	15.5%	25	12.4%

### 3.6 Concerned Regarding Sanitation

In Gaibandha district almost five river causes two times flood per year. So sanitation is a big concern to prevent communicable diseases. People have to

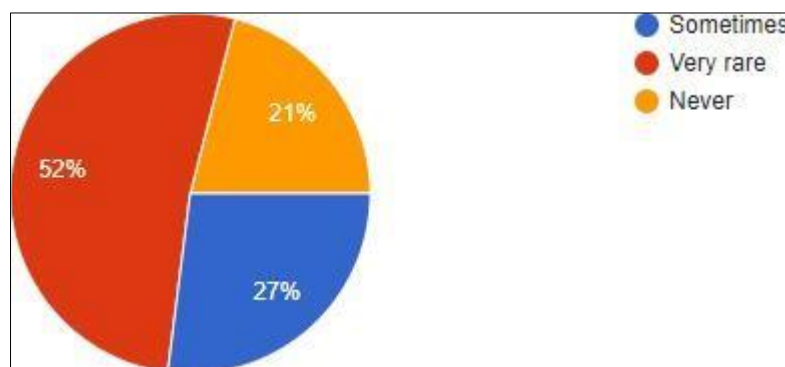
always concern about this. In this survey that is reflected about 61.1%, sometimes they maintain 31.3%. 7.6% people do not concern about it, that's why they have to suffer a lot.

**Figure 5: Sanitation conscious rate**

### 3.7 Availability of Free Medical Camp Gaibandha

Gaibandha is a poor region of north Bengal contains lots alluvial lands. Transport system is very dull

to reach there to provide medical facilities. So it is very rare about 52%.

**Figure 6: Availability of free medical Camp Gaibandha**

## 4. CONCLUSION

In this survey among 200 peoples the young people 21-30 age suffer most of the various diseases. In this age the prevalence level is high and treatment seeking behavior is positive except exorcism and magic treatment attitude due to significant value is  $P > 0.05$ . Prevalence associated with occupation the students are remain high risk zone where the doctors are in safe zone. The occupational diseases high in day-labor where students also associated with them in vulnerable conditions. Most chronic disease with occupation is asthma and Alzheimer's disease rate is low. Maximum survey people have no significant blood pressure except businessman is about 8.9% according to their frequency. Traditional treatment seeking behavior is high within

businessman is about 6.50%. Only farmer and some house-wife belief in exorcism and magic treatment. Day-labor and housewife have some superstitious about lifestyle. The city or urban people are more conscious 27.5% than villagers 14.5%. This percentage also high in doctors due to conscious life style. Higher secondary educated people suffer gastrointestinal disease 8.5% that is higher than any other educational background. Chicken pox is a major concern in Gaibandha is about 10.6% due to 6 rivers associated flood. Illiterate people suffer with Asthma than other people about 10%. Traditional and complementary treatment tendency is high in illiterate people. People who maintain Physical exercise regularly faces low prevalence of disease. The urban people take unhealthy food than villagers. Due to

two times flood per year in Gaibandha district the government should be more concern about sanitation because the negative response is about 61.1%. Finally, the government should be more concern to improve the people's health needs by providing free medical camp, diagnosis facilities and other health supplies management.

**DISCLOSURE OF CONFLICT OF INTEREST:**

There is no conflict of interest regarding this paper.

**AUTHOR CONTRIBUTION:** All author contributed significantly to design and development of this work.

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