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Morbidity pattern and utilization of healthcare services in Alipurduar district, West Bengal: A household study

BARNALI BISWAS
Research Scholar
Department of Geography, Cooch Behar Panchanan Barma University
Vivekananda Street, Cooch Behar (W.B.) India

ABSTRACT

Introduction: The concept of good health is an indicator in ensuring the functional quality of health care system and morbidity prevalence is one of the significant measurements to assess the status of health. **Objectives:** This paper aims to discuss the pattern of morbidity and utilization of health care services with a focus on the socio-demographic co-relates in Alipurduar district, West Bengal. **Method:** To conduct this study, primary data is required which have been collected from 100 households and the sample size is 520. Morbidity Prevalence Index has been prepared and the Chi-square test is applied to analyze the objectives of this paper. **Result:** Results indicate that morbidity prevalence rate is associated with socio-demographic variables as the rate of communicable disease is higher in lower class groups where the most of the educated and rich people suffer from some non-communicable disease like Heart Disease, Diabetes, Blood Pressure, and Gastric problem. Apart from the patients' need of the treatment, choice of health care influences the utilization of services which varied among different groups. **Conclusion:** This association with some socio-demographic factors, affecting the equities in health care services of this district

Key Words : Morbidity prevalence, Choice of healthcare, Socio-demographic Co-relates, Utilization of services

INTRODUCTION

Health is considered as one of the important determinants in developing the process of socio-economical wellbeing. But the measurement of the status of health is a complex phenomenon as it has many dimensions (Audibert, 2009). While assessing the health of an individual or groups, mortality rate, birth rate, life expectancy rate are the most frequently used parameter whose status is improving over the last few decades. But the current status of morbidity in this country is yet to be assessed (Datta *et al.,* 2017).

Increasing the rate of morbidity is a threat to the future as it is directly related to mortality along with the standard of living. Morbidity or feeling sick is a subjective phenomenon and its measurement is characterized by conceptual limitations because it includes a mixture of disease of poverty and disease of affluence (Dilip, 2002 and Panikar and Soman, 1984). Pattern of morbidity is co-related with the level of utilization of health care services. The term utilization is defined as qualitative and quantitative aspects by delivering a quality healthcare to consumers. The extent of

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utilization is varied among different groups as it is the most consumer-oriented activity with diverse dimensions of need, perception, knowledge, decisions as well as the choice of healthcare (Oladipo, 2014).

West Bengal is one of the moderately developed states in India where the status of mortality is improving with the improvement of economic conditions. Despite this development, the morbidity rate in this state has increased over time (Ghosh and Arokiasamy, 2010). This paper aims to discuss the pattern of morbidity and utilization of health care services along with their socio-demographic correlates in Alipurduar district, one of the disadvantaged regions in West Bengal, with a huge number of tribal populations.

Objectives :

- To determine the pattern of morbidity in this study area.
- To discuss about the choice of health care services of the respondents.
- To analyze the socio-demography co-relates with morbidity pattern and utilization of health care services.

METHODOLOGY

This paper analyzes the pattern of morbidity and choice of health care services in Alipurduar district along with the utilization of health care services which determine the status of health. After the identification of problems, the major work of this study depends on primary sources where 100 households are randomly selected and the sample size is 520. This study has been conducted during the month of February and March, 2018 in different parts of Alipurduar district and the selection of the survey areas have been chosen on the basis of its geographic and demographic characteristics. For the collection of data, structured interview was conducted among different socio-economic and demographic groups.

To conduct this study Morbidity Prevalence Index has been prepared (Dhanya and Maneesh, 2016) and T-test and Chi-square test is applied at the level of 5% significance.

The following formula has been used to get Morbidity Prevalence Index

$$\text{Morbidity prevalence rate} = \frac{pa\ (t)}{P} * 1000$$

where,
pa = number of ailing persons with the specific disease
t = at reference period of time
P = total number of population to risk

RESULTS AND DISCUSSION

Socio-demographic profile :

Socio-demographic profile of an area is a pre-requisite for development which is co-related with the status of health. There are various factors, playing an important role to determine the socio-demographic status of the region

From Table 1, it shows most of the people live in rural areas where the family size of 56 houses are medium. Among the respondents, 33.84% people are from 36-59 age group and the

Table 1 : Socio-demographic profile of the study area

Family Size		Rural	Urban	Total Households (100)
		No. of Households		
01-03 Members		09	16	25
04-06 Members		38	18	56
> 07 Members		14	05	19
Socio-demographic characteristics		N= 352 (%)	N= 168 (%)	P value
Age (years)	< 06	07.1	06.5	< 0.05
	06-17	19.0	14.9	
	18-35	29.3	29.2	
	36-59	33.8	33.9	
	>60	10.8	15.5	
Gender	Male	50.9	54.2	< 0.05
	Female	49.1	45.8	
Caste	SC	36.1	28.6	< 0.05
	ST	26.4	14.9	
	Others	37.5	56.5	
Education	Illiterate	28.7	22.6	< 0.05
	up to VIII	37.2	35.1	
	IX to XII	23.9	25.6	
	Upper Education	10.2	16.7	
Monthly Income	< 7000	40.1	39.3	< 0.05
	7000-14000	42.3	44.0	
	> 14000	17.6	16.7	

Source: Field Survey

number of male people is higher (50.9 and 54.2%) there. In this study area, tribal people share 22.69% population and most of them are concentrated in rural areas. Most of the people are from an illiterate group whereas only 10.2% and 16.7% are higher educated and monthly income of 17.6 % and 16.7% people is more than 14000/-.

Communicable diseases and morbidity prevalence rate :

When individuals are killed by a disease that can be transmitted from one person to other due to microorganisms is defined as communicable disease (Walker, 2012). The pattern of morbidity of communicable disease is varied among different regions and different groups are associated with the environmental conditions of any region.

From Table 2 it seems to be understood that higher number of people of this area are suffering from diarrheal and infectious disease and its morbidity prevalence rate are comparatively higher (73.86 and 96.59) in rural areas. The number of reported cases of Tuberculosis and Typhoid is lower (3 and 2) in this area. In addition, morbidity prevalence rate of most of the communicable disease is higher in rural areas with compare to urban areas.

Non-communicable diseases and morbidity prevalence rate :

Non-communicable type of disease is not transmitted by another person. According to the definition of WHO, Non-communicable disease is a diverse group of chronic diseases and are the result of a combination of genetic, physiological, environmental and behavioral factors (Tunstall-

Table 2 : Communicable diseases and morbidity prevalence rate

Illness	No. of cases reported		Morbidity prevalence rate	
	Rural	Urban	Rural	Urban
Malaria	06	02	17.05	11.90
Pneumonia	11	03	31.25	17.85
Influenza	15	13	42.61	77.38
Tuberculosis	01	02	2.84	11.90
Diarrheal	26	07	73.86	41.67
Typhoid	02	0	05.68	0
Infection	34	10	96.59	59.52

Source: Compiled by Author

Pedoe, 2005). Now-a-days, this disease is becoming the main cause of morbidity and mortality.

From Table 3, it is understood that the number of reported cases of Blood Pressure, Diabetes, and the Gastric problem is higher in urban areas whereas in rural areas some diseases are more dominant, like- Mental Disorder, Joint Pain, Anemia and Skin problems. Apart from this, morbidity prevalence rate of Heart disease and the Gynecological problem is also higher (47.62 & 65.48) in urban areas compared to rural parts.

Table 3 : Non-communicable diseases and morbidity prevalence rate

Illness	No. of cases reported		Morbidity prevalence rate	
	Rural	Urban	Rural	Urban
Heart disease	07	8	19.89	47.62
Mental disorder	21	02	59.66	11.90
Blood Pressure	08	17	22.73	101.19
Diabetes	06	16	17.05	95.24
Joint Pain	25	03	71.02	17.86
Gynecological	06	11	17.05	65.48
Breathlessness	13	05	36.93	29.76
Gastric Problem	09	18	25.57	107.14
Anemia	31	02	88.06	11.90
Skin Disease	34	04	96.59	23.81
Headache	10	07	28.41	41.67
Cancer/Tumor	01	01	02.85	05.95

Source: Compiled by Author

Socio-demographic status and pattern of morbidity :

Socio-demographic factors determine the behavioral, food habits as well as the lifestyle of the people, influencing the pattern of morbidity of any region. Many studies have stated that socio-economical and demographical status is associated with patients' perception, attitudinal as well as the health status of any region (Najman, 1979).

Table 4 shows that the rate of morbidity prevalence of communicable diseases is higher among large size families. People from lower age groups are suffered more from diarrheal problems and infectious disease (83.33 and 222.22). With the increase of age, the chances of getting sick from the infectious diseases are decreasing (Armstrong and Conn, 1999 and Santoro *et al.,* 2015). There are no significant differences among the group of gender and caste in the rate of morbidity prevalence. Most of the lesser educated people and those whose monthly income is lower suffer more from a communicable disease.

Table 4 : Socio-demographic profile and morbidity prevalence rate of communicable disease

Socio-demographic characteristics		Malaria	Pneumonia	Influenza	Tuberculosis	Diarrheal	Typhoid	Infection
Family size	01-03	13.89	27.78	41.67	0	55.56	0	41.67
(Member)	04-06	10.07	16.78	36.91	6.71	43.62	3.36	63.76
	> 07	26.67	46.67	93.33	6.67	106.67	6.67	146.67
Age (years)	< 06	0	55.56	83.33	0.00	83.33	0.00	222.22
	06-17	10.87	21.74	32.61	0.00	54.35	0.00	97.83
	18-35	13.16	6.58	39.47	6.58	59.21	6.58	78.95
	36-59	22.73	17.05	39.77	11.36	56.82	5.68	62.50
	>60	15.63	93.75	140.63	0.00	93.75	0	62.50
Gender	Male	18.52	18.52	55.56	11.11	55.56	3.70	59.26
	Female	12.00	36.00	52.00	0.00	72.00	4.00	112.00
Caste	SC	17.14	28.57	51.43	5.71	74.29	5.71	80.00
	ST	16.95	25.42	25.42	0.00	50.85	0	127.12
	Others	13.22	26.43	70.48	8.81	61.67	4.41	66.08
Education	Illiterate	35.97	43.17	28.78	7.19	86.33	7.19	107.91
	Up to VIII	10.53	36.84	36.84	10.53	68.42	5.26	105.26
	IX to XII	7.87	7.87	94.49	0.00	47.24	0	62.99
	Upper Edu.	0.00	0.00	78.13	0.00	31.25	0	15.63
Monthly	< 7000	4.83	28.99	28.99	4.83	67.63	9.66	120.77
income	7000-14000	22.42	35.87	71.75	8.97	71.75	0	76.23
	> 14000	22.22	0.00	66.67	0	33.33	0	22.22

Source: Compiled by Author

From Table 5, it is understood that the problem of heart disease is higher among old age and educated groups and whose monthly income is higher. Morbidity prevalence rate of mental disorder, skin disease, and anemia are higher among lesser educated and poor people as most of them don't give much importance to this problems due to lack of awareness (Ghosh and Arokiasamy, 2009). Educated and economically rich people suffer more from the problem of Diabetes, Blood Pressure, Gynecological and Gastric problem. Due to the changing nature of lifestyle and pressure of work, most of the people from these groups are suffered more and these diseases are thought as a disease for the rich (Banerjee and Dwivedi, 2016).

Table 5 : Socio-demographic profile and morbidity prevalence rate of non-communicable disease

Socio-demographic characteristics		Heart disease	Mental disorder	Blood Pressure	Diabetes	Joint Pain	Gynecological	Breathlessness	Gastric Problem	Anemia	Skin Disease	Headache	Cancer/ Tumor
Family	01-03	27.78	83.33	97.22	41.67	97.22	41.67	55.56	83.33	152.78	138.89	55.56	13.89
size	04-06	30.20	43.62	40.27	46.98	53.69	36.91	30.20	53.69	46.98	63.76	26.85	0.00
	> 07	26.67	26.67	40.00	33.33	33.33	20.00	33.33	33.33	53.33	60.00	33.33	6.67
Age	< 06	0	0	0	0	0	0	0	0	0	111.11	0	0
(years)	06-17	0	10.87	0	0	0	0	0	0	10.87	97.83	21.74	0.00
	18-35	0.00	52.63	0.00	0.00	13.16	72.37	6.58	6.58	65.79	65.79	52.63	0.00
	36-59	45.45	62.50	96.59	85.23	90.91	34.09	51.14	107.95	90.91	62.50	34.09	5.68
	>60	109.38	46.88	125.00	109.38	156.25	0	125.00	109.38	93.75	62.50	15.63	15.63

Table 5 contd…

Table 5 contd..

Gender	Male	37.04	33.33	40.74	48.15	40.74	0	25.93	62.96	44.44	55.56	25.93	7.41
	Female	20.00	56.00	56.00	36.00	68.00	68.00	44.00	40.00	84.00	92.00	40.00	0.00
Caste	SC	22.86	51.43	40.00	22.86	51.43	22.86	22.86	34.29	57.14	68.57	28.57	5.71
	ST	8.47	42.37	8.47	8.47	33.90	0.00	16.95	8.47	76.27	110.17	8.47	0.00
	Others	44.05	39.65	74.89	74.89	66.08	57.27	52.86	88.11	61.67	57.27	48.46	4.41
Education	Illiterate	7.19	64.75	7.19	0.00	21.58	7.19	14.39	21.58	93.53	14.39	7.19	0.00
	Up to VIII	10.53	42.11	15.79	21.05	26.32	10.53	15.79	26.32	52.63	68.42	10.53	0.00
	IX to XII	47.24	39.37	94.49	70.87	62.99	39.37	39.37	86.61	55.12	70.87	62.99	7.87
	Upper Edu.	93.75	15.63	140.63	140.63	187.50	140.63	125.00	125.00	46.88	62.50	93.75	15.63
Monthly	< 7000	4.83	43.48	14.49	4.83	19.32	4.83	14.49	14.49	82.13	96.62	4.83	0.00
income	7000-14000	17.94	49.33	53.81	35.87	58.30	26.91	26.91	49.33	49.33	62.78	35.87	4.48
	> 14000	111.11	33.33	111.11	144.44	122.22	111.11	100.00	144.44	55.56	44.44	88.89	11.11

Source: Compiled by Author

From Table 6, it seems to be understood that some socio-demographic factors are associated with the pattern of morbidity. Age groups of the people have significantly related with disease pattern and the p-value is 0.014 (chi-square= 19.173). In this study area, educational and monthly income groups are associated with the type of disease (p = 0.000 and 0.003). The p-value of other

Table 6 : Association between socio-demographic profile and pattern of diseases

Socio-demographic characteristics		Communicable disease (no. of cases)	Non-communicable disease (no. of cases)	Chi-square	P value
Family Size	01-03	13	64	2.266	0.687
(Members)	04-06	54	141		
	> 07	65	60		
Age (years)	< 06	16	4	19.173	0.014
	06-17	20	13		
	18-35	32	51		
	36-59	38	135		
	>60	26	62		
Gender	Male	60	114	0.01	0.995
	Female	72	151		
Caste	SC	46	75	0.658	0.356
	ST	29	38		
	Others	57	152		
Education	Illiterate	44	46	25.225	0.000
	up to VIII	52	57		
	IX to XII	28	86		
	Upper Edu.	8	76		
Monthly	< 7000	55	63	16.254	0.003
Income	7000-14000	64	105		
	> 14000	13	97		
Place	Rural	171	95	0.322	0.851
	Urban	94	37		

Source: Compiled by Author

socio-demographic factors is more than the level of significance (0.05) and it can be concluded that these groups are not associated with the pattern of disease.

Utilization of healthcare service :

Appropriate health facility is a necessary service but not a sufficient condition for the utilization of health care services (Sundar and Sharma, 2002). Patients' perceptions towards treatment as well as the choice of health care service play an important role in the utilization of health care services.

Table 7 shows, in this study area many patients are preferring treatment under non-qualified services for the problem of influenza, infection, and diarrhea. Sub-center, PHCs, and Govt. Hospitals are the first choice for the treatment of this communicable type of diseases. In addition, the dependency of patients in private hospitals is seemed to be lesser here.

Table 7 : Communicable diseases and choice of healthcare

Illness	Treatment under qualified staff (%)				Treatment under non-qualifier (%)		
	Sub-Center	PHC	Govt. hospital	Private hospital	Medical shop	Self treatment	Quack doctors
Malaria	25.00	37.50	12.50	12.50	0	12.50	0.00
Pneumonia	21.43	35.71	14.29	14.29	0	0.00	14.29
Influenza	25.00	25.00	21.43	03.57	14.29	07.14	03.57
Tuberculosis	0	33.33	66.67	0	0	0	0
Diarrheal	24.24	21.21	12.12	03.03	18.18	12.12	09.09
Typhoid	0	50.00	50.00	0	0	0	0.00
Infection	22.73	20.45	06.82	02.27	20.45	18.18	09.09

Source: Compiled by Author

Table 8 indicates that the rate of dependency of treatment for the non-communicable disease under qualified services is comparatively higher. Many people choose private hospitals for their treatment of Heart, Diabetes, Blood Pressure, and Gynecological problems. Patients in this area suffer from other non-communicable disease choose PHCs and Govt. Hospitals for their treatment. Many patients who have the problem of mental disorder, joint pain, gastric, anemia, and skin disease prefer medical shop, self-treatment and quack doctors for its cure.

Table 8 : Non-communicable diseases and choice of healthcare

Illness	Treatment under Qualified Staff (%)				Treatment under Non- Qualifier (%)		
	Sub-Center	PHC	Govt. hospital	Private hospital	Medical shop	Self treatment	Quack doctors
Heart disease	0	06.67	60.00	33.33	0	0	0
Mental disorder	0	17.39	39.13	04.35	0	17.39	21.74
Blood Pressure	04.00	12.00	32.00	32.00	08.00	04.00	08.00
Diabetes	0	09.09	31.82	31.82	04.55	09.09	13.64
Joint Pain	03.57	25.00	21.43	07.14	10.71	17.86	14.29
Gynecological	0	11.76	41.18	47.06	0	0	0
Breathlessness	05.56	22.22	38.89	11.11	0	16.67	05.56
Gastric Problem	03.70	11.11	25.93	22.22	18.52	07.41	11.11
Anemia	09.09	27.27	30.30	09.09	0	09.09	15.15
Skin Disease	10.53	15.79	26.32	05.26	18.42	15.79	07.89
Headache	0	05.88	17.65	0	35.29	23.53	17.65
Cancer/Tumor	0	0	50.00	50.00	0	0	0

Source: Compiled by Author

Socio-demographic Status and Utilization of Healthcare Services :

Socio-demographic factors are one of the important parameters to analyze the perception and choice of the people about healthcare services. After applying the Chi-square test the following table shows the extent of association between choice of health care services and socio-demographic factors.

From Table 9, it seems that the p-value of family size, gender, education, and place is more than 0.05, indicating these social and demographic factors are not related to the choice of healthcare services. The group of caste and monthly income is significantly associated with the pattern of choice of health care as here the p-value is 0.037 and 0.038 which is less than the level of significance (0.05).

Table 9 : Association between socio-demographic status and choice of healthcare service

Socio-demographic characteristics		Treatment under Qualified Staff (no. of cases)	Treatment under Non-Qualifier (no. of cases)	Chi-square	P value
Family size	01-03	50	27	1.148	0.887
(Member)	04-06	139	56		
	> 07	81	44		
Gender	Male	118	56	0.01	0.995
	Female	152	71		
Caste	SC	80	41	10.186	0.037
	ST	31	36		
	Others	159	50		
Education	Illiterate	52	38	6.878	0.332
	up to VIII	67	42		
	IX to XII	83	31		
	Upper Edu.	68	16		
Monthly	< 7000	72	46	10.167	0.038
income	7000-14000	105	64		
	> 14000	93	17		
Place	Rural	170	96	0.78	0.677
	Urban	100	31		

Source: Compiled by Author

Conclusion :

Morbidity pattern has now become an important indicator to measure the health status of any regions and the low rate of prevalence indicting a good status of health. The discussion of this paper has implied that in this region the morbidity prevalence rate of some disease is comparatively higher and the pattern of disease is co-related with some socio-demographic factors, like – age, education, and monthly income of respondents. The utilization of health care services is not always related to the need for patients' treatment and their choice of services is varied for different type of diseases. In addition utilization of services is associated with some socio-demographic factors, affecting the equities in health care services of this district. Therefore, there is an urgent need of reformation of socio-economic and demographic conditions and public health care system within the district by identifying the areas where it is weak.

Conflict of interest:

Conflict of interest does not exist

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