

Socio-Economic Determinants of Health Status and Disease Prevalence in Surveyed Households of Jashpur District (C.G.)

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Abstract:

This study investigates the socio-economic determinants of health status and disease prevalence among the households in Jashpur District, Chhattisgarh state. Recognizing that health outcomes are heavily influenced by factors beyond healthcare services. This research paper examines how income, education, occupation, housing quality, sanitation and clean water access impact community health. Jashpur, characterized by a high tribal population and a rugged geography, faces unique socio-economic challenges that exacerbate vulnerabilities to both communicable and non-communicable diseases. A cross-sectional survey was conducted across selected rural households using structured questionnaires, focus group discussions and health indicators. The findings reveal a strong correlation between low literacy rates, low household income and a higher prevalence of waterborne illnesses, malnutrition & respiratory infections. The study highlights that improving health status in Jashpur District requires a holistic approach that goes beyond medical interventions. Targeted policies must focus on enhancing female literacy, generating sustainable livelihoods, improving clean water infrastructure and strengthening primary healthcare accessibility.

Keywords: Jashpur District, Health Status, Socio-Economic Determinants & Healthcare Accessibility.

Introduction:

Every part of the body is dependent on energy for its smooth functioning and energy is obtained from nutrients [1]. Nutrients provide us with functionality and ability, which strengthens the body's defense and the body, remains healthy or disease-free [2]. Physical strength is directly related to a balanced diet, in which nutrients are obtained in proper quantity due to which man achieves his full life. Humans require about 45 types of nutrients to stay healthy [3]. Food is very important to keep the body healthy, but this question arises again and again in our mind that what should we eat, in what quantity should we eat, do they contain all the nutrients that are necessary to meet the needs of our body [4]. Good nutrition

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has a positive and favorable effect on our health due to which our body remains healthy, fit, agile and disease-free. A healthy mind resides in a healthy body, our first priority lies in keeping the body and mind healthy [5-6]. Health is directly related to the physical and cultural environment in which humans are born, grow up and work. Therefore, in order to live life in the best way, staying healthy is necessary in the interest of the individual as well as in the interest of the community [7]. The World Health Organization (WHO) has focused on three important components - physical, mental and social health. According to gender and age group - the body weight, height, mental balance, heart rate, normalization of blood pressure is the sign of physical health [8].

Study Area:

Jashpur is a picturesque north-eastern district of Chhattisgarh state, India, known for its hilly terrain, waterfalls, and rich tribal culture. Geographically, it is located between $22^{\circ}17' N$ to $23^{\circ}15' N$ latitude and $83^{\circ}30' E$ to $84^{\circ}24' E$ longitude. The district covers a total geographical area of 6,457 square kilometers, characterized by two distinct landforms; the mountainous Upper Ghat (Pandrapat plateau) and the fertile Lower Ghat plains. The district shares boundaries with Jharkhand and Odisha, making it a strategic border region. It is heavily forested, rich in bauxite reserves and famous for its production of premium varieties of rice, minor forest produce and dynamic agro-forestry. The socio-economic life of villagers in the study area is deeply rooted in tribal traditions, forest ecology and subsistence agriculture. As a predominantly rural district where over 91% of the population lives in villages, Jashpur's communities including the Oraon, Gond and Particularly Vulnerable Tribal Groups (PVTGs) like the Birhor and Hill Korwa - experience a lifestyle that balances deep cultural heritage with evolving economic opportunities and distinct infrastructure challenges.

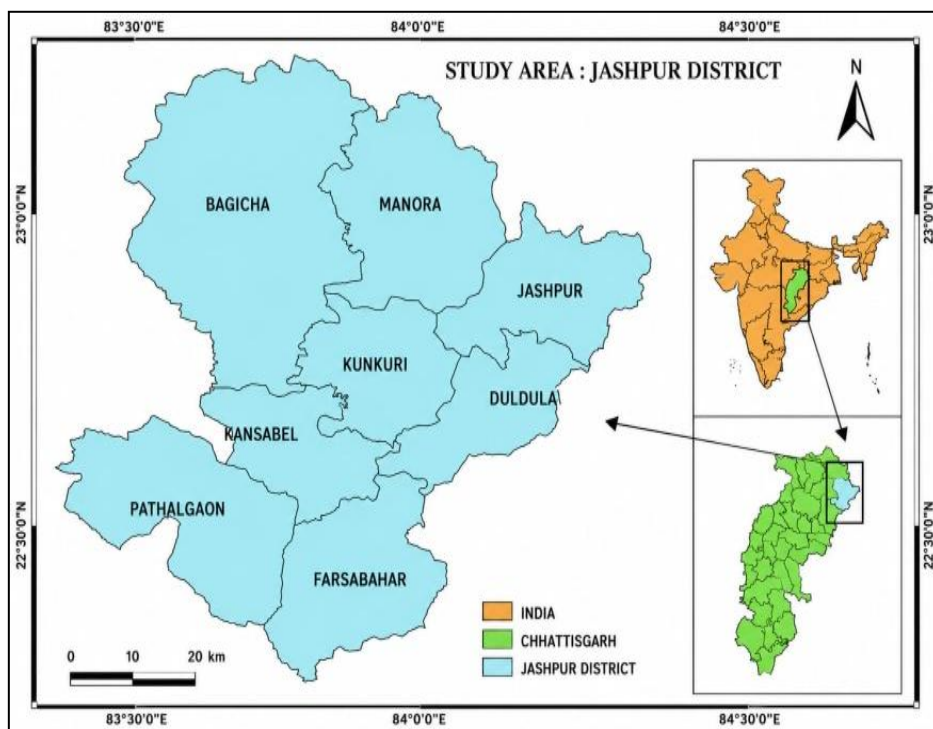


Fig. no. 01: Location map of the study area.

Objectives of the study: The key objectives for a research study on the “Socio-Economic Determinants of Health Status and Disease Prevalence in Surveyed Households of Jashpur District (C.G.)” are as follows –

- i. To assess the socio-economic profile of the surveyed households in Jashpur District as well as focusing on the indicators of health.
- ii. To estimate the prevalence and patterns of major diseases among the surveyed household populations across different tehsils of the district.
- iii. To analyze the inter-relationship between specific socio-economic determinants and the health status of the households.

Database & Research Methodology:

(a) Data Sources: - The present study has been based on both the primary data and secondary data.

(i) Primary data: - Constructed via a structured, pre-tested household questionnaire administered directly to the head of every sample household or adult respondents.

(ii) Secondary data: - District health reports, Census of India data-2011 and National Family Health Survey (NFHS) reports used to cross-verify local disease trends (e.g. Malaria, Anemia & malnutrition spikes common in study area).

(b) Core Variables captured in the database: - The dataset is structured around two main categories of variables to analyze the correlation between living conditions and medical outcomes; **Independent variables** - Socio-economic determinants (Demographics, economic status, living conditions, education & awareness) and **Dependent variables** - Health status & disease prevalence (Morbidity profiles, nutritional metrics & healthcare utilization).

(c) Sample design & Methodology: - Given Jashpur's geographically dispersed and largely tribal population, Stratified Multi-stage Random Sampling method has been used for sample household selection. The anthropometric method & different chronically diseases based on nutritional deficiency is used for measurement the health status of the sample villagers in the study area. According to ICMR's standard level, a total of 1216 households from the selected 38 sample villages has been surveyed and analyzed according to age, weight, gender and height of sample villagers. Thus a total of 2766 adults have been measured for the anthropometric study.

(d) Analysis of data & interpretation: - To quantify the socio-economic determinants of health status and disease prevalence in surveyed households of Jashpur district as well as the impact of socio-economic factors on disease distribution, the collected database is processed using SPSS software via statistical techniques to make a significant interpretation of different variables as well as to bring out the reaching conclusion.

(e) Cartographic representation of data: - As cartographic techniques, Arc GIS

software has been used for prepared the location map of the study area and different diagrams are also used to visual look of the present study as well as rational outcomes with the scientific explanations.

Results & Discussion:

(1) Socio-Economic Determinants of Health Status in study area:

The health status of residents in the Jashpur district of Chhattisgarh is heavily shaped by an intersection of geographic isolation, economic vulnerabilities and demographic characteristics. With a Scheduled Tribe (ST) dominant population making up approximately 62.27% of the district, socio-economic determinants heavily drive community healthcare outcomes, nutritional markers and health-seeking behaviors.

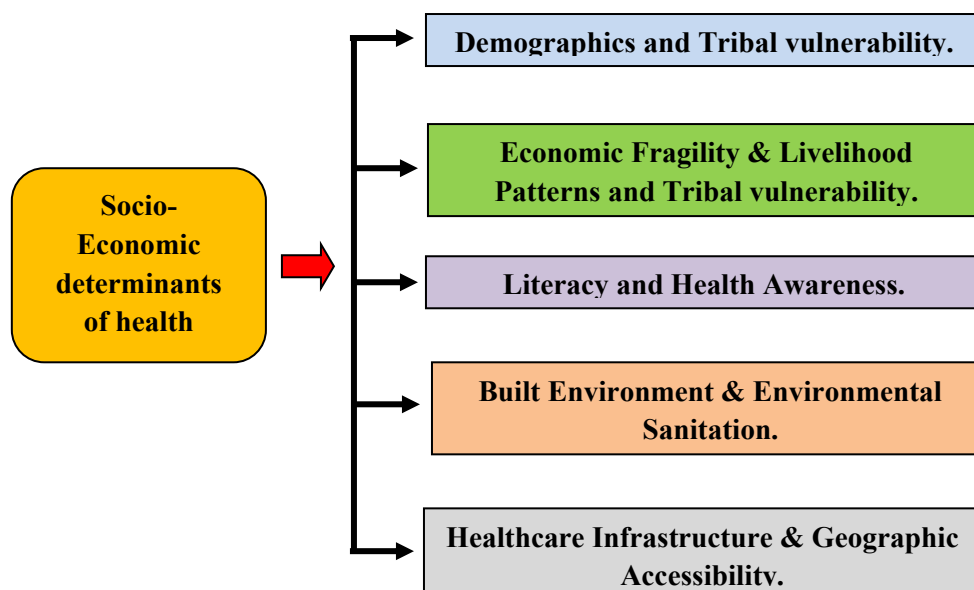


Fig. no. 02: The primary socio-economic determinants of health in Jashpur district.

(2) Health Status in Surveyed Households - on the basis of Anthropometric Study:

Anthropometric studies have been used to determine and analyze the health status in the surveyed households of selected sample villages under the study area. With the help of anthropometry, information about the definite size and volume of the body can be easily obtained. The effect of environment and nutrition on human physical growth and development as well as the correlation in between the different types of body composition and diseases are accurately measured [9]. Nutritional levels are determined by relating the food elements responsible for measuring less or more than the normal level. These are measurements taken at different ages and development levels of the human body, which indicate the nutritional level [10]. Anthropometric measurement has an important contribution in the evaluation of nutritional status of human population. Anthropometric method is an important index to determine the nutritional status in adults [11]. The study area belongs to the tribal dominated area. The economic basis of the villagers living in this area is agriculture. Agricultural activities are a major source of food items in the study area. The

study area is socio-economically very backward due to less development in agricultural activities which directly affects their health status. The socio-economic status of the surveyed households of the selected sample villages under the study area is low and the main reasons for malnutrition among the villagers in the study area are high poverty level, mass of illiteracy, ignorance, low production of agricultural crops and lack of basic medical facilities.

Under nutrition & malnutrition among the villagers, low socio-economic status, mass of illiteracy, poverty, low standard of living, low residential conditions and lack of health / medical facilities have directly and indirectly affected the health status of the surveyed households in the sample villages under the study area. The standard method prescribed by the Indian Council of Medical Research (ICMR) has been used for the analysis of weight pattern in the individuals of the surveyed households by anthropometric test method. According to this standard level, a total of 1216 households from the selected 38 sample villages of the study area has been surveyed and analyzed according to age, weight, gender and height. Thus a total of 2766 adults have been measured for the anthropometric study. Of these, 1396 are male (50.47 %) and 1370 are female (49.53 %) population. Weight Machine (in kg.) and Tape (in cm.) has been used for the measurement of weight and height respectively. For the analysis of the anthropometric test, an adult person of 18 to 65 years of surveyed families has been considered as the basis. It is noteworthy that it has been considered by the medical science / doctor that after 18 and 21 years, there is no increase in the height of women and men. Body Mass Index (BMI) has been used to measure the amount of fat in the body of adults of the surveyed households, whose formula is as follows -

Weight in kilograms

Body Mass Index (BMI) = _____

Height in meter ²

The above index has been used to identify or improve the health conditions. James (1988) and Lewis (1992) have classified the Body Mass Index (BMI) into six categories (shown in table no.- 01) to identify the health status / nutritional levels that is (i) Extremely underweight (BMI = < 16.0), (ii) Very underweight (BMI = 16 - 17), (iii) Underweight (BMI = 17-18.5), (iv) Normal weight (BMI = 18.5 - 25), (v) Overweight (BMI = 25 - 30) and (vi) Obese (BMI = > 30.0).

Table no. - 01

Classification of BMI for the identification of Health / Nutritional status

Serial no.	Classes of Body Mass Index (BMI)	Pattern of Health / Nutritional status
01.	BMI = < 16.0	Extremely Underweight
02.	BMI = 16 - 17	Very Underweight

03.	BMI = 17 - 18.5	Underweight
04.	BMI = 18.5 - 25	Normal Weight
05.	BMI = 25 - 30	Overweight
06.	BMI = > 30.0	Obese

Source: Classification of BMI according to James (1988) and Lewis (1992).

In this way, the weight pattern of the surveyed households of the selected sample villages in the study area has been divided into three major categories after anthropometric calculations have been done on the basis of the above mentioned standards, which are shown in the table no. - 02.

Table no. - 02

Jashpur District: Weight pattern of the adults in surveyed households

Study Area	Above normal weight pattern	%	Normal weight pattern	%	Below normal weight pattern	%	Total no. of adults population	%
Jashpur district	142	5.12	1150	41.58	1474	53.30	2766	100

Source: Based on Personal Survey of 1216 households, 2021.

[A] Above normal weight pattern (Overweight: BMI = 25 - 30):

On the basis of household's survey, among the surveyed families of the selected sample villages under the study area, the number of adults with above normal weight pattern has been found to be the lowest at 5.12 % (142 adults population). Variation has been found / observed in the anthropometric tests among the adults of the surveyed villages of the study area. This diversity is a result of the variation in their food consumption patterns.

Among the surveyed villages, the highest number of adults with above normal weight pattern has been found in the sample village Gala (tehsil Pathalgaon), the main reason for which is Gala village have high percentage of large farmer (> 4 hectares) households, agricultural production is high, very high nutritional levels, irrigational facilities are available, more expansion of irrigated land area as well as double cropped area, high percentages of net sown area, high percentage of literate population as compared to other surveyed villages and due to the abundance of rural forests, the trends of excessive use of forest produce in the above surveyed village. On the other hand, the proper distribution of food grains under the food security distributed by the Government has been found during the household's survey. Whereas, the lowest number of adults with above normal weight pattern has been found in the sample village Simda (tehsil Duldula), because comparatively, there has been a decrease in the production of agricultural crops in this village, the main reason for which is the lack of

geographical conditions necessary for agricultural activities, as a result variation has been found in the consumption pattern of food items.

[B] Normal weight pattern (Normal weight: BMI = 18.5 - 25):

Among the surveyed families of the selected sample villages under the study area, the number of adults with normal weight pattern has been found to be the moderate at 41.58 % (1150 adults' population). Variation has been found / observed in the anthropometric tests among the adults of the surveyed villages in the study area. Regional disparities have also been reflected in the normal weight pattern of adults in the surveyed villages under the study area, which is a result of the variation in their food consumption patterns. Among the surveyed villages, the highest number of adults with normal weight pattern has been found in the sample village Kamarima (tehsil Bagicha), the main reason for which is this village have high percentage of large farmer (> 4 hectares) households, agricultural production is high, high nutritional levels, irrigational facilities are available, the irrigated area is relatively large due to the large expanse of flat plains and high percentage of literate population etc. Whereas, the lowest number of adults with normal weight pattern has been found in the sample village Dobh (tehsil Duldula) because this village have high percentage of medium farmer (2-4 hectares) households, agricultural production & irrigational facilities are moderately found, medium nutritional levels, excess of pat & plateau area and the percentage of forests is relatively higher as compared to other surveyed villages etc.

[C] Below normal weight pattern (Underweight: BMI = 17 - 18.5):

On the basis of household's survey, among the surveyed families of the selected sample villages under the study area, the number of adults with below normal weight pattern has been found to be the highest at 53.30 % (1474 adults population). Variation has been found / observed in the anthropometric tests among the adults of the surveyed villages in the study area. Regional disparities have also been reflected in the below normal weight pattern of adults in the surveyed villages under the study area, which is a result of the variation in their daily food consumption patterns according to size of landholdings. Among the surveyed villages, the highest number of adults with below normal weight pattern has been found in the sample village Chhichhli - A (tehsil Bagicha), the main reason for which is this village have high percentage of landless (no land) households & marginal farmer (< 1 hectares) households, high extension of pat and plateau area, high percentage of fallow land, low agricultural production, very low nutritional levels, under nutrition & malnutrition due to low food consumption patterns, non-availability of irrigational facilities, presence of infertile land, mass of illiteracy & high poverty levels has been found in this sample village and socio-economically very backward etc. Whereas, the lowest number of adults with below normal weight pattern has been found in the sample village Kolhenjhariya (tehsil Farsabahr) because this village have high percentage of small farmer (1-2 hectares) households, low agricultural production, low nutritional levels, lack of irrigational facilities, low percentage of net sown area, lack of cultivable land, low percentage of literate population, poverty among villagers and lack of awareness among the sample villagers about modern agricultural practices etc., which are cartographically represented in the fig. no. 03 & 04.

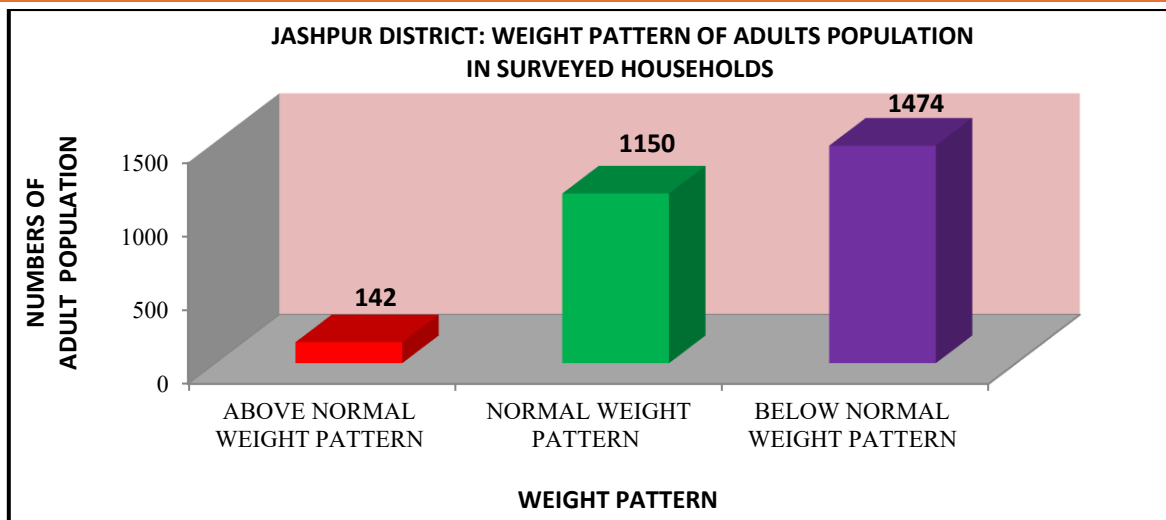


Fig. no. 03: Weight pattern of adult's population in surveyed households of Jashpur district.

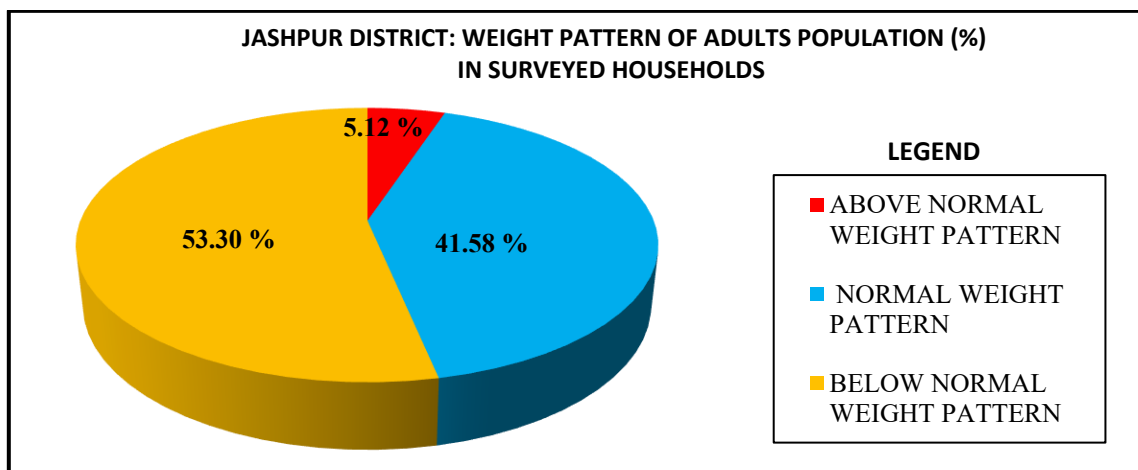


Fig. no. 04: % of weight pattern among the adults population in surveyed households.

(3) Disease prevalence in surveyed households of Jashpur district:

Health is an indicator of progress in any field. Health is a condition in which complete physical, mental and social well-being is found. Health is not mere absence of diseases. Therefore, disease is an imbalance of systematic physical processes [12]. Deviation from the normal state in both physical and mental processes of the body is called disease. It is an extraordinary phenomena or condition of the body, which occurs due to the effects of the environment, and is also affected by the eating habits and lifestyle of the people. Therefore, it is very important for humans to remain healthy [13]. Nutrients are required for various functions of the human body. These nutrients are obtained by humans from daily diet. Therefore, if a person does not get balanced amount of nutrients in his daily diet, then physical functions get disrupted and diseases start occurring, these are called nutritional deficiency based diseases [14].

Due to non-availability of complete nutrients in the surveyed households of the study area, they are suffering from many types of diseases like - eye disease, mental health disorders, diabetes, skin disease, stomach related disease, tooth related disease, bone damage, polio,

tuberculosis, cholera, typhoid and viral fever etc. due to malnutrition / under nutrition. The main reasons for which is high poverty levels, ignorance, wrong dietary habits / practices, lack of sufficient food stuffs in per capita per day, lack of proper management of cleanliness (sanitation), villagers are mostly consumed & believe in herbs for the treatment of diseases, lack of awareness about their health, absence of health workers in the health centre for special circumstances, belief on Orthodoxy, Superstition & witchcraft, mass of illiteracy among the villagers and lack of medical facilities for treatment on time etc. On the other hand lack of proper care of children, weakness among the children, low weight, anemia and preterm birth etc. health related problems has been also found among the sample villagers due to low economic levels in the surveyed households, which is represent the low nutritional levels as well as low health status of the villagers in the study area.

The study area Jashpur district is tribal dominated as well as backward in terms of the quality of life and socio-economic point of views, as a result of which the sample villagers face a variety of health-related problems. The main causes of diseases and illnesses in the surveyed families of the selected sample villages under the study area are lack of nutritious foods (due to low agricultural production), untreated water, unhealthy lifestyle, traditional eating habits, poor economic conditions, lack of sanitation and lack of proper medical facilities etc. As a result, study and analysis of diseases and illnesses in the surveyed villages is very important in respect to improve the health status among the sample villagers. Many scholars have done many research works regarding the different diseases caused by nutritional deficiency, among which J. M. May's research work is notable.

As a Geographer, J. M. May, while studying the "Ecology of Human Diseases" in 1958, considered the ecological and geographical elements as the basis for the classification of diseases and he has divided the diseases into four groups on the basis of geographical factors; group of water borne diseases, group of air borne diseases, group of animal borne diseases and group of nutrition related diseases. The total population of 1216 surveyed families of 38 selected sample villages under the study area is 4864 persons, out of which 2089 persons (42.95 %) were found suffering from various types of diseases and 2775 persons (57.05 %) were found free from diseases. The main reason for which is the difference in geographical, socio-economic environment and lack of health related facilities in the surveyed villages.

On the basis of households survey, out of total 2089 persons suffering from diseases in the surveyed households of the selected sample villages under the study area, maximum 688 persons (32.93 %) were suffering from viral fever, 442 persons (21.16 %) were suffering from stomach related diseases, 264 persons (12.64 %) were suffering from skin related diseases, 206 persons (9.86 %) were suffering from dental diseases, 153 persons (7.32 %) were suffering from eye diseases, 132 persons (6.32 %) were suffering from mental disorders / imbalance, 110 persons (5.27 %) were suffering from typhoid, 46 persons (2.20 %) were suffering from bones damage, 26 persons (1.25 %) were suffering from diabetes, 18 persons (0.86 %) were suffering from polio and 04 persons (0.19 %) were found suffering from Tuberculosis (TB) disease (Table no. 03 & Fig. no. 05). Among all the diseases found in the study area, most of them are water borne diseases as well as nutritional deficiency diseases, which come in the first & fourth group of diseases classified by May. Therefore, the diseases

caused by nutritional deficiency have been analyzed on the basis of geographical factors by identifying the disease and symptoms of the disease through the direct observation method during the household's survey.

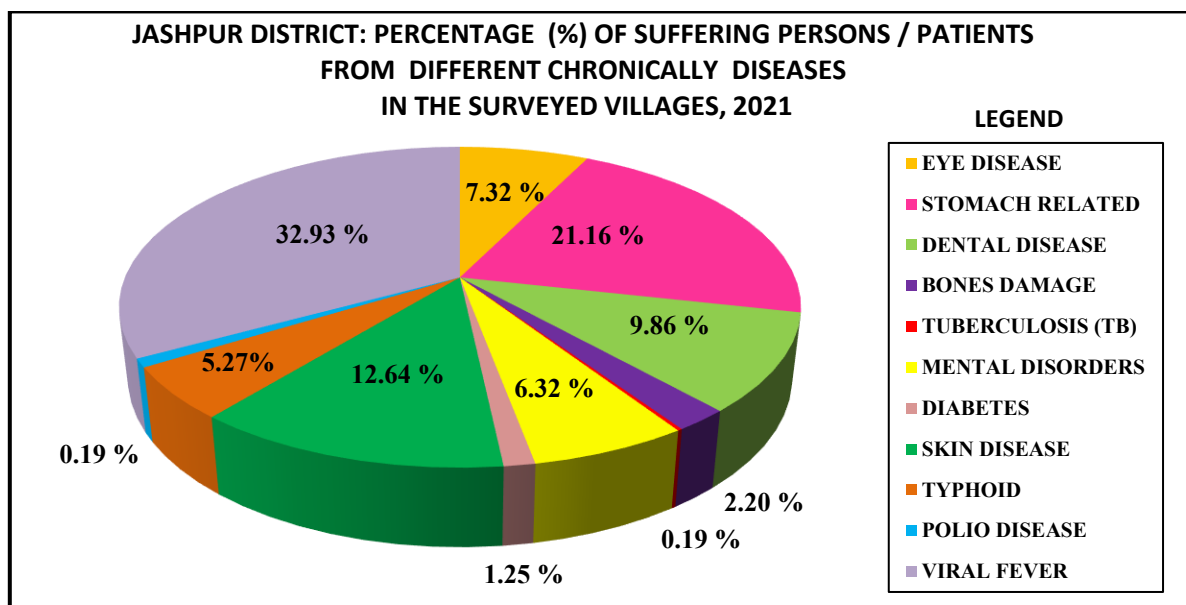


Fig. no. 05: % of suffering persons from different diseases in surveyed villages of the study area.

Table no. - 03

Jashpur District: Distribution of diseases in surveyed villages, 2021

Name of Tehsils	Selected Sample Villages (5 % of each Tehsils)	Sample villagers are suffering from different chronically diseases											Total no. of Patients / Persons
		Eye disease	Stomach related	Dental disease	Bones damage	Tuberculosis (TB)	Mental disorders	Diabetes	Skin disease	Typhoid	Polio disease	Viral fever	
Bagicha	Chhichhli - A	07	16	10	02	01	06	02	14	04	01	11	74
	Lodhena	05	12	06	-	-	04	01	06	02	-	16	52
	Chalni	04	14	07	03	-	06	02	12	05	02	15	70
	Ghoghar	05	09	05	01	-	01	-	06	04	-	22	53
	Loro	07	12	06	02	-	04	01	08	03	-	16	59
	Kamarima	-	14	08	-	-	03	-	05	02	-	11	43

	Laranga	02	08	-	-	-	-	-	04	02	-	22	38
Kansabel	Khuntitoli	06	15	10	02	01	06	02	13	05	01	12	73
	Kusumtal	-	14	07	03	-	04	01	08	03	02	20	62
	Nariyar Dand	-	07	-	-	-	02	-	-	01	-	27	37
Jashpur	Basta	06	14	08	02	-	05	01	10	04	01	17	68
	Pondi	06	10	07	01	-	04	-	06	02	-	21	57
	Boki	05	14	06	03	-	05	01	08	04	01	20	67
	Jobla	04	14	-	-	-	02	-	04	02	-	19	45
	Pindi	-	10	06	03	-	03	01	05	02	-	28	58
Manora	Birla	05	10	08	02	-	05	02	08	04	01	20	65
	Alori	06	12	-	-	-	02	-	04	01	-	16	41
	Litim	07	08	09	02	-	04	01	06	02	-	16	55
	Asta	04	14	05	-	-	03	-	08	04	-	10	48
	Lukhi	05	12	06	01	-	05	01	07	03	01	25	66
Kunkuri	Ginabahar	06	14	07	04	01	06	02	12	04	02	13	71
	Jokari	06	14	06	-	-	05	-	06	04	-	06	47
	Pharsakan i	02	09	-	-	-	-	-	04	02	-	23	40
	Lodhma	05	13	06	02	-	05	01	08	04	01	19	64
	Kamtara	04	12	05	-	-	02	02	06	02	-	18	51
Duldula	Korna	06	14	07	02	-	07	01	12	05	01	14	69
	Dobh	-	13	06	03	-	-	-	07	02	-	29	60
	Simda	-	09	04	-	-	02	-	02	03	-	22	42
Farsabahr	Joranda Jharia	02	14	-	-	-	04	-	08	02	-	14	44
	Hathibed	03	10	07	02	-	-	-	07	02	-	19	50
	Abira	06	15	10	02	01	07	02	13	05	01	10	72
	Kolhenjha riya	05	11	05	01	-	04	-	08	03	02	22	61

	Pharsabahr	04	14	07	-	-	04	-	06	02	-	09	46
Pathalgaon	Pakargaon	05	12	05	-	-	01	-	04	04	-	18	49
	Palidih	06	09	06	01	-	04	01	06	02	-	19	54
	Dudungjor	04	12	07	02	-	05	01	08	03	01	20	63
	Gala	03	-	-	-	-	01	-	05	-	-	27	36
	Kumekela	02	08	04	-	-	01	-	-	02	-	22	39
Sum of peoples suffering from different chronically diseases		153	442	206	46	04	132	26	264	110	18	688	2089
Percentage (%)		7.32 %	21.16 %	9.86 %	2.20 %	0.19 %	6.32 %	1.25 %	12.64 %	5.27 %	0.86 %	32.93 %	100

Source: Based on Personal Survey of 1216 households, 2021.

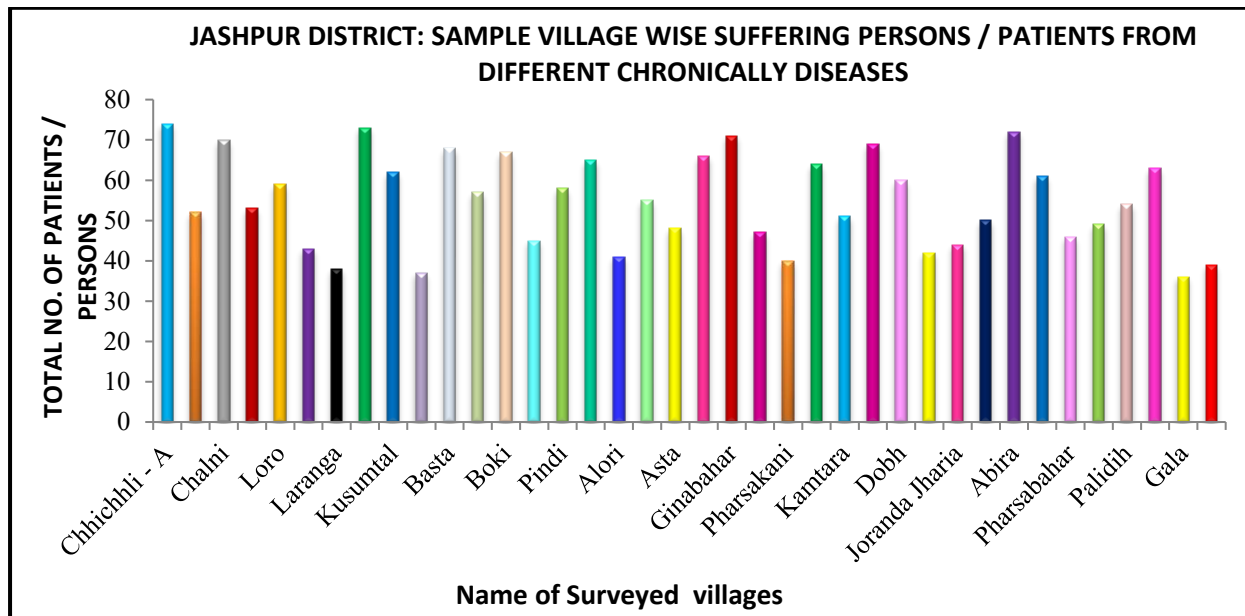


Fig. no. 06: Sample village wise total no. of suffering persons / patients from different chronically diseases in Jashpur district.

Conclusion:

This research underscores the critical, intertwined relationship between socio-economic determinants as well as the overall health status and disease prevalence within the surveyed households of Jashpur District (C.G.). The empirical evidence reveals that lower household income, lack of formal education, and poor sanitation facilities are strongly correlated with a higher incidence of communicable diseases like malaria and tuberculosis, as well as rising trends in non-communicable lifestyle disorders. A substantial portion of the population relies

on subsistence agriculture or daily wage labor, restricting their financial capacity to afford quality medical care. The findings clearly demonstrate that medical interventions alone cannot bridge the health disparity gap in Jashpur. To achieve sustainable health equity, policymakers must adopt a multi-sectoral approach that harmonizes healthcare delivery with socio-economic empowerment. Ultimately, mitigating these underlying socio-economic vulnerabilities will not only reduce the district's disproportionate disease burden but also foster a resilient, healthy and economically productive community.

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