

Influence of Socio-Economic Environment on Tribal Health

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Environment is the surroundings of us. It includes physical, biological and man-made elements which are interlinked individually as well as collectively. Man made elements are various cultural elements like – economic, social, political etc. For our survival each and every environmental factors have important role. Tribes are the marginalized and vulnerable section of the society. They are technologically, economically and culturally backward due to their isolated nature. This backwardness hampers their livelihood conditions, health conditions and sustainability. In this paper the impacts of various socio-economic factors of environment like – education, income etc. as well as domestic environmental factors like – sanitation, garbage disposal etc. on tribal health have been analyzed in some tribal villages of Ausgram – II block in East Burdwan district, West Bengal. Problems of various diseases have been pointed out and some remedial measures have been also suggested to achieve sustainable living environment. This work is mainly based in primary data. Simple statistical and cartographic techniques have been applied to prepare it.

Key words – Tribes, Health, Environment, Sustainability, Sanitation.

Introduction

Environment is the sum total surrounding conditions of man. Previously the physical aspects of the earth were considered as environment. But now social, economic, cultural and political aspects of the earth has been included with it (Singh, Savindra, 1991). Environment and society are closely related with each other. Different social structures are developed depending on man's natural environment. According to E.B. Tylor, tribes are the social groups with a social area, dialect, cultural homogeneity and uniform social organization. One of the important characteristics of tribal people is poor health status. Indian tribal people have a heterogeneous group. They have poor health conditions, greater morbidity and mortality and limited health care facilities. Health status of people is directly related with nation's economic growth (Sarkar, Dr. Ratna 2016). Health problems in India has a reflection on poverty (Akhtar, Rais and Izhar, Nilofar, 2018). Santals are one of the isolated tribal groups lie in Santal Parganas of Jharkhand, Mayurbhanj of Odisha, Raj Mahal hills and in Chotonagpur plateau (Sen, Jyotirmoy, 2016).

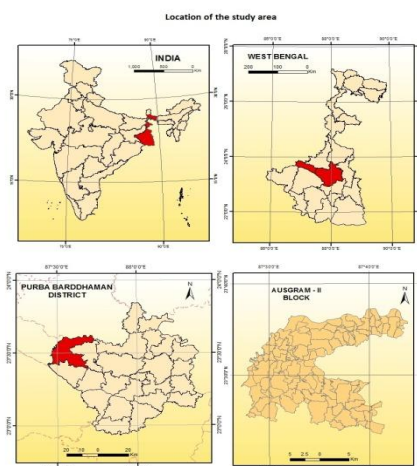
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They are now facing many problems like – unemployment, illiteracy, poor health and hygiene, poor sanitation, poverty, alcoholism etc. The social and economic conditions like – income, education, savings, occupation etc. have their own implication on health. The dominant groups enjoy good health conditions than deprived groups. By taking good health care man can avoid various diseases. Balanced diet and healthy life styles are very essential for a healthy living

(Misra, R.P. 2007). Not only the socio-economic environment but domestic environment of poor people in developing countries has greater health risk. These domestic factors are – sanitation, drinking water, garbage disposal etc. (Singh, Abha Lakshmi and Mohd.,Salahuddin, 2010). Socio-economic and domestic environmental factors are essential for sustainable tribal development. Sustainable development brings ecological security, economic efficiency and social equity (Sachchidananda, Professor, 1999). Sustainable development brings proper health improvement of tribal people. To achieve it, the “Concept of total Sanitation” is very essential along with other factors. Total sanitation is a people friendly, ecologically suited affordable and acceptable situation (Sinha, Bakshi D. & Menon, P.S.K., 2000). In this paper the influence of socio-economic and domestic environment on tribal health specially on Santal tribe has been analyzed.

Study area – its location and rationale behind its selection

Fig - 1



The present study has been carried out over some Santal tribal villages of Ausgram – II block in East Burdwan district, West Bengal. It is located within $87^{\circ}27'30''$ E to $87^{\circ}44'00''$ E longitudes and $23^{\circ}24'00''$ N to $23^{\circ}37'30''$ N latitudes. It is situated in ‘Rarh Bengal’. There is a greater amount of tribal population in this block. The tribal people of this block facing some problems like – lack of drinking water, inadequate housing, sanitation problems, poor health care facilities, common diseases, unemployment, poverty, lack of women empowerment, illiteracy etc. These problems are mainly linked with health which is basically happened by socio-economic and domestic environment. So the selection of this study is highly justified.

Influence of Socio-Economic Environment on Tribal Health

Objectives

1) To know the nature of social factors influencing tribal health. 2) To investigate the influence of economic environment on tribal health. 3) To assess the nature of domestic environment over tribal health. 4) To formulate some remedial measures for solving the health problems of tribal people.

Database & Methodology

The present paper is mainly based on primary data collected by household survey. Besides many secondary sources have been used. Simple statistical and cartographic techniques have been applied to prepare this paper.

Discussion & Results

Health status of tribal population of India is poor due to poverty, illiteracy, malnutrition, water scarcity, lack of sanitation, lack of health service etc. (Kshatriya, Gautam Kumar, 2014). Various socio-economic and domestic factors along with health status of tribal people are discussed below. To show the impact of all such environment over tribal health, five santal tribal villages – Kankora Adibasipara, Premganj Adibasipara, Khandaridanga, Balarampur and Radhamohanpur Adibasipara have been selected and twenty five families from each village have been randomly surveyed.

1) Yearly income & taking of different medical facilities

Table – 1 Yearly income & different medical facilities (n=125)

Yearly Income (Rs.)	Total families	Different level of medical facilities			
		Registered doctors	Quack doctors	Medicine shop	Traditional own treatment
Below 40000 (Low)	25 (20)	02	05	06	12
40000 – 60000 (Medium)	87 (69.6)	17	37	20	13
Above 60000 (High)	13 (10.4)	10	03	-	-
Total	125 (100)	29 (23.2)	45 (36)	26 (20.8)	25 (20)

(Brackets indicate percentage)

(Field survey)

It is clear that 69.6% families have a yearly income between Rs. 40000-60000. Out of the total surveyed families maximum i.e. 36% go to quack doctors for their treatment and only 23.2% families go to registered doctors for treatment. This amount is not expected. Still now there are 20% families which depend on their traditional own treatment and magical man (Ojha) of the

society. Economic backwardness, lack of education and superstition are the main causes behind it.

Chi-square Test

In 1900 Karl Pearson proposed this test to find out the relationship between two attributes i.e. whether they are independent or not.

$$X^2 = \frac{(O1-E1)^2}{E1} + \frac{(O2-E2)^2}{E2} + \frac{(O3-E3)^2}{E3} \dots\dots\dots n$$

Where, X^2 = chi-square

O or O_j = observed frequency / value in each cell (j)

E or E_j = Expected frequency / value or theoretical value in each cell computed by multiplying the sum of each row by the sum of the corresponding column in which the observed frequency occurs dividing this by the sum of all the observed frequencies.

Degree of freedom (df) = (r-1) (c-1)

Where r = total number of rows

c = total number of columns

Table – 2 Chi-square test from the contingency table

Yearly income groups (Rs.)	Going to registered doctors	Going to quack doctors	Going to medicine shop only	Going for traditional own treatment
Below 40000 (Low)	$\frac{25 \times 29}{125}$ = 5.8	$\frac{25 \times 45}{125}$ = 9	$\frac{25 \times 26}{125}$ = 5.2	$\frac{25 \times 25}{125}$ = 5
40000 – 60000 (Medium)	$\frac{87 \times 29}{125}$ = 20.18	$\frac{87 \times 45}{125}$ = 31.32	$\frac{87 \times 26}{125}$ = 18.10	$\frac{87 \times 25}{125}$ = 17.4
Above 60000 (High)	$\frac{13 \times 29}{125}$ = 3.02	$\frac{13 \times 45}{125}$ = 4.68	$\frac{13 \times 26}{125}$ = 2.70	$\frac{13 \times 25}{125}$ = 2.6

Table – 3 Observed frequency & expected value

Yearly income groups (Rs.)	Going to registered doctors	Going to quack doctors	Going to medicine shop only	Going for traditional own treatment	Total
Below 40000 (Low)	02 (5.8)	05 (9)	06 (5.2)	12 (5)	25

Influence of Socio-Economic Environment on Tribal Health

40000 – 60000 (Medium)	17 (20.18)	37 (31.32)	20 (18.10)	13 (17.4)	87
Above 60000 (High)	10 (3.02)	03 (4.68)	0 (2.70)	0 (2.6)	13
Total	29	45	26	25	125

Now, Chi-square (X^2) = $\frac{(O1-E1)^2}{E1} + \frac{(O2-E2)^2}{E2} + \dots + n$

$$= \frac{(2-5.8)^2}{5.8} + \frac{(5-9)^2}{9} + \frac{(6-5.2)^2}{5.2} + \frac{(12-5)^2}{5} + \frac{(17-20.18)^2}{20.18} + \frac{(37-31.32)^2}{31.32} + \frac{(20-18.10)^2}{18.10} + \frac{(13-17.4)^2}{17.4} + \frac{(10-3.02)^2}{3.02} + \frac{(3-4.68)^2}{4.68} + \frac{(0-2.70)^2}{2.70} + \frac{(0-2.6)^2}{2.6}$$

$$= 2.49 + 1.78 + 0.12 + 9.8 + 0.50 + 1.03 + 0.20 + 1.11 + 16.13 + 0.60 + 2.70 + 2.6$$

= 39.06 (computed value)

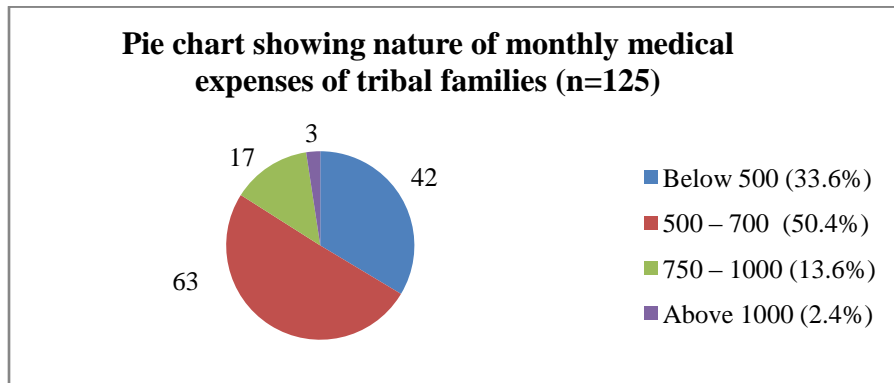
Here degree of freedom (df) = (r-1) (c-1) = (3-1) (4-1) = 2 x 3 = 6

The value of chi-square for degree of freedom at 0.001 and 0.05 level of significance are 22.457 and 12.592. Here computed value is 39.06. It is more than tabulated values. So the null hypothesis is rejected i.e. the nature of medical treatment and income categories are dependent and they are correlated.

2) Medical expenses

Medical expenditure is used to recover from various illness. It is of two types. Direct expenditure includes doctor’s fee, hospital fee, surgery charges, medicine charges etc. and indirect expenditure includes diet expenses, transport cost etc. (Dutta, / Dasgupta, Suvasree & Sivaramkrishnan, Lakshmi, 2011).

Fig - 2



Here 50.4% families have Rs. 500 – 750 monthly medical expenses which is moderate type of condition. But 33.6% families have very poor condition which is below Rs. 500 per month. As

maximum tribal people have very lower income level so they have amount of medical expenses also.

3) Major diseases & sex wise distribution

The disease pattern is calculated by percentage of treated patients from total treated patients of a place (Rajeshwari, 2010). Major diseases found in the tribal area are malaria, polio, typhoid, ameobiasis, gastroenteritis, hepatitis, (jaundice) chicken pox, whooping, cough, leprosy, tetanus, tuberculosis, common fever, cold-cough, eye problems, anemia, diarrhea, dysentery etc. Diseases are mainly caused by lack of nutrition. Besides are water born diseases, respiratory diseases, chronic diseases, mental diseases etc. To study the diseases of various types & suffering pattern, fifteen adult male and fifteen adult female from each tribal villages have been selected and interviewed.

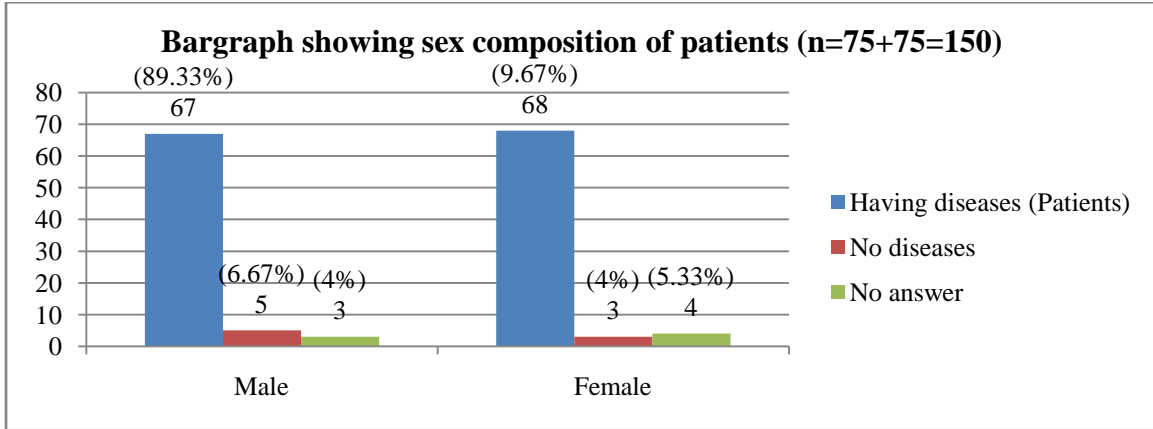
Table – 4 Patients suffered in last one year (n=150)

Diseases	Number	
	Male	Female
Polio	02(2.67)	0
Hepatitis / jaundice	02(2.67)	02(2.67)
Leprosy	0	01(1.33)
Gastroenteritis	12(16.0)	10(13.33)
Eye sight problem	05(6.67)	06(8.0)
Cough – cold	13(17.33)	20(26.67)
Tuberculosis	03(4.0)	01(1.33)
Headache	05(6.67)	06(8.0)
Enteric fever	11(14.67)	13(17.33)
Dysentery	10(13.33)	05(6.67)
Diarrhea	02(2.67)	02(2.67)
Anemia	0	01(1.33)
Chicken pox	02(2.67)	01(1.33)
No disease	05(6.67)	03(4.0)
No answer	03(4.0)	04(5.33)
Total	75(100)	75(100)

(Brackets indicate percentage)

(Field survey)

Fig - 3

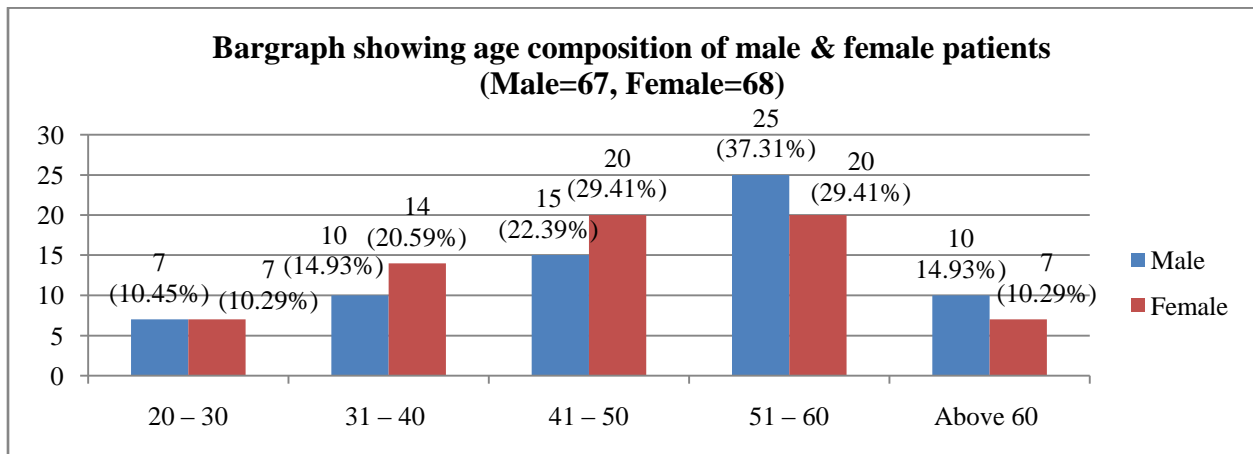


From disease ecology point of view, maximum male and female suffers are found in case of cold – cough (17.33% & 26.67%), common fever (14.67% & 17.33%), and gastro problems (16.0% & 13.33%). Besides eye sight and headache problems are predominant in tribal villages. Main cause of cold cough and fever is their field based agricultural activities and openness of nature. The gastro problems is due to the problem of drinking water. Eye sight and headache problems are synonymous in nature. It is acute in case of aged persons only. Besides industrial railway casual labours suffer from headache.

4) Age composition of patients

Like sex age composition of patients are very important. Generally younger males and females have lesser health problems. As age increases, physical strength also decreases.

Fig - 4



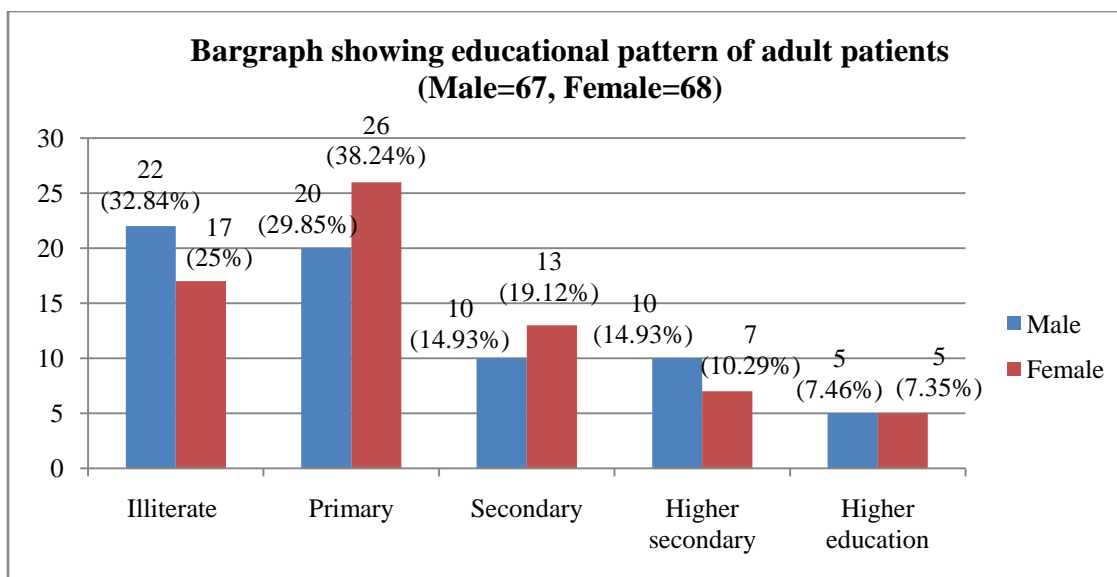
Among the male patients, maximum share i.e. 37.31% is found in case of 51 – 60 years age category and lowest percentage i.e. 10.45% is found in case of 20 – 30 year age category. But in case of female patients maximum share i.e. 29.41% is found in case of both 41 – 50 and 51 – 60

years age categories and lowest figure i.e. 10.29% is found in case of 20 – 30 years age group. So it is clear that health problems become vital at late nature and old age. At younger age the tribal male, female remain energetic due to their physical strength, work efficiency, good food habit, healthy gestures, mental satisfaction and happiness etc.

5) Educational level of patients

There is a good relation with standard of education and level of health understanding. Generally healthy people have good basic education which is very practical.

Fig - 5



Maximum male patients are illiterate (32.84%). About 29.85% male patients have education up to primary level. On the other hand, 38.24% female patients have education up to primary level and 25% are illiterate. It is clear from the above picture that still now the curse of illiteracy is predominant in tribal society and educational level of tribal people is not satisfactory due to lack of financial support and consciousness. But this situation hampers health status. The condition of female is better than male.

6) Occupational pattern of patients

Occupation or source of income is very important factors which controls health condition of patients.

Table – 5 Occupational conditions of patients

Occupation	Male	Female	Total Patients
Agricultural labour	27(40.30)	26(38.24)	53(39.26)
Railway casual labour	07(10.45)	03(4.41)	10(7.41)

Influence of Socio-Economic Environment on Tribal Health

Factory casual labour	13(19.40)	13(19.12)	26(19.26)
Masson's helper	08(11.94)	15(22.06)	23(17.04)
Govt. job	02(2.99)	01(1.47)	03(2.22)
Others	10(14.93)	10(14.71)	20(14.81)
Total patients	67(100)	68(100)	135(100)

(Brackets indicate percentage)

(Field survey)

Both male and female patients are basically agricultural labours in the study area i.e. 40.30% and 38.24% respectively. Female patients are more in case of masson's helper i.e. 22.06% and male patients are more in case of railway casual jobs i.e. 10.45%. Agriculture is a direct nature based activity so agricultural labours are prone to diseases than other professions. In case of total analysis factory casual labours like – rice mill worker, brick field workers and other small scale industries of the nearby towns have second position i.e. 19.26%. It is due to factory pollution.

7) Dietary pattern of patients

For health living there need balanced diet. Due to economic drawback, the tribal people do not get proper food for living.

Table – 6 Diet system of patients

Diet type / day	Male	Female	Total patients
Taking two meals only	08(11.94)	13(19.12)	21(15.56)
Taking two meals and one Tiffin	42(62.69)	33(48.53)	75(55.56)
Taking two meals and two Tiffin	17(25.37)	22(32.35)	39(28.89)
Total patients	67(100)	68(100)	135(100)

(Brackets indicate percentage)

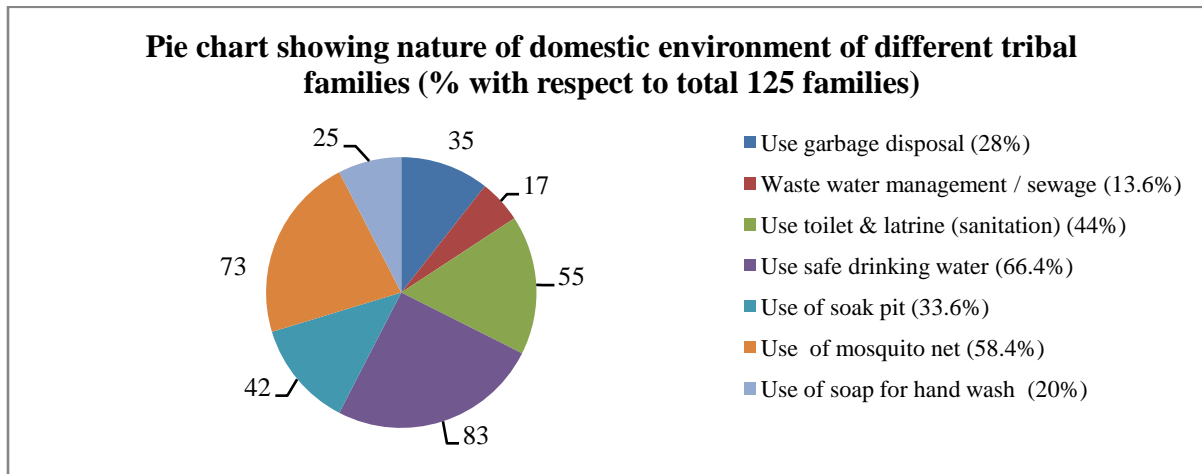
(Field survey)

The dietary pattern of patients in the study area indicates a moderate nature. It needs to be improved. Maximum male and female patients i.e. 62.69% and 48.53% take two meals and one tiffin. Only 25.37% male and 32.35% female patients take two meals and two tiffins. The economic conditions of patients are not so sound as maximum of them are agricultural labours. So dietary condition is not so improved.

8) Nature of Domestic Environment

Domestic environment indicates household environment. There are some components which indicate the quality of domestic environment. These are garbage disposal, waste water management, toilet, latrine, sanitation, safe drinking water facilities, use of soak pit, use of mosquito net, use of soap etc. These factors are directly related with health condition and spread of diseases. If better is the domestic environment, better will be the health condition.

Fig - 6



The conditions of domestic environment of the tribal families are not so satisfactory. Only 66.4% families use safe drinking water and 44% families have toilet and latrine facility which is not a good mark for healthy livelihood. Besides 58.4% families use mosquito net and 20% families use soap for hand wash before meal. But there need proper practice to change primitive habit for better living.

Major findings

- 1) 36% families go to quack doctors for treatment which is maximum in number.
- 2) There is a relation between yearly income and taking of different medical facilities.
- 3) 50.4% families have the monthly medical expanses between Rs. 500 – 750.
- 4) Major three diseases are cold – cough, common fever and gastro problems which are found at maximum rate among tribal male and female.
- 5) Maximum illness is found in case of 51 – 60 years age category among male and 41 – 50 years age category among females.
- 6) Maximum male patients are illiterate and maximum female patients have education up to primary level.
- 7) Maximum male and female patients are agricultural labours.
- 8) Maximum male and female patients take two meals and one tiffin only.
- 9) Only 66.4% and 44% families use safe drinking water and latrine facilities.

Problems

- 1) In some cases child mortality is found.
- 2) Maternal health condition is not so good.
- 3) In some cases malnutrition is predominant.
- 4) Communicable diseases create some problems in tribal society.
- 5) Tobacco and alcohol culture threaten the tribal people.
- 6) Tribal people still now suffering from illiteracy, poverty, poor housing, poor sanitation, drinking water shortage.
- 7) Poor health care facilities and services.
- 8) Political disempowerment of tribal people.
- 9) Much dependency on tribal traditional medicines.
- 10) Superstitions among tribal people.
- 11) Lack of ICDS centers.
- 12) Lack of health centers.
- 13) Lack of govt. health schemes and their proper implementation.

Recommendations

1) Creation of sustainable and functional health care for tribal people. 2) Arrangement of proper health and dietary education in tribal area specially the school health program. 3) Allotment of more budget for tribal health. 4) Frequent health checkup & visit by govt. health officials. 5) More supply of free medicines and sanitary materials. 6) Establishment of more sub health centers. 7) Arrangement of mobile health checkup facilities. 8) Arrangement of free diagnostic camp. 9) Arrangement of health insurance. 10) Formation of health related SHGs. 11) Active involvement of ASHA & ICDS workers. 12) Gram Sabha should be active in case of formulating various health programs and sustainable living environment. 13) Mass awareness is to be increased. 14) Encouragement of private doctors to visit tribal areas. 15) Arrangement of proper tribal women education as they are the central point of a family.

Conclusion

From the above discussion it is clear that tribal health is largely influenced by socio-economic and domestic environment. There is a positive relationship among them. To solve various health problems and to make a sustainable living environment there need huge tribal people's participation specially the women's involvement. Besides village Health Committee is to be formed to improve the situation along with the cooperation from Govt. and NGOs.

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