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# Impact of Education and Income on Health Status of Households in a Socially Backward District of Kerala: A Study of Tanur Panchayath

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***ABSTRACT:*** *There is a baronial and persistent relation between education and health. Education and Health of people is the positive sign of socio-economic and human development of a nation. It has also been rightly recognised that the improvement in the quality of human resources, by way of education and health, contributes not only to economic development, but also to the general well being of the nation. Kerala has received worldwide attention on account of its remarkable achievements in the field of education and health. Generally Keralites are more health conscious and the percentage of health insured people is increasing in the state. Now-a-days, Kerala state is badly affected by almost all diseases which were tactfully checked around the world. The low mortality and high morbidity syndrome in Kerala's health situation is a live topic subject to analyses. This situation creates some serious doubts about the positive correlation between education and health indicators. This study tries to analyse the influence of education and income on health status of people. This study is based on both secondary and primary data. For analysis, the simple statistical tools like percentages, tables, graphs, and the other methods like indexing, correlation, simple and multiple regressions, hypothesis testing tools were used. The regression result of Aggregate Health Index and Education is AHI= 5.05 + 0.553YEdnI, shows that one year of education will make 0.553 unit changes in Aggregate Health Index on average and 27.1% of variation in aggregate health index is due to education. The regression result of aggregate health index with income is AHI = 10.3 +0.000105MY, exhibits positive relation between them. The Multiple regression of Aggregate Health Index with education and income is AHI = 5.50 + 0.450YEdn + 0.000067MY. This study reveals that education and income will make positive significant impact on health of people. Since education makes positive impacts on health, it is necessary to provide the access of education to each and every individual irrespective of the caste, creed or area.*

***KEYWORDS:*** *Aggregate Health Index, Consumption Index, Education, Health Awareness Index, Health, Maternal Health Index, Physical Environmental Index,*

## I. INTRODUCTION

Kerala has achieved remarkable progress in human development, which is reflected in the high levels of education and health of its population. The health status of a community depends on its socio-economic, educational, environmental, biological and political factors. At present Kerala state is noted for its high physical Quality of Life Index (PQLI), which far exceeds the national average. Kerala state has achieved this stage of health even when it was having a low per capita income and low agricultural and industrial production, have reformulated as the paradox of Kerala Model of Development. (K.K.George 1999 and Joseph Tharamangalam, 1999). Education contributes towards better health. Primary education and women's education promotes a reduction of mortality rates in rural areas.

Education and health are the two interrelated factors which are the integral part of the development of a nation. Education and Health status of population is the positive sign of socio-economic and human development of a nation. It has also been rightly recognised that improvement in the quality of human resources, by way of education and health, contributes not only to economic development, but also to the general well being of the people. Education is a medium through which knowledge is imparted from one generation to another. It leads to further learning and research. It is an instrument which provides the means of living to the people. It also will provide the income and wealth to the people. While education acts as a means of income and wealth, it will be supported to overcome the ill-health or malnutrition.

Education, health and housing are the three pillars of any civilized society. Educational advancement becomes a catalyst for economic development. According to Schultze (1961), investment in education is three to five times more attractive than investment in physical capital. The health behaviours differ so much between

people of different education level. Grossman and Kaestner (1997) found that, higher educated people are less likely to smoke, exercise more, wear seatbelts more often, and are more likely to participate in screening programmes for breast cancer and cervix cancer. The prevalence of overweight and obesity is also much lower among higher educated people. Griliche (1964) has pointed out that a 10 percent increase in farmer's education raised the productivity by three to five percent as compared to only one to two per cent due to 10 percent increase inland fertilizer and machinery in U.S. agriculture.

Education and health status of people in a nation would eventually promote its economic development. While education and health of the present generation will make an impact on the future generation (Overlapping Generation Model), the future development of the nation will be decided by the present status in education and health of people.

The general education and health education impart awareness among the people about the need of good health and the problems and consequences of ill-health. Mother's schooling emerges to be the prime determinant in the household production of health (Rosenzwing and Schultz 1982, Behrman and Wolfe 1987). The role of education particularly female education seems to have most powerful influence on demographic variables because women marry later which tends to have fewer children and are more likely to use effective methods of contraception and have greater means to for their economic livelihood, thereby slowing population growth (Zabeena Hameed -2007).

The social development of Kerala especially in the field of education and health without proper economic development has got both national and international attention. Kerala has achieved a commendable position among the other states in education indicators like literacy rate, higher enrolment rate of students, higher percentage of girls, SC and ST students in schools and colleges even in remotest regions, low dropout rate among students etc. The per capita expenditure on education in Kerala is the second highest in India. Students constitute nearly one-fifth of the population (Kerala Sasthra Sahitya Parishad 1999). Education sector is one of the state's biggest employment providers. Teachers aggregate nearly eighteen per cent of total employment in the organised sector. Kerala's literacy rate is comparable to the most advanced regions of the world. Kerala's literacy rate which was only 47.18 per cent in 1951 has almost doubled to 93.91 per cent in 2011. The male-female literacy gap which was 21.92 per cent in 1951 has narrowed down to 4.04 per cent in 2011.

Kerala's educational system expanded substantially in response to public demand. The pressure groups of religious, social and political parties make pressure on the governments for starting more and more educational institutions. But this leads only to expand the number of institutions without improving its quality. School and college curriculum and syllabus are still conventional in nature. Primarily due to the poor quality of educational institutions and inadequate syllabus, the performance of candidates from Kerala is very poor in national level competitive examinations for jobs or admission to institutions of higher education and research.

Health is the soundness of body and mind. WHO defines, "*Health is the state of complete mental, physical, social, economic and spiritual well being and not merely the absence of disease or infirmity".* The constitution of World Health Organisation says, *"Enjoyment of the high standard of health is one of the fundamental rights of every human being".* In Oxford English dictionary, health is defined as *"Soundness of body or mind that condition in which its functions are duly and efficiently discharged".* The Kerala Sastra Sahitya Parishad (KSSP) has defined the health as a functional relationship as Health = f (Nutrition, Safe Drinking Water, Environmental Hygiene, Employment and Preventive Medicine). Health is considered as the wealth of a man. Therefore good health is the essential requirement not only for education but also for every creative activity of human being.

Kerala has made a commendable achievement in the area of health care and immunization. The gulf boom experienced by Kerala since 1970s has contributed to the emergence of private nursing homes in both Ayurveda and Alopathy medical system. The services of doctors and hospitals spread all over the state. The wide network of rural dispensaries, rural hospitals, community health centres, taluk and district hospitals, and medical college hospitals, private and co-operative hospitals render services to health care of the people. Generally, Keralites are more health conscious and hence Kerala is first among Indian states in the provision of hospital beds. In the basic health indicators, Kerala is in a better position than the all India level. In 1971, the birth rate of Kerala was 26 per 1000 population. It came down to 14.7 per 1000 population in 2011. The total fertility rate of Kerala has also come down to 1.7 in 2008 from 2.8 in 1981.

The death rate of Kerala has also decreased from 29 per 1000 population in 1941 to 6.8 per 1000 population in 2011. The infant mortality rate of Kerala came down to 12 per 1000 population in 2011 from 66 per 1000 population in 1971. The Maternal Mortality rate is only 4.9 in Kerala as per 2009 data which is the least among the southern states of India.

Malappuram is an economically and socially backward district in Kerala. It has 14th rank in per capita income and 10th rank in literacy rate as per 2001 census. Tanur Grama Panchayath (the sample area) is one of the special grade panchayaths in Malappuram district. This Panchayath is the most densely populated panchayath in Kerala. Tanur Panchayath is also economically and socially backward because of its coastal belt nature and least rank in literacy.

## II. IMPORTANCE OF THE STUDY

Education has a prime role in production of health in the family. An educated parent can perform a multiple role for the benefit and overall happiness in the family by providing good health, proper childcare, providing appropriate deity food, maintaining of better sanitation and hygiene. The relationship between education and health of Kerala have been attempted by many studies at the state level by many economists but little efforts have been made in studying the relationship of education and income on health status of households in a socially backward region.

## III. ORIGIN OF THE RESEARCH PROBLEM

Kerala has received worldwide attention on account of its remarkable achievements in the field of education and health. Now-a-days, Kerala state is badly affected by almost all diseases that were prevented in the world. The low mortality and high morbidity syndrome in Kerala's health situation is a live topic subject to analyses. This situation creates some serious doubts about the positive correlation between education and health indicators. In this context, a detailed study is felt necessary to expose the impact of education on health status of households in a socially backward district of Kerala

## IV. OBJECTIVES

1) To analyse the influence of education on health status of households.
2) To analyse the influence of income on health status of households

## V. HYPOTHESES

The above objective leads us to the following hypotheses

- "Health Status may positively correlate with level of Education of households.
- "Level of education and Health problems may be inversely correlated"
- "The probability of illness is higher in the health insured individuals"
- "Income level and Medical Treatment Expenditure is directly related"

## VI. SOURCE OF DATA AND SAMPLE DESIGN

The study uses the information from secondary as well as primary sources. Various publications, journals and reports have been made use of for the study. The Economic Review (various years) of the state planning Board, Census Reports, Reports of the Directorate of Economics and Statistics, Economic Surveys, Human Development Reports, Sample Registration System Reports, National Family Health Survey Reports, National Rural Health Mission (NRHM) reports etc are used as the source of secondary data. The primary data were collected from the selected wards (Ward Nos., 14, 16, 17 and 18) of Tanur Grama Panchayath. To improve the reliability of the study, the researcher randomly selected 100 households (50 households from coastal belt wards and 50 households from non coastal belt wards) of Tanur Panchayath.

## VII. METHODS OF DATA ANALYSIS

For analysis, the simple statistical tools like percentages, graphs, and the other methods like indexing, correlation, simple and multiple regression, hypothesis testing tools were employed. In order to analyse the impact of education on health status of households in the study area, the researcher has defined the educated household as a household with at least one person in the household with an education qualification of plus two and above. The household with an education qualification of SSLC or below SSLC is considered as uneducated household. The researcher again defined the health status index with 20 criteria under four indices. They are

**(1) Physical Environmental Index (PEI)**

(i)Source of Drinking Water (ii) Disposal of waste water (iii) Disposal of domestic waste (iv) Toilet (v) Mosquito menace

**(2) Consumption Index (CMNI)**
(i)Drinking water type (ii) Milk consumption (iii) Fast food culture (iv) Smoking habit (v) Alcohol Consumption

**(3) Maternal Health Index (MHI)**
(i)Age of first Pregnancy (ii) Weight of Children (iii) Vaccination (iv) Sterilization method adopted
(v)Literacy in Family Planning

**(4) Health Awareness Index (HAI)**
(i)Family Doctor (ii) Regular Medical Check up (iii) Subscription of Health Magazine
(iv)Watching/Listening of Health Programmes (v) Health Insurance

**VII.1. Aggregate Health Index (AHI)**

The value of aggregate health index is the total score of four indices mentioned

**VII.2. Year of Education Index (YEdn*I*)**

In order to find out the relation between education and health status of households, the year of education is considered. The year of education means the actual year - a person spent for formal education.

**VII. 3. Monthly Income Index (MYI)**

The impacts of income on health status of households are also equally important as education. In order to relate the monthly income with health, the researcher formed an index called Monthly Income Index with considered the total monthly income in rupees of a household from all the sources.

## VIII. DATA ANALYSES

**VIII.1. Annual Income of Households in the Study Area**

It is evident that 33% of the households have an annual income in between Rs. 50001 and Rs.100000. Only 5% of households have an annual income of more than two lakh. The average annual income of households is Rs. 96894. But 21% of households are below poverty line as per their ration cards. The details are depicted in the table 1.

TABLE 1**: Distribution of Households by Annual Income**

| Selected Variables | Details | Number | Percentage |
|---|---|---|---|
| Annual Income | Up to Rs. 25,000 | 11 | 11 |
| | 25001 to 50000 | 20 | 20 |
| | 50001 to 100000 | 33 | 33 |
| | 100001 to 150000 | 13 | 13 |
| | 150001 to 200000 | 18 | 18 |
| | Above 200000 | 5 | 5 |
| | Total | 100 | 100 |
| Poverty line status | BPL | 21 | 21 |
| | APL | 79 | 79 |
| | Total | 100 | 100 |

Source: Primary Survey 2011

**VIII.2. Education Status of the Study Area**

Educational status of the population including the students is reflected in table 2. The total number of illiterates including the students' population consists of 7.68%. There are 8.9 % of population have plus 2 qualification. 2.88 per cent of population are graduates. And only 0.48 per cent of population are post graduates. The majority of population have high school level education, which is 35.68 % of total population.

A male and female classification shows that, illiteracy is more among females (10%) of total female population. There are 11.61% of female population have plus 2 education while only 6.35% of male population have plus 2 education. And 3.23% of female population have degree level education while only 2.54% of male population have degree level education.

TABLE 2: **Distribution of population by Education**

| Education | Male | Percentage | Female | Percentage | Total | Percentage |
|---|---|---|---|---|---|---|
| Illiterate | 17 | 5.40 | 31 | 10 | 48 | 7.68 |
| LP | 60 | 19.05 | 49 | 15.81 | 109 | 17.44 |
| UP | 92 | 29.21 | 70 | 22.58 | 162 | 25.92 |
| HS | 113 | 35.87 | 110 | 35.48 | 223 | 35.68 |
| Plus2 | 20 | 6.35 | 36 | 11.61 | 56 | 8.96 |
| Degree | 8 | 2.54 | 10 | 3.23 | 18 | 2.88 |
| Post Graduation | 2 | 0.63 | 1 | 0.32 | 3 | 0.48 |
| Technical | 2 | 0.63 | 00 | 00 | 2 | 0.32 |
| Professional | 1 | 0.32 | 2 | 0.65 | 3 | 0.48 |
| Others | Nil | 00 | 1 | 0.32 | 1 | 0.16 |
| Total | 315 | 100 | 310 | 100 | 625 | 100 |

Source: Primary Survey 2011

**VIII.3. Health status of the study area**

13.44% of total population (84/625) is suffering from chronic illness. Major health problems identified are chronic life style diseases such as hypertension and diabetes. The prevalence of each disease is shown in the table 3.

TABLE 3: **Distribution of population with chronic illness**

| Illness | Number | % |
|---|---|---|
| Diabetes | 46 | 54.76 |
| Hypertension | 31 | 36.90 |
| Asthma | 3 | 3.57 |
| TB | 1 | 1.19 |
| Rheumatic | 3 | 3.57 |
| Total | 84 | 100 |

Source: Primary Survey 2011

**VIII.4. Substance abuse**

56 people (8.96%) are using one or other kinds of intoxicants. Major intoxicant used is tobacco (6.4%) of total population followed by alcohol (1.28%) of total population. The prevalence of the life style diseases among the people may be attributed to the use of intoxicants. The details of consumption of intoxicants are shown in the table 4.

TABLE 4: **Consumption of Intoxicants**

| Intoxicant | Number | Percentage | % of total population |
|---|---|---|---|
| Smoking | 40 | 71.43 | 6.4 |
| Alcohol | 8 | 14.29 | 1.28 |
| Pan Masala | 6 | 10.71 | 0.96 |
| Others | 2 | 3.57 | 0.32 |
| Total | 56 | 100 | 8.96 |

Source: Primary Survey 2011

**VIII.5. Immunization coverage**

78.12% of children under age five are fully immunized and 13.54% of them are partially immunized. Only 8.33% is unimmunized. Immunization coverage is highest for BCG followed by Polio and DPT and lowest for hepatitis B. The following table 5 reveals it in detail.

TABLE 5**: Distribution of children under age 5 by immunization**

| Immunization Status | Number | Percentage |
|---|---|---|
| Fully | 75 | 78.12 |
| Partially | 13 | 13.54 |
| Unimmunized | 8 | 8.33 |
| Total | 96 | 100 |

Source: Primary Survey 2011

**VIII.6. Impact of Education and Income on Health Status of Households**

The relation of education and income on Aggregate Health Index (AHI) is clear from the table 6.

TABLE.6: **Education and Income Vs Health Status**

| Variables | Aggregate Health Index(AHI) | | | | |
|---|---|---|---|---|---|
| | Correlation | Regression | | | |
| | | Constant | Co-efficient | $R^2$ | $R^2_{(adj)}$ |
| Year of education (YEdn) | 0.521 | 5.05 | 0.553 | 27.1% | 26.4% |
| Monthly Income (MY) | 0.423 | 10.3 | 0.000105 | 17.9% | 17% |

The Year of Education (YEdn) and Aggregate Health Index (AHI) is very significantly related. While considering the degree of relationship between Aggregate Heath Index (AHI) and Monthly Income (MY), there is moderate level of correlation. The regression equation and regression line show that, there is a little significant positive impact on Aggregate Health Index by Monthly Income Index.

**VIII.7. Health Insurance and Health Problems**

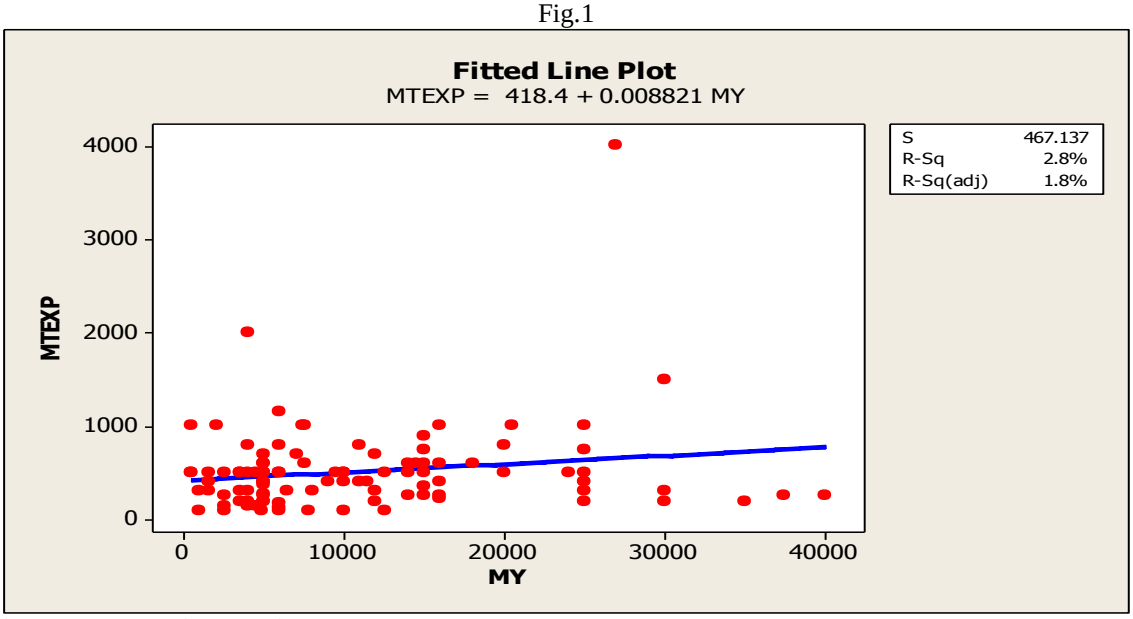
Out of the 100 households, 47 households have various types of health insurances. Among the total health insured households, 61.70% households have different kind of health problems. It is a clear evident for the great law 'Moral Hazards' -- Increase the probability of an illness when an individual is insured than when he or she is not**.** The health insured people are little aware about the health problems. And 38.29% of health insured households have no health problems.

53 households have not any kind of health insurances. Among non-insured households, there are 62.26% have not any kind of health problems. Only 37.73% households among non-insured households are facing some kinds of health problems.

**VIII.8. Income and Health Treatment Expenditure**

As income increases the health treatment expenditure is also increases. The following scatter plot of Monthly Health Treatment Expenditure (MTEXP) verses monthly income of Households (MY) revealing a moderately positive relation (r = 0.167), and the regression equation is MTEXP = 418.4 + 0.008821MY

Fig.1




Source: Primary Survey 2011

**VIII.9. Education level and Number of Health Problems**

There is an inverse relation between year of education and number of health problems in the study area. The value of correlation of between education level and number of health problem is -0.55.

## IX. SUMMING UP

The analyses of primary data show that there is 0.521 degree of co-variability between Aggregate Health Index (AHI) and Year of Education Index (YEdnI). The nature of relation between Year of Education Index with Aggregate Health Index show that one year of education index will make 0.583 unit changes in AHI on average and the variation of AHI is 27.1% due to education. The components of Aggregate Health Index are also positively correlated with level of education. The multiple regression model of AHI versus Year of Education Index and Monthly Income Index has also positively correlated. The impact of education on the health related variables such as education and life insurance, education and consumption expenditure are positively correlated. But the education and number of children in the households, education and number of health problems in the households are negatively correlated.

The data of the dependency of hospitals show that more households are depending government hospitals (59%) for treatment in general. Among educated households 57.14% are depending government hospitals while 63.63% are depending government hospitals among the uneducated households. Among educated households, 53% households are insured their health for various amounts. But among uneducated only 33% households have health insurance. Among the health insured households, 61.7% have different kinds of health problems.

The sex ratio among educated households is 1064 while it is 946 among uneducated households. The average age at marriage among educated households is 26 years and 18.35 years respectively for males and females. But among uneducated households, it is 24 years and 16.3 years respectively.

The average monthly income of households among educated is Rs.8196 while it is only Rs.5455 among uneducated.

The immunization status of households shows that, there are 80% of the educated households are immunized while only 68% of uneducated are immunized.

## X. CONCLUSION

Since education makes positive impacts on health status, it is necessary to provide education and health care facilities to each and every individual irrespective of caste, creed and the area. Since Tanur Panchayath is a coastal belt Panchayath, an area where the study has been conducted which is the most densely populated panchayath in the State has utmost necessity to provide more access to education on the basis of population proportion. Therefore a special attention is quite necessary from the side of authorities to provide balance in social development and ensure inclusive growth in the field of education and health.

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