INTERNATIONAL JOURNAL OF DEVELOPMENT IN SOCIAL SCIENCE AND HUMANITIES

e-ISSN:2455-5142; p-ISSN: 2455-7730

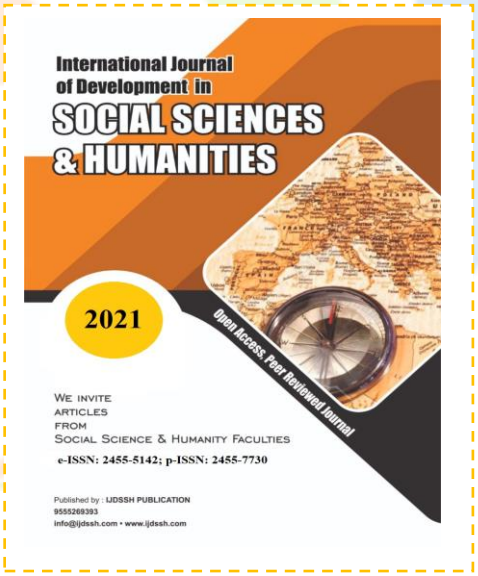
Does Health Play a Role in Assimilating Children into The Education System?

Simran Pal Singh

Paper Received: 10th February, 2021; **Paper Accepted:** 01st April, 2021; **Paper Published:** 19th May, 2021

How to cite the article:

Simran Pal Singh, Does Health Play a Role in Assimilating Children into the Education System, IJDSSH, January-June 2021, Vol 11, 91-111



ABSTRACT

The healthy upbringing of a child is crucial to its education. This paper determines whether health plays a role in real life enrollment of children into the education system. The research will be conducted in the Indian landscape. It will take a look at how the existing Governments till date have tackled these problems in history and where their approaches have lacked. This important work is done by evaluating to how many and at what frequency, the vaccinations are provided to children, in addition to how many of them perish before turning 5. It is also of utmost importance that the offspring has access to adequate amounts of nutritious food at all times. I've prepared a frame consisting of all terminologies and measurements. Further, how these tools are put into practice today is studied for these metrics will be explained. The author describes the tools that 1) provide figures of nation-wide immunization, 2) describe under-5 mortality rates in India and 3) put malnutrition numbers into focus. By describing these tools, it will become easier to prepare an econometric model to understand the implications these factors have. The paper will conclude by coming up with solutions to the problems faced by children with poor health.

INTRODUCTION

This paper introduces the concepts of immunization, malnutrition (in terms of being underweight) and under-5 mortality and aims to link these factors to Gross Enrollment Rate. Several medical papers were referred to provide a theoretical framework.

India has a 62% full immunization coverage rate that is expected to grow even more with the policies being rolled out by the State. The State has also put a focus on eradicating malnutrition through schemes providing highly-subsidized or free meals to the needy. Commonsense should dictate that once problems related to subsistence and survival are solved, secondary priorities (to the poor) like education should take the center stage. This paper will check whether these 'schemes' have somehow helped to push children into being educated.

TERMINOLOGY

It is crucial to learn all terminology related to the technical aspects of this paper to have a better understanding.

The WHO defines malnutrition as "the deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients". It can be further divided into two more categories: undernutrition- which includes wasting, underweight and micronutrient

deficiencies. The other one is overweight, obesity and other related terms.

The Food and Agriculture Organization defines food insecurity as "when a person lacks regular access to adequate safe and nutritious food for normal development and leading a healthy life". This unavailability of food maybe due to access issues or lack of resources. It can be experienced at multiple levels. If someone is severely food insecure, they have gone a day or more without food.

Full immunization is the % of 1-year olds who received one dose of BCG vaccine, three doses of polio vaccine, three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP3) vaccine, and one dose of measles vaccine. Numerator: Number of children aged 12–23 months receiving one dose of BCG vaccine, three doses of polio vaccine, three doses of DTP3 vaccine, and one dose of measles vaccine. Denominator: Total number of children aged 12–23 months surveyed.

Under-5 mortality is the number of resident newborns in a specified geographical area dying under five years of age. It's the probability of a child dying between birth and five years of age expressed per 1000 live births. Both neonatal mortality (death of a fetus) and infant mortality (death of a child under one year of age) are included in this.

OBJECTIVES

In light of the importance of both health and education, our objectives were to: 1) Understand how these variables (under-5 mortality, malnutrition, vaccination) are measured and how their data collection is carried out in the Indian context. 2) Collect data from sources about said variables for two time periods (2005-06 and 2015-16) and to establish an econometric model to help form a relationship between education rates and health. 3) Provide an in-depth statistical and descriptive analysis 4) Compare how the relationship was affected between the time periods and what changed when it came to the variables.

CURRENT STATUS OF KNOWLEDGE

Why are these factors important and how are said factors measured in the Indian context?

- **Malnutrition**

UN defines malnutrition as both undernutrition and overnutrition, but for the purposes of this paper; malnutrition will be confined to undernutrition only. It can stem from various factors, the most common being inadequate diet and repeated exposure to disease. These are further linked to socio-economic status in society, standards of living. It has been found that it contributes to morbidity and mortality, although it usually

isn't the direct cause of death (except for extreme circumstances like famine or natural disasters).[1]

Malnutrition can affect all sections of society but the youngest demographic i.e. infants and young children are the most vulnerable. They require high levels of nutrition to make sure their growth doesn't get stunted and develops to its maximum potential. Poor prenatal conditions lead to 23% of all deaths in kids under 5 years of age.[2] Why should malnutrition figures be measured in the first place? It is to make sure that our policymakers know where to redirect resources to minimize the risk originating from malnutrition.

Early studies used indirect methods to estimate the extent of malnutrition of a population. It would count those with energy intakes below a set norm called 'requirements' as someone suffering from malnutrition. These norms were decided on for a reference man and woman were published by the FAO (Food and Agricultural Organization) and evaluated periodically. These publications pointed out that these requirements can't be used for examining the nutritional status of a country, instead a food consumption survey should be used. The recommended intakes are not an adequate measure as it's an average and the recommended intake would vary from individual to individual. However, FAO would continue using it as a yardstick.[3]

In more recent times, the National Family Health Survey performs the duty of conducting large-scale, multi-round survey conducted in a representative sample of households throughout India. It provides state-wise and national information for India fertility, family and child health, quality of health and other indicators. It has two primary goals: a) provide essential data on health and family welfare for policy purposes and b) provide info on important emerging health and family welfare issues.[4]

In 2015-16 NFHS measured the height and weight of children under the age of five years regardless of whether their mothers were interviewed or not. Children's height, weight and age are gathered and then used to calculate three indices: height-to-age, weight-to-height and weight-to-age. Each one of this index is used to assess nutritional status. Each one corresponds to different categories and severities of malnutrition. [5]

Stunting- Low height-to-age reflects failure to gain necessary and adequate nutrition over a long period. Children whose height-to-age Z-score is under 2 standard deviations from the median of the population are considered to be short for their age (stunted). Those below 3 standard deviations are severely stunted.

Wasting- Low weight-to-height measures body mass in relation to height to describe nutritional status. Those below minus 2 standard deviations from the reference median are considered thin (wasted) or undernourished. Those below minus 3 standard deviations from the reference median are considered to be severely wasted.

Underweight-It's a cumulative index for both height-to-age and weight-to-height (i.e. stunting and wasting). Those below minus 2 standard deviations from the median of reference population are considered to be underweight. Those below minus 3 standard deviations are considered severely underweight.

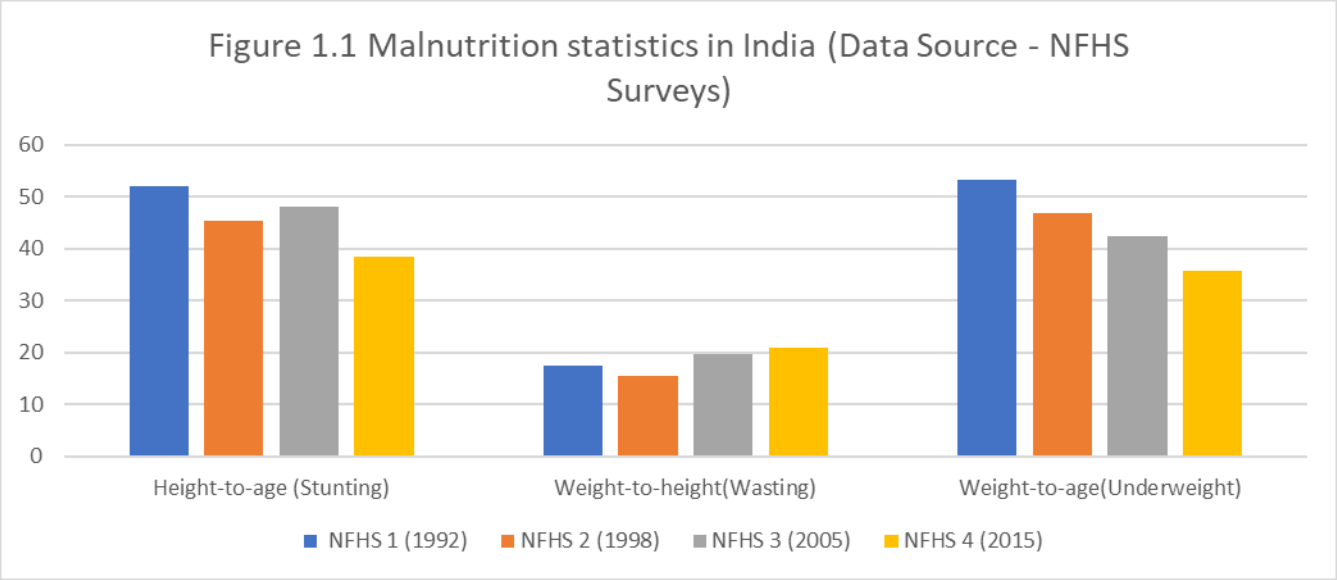


Figure 1.1 (above) show the progress of stunting, wasting and underweight children over the years in India with data sourced from NFHS surveys conducted over the past 3 decades. A downward trend in both underweight children and stunting can be observed over the years. Meanwhile, a slight increase in wasting can be seen in the abovementioned figure.

- **Immunization**

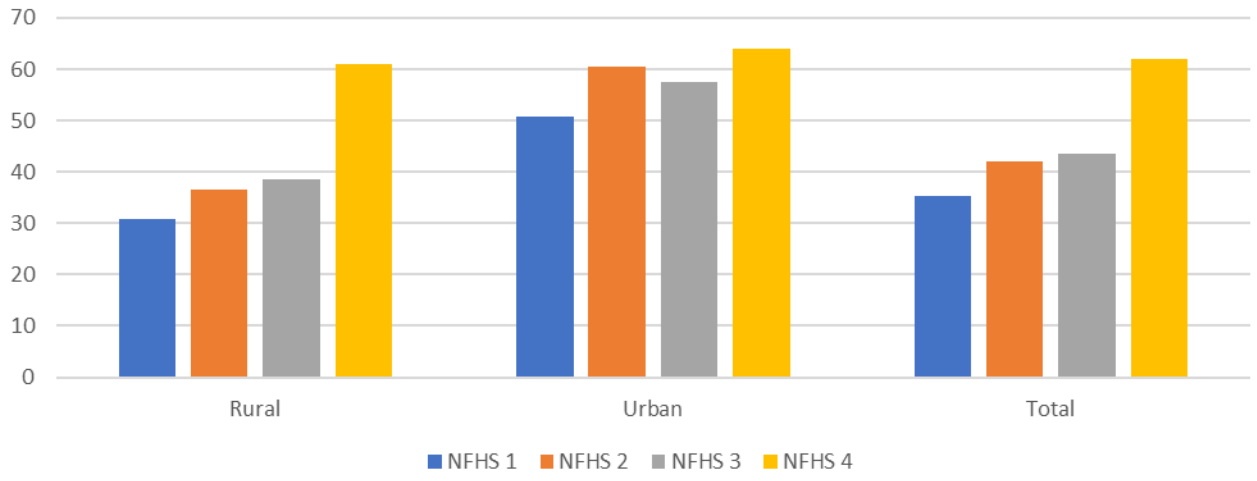
A person is made immune or resistant to an infectious disease by administering them with a vaccine. Vaccines contain killed or weakened versions of the targeted disease-causing pathogen. This causes the body to form antibodies to combat the infection. These antibodies remain in the body even after killing off the antigens from the vaccine. In the future, if the body encounters the same infectious disease, the body remembers to combat said disease without the person ever getting ill. It has been proven through a multitude of studies and research journals to be the most cost-effective way of administering healthcare to the population.

It's estimated to save between 2-3 million deaths each year.

India was an early adopter of WHO's EPI (Extended Programme of Immunization). Since its inception in 1974 and implementation in India in 1978. This EPI would increase the percentage of children immunized from under 5% in 1977, to 20-30% by 1983 and finally 80% by 1990 with the introduction of DPT, polio and measles vaccines (World Bank Report, 1993). By 2000, the states of Bihar, Rajasthan, Uttar Pradesh and Madhya Pradesh together accounted for over two thirds of non-immunized children.[6]

This study will use the criteria for full immunization as defined by the WHO to derive conclusions. Full immunization as stated by the WHO: "The percentage of one-year-olds who have received one dose of Bacille Calmette-Guérin (BCG) vaccine, three doses of polio vaccine, three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP3) vaccine, and one dose of measles vaccine. Numerator: Number of children aged 12–23 months receiving one dose of BCG vaccine, three doses of polio vaccine, three doses of DTP3 vaccine, and one dose of measles vaccine. Denominator: Total number of children aged 12–23 months surveyed."

Figure 1.2 - Immunization trends in India
(Data Source - NFHS surveys)



There have been several cases throughout history that show the benefits extended by providing vaccinations. It can be clearly observed in Figure 1.2 that the initial numbers for full immunization were low but slowly progressed before a massive rise in the NFHS-4 survey. Very noticeable rises can be seen in Rural and Total trends while there have been consistently high full immunization rates for urban areas. This can be explained by the higher literacy rates, higher per capita income in urban areas.

People living in urban areas have more awareness when it comes to vaccinations and thus have higher rates. The noticeably higher rates of full immunization between NFHS-3 and NFHS-4 can be attributed to the National Rural Health Mission which targeted almost 2.67 crore newborns annually, providing free of cost vaccines against 12 preventable diseases. In more recent times, Mission Indradhanush has been implemented by the current government with an aim to increase the full immunization coverage of children to 90%.

- **Under-5 Mortality**

Under-5 mortality is the mortality of children under the age of five. It refers to the probability of a child dying between birth and exactly five years of age expressed per 1000 live births. It is an umbrella term including neonatal mortality (death of a fetus) and infant mortality (a child dying under 1 year of age). Reducing under-5 mortality is listed in several of UN's Sustainable Development Goals.

NFHS asks all women aged between 18-45 to give complete histories of their births. Said information includes sex of child, date and month of each birth, age at the time of surve, age of death is recorded in days for children dying before second birthday and in years for children dying at later stages. High levels of infant deaths can be attributed to structural issues like lack of facilities at primary care centres, delays in transporting patients from one place to another and lack of specialists. In a paper led by G. Bassani and Rajesh Kumar , findings show that pneumonia and diarrhoeal diseases account for 50% of all deaths between ages 1-59 months. [7]

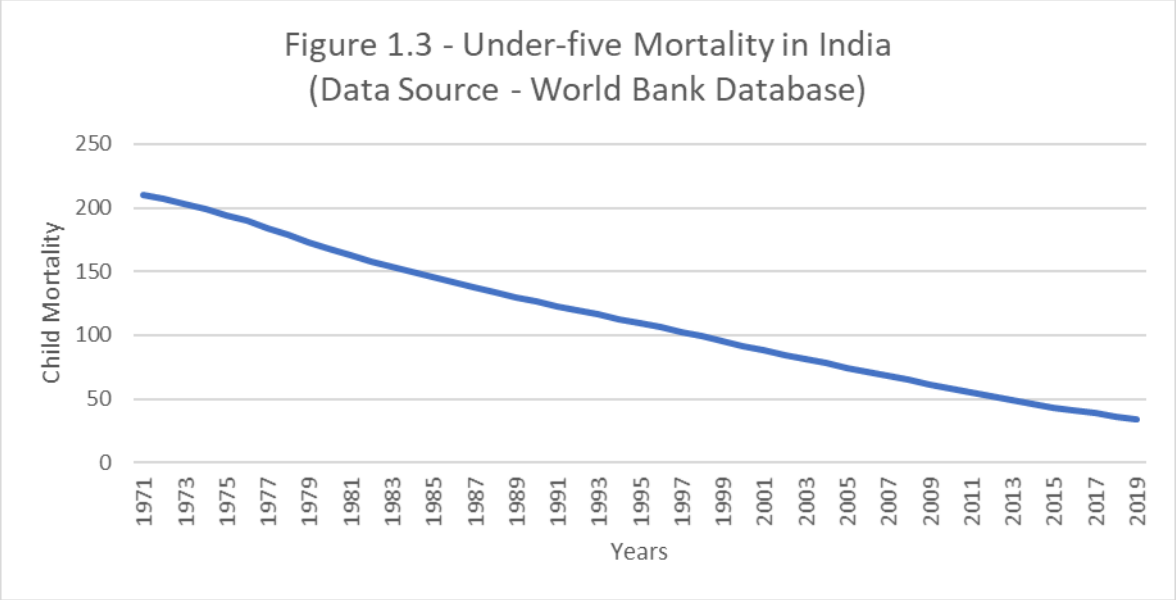
Figure 1.3 shows under-5 mortality trends in India across 48 years. There has been a steady decline in under-5 mortality which can be boiled down to several factors. Affordable, widely-available interventions against preventable diseases such as immunization, nutritional supplements played a major role. Also another reason was improving maternal health in mothers. Governmental programmes and interventions have increasedawareness about prenatal care.

Several key schemes have been put into place under the National Health Mission to reduce this:

- Janani Suraksha Yojana-Encourages pregnant women to deliver within institutional set-ups. Cash assistance is provided for doing this.
- Janani Shishu Suraksha Karyakaram-All pregnant women delivering in public health institutions are ensured a no-expense delivery. Free delivery, drugs, transport is provided to them.
- Pradhan Mantri Surakshit Matritva Abhiyan- Fixed, quality and universal

ante-natal care to provided to all women on the 9th of every month.

The Union Health Minister has said that it aims to bring down the infant mortality rate (which contributes to the under-5 count) to 23 per 1000 live births by 2025.



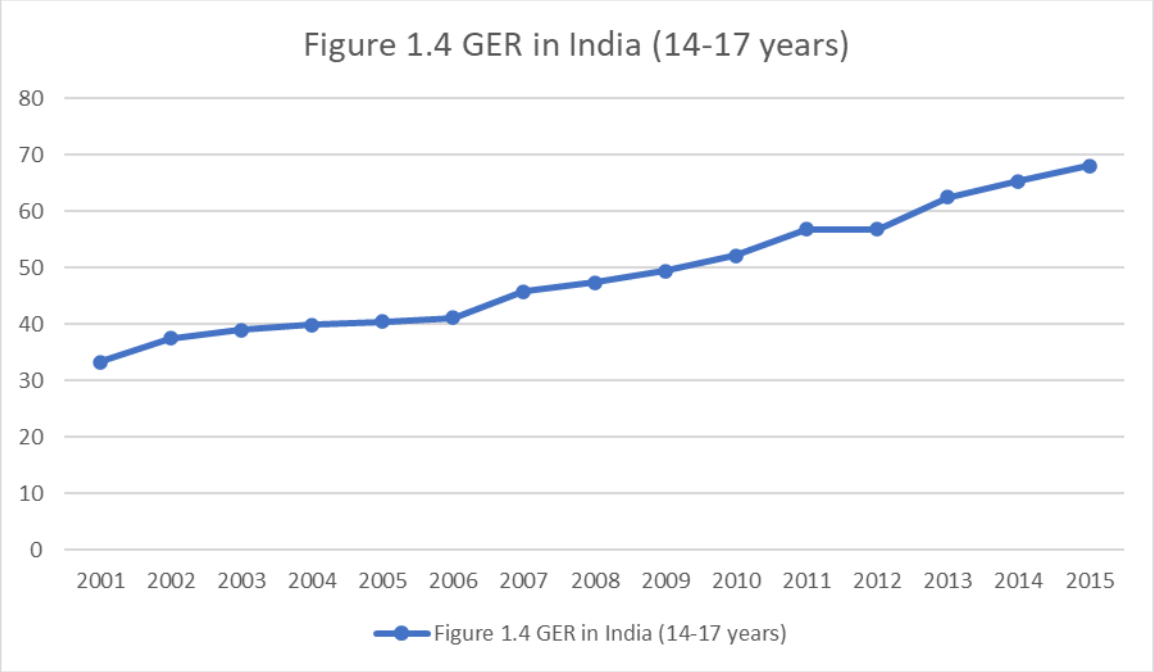
Gross Enrollment Ratio

This is a measure used in the education sector. It determines the number of students enrolled in a school in a specific age group and highlights the ratio to the number of children (of the same age group) living in that geographic region. It's one of the measures previously used to determine the United Nations' Human Development Index (HDI) from 1990 to 2009.

G.E.R= (Students enrolled in age group/Total children in that age group)*100

Unlike other ratio measures, whose value never exceeds 100%; GER can exceed 100% due to the inclusion of early, late entrants and grade repetition. India's gross enrollment ratio for the years 2001-2015 are given in Figure 1.4. Higher values of GER mean higher values of participation in the education system. If it exceeds over 90% of the target demographic, it can be said that the universal education access for said age group has been achieved.

It should account for students in all sorts of institutions; public, private and other ventures that provide educational programmes in an organized fashion.[8]



Inclusion in the education system gives the economically weak a chance to come out of poverty and pursue a financially better life and contribute greatly to the economy.[9]

METHODOLOGY

The proposed hypothesis will state that there is a positive correlation between both health and education. Immunization, eradication of malnutrition and lower mortality rates are key to ensuring academic excellence in the country.

Inferences will be drawn on the basis of multiple, linear econometric models that will explain and establish a relationship between Gross Enrollment Ratios in senior secondary education and several variables:

- The percentage of one-year-olds who have received one dose of Bacille Calmette-Guérin (BCG) vaccine, three doses of polio vaccine, three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP3) vaccine, and one dose of measles vaccine
- Under-5 mortality rates
- Malnutrition (in the form of weight-to-age ratio as its cumulative of both height-to-age and weight-to-height)

The data for all above mentioned variables will be gathered for the year 2004-05 (the year in which the National Family Health Survey – 3 was conducted) for 10 different Indian states. All of this will be used in the construction of linear models.

An in-depth descriptive analysis explaining all of the variables and parameters shall be used. Appropriate statistical and graphical

techniques are applied to present the data in a visual, easy-to-understand manner.

DATA COLLECTION: NATURE AND SOURCES

All data used in this paper will be secondary in nature, sourced from reputed organizations, research papers and databanks. Renowned databanks, organizations and research papers are used for sourcing data. The Government of India's National Family Health Survey is used to provide sources for the independent variables used in the model. The data for the Gross Enrollment Ratio was sourced from the Ministry of Human Resource Development's databank.

These variables were chosen for 10 Indian states that vary in educational, financial, cultural and social backgrounds. This will make sure that the results being derived are not cherry-picked for the sake of obtaining results.

NFHS-3

STATES	GER SENIOR SECONDARY 2005-06	UNDER-5 MORTALITY	BASIC IMMUNIZATION	UNDERWEIGHT (2 SD BELOW MEAN)
DELHI	52.52	46.7	63.2	26.1
HARYANA	42.22	52.3	65.3	39.6
UP	35.9	96.4	23	42.4
BIHAR	16.02	84.8	32.8	55.9
ARUNACHAL PRADESH	42.55	87.7	28.4	32.5
MAHARASHTRA	56.78	46.7	58.8	37
KERALA	64.63	16.3	75.3	22.9
TAMIL NADU	63.79	35.5	80.9	29.8
GUJARAT	39.5	60.9	45.2	44.6
PUNJAB	39.76	52	60.1	24.9

NFHS-4

STATES	GER SENIOR SECONDARY 2015-16	UNDER-5 MORTALITY	BASIC IMMUNIZATION	UNDERWEIGHT (2 SD BELOW MEAN)
DELHI	77.9	42.2	68.8	27
HARYANA	59.59	41.1	62.2	29.4
UP	60.78	78.1	51.1	39.5
BIHAR	35.62	58.1	61.7	43.9
ARUNACHAL PRADESH	61.81	32.9	38.2	19.4
MAHARASHTRA	67.81	28.7	56.2	36
KERALA	77.56	7.1	82.1	16.1
TAMIL NADU	82.03	26.8	69.7	23.8
GUJARAT	43.43	43.5	50.4	39.3
PUNJAB	70.19	33.2	89	21.6

RESULTS AND DISCUSSION

The regression is run in a linear form:

$Yi=\beta_0 + \beta_1 + \mu_i$

FOR NFHS-3 (2005-06)

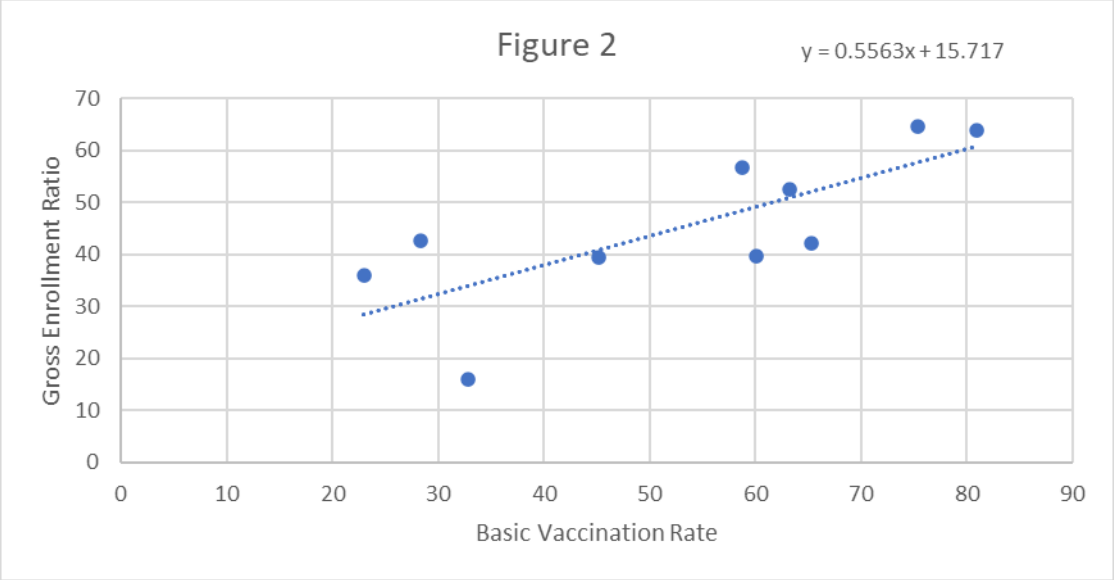
Regressing Enrollment Ratio to Immunization

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 10/28/20 Time: 12:43
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMMUNIZATION	0.556288	0.168608	3.299306	0.0109
C	15.71683	9.537461	1.647905	0.1380

R-squared	0.576393	Mean dependent var	45.36700
Adjusted R-squared	0.523442	S.D. dependent var	14.63049
S.E. of regression	10.09989	Akaike info criterion	7.639783
Sum squared resid	816.0630	Schwarz criterion	7.700301
Log likelihood	-36.19892	Hannan-Quinn criter.	7.573396
F-statistic	10.88542	Durbin-Watson stat	2.472630
Prob(F-statistic)	0.010870		



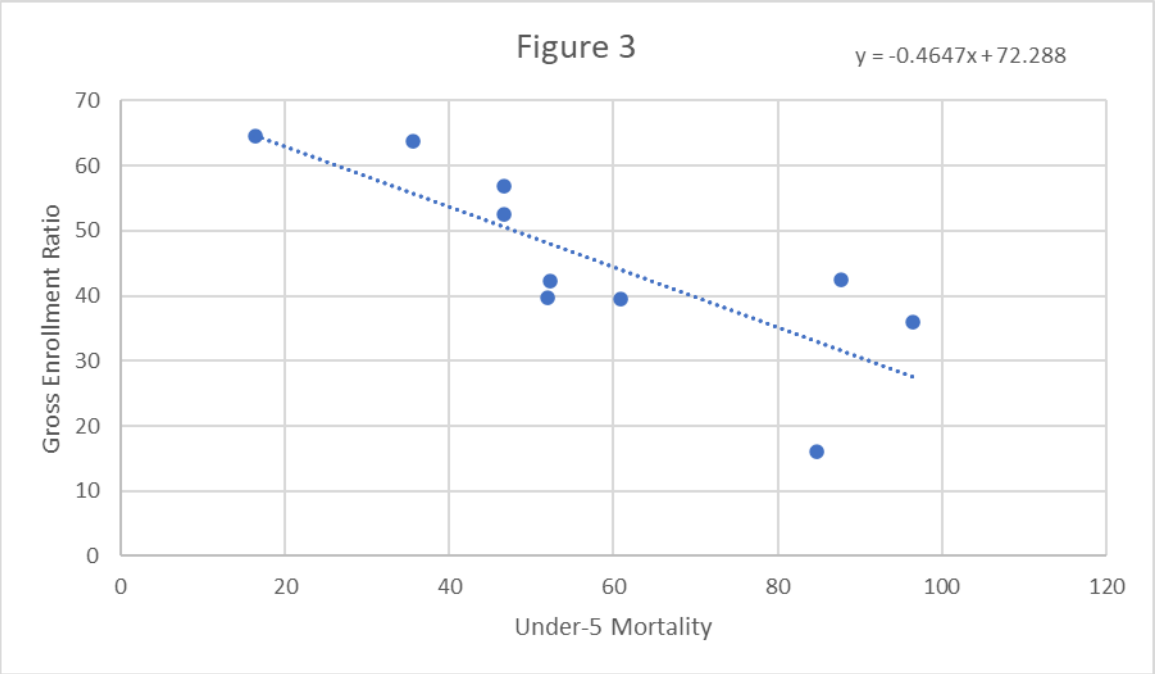
Regressing Enrollment Ratio to Under-5 Mortality

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 10/28/20 Time: 12:44
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MORT	-0.464719	0.124933	-3.719734	0.0059
C	72.28816	7.823173	9.240262	0.0000

R-squared	0.633640	Mean dependent var	45.36700
Adjusted R-squared	0.587845	S.D. dependent var	14.63049
S.E. of regression	9.392678	Akaike info criterion	7.494594
Sum squared resid	705.7792	Schwarz criterion	7.555111
Log likelihood	-35.47297	Hannan-Quinn criter.	7.428207
F-statistic	13.83642	Durbin-Watson stat	2.798129
Prob(F-statistic)	0.005874		



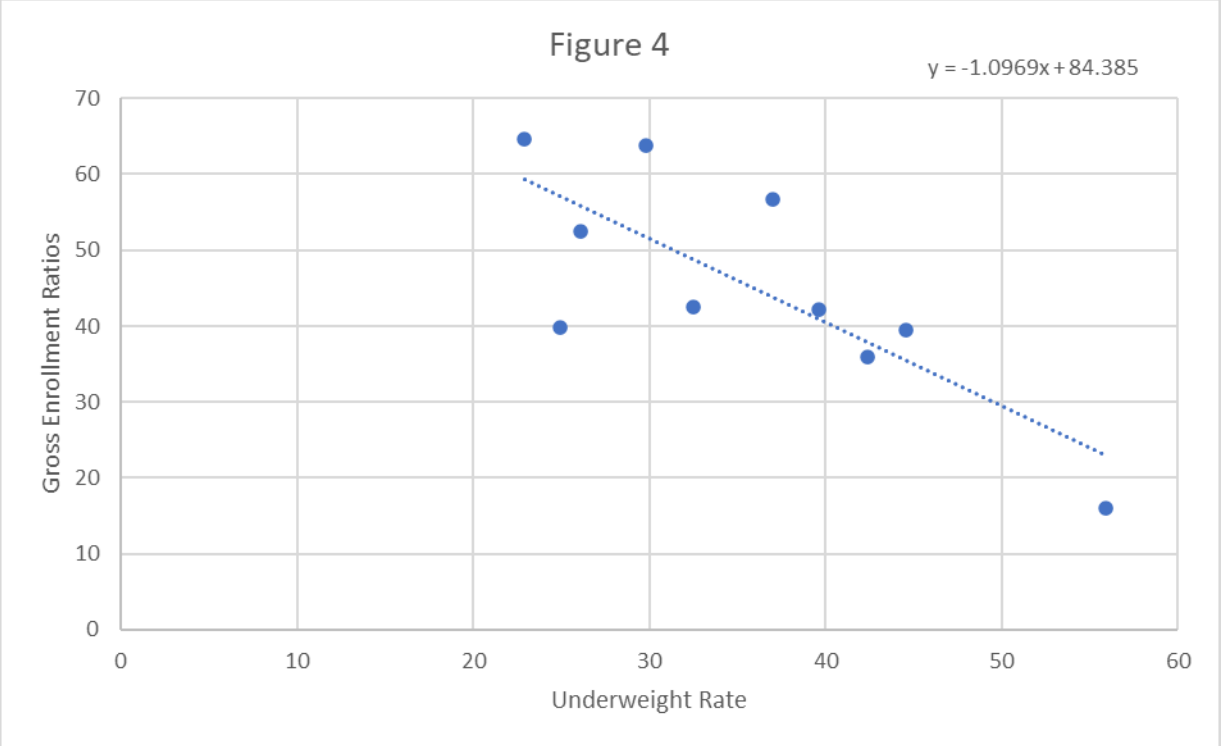
Regressing Enrollment Ratio to being Underweight

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 10/28/20 Time: 12:44
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNDERWEIGHT	-1.096932	0.314215	-3.491023	0.0082
C	84.38488	11.59569	7.277261	0.0001

R-squared	0.603710	Mean dependent var	45.36700
Adjusted R-squared	0.554174	S.D. dependent var	14.63049
S.E. of regression	9.768811	Akaike info criterion	7.573123
Sum squared resid	763.4373	Schwarz criterion	7.633640
Log likelihood	-35.86562	Hannan-Quinn criter.	7.506736
F-statistic	12.18724	Durbin-Watson stat	1.373618
Prob(F-statistic)	0.008186		



Slope Coefficient Matrix for Indian States

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

Relation between	Coefficient value
GER and Immunization	0.556
GER and Mortality	-0.464
GER and Underweight	-1.096

Test-statistic matrix for Indian States

$$\text{t-statistic} = \frac{\bar{x} - \mu_o}{s/\sqrt{n}}$$

Relation between	T-statistic
GER and Immunization	3.299
GER and Mortality	-3.719
GER and Underweight	-3.49

Probability-value matrix for Indian States

Relation between	Probability value
GER and Immunization	0.0109
GER and Mortality	0.0059
GER and Underweight	0.0082

All the calculated probability-values are much lower than the accepted 5% (0.05) value to address a variable in a model as significant. All of them are deemed as to be significant and are thus included in the paper.

Correlation matrix for Indian States

R^2= 1-(Sum of Squares of Residuals/Total Sum of Squares)

(Within a 2-variable model, $R^2=r^2$. so correlation values are derived from square rooting the coefficient of determination)

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

Correlation matrix for Indian States

Relation between	Correlation value
GER and Immunization	0.75920
GER and Mortality	-0.79601
GER and Underweight	-0.77699

It's used to indicate the direction and strength of the relationship between an independent and dependent variable. Its interpretation in Layman's terms can interpreted as:

- Exactly –1. A perfect downhill (negative) linear relationship
- –0.70. A strong downhill (negative) linear relationship
- –0.50. A moderate downhill (negative) relationship
- –0.30. A weak downhill (negative) linear relationship
- No linear relationship
- +0.30. A weak uphill (positive) linear relationship
- +0.50. A moderate uphill (positive) relationship
- +0.70. A strong uphill (positive) linear relationship
- Exactly +1. A perfect uphill (positive) linear relationship

The values of 0.7592, -0.796, -0.7769 derived signify very strong correlations between the variables. The negative sign between mortality, underweight to GER signifies that there is a negative relationship. An increase in these variables would mean a decrease in the Gross Enrollment Ratios. This supports the initial hypothesis that there is a negative relationship between being underweight, under-5 mortality and the Gross Enrollment Ratios. The only positive value (0.7592) indicates a strong, positive correlation between immunization and GER.

FOR NFHS-4 (2015-16)

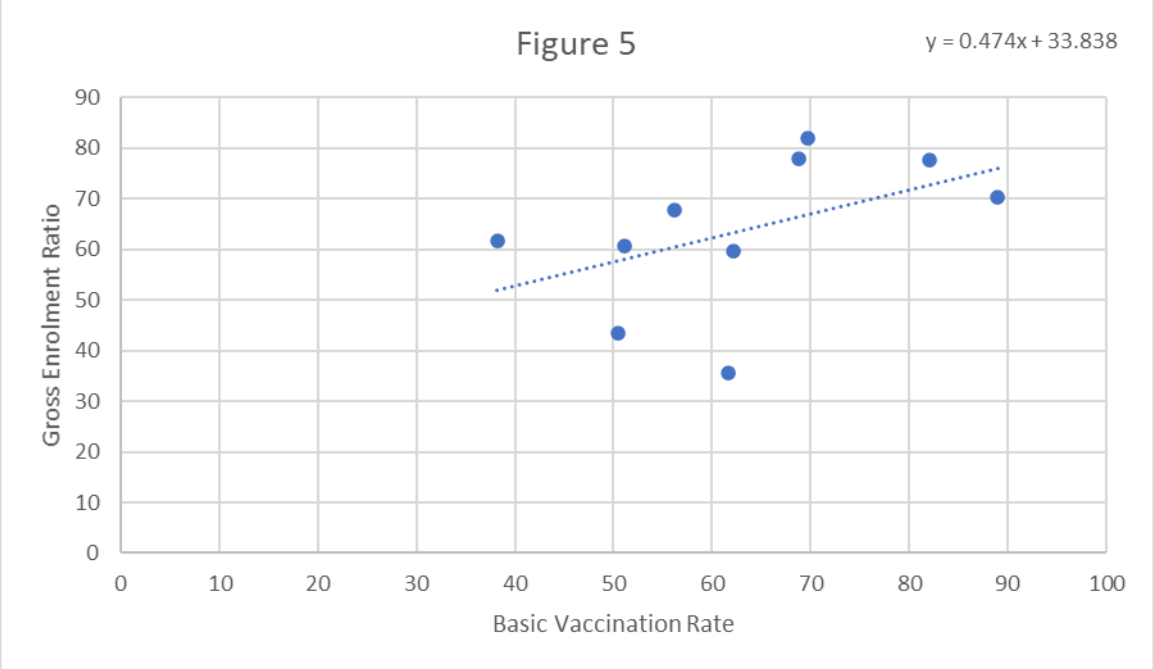
Regressing Enrollment Ratio to Immunization

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 11/03/20 Time: 14:25
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMMUNIZATION	0.474005	0.304865	1.554801	0.1586
C	33.83815	19.68630	1.718868	0.1240

R-squared	0.232054	Mean dependent var	63.67200
Adjusted R-squared	0.136061	S.D. dependent var	14.97065
S.E. of regression	13.91496	Akaike info criterion	8.280663
Sum squared resid	1549.010	Schwarz criterion	8.341180
Log likelihood	-39.40332	Hannan-Quinn criter.	8.214276
F-statistic	2.417405	Durbin-Watson stat	2.347027
Prob(F-statistic)	0.158602		



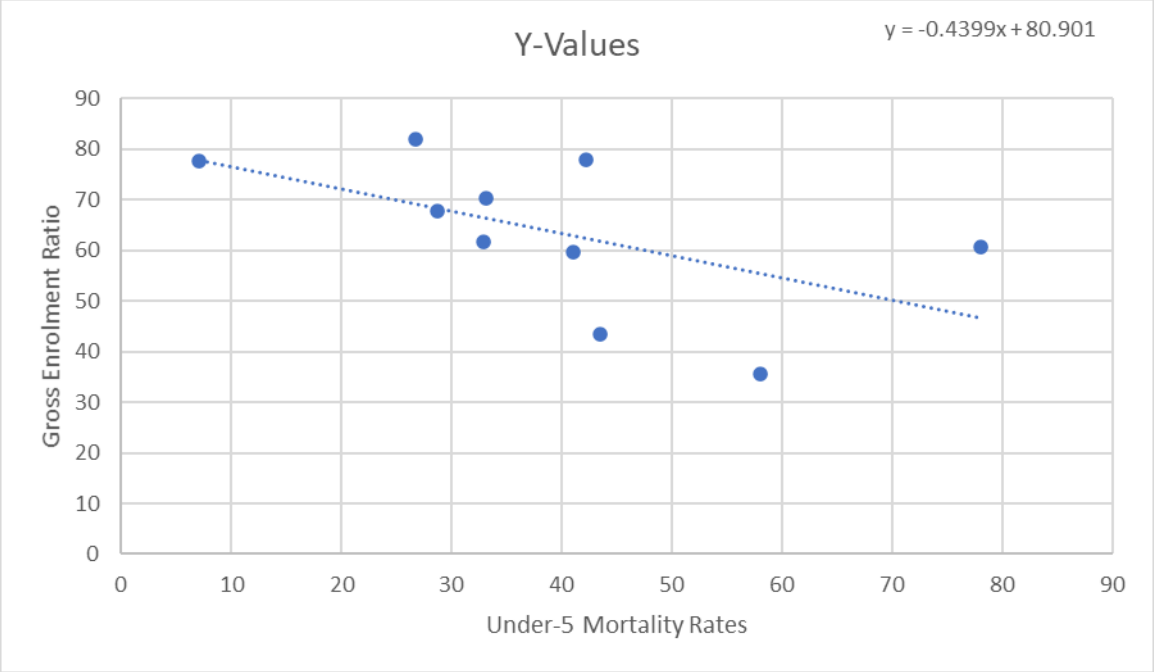
Regressing Enrollment Ratio to Under-5 Mortality

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 11/03/20 Time: 14:24
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MORT	-0.439863	0.229962	-1.912763	0.0921
C	80.90143	9.921601	8.154069	0.0000

R-squared	0.313815	Mean dependent var	63.67200
Adjusted R-squared	0.228042	S.D. dependent var	14.97065
S.E. of regression	13.15338	Akaike info criterion	8.168091
Sum squared resid	1384.092	Schwarz criterion	8.228608
Log likelihood	-38.84046	Hannan-Quinn criter.	8.101704
F-statistic	3.658664	Durbin-Watson stat	2.673466
Prob(F-statistic)	0.092138		



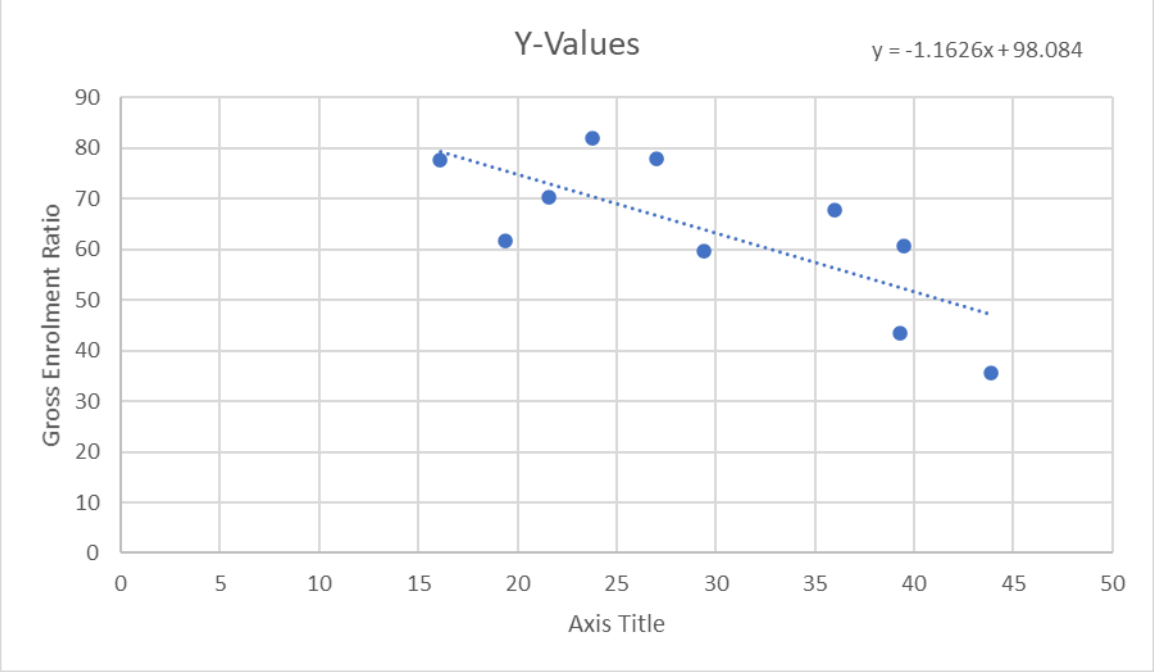
Regressing Enrollment Ratio to being Underweight

The following results were obtained after regressing the model in E-Views:

Dependent Variable: GER
Method: Least Squares
Date: 11/03/20 Time: 14:24
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNDERWEIGHT	-1.162567	0.368053	-3.158694	0.0134
C	98.08398	11.39770	8.605597	0.0000

R-squared	0.554995	Mean dependent var	63.67200
Adjusted R-squared	0.499370	S.D. dependent var	14.97065
S.E. of regression	10.59251	Akaike info criterion	7.735029
Sum squared resid	897.6110	Schwarz criterion	7.795546
Log likelihood	-36.67514	Hannan-Quinn criter.	7.668642
F-statistic	9.977345	Durbin-Watson stat	2.535888
Prob(F-statistic)	0.013421		



Slope Coefficient Matrix for Indian States

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

Relation between	Coefficient value
GER and Immunization	0.47
GER and Mortality	-0.43
GER and Underweight	-1.16

Test-statistic matrix for Indian States

$$\text{t-statistic} = \frac{\bar{x} - \mu_o}{s/\sqrt{n}}$$

Relation between	T-statistic
GER and Immunization	1.55
GER and Mortality	-1.91
GER and Underweight	-3.15

Probability-value matrix for Indian States

Relation between	Probability value
GER and Immunization	0.158
GER and Mortality	0.092
GER and Underweight	0.013

2 of the 3 relationships (GER and immunization, GER and mortality) have probability values greater than the level of significance (5%). They're concluded to be insignificant to the model so not much can be said about the relationships for 2015-16. The relationship between GER and being underweight is, however, significant and can be analyzed reliably.

Correlation matrix for Indian States

R^2= 1-(Sum of Squares of Residuals/Total Sum of Squares)

(Within a 2-variable model, $R^2=r^2$. so correlation values are derived from square rooting the coefficient of determination)

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

Correlation matrix for Indian States

Relation between	Correlation value
GER and Immunization	0.481
GER and Mortality	-0.560
GER and Underweight	-0.744

The values of 0.481 and -0.56 cannot be interpreted assuredly because of its probability value. However, if they were still to be interpreted in spite of the probability value; these relationships grew weaker with time from 2005 to 2015.

Since the relationship between GER and being underweight is statistically significant, it is safe to say that its coefficients' can be interpreted reliably. Its relationship is negative and strong. An increase in the amount of malnutrition will lead to lower rates of GER. This coefficient (-0.744) has remained more or less the same.

CONCLUSION

All medical research papers quoted in this work point towards the same outcome- health is an important indicator towards participation in quality education. This paper also reaches the same conclusion- factors related to health contribute greatly to participation in quality education.

The indicators used here- immunization, malnutrition and under-5 mortality rates remain crucial factors in this fight to promote education especially among those in poverty. Use of vaccinations to combat easily preventable diseases remains one of the cheapest and wide-spread strategies. Lowering under-5 mortality and eliminating nutrition gives children their best chance at great health and help them assimilate into society. It should be the government's prime focus to eliminate them. Strong correlations between the variables indicate that once

subsistence problems are solved, higher rates of enrollment are experienced.

REFERENCES

Environmental Burden of Disease Series, No. 12 Malnutrition Quantifying the health impact at national and local levels : Blössner, de Onis

World Health Organization 2004 report

T. N. Srinivasan ; Malnutrition: Some Measurement and Policy Issues (1979)

National Family Health Survey website : http://rchiips.org/nfhs/

NFHS-4 survey 2015-16 report

Lahariya, Chandrakant. "A brief history of vaccines & vaccination in India." *The Indian journal of medical research* vol. 139,4 (2014): 491-511.

Million Death Study Collaborators, Bassani DG, Kumar R, Awasthi S, Morris SK, Paul VK, Shet A, Ram U, Gaffey MF, Black RE, Jha P. Causes of neonatal and child mortality in India: a nationally representative mortality survey. Lancet. 2010 Nov 27;376(9755):1853-60. doi: 10.1016/S0140-6736(10)61461-4. Epub 2010 Nov 12. PMID: 21075444; PMCID: PMC3042727.

UNESCO Institute of Statistics

Sartaj Singh Wariah and K Karthikeyan 2018 J. Phys.: Conf. Ser.1139 012033