International Journal of Humanities and Social Sciences.
ISSN 2250-3226 Volume 3, Number 1 (2013), pp. 13-22

http://www.ripublication.com

Impact of Education in Better Health Outcomes: A Case Study of Madhya Pradesh

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Abstract

In Madhya Pradesh a large number of development programmes are being run by state government to achieve the goals of human development. Dimensions of Human Development are related to Education, Health-Nutrition and Livelihood. It is a well known fact that Education is one of the major determining factor which impacts health and livelihood directly and indirectly. This has been observed in many countries and over different time periods, a wide variety of health measures have been taken but without resulting significant outcome/ results in comparison to efforts and investment made in the sector. To find out the answer to this, one has to go in detail research based discussions. The purpose of this paper is to establish the impact of education especially of mothers with different aspects affecting health status in Madhya Pradesh. For reviewing the evidence, the primary data collected for "Impact Assessment of the Integrated Child Development Service (ICDS) in Madhya Pradesh" conducted by Poverty Monitoring and Policy Support Unit (PMPSU has been used. Authors have also described evidence that demonstrates the extent of the descriptive correlation of education and community health. It is argues that health Policy makers must consider education as a key factor in designing of health and nutritional interventions for improving the participation and nutritional performance especially among children, adolescents girls and mothers. It is necessary that higher education of girl should be on the top priority of any government to attain/ improve the Human Development Index and Millennium Development goals.

Key Words Integrated Child Development Service (ICDS), Poverty Monitoring and Policy Support Unit (PMPSU) National Family Health Survey (NFHS), National Rural Health Mission (NRHM).

1. Background

In today's world, investing in formal or non formal education is a necessity, not a luxury. No government can afford to waste its supreme resource without achieving proportionate outcomes in related field. In Madhya Pradesh high MMR, IMR and low birth weight is common, a large number of children fail to achieve their full potential growth. This is the position, even after implementing ICDS for more than 5 decades and spending a huge amount of money. Although the effort put through ICDS and NRHM have shown their impact but the same is not as significant as compare to international standards. It is now time to analyze what are other possible factors other than those which are the part of the programme or scheme.

A study commissioned by PMPSU which is mandated to support government in design and review their policy initiatives also to improve monitoring and evaluation of state government's programmes. Aligned to this mandate, PMPSU has conducted "Impact Assessment of the Integrated Child Development Service (ICDS) in Madhya Pradesh" to ascertain the perception of various stakeholders, Assess Component wise Impact of ICDS, ascertain the contribution of ICDS in reference to reduction of IMR and MMR, document innovative design and practices in the programme, identify constraints and bottlenecks and suggest policy and ways for the improvement in design and implementation for optimum performance. It was an opportunity to establish the evidence based link assuming that the education leads to better health awareness, enhance decision making ability and finally education and health leads to better development of any nation. This study indicates the substantial public significance of the potential role education in improving health.

Table I. Demographic, Socio-economic and Health profile of MP

Characteristic	Madhya Pradesh	India
Total population (Census 2001) (in millions)	72.6	1210.2
Decadal Growth (2001-11) (%)	20.3	17.7
Crude Birth Rate (SRS 2010)	27.3	22.1
Crude Death Rate (SRS 2010)	8.3	7.2
Total Fertility Rate (SRS 2009)	3.3	2.6
Infant Mortality Rate (SRS 2010)	62	47
Maternal Mortality Ratio (SRS June 2011) 2007-09	269	212
Sex Ratio (Census 2011)	930	940
Child Sex Ratio (Census 2011)	912	914
Population below Poverty line (%) 2009-12	36.7	29.8
Female Literacy Rate (Census 2011) (%)	60.0	65.5

1.1 Integrated Child Development Services (ICDS) in MP

ICDS represents one of the world's largest programmes (both in term of coverage and investment) for early childhood development. It is now the foremost symbol of Indian Government commitment to her children – India's response to the challenge of

breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality on one hand and providing pre-school education on the other.

The Integrated Child Development Services (ICDS) offers a fundamental intervention for addressing the nutrition and health problems and promoting early childhood education among the disadvantaged population of the country. Its basic objectives are:

- To improve the nutritional and health status of children in the age group 0-6 years;
- To lay the foundation for proper psychological physical and social development of the child;
- To reduce the incidence of mortality, morbidity, malnutrition and school dropout;
- To achieve effective co-ordination of policy and implementation amongst the various departments to promote child development; and
- To enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

In Madhya Pradesh ICDS is implemented by Women and Child Development Department. These are 367 projects (313 rural and 54 urban) and 78929 Anganwadi Centers (AWCs) and 2215 Sub centers. The administrative unit for the location of ICDS Projects is the Community Development blocks in rural areas, tribal blocks in tribal areas and ward (s) or slums in urban areas. A total 76.31 lakh beneficiaries are taking benefits from the project.

2. Impact Assessment of the Integrated Child Development Service (ICDS) in Madhya Pradesh

2.1 Research Designing and methodology

Adopting a well thought-out mix of quantitative and qualitative research approaches, the impact Assessment exercise was designed to provide diagnostic insights into the broad package of services provided by ICDS i.e. Supplementary nutrition, Non-formal Pre-School Education, Immunization, Health Check-up, Referral Services and Nutrition and Health Education. While the quantitative component provided statistically robust estimates of key indicators, the qualitative element of the study provided a story line on cause-effect scenario.

The quantitative component of the study was anchored by a comprehensive *house listing* exercise followed by semi-structured interviews with eligible respondent's viz. pregnant women, lactating women, Mothers of children below 3 years (> 6 months to 3 years), Mother of children of 3-6 years and Adolescent Girls. Subsequent to this, Anthropometric measurement and Anemia test were also conducted with the eligible respondents. A minimum of 1125 sample was covered under each category of eligible respondent spreaded across 10 urban and 35 rural/tribal project blocks in Madhya Pradesh. Programme level assessment on logistics, norms, guidelines and management of programme was also undertaken within this component of the study.

Qualitative component of the study comprised of Focus Group Discussions with eligible clients, In-depth Discussions with Government functionaries, Social Mapping and case studies.

2.2 Key findings of Research

2.2.1 Status of Malnutrition and Anemia in Madhya Pradesh

Malnutrition among children occurs almost entirely during first two years of life and is virtually irreversible after that. Findings from the PMPSUs study show a significant decrease of around seven percentage point in malnourished children from NFHS-III estimates (61.8 percent) to 54.1 percent in 12-23 age groups. Children's nutritional status in Madhya Pradesh has also improved since NFHS-III differentially across 36-47 aged children and children aged 48-59. A comparative assessment of nutritional impact for stunting shows that stunting had remained constant for both children less than six month and children aged 6-11 months. Thus malnutrition status across 12-23 months aged children becomes central to the reduce malnutrition among children. Findings show a significant decrease of around seven percentage point from 57.3 percent to 47.9 percent in 12-23 months age groups. Children's nutritional status in Madhya Pradesh has also improved since NFHS-3 differentially across 36-47 months aged children and children aged 48-59 months aged.

More than half of adolescent girl (57 percent) in Madhya Pradesh have anemia, including 39 percent with mild anemia, 18 percent with moderate anemia and 2 percent with severe anemia. Comparison by NFHS-III estimates for 15-19 age category inferred that anemic status of the adolescent girl over last three year has remained constant highlighting the need for strategic focus to reduce anemia. Prevalence of anemia by maternity status show conforming figures with NFHS-III. About 60 percent of the pregnant women and nearly 65 percent of lactating women are anemic.

The supplementary food distribution scheme under ICDS seems to have a positive impact on improving the nutritional status of children. It has been observed from the study that ICDS undeniably has an impact on the health outcomes of women and children in the area. Improvement in health care practices such as breast feeding, infant feeding practices, hygiene and sanitation have a significant role in infant and child nutrition outcomes.

The study could not differentiate as to how much the services of various implementing agencies such as Anganwadi contribute to the nutritional status of children. Similarly, it is difficult for the study to determine the contribution of various inputs in improvement of different health indicators. It is well known that social and economic factors are also operating in the social structure of the society.

As the data of mother’s educational qualification, age of marriage, number of pregnancies, number of alive children, anti natal checkups, status of malnutrition among children and standard of life was available for mothers of children of different age groups. This data enable us to study the impact of education on these variables which are directly or indirectly have impact on key health indicators such as IMR, MMR, and number of alive children, malnutrition etc., and human development index.

2.2.2 Age of Marriage

According to UNICEF's "State of the World's Children-2009" report, 47% of India's women aged 20–24 were married before the legal age of 18, with 56% marrying before age 18 in rural areas. The report has also highlighted that 40% of the world's child marriages occur in India. It is also observed that pregnant young adolescents suffer from prolonged and obstructed labor, which can lead to hemorrhage, severe infection, and maternal death. This is especially true for girls who experience additional pregnancy-related complications. It is a belief that lower age of marriage leads to birth of unhealthy child, more number of pregnancies, more chances of mother and child mortality. Thus age of marriage of girl is very crucial factor which impacts health of child, health of mother and her future life. On the basis of analysis of data pertaining to Madhya Pradesh, it is found that proportion of marriages taken place at the age of 18 and below (despite the existing law of not marrying girl below the age of 18 years) decreases with increasing level of education. It is observed that that among illiterate mothers 88.7% were got married at the age of 18 years and below, in case of literate (without having any formal education and below primary) the percentage of such case was 86.9% and gradually decreased to 78.7% in case of primary level of education, 69.4% in case of middle, 54% in case of high school, 34.3% in case of higher secondary and lowest of 14.4% in case of graduation and above. This data also reveals that with attaining education level of higher secondary and above, females are able to decide when they should get married and also support the increasing consciousness among female for self dependant. These results are presented in Figure1.

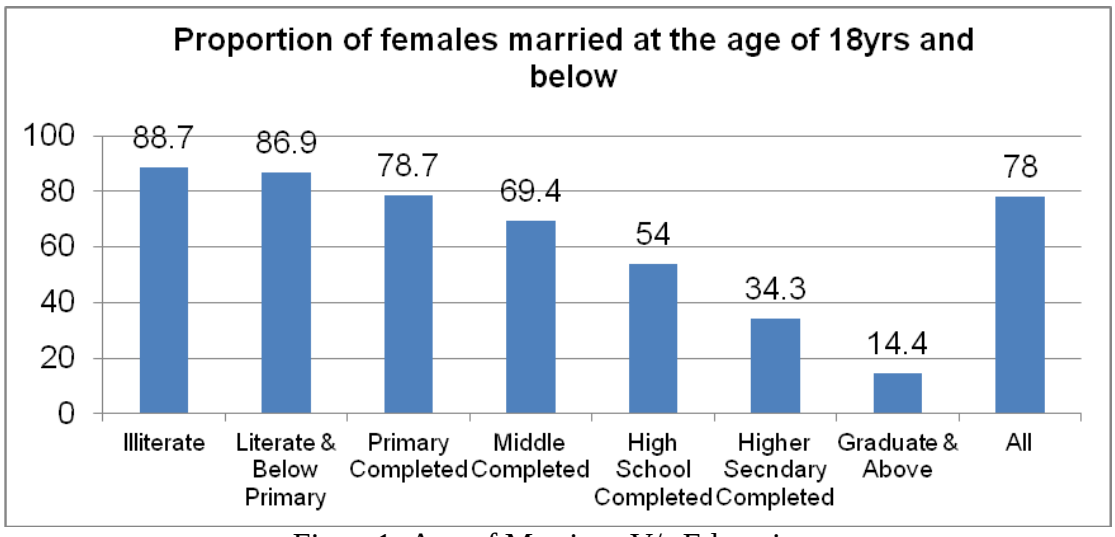

Figure1: Age of Marriage V/s Education

According to International Women's Health Coalition (IWHC), Girls who are married at a very young age experience constraints related to educational, social, and personal as compared with those who marry later. Some of these constraints are:

- Greater control over the young bride by her husband and his family, including

restrictions on her freedom of movement and her capacity to seek health care and family planning services;

- Increased likelihood that she will experience domestic violence and sexual abuse;
- Little if any schooling and little possibility of pursuing educational opportunities;
- Limited capacity to enter the paid labor force and earn an independent income;
- Greater personal insecurity in the face of the possibility of divorce or early widowhood; and
- Social isolation from her own family, friends, and other social networks.

All these constraints are practical in routine life although intensity of these may differ with socio economic conditions and culture prevailing in particular region. Thus it is evident that increased level of education among female will serve as catalyst for increasing age at marriage and overcoming these routine difficulties of early age marriage.

2.2.3 Education level and No. of Pregnancies

The analysis of data related to education and number of pregnancies had by the mothers reveals that number of pregnancies had by mothers with education level of graduation and above is almost half of the mothers who are illiterate. It is also noted that mothers with education level of high school and above had two or less number of pregnancies. This finding is indicative towards controlling population within limits through imparting minimum high school education to all females within stipulated period. In this direction, fundamental right to education up to 8th standard has been granted and central and state governments are making efforts to improve completion rate and transition rate to high school and above. The results have been depicted in figure 2.

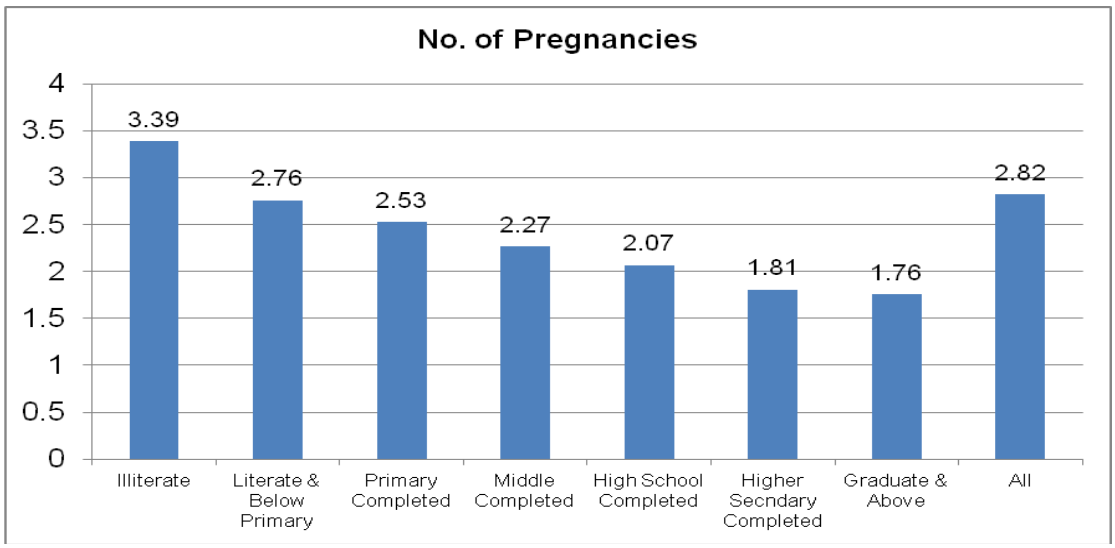

Figure 2: Number of Pregnancies & Education Level

The success rate of pregnancies is defined here number of alive children per pregnancy. The data used for the purpose are mothers of children in age group of 3 to 36 months, mothers of children in age group of 37 to 60 months and presently pregnant women. For each sub set number of pregnancies and alive children has been used but in case of presently pregnant women present pregnancy is not included. The pregnancies resulted in abortion and still births are included. This cannot be used as infant mortality rate as data pertain to reference period during which data has been collected and not for entire period of one year. Estimation of IMR was not the purpose of the study. This data is analyzed to establish that education has strong correlation with success rate of pregnancy. The results shows that it is true that with increase in level of education success rate of pregnancies increases.

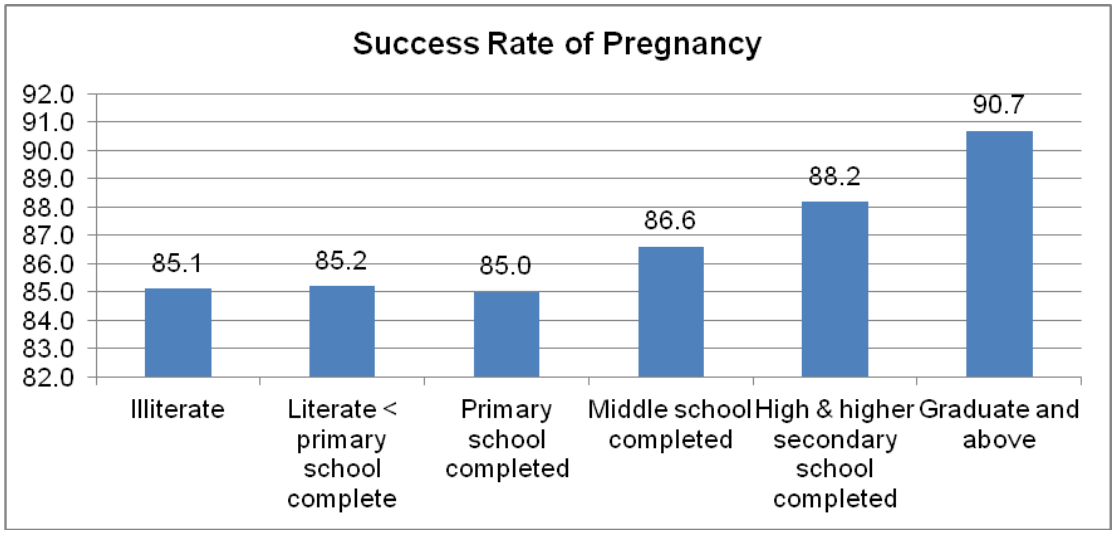

Figure 3 Education & Success Rate of Pregnancy

2.2.4 Maternal Health

At the ante natal clinics apart form complete physical and obstetrical examination of the mother, serial recording of weight, blood pressure, hemoglobin and examinations of urine is done as a routine. Immunization against tetanus is given. Iron and folic acid tablets along with protein supplements are given. Attention is paid to the health education of the mothers on hygiene of pregnancy, breast feeding of infant and child rearing with special reference to the spacing of next child. Records of ante natal care are kept in ante natal card. Pregnant women should undertake minimum three ante natal checkups during the pregnancy period. It is observed that proportion of women got ante natal check up has increased from 45.6% in case of illiterate women to 91.7 % with educational level of graduation & above. Similarly, among the women who have got ante natal checkup, the proportion of women going for more than three checkups is increasing with the increased level of education. This shows that awareness, adoption and knowledge regarding child care have direct relationship with education.

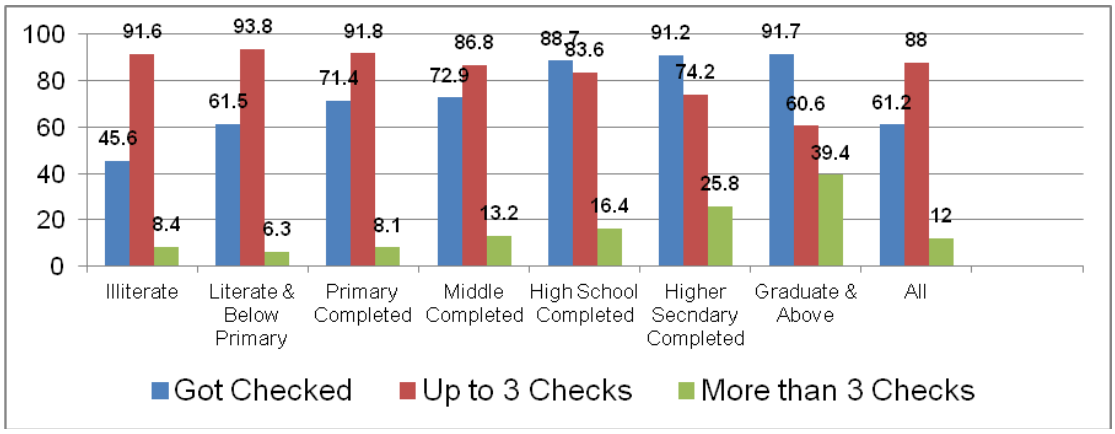

Figure 4 Education & Ante Natal Check-up

2.2.5 Education and status of Child Malnutrition

Malnutrition among Children up to 5 year of age It is perceived that if education has direct relationship with Age of Marriage, Number of Pregnancies, Success Rate of Pregnancy and Ante Natal Check-up than it should result in proportionally less malnutrition among the children of educated mothers. It is found to be true as data shows that 53% of children of illiterate mothers are malnourished and gradually proportion of malnourished children of decline with ascending level of education of mothers.

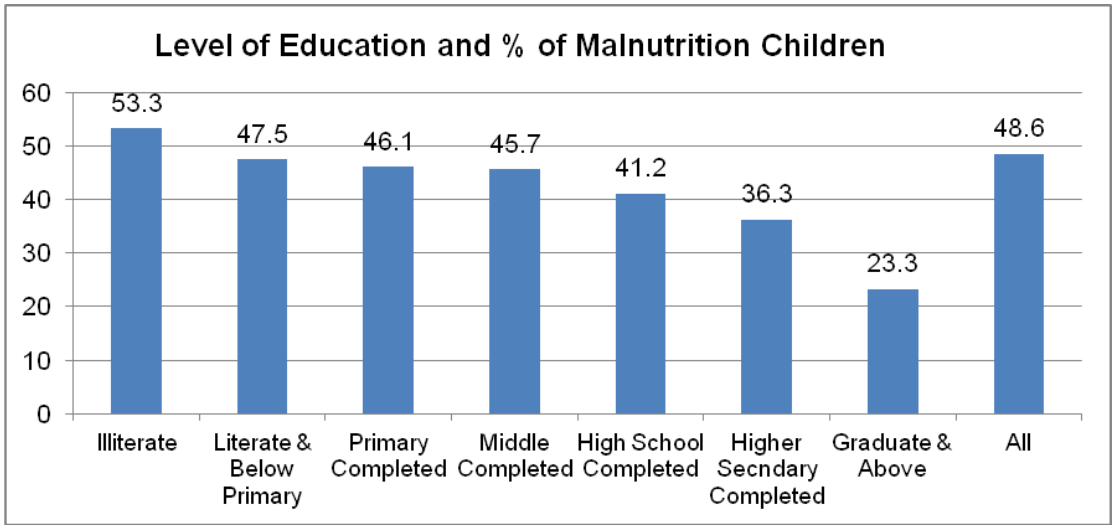

Figure 5 Education & Malnutrition of Children

2.2.6 Standard of living

An index of standard of living has been developed taking into account 29 proxy indicators. each household asset is assigned a weight generated through principal component analysis, and the resulting asset scores are standardized in relation to a

normal distribution with a mean of zero and standard deviation of one. Each household is then assigned a score for each asset, and the scores were summed for each household; individuals are ranked according to the score of the household in which they reside. The sample is then divided into quintiles i.e. three equal groups namely low, medium and high. This standard of living index is analyzed in perspective of education of mothers. It is observed that as the level of education of mothers' increases, the proportion of mothers belonging to higher band of standard of living index also increases. This may be due to education improves the capabilities and knowledge relating to health, education, better management of household affairs, earning capacity etc.

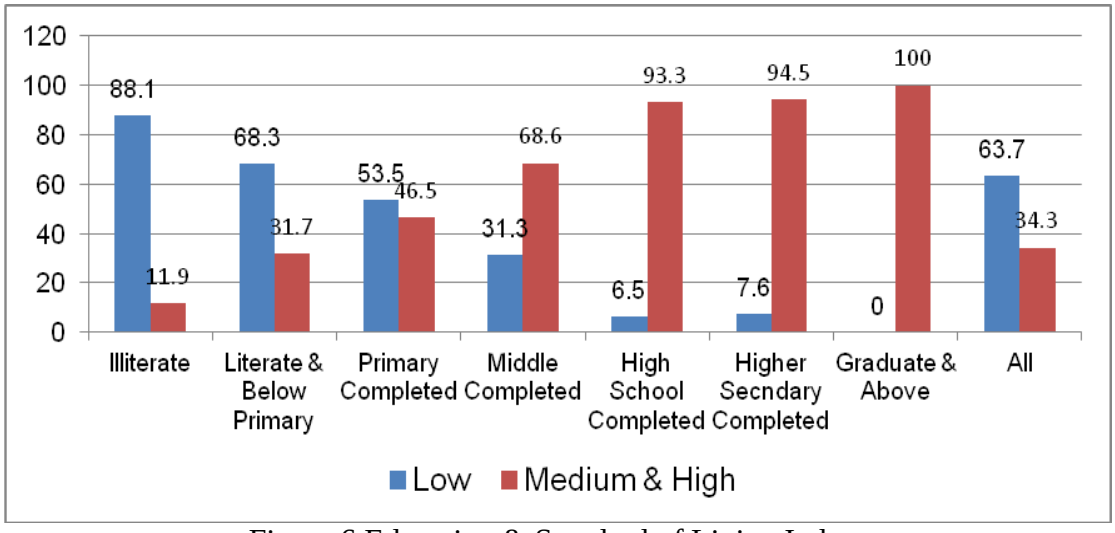

Figure 6 Education & Standard of Living Index

3. Conclusion

Understanding the mechanism by which education affects health is therefore important for policy. It may be more cost effective to tap that mechanism than to increase educational attainment. For example, if all of the education effect operated through income, and income improved health status, then it might be cheaper to transfer income directly rather than to subsidize schooling. But increasing educational attainment might be the correct policy response if, for example, there were no cost effective alternatives for acquiring the skills that ultimately affect health. In spite of these the author point out those education policies has the potential to have a substantial effect on health. Assuming that the experimental correlation between education and health are long-term causal effects form education to health, and that the relationship is linear and identical across gender, race and other groups, the authors can do a rough calculation of the return of education policies.

Education does not act on health in isolation form other factors. This review lays out the mechanisms for the effects of education on health but this is not to suggest that other factors do not have importance independently of education. Education surely impact on income and so some of the effect of income must be thought of as the

channeling of the effect of education but that is not to consider the whole income effect under the heading if education.

We conclude that there are substantial and important causal effects of education on health and Nutrition. There are clear conceptual frameworks to explain this but the evidence on the precise contributions of the mechanisms is still weak. This limits our ability to make precise policy recommendations.

The evidence on the mechanisms for effects of education on health does not suggest that there is one single, simple mechanism. Rather we find evidence in support of a range of hypothesized mechanisms that operate at different levels of society, from effects on the individual, through effects on household and work contexts, effects at the community level and also national level effects.

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