



Study the association between wealth index and morbidity pattern among under-five children in Pravara area

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Abstract:

Background: Wealth may affect the health of the children through different channels. Health status of under-five children is affected by the wealth index of the family. These problems mainly severe in the developing countries. **Materials and Methods:** The cross sectional study was carried out in Rahata taluka among the 200 household by using systematic random sampling. The respondents were interviewed face to face with the help of household questionnaire (NFHS-3) for wealth index and its association with morbidity pattern among under-five children. **Result:** In this study, the wealth index was constructed by giving the scores to each household asset. Out of 200 children 70 % were found ill in last six months. The majority of the children belonging to lower class had one or other illness during the last six months (96.30%); amongst them the majority of the children were ill because of ARI and Diarrhea. The chi-square test showed a significant association between wealth index and morbidity in under-five children ($p < 0.001$) with the majority of children belonging to lower quintile. **Conclusion:** The study concludes that there was an association between the wealth and health, because those who had a higher wealth index were having less morbidity as compared to those who belong to the lower wealth index. Diarrhoea and ARI were the main causes of illness in under-five children.

Key words: Acute lower respiratory tract infection; Diarrhoea morbidity; Socio-demographic parameter; Under-five morbidity; Wealth index

Introduction

Wealth index is an indicator of the level of wealth that is consistent with expenditure and income measures [1]. In India more than 1 child in every 18 dies within the first year of life, and more than 1 in every 13 dies before they reaching age five [2]. Wealth may affect health through different channels.

For individuals with low income, lack of wealth may limit the ability to receive the care they need and place them in situations with additional health risks. While income inequality may create stress and hence it leads to poor health, wealth inequality may do so as well. Study on wealth and health at rural area are limited. The actual association

between wealth and health is not available easily. The health status of under-five children reflects the socio-economic development of family and community. Health status of under-five children is affected by the wealth index of family. These problems tend to be particularly more severe in developing countries struggling to emerge from the scourge of extreme poverty. In case of India health is directly related to poverty and people are still facing problem to fulfill their basic needs in rural area [3]. Child morbidity and mortality is closely connected with economic welfare. Trends in morbidity, mortality and poverty create the question that what happened at the household level. Currently, poor-rich inequalities in health in developing countries receive a lot of attention from both researchers and policy makers [4].

Materials and Methods:

The study was conducted in Rahata taluka of Ahmednagar district adopting a cross sectional study design. The five Anganwadi's were selected by using simple random sampling. The household having the under-five children was select as a study sample. For calculation the sample size of present study the proportion of under-five children mentioned in census 2011 was used and accordingly the sample size was 200. The required sample was obtained by using systematic random sampling. Information regarding socio-demography, household and morbidity of under-five children was obtained by face to face interviewing the respondents with the help of household questionnaire (NFHS-3) and self-semi-structured questionnaire. Economic class of these subjects was determined by using the B.G. Prasad classification. For construction of wealth index each household was assigned a score for each asset and the scores were summed for each household; individuals were ranked according to the score of the household in which they reside. Then the sample was divided into quintiles i.e. five groups. For analysis we combined the quintiles lower (lowest and second) and higher (fourth and highest) quintile. The history of illness amongst under-five children in the last six months was asked and its association with wealth index was examined by applying a statistical test. For drawing interference, statistical test (χ^2 and Fishers exact test) were used. Collected data were analyzed by using SPSS, Instat.

Consent and Ethical Committee Approval

Approval was taken from the Research committee of the Centre for Social Medicine (PIMS, Loni) prior to the study.

All respondents of this study were clearly informed and explained about the purpose of study, ensuring their confidentiality before the interview.

Results:

A. Morbidity pattern of under-five children

Figure 1 depicts the morbidity pattern among the under-five children. The morbidity pattern was showed according to the wealth quintiles. In under-five children the major causes of illnesses were the ARI and diarrhea. The ARI was 81.48% in the lower class followed by diarrhea 53.85% in the lower class. In the higher class the 7.41% of the children had the ARI followed by diarrhea 26.92%. Other diseases like skin disease, malnutrition, mentally retardation, obesity was found during data collection.

B. Construction of wealth index

The quintiles were constructed according to scores allotted to each household. 6.5% of the respondents were residing in the lowest quintile while 45% respondents were residing in the highest wealth quintile. The 7%, 13% and 28.5% respondents were comes in the second, middle and fourth quintile respectively.

By using the scoring method the household assets of study population was ranked. 94% respondents had electricity in their houses in study area while 95.5% had mattress and cot; 89% had the pressure cooker and 89.5% had color television, improved source of drinking water includes, public tap 63.5% and 8% were using the dug well water for drinking. 65.5% of the respondent had toilet facility. In study area 76% had the house ownership while 78.5% using the LPG as fuel followed by 2% using the kerosene and 19.5% using the other fuel like cow dung cakes, wood, agricultural crop waste. Bicycles continue to be the most commonly owned means of transport, owned by 83% of households. About 61.5% households own a motorcycle and 3% own a car. 68% of the respondents having the pucca type of house.

Table I showed the Prevalence of ARI. The proportion of ARI among the lowest and second quintile was more as compared to the highest quintile. 81.48% of the children were ill because of ARI in the lowest and second quintile while 56.47% children were from the fourth and highest quintile. The chi square test was applied to find out the association, the test was statistically significant at 95% confidence level.

Table II displays the Prevalence of Diarrhoea among under-five children. The children from the houses belonging to lower quintile shows that 15.09

% of children were ill because of the diarrhea and in the highest quintile the diarrheal illness was less 2.72% as compared to the lowest quintile. The fisher's exact test was applied to find out the association and the association was statistically significant at 95% confidence level.

Table 3 showed the association between wealth index and morbidity in under-five children. The study population was divided into three classes. More children belonging to lower class had 96.30% illnesses followed by 92.31% in the middle class and 61.22% ill children's in the higher class. Chi square test was applied to find out the association, the test was significant at 95% confidence level.

Figure 1: Morbidity pattern of under-five children

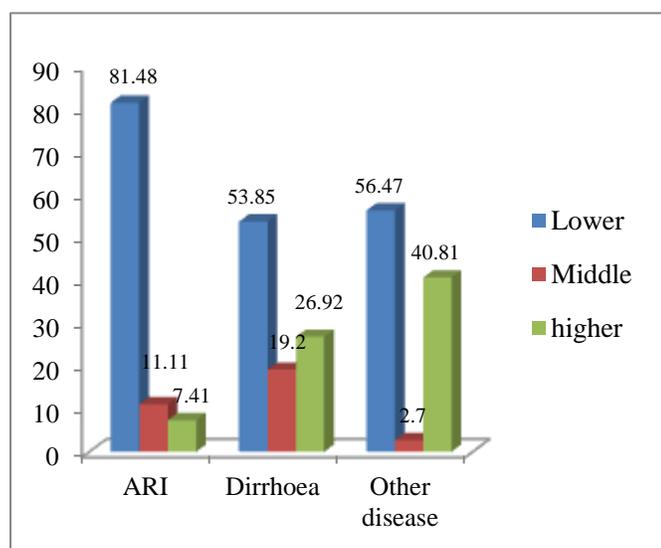


Table 1: Prevalence of ARI

Class	Present	Absent	Total
Lower (lowest+second)	22 (81.48%)	5 (18.52%)	27
Middle	14 (53.85%)	12 (46.15%)	26
Higher (fourth+highest)	83 (56.47%)	64 (43.53%)	147
Total	119	81	200 (100%)

$\chi^2 = 6.322$, d.f. = 2, p value is 0.0424

Table 2: Prevalence of diarrhoea

Class	Present	Absent	Total
Lower + middle	8 (15.09%)	45 (84.90%)	53
Higher	4 (2.72%)	143 (97.98%)	147
Total	12	188	200

P = 0.0031.

Table 3: Association between wealth index and morbidity in under-five children

Class	Illness present	Illness absent	Total
Lower (lowest+second)	26 (96.30%)	1 (3.70%)	27 (100%)
Middle	24 (92.31%)	2 (7.69%)	26 (100%)
Higher (fourth+highest)	90 (61.22%)	57 (38.78%)	147 (100%)

$\chi^2 = 20.442$, d.f. = 2, p value = <0.001

Discussion

A. Morbidity pattern of under-five children

The health of the children mainly affected due to the major diseases like ARI and diarrhea. Among the lower class the ARI was 81.48% and diarrhea was 53.85%. The diarrhea and ARI was the main causes of death in under-five year children. The other diseases like malnutrition, skin disease, physically handicapped were found among the lower socio-economic class. The findings of Becker S, Black R and Brown K support the findings of present study [5].

B. Association between wealth index and morbidity in under-five children.

There was an association between wealth index and morbidity of under-five children. The study results showed that 81.48% of the children were found ill because of ARI in the lower class. Followed by middle class 53.85% children had ARI. This study was similar to the study conducted by Bhat R.Y [6]

The lowest quintile showed that 15.09% of the children were ill because of the diarrhea and in the highest quintile the diarrheal illness was less than 2.72%. These results showed the association between wealth and health. The finding of this study was similar to the findings of Arif A. and Naheed R. 2012 [7-9]

About 96.30% of under-five children found ill in the lower class. Wealth index plays an important role in reducing the morbidity of under-five children. Those who had the good socioeconomic status they had the good wealth index and which helps in reducing the child morbidity [10-12].

Conclusion

The results of the present study revealed that the morbidity was found in all classes, but the majority of the children's were from lower class found ill as compared to a higher class. After applying chi square test the association between the wealth index and under-five morbidity was found significant at 95% confidence level. Diarrhoea and ARI causes more illnesses in under-five children. These diseases were mainly found in the lower class. The other diseases like malnutrition, skin diseases also found among the lower socio-economic class. The wealth and health had the close association.

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References

1. Park J. Park's textbook of Preventive and social medicine, 21st Edition, 2011, ISBN No.978-81-906079-9-5
2. Chalasani S. The Changing Relationship between Household Wealth and Child Survival in India, This document was produced for review by the United States Agency for International Development, September 2010.
3. Hong R, Banta J and Betancourt J. Relationship between household wealth inequality and chronic childhood under-nutrition in Bangladesh, *Int. J Equity Health*, 2006; 5: 15.
4. Houweling T, Kunst A and Mackenbach J. Measuring health inequality among children in developing countries: does the choice of the indicator of economic status matter, *International Journal for Equity in Health* 2003.
5. Becker S, Black R, Brown K and Nahar S. Relations between socio-economic status and morbidity, food intake and growth in young children in two villages in Bangladesh, *Ecology of Food and Nutrition*, 2010.
6. Bhat R Y and Manjunath N. Correlates of acute lower respiratory tract infections in children under 5 years of age in India, 2013.
7. Arif A, Naheed R. Socio-economic determinants of diarrhea morbidity in Pakistan, January 2012.
8. Kloos H, Boatman B. A Research Agenda for Helminth Diseases of Humans: Social Ecology, Environmental Determinants, and Health Systems, DOI: 10.1371/journal.pntd.0001603, 2012.
9. Bammann K and Bara G. Socioeconomic factors and childhood overweight in Europe: results from the multi-centre IDEFICS study, 2012, DOI: 10.1111/j.2047-6310.2012.00075.x
10. Zere E and Duale S. Inequities in maternal and child health outcomes and interventions in Ghana, *BMC Public Health* 2012.
11. Rassela D and Barreto M. Effect of a conditional cash transfer program on childhood mortality: a nationwide analysis of Brazilian municipalities, <http://ars.elscdn.com/content> .
12. Naidu and Mahadir B. Overweight among primary school-age children in Malaysia, *Asia Pacific Journal of Clinical Nutrition*. 2013.