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Dr. A Sugirtha Rani
Associate Professor,
Department of Economics,
Periyar University, Salem,
Tamil Nadu, India

Dr. V Vaithianathan
Assistant Professor,
Department of Economics,
Periyar University, Salem,
Tamil Nadu, India

Challenges and issues on living environment and demand for healthcare treatment among slum dwellers

Dr. A Sugirtha Rani and Dr. V Vaithianathan

Abstract

Slum dwellers are highly vulnerable because of poor hygiene, over – crowding, lack of basic amenities such as water and sanitation, low availability and use of formal health services. Inadequate sanitation remains a leading cause of diarrheal disease and mortality among children in urban slums. Additionally, urban air quality is polluted from industry and vehicles and indoor air can be especially toxic from fumes of indoor cooking stoves. Children are especially susceptible to lung disease from air pollution. There is an imperative need to have a more inclusive policy that extends services to the slum people as well. This research paper helps to provide timely, high-quality information on health and living conditions among the poor in urban areas, as well as residents of slum area, will help to guide the design of effective policies and the implementation of programmes to take the most urgent problem in growing cities in India. This research work emphasises and creates awareness about the concept of community participatory approach in setting up of necessary basic amenities along with the help of third sector in slum areas towards achieving the sustainable goals related to health and living conditions.

Keywords: Living environment index (LEI), demand for healthcare treatment, expenditure on healthcare treatment, logit regression analysis

Introduction

Increasing urbanization is emerging as the most pervasive and dominant challenge as well as opportunity facing India. Urban population in India has grown from 78.9 million in 1961 to 286 million in 2001 during the past 25 years. Cities and towns are centers of agglomeration economies, investments, technology, innovation, economic growth and tertiary jobs. Their contribution to countries GDP is immense, they are reservoirs of skills, capital and knowledge. They are the centres of innovation and creativity. They are the generators of resources for the national and state exchequers. They are also the hopes of millions of migrants from the rural hinterland and smaller settlements. With growth of the service sector and surge of the knowledge economy, the population pressure on cities is bound to escalate. They are increasingly face the negative consequences of rapid urbanization, such as polarization of population in large cities, high density, slums and squatter settlements, acute shortage of housing and basic civic amenities, degradation of environment, traffic congestion, pollution, poverty, unemployment, crime and social unrest,

An estimated 25 percent of urban population (810 lakh in 2001) still subsists on incomes that are below the poverty line. Eighty percent of their meager earnings go towards food and energy, leaving very little for meeting the costs of living in an increasingly monetized society. The majority of them lives in slums and squatter settlements, in human conditions that deny them dignity, shelter, security and the right to basic civic amenities or social services, an environment in which harbours crime, ill-health and disease, frequently raise demand on their resources that draws them deeper into vulnerability and poverty. Urbanization accompanied by sustained population growth due to large scale migration from rural areas to urban areas lead to mushrooming slum settlements in all cities and towns in India.

Slum household

A slum household is defined as a group of individuals living under the same roof lacking one or more of the conditions below:

- Access to improved water
- Access to improved sanitation facilities
- Sufficient living area, not overcrowded
- Structural quality/durability of dwellings

Corresponding Author:
Dr. A Sugirtha Rani
Associate Professor,
Department of Economics,
Periyar University, Salem,
Tamil Nadu, India

- Security of tenure

Slums in India

In India, there has been an alarming increase in the slum population mostly due to the migration of the rural poor. The decadal growth of slum was 37.1 percent in India during 2001-11. According to the 2011 census, 2613 cities and towns in India reported slums and the total slum population comprised 30.80 percent of the total urban population of the states/union territories reporting slums. The number of people living in slums in India has more than doubled in the past two decades and now exceeds the entire population of Britain, the Indian Government has announced. The numbers of people living in slums rise to 93 million in 2011 or 7.75 percent of the total population almost double the population of Britain. India has the highest concentration of slum dwellers in South Asia. Around 63 percent of the slum dwellers of Sothern Asia, numbering about 170 million people are living in India.

Maharashtra stands first in the slum population by Andhra Pradesh, Uttar Pradesh, West Bengal and Tamil Nadu. The least slum population is in Goa, Andaman and Nicobar Island and Tripura. The reason for the highest slum population in those states is that it includes million plus cities such as Mumbai, Kolkata, Delhi, Chennai, Hyderabad, Kanpur, Ahmedabad, Pune and Surat. Rapid industrialization along with in-migration is the factor that causes increasing slum population in the states. The financial capital of India known as Mumbai is home to 6.5 million slum people. Nearly half of Mumbai's population lives in small shacks surrounded by open sewers. Nearly 55 percent of Mumbai's population lives in slum areas. After Mumbai, Delhi has the second largest slum population in India. Nearly, 1.8 million people lives in slum areas in capital of India – New Delhi. These people are mostly unemployed or daily wage workers who cannot even afford basic necessities of life.

Slum population in Tamil Nadu

The total slum population of Tamil Nadu in the selected 63 Municipal Towns as per the Census of India 2001 is 2,838,366. This forms around 20.02 percent of the total population of the selected towns. The largest slum population is found in the Chennai Corporation where 10,79,414 persons are reported as slum dwellers. This forms 25.6 percent of the total population. Madurai Corporation (1.76 lakhs / 19 percent), Trichy Corporation (1.61 lakhs / 22 percent) and Salem Corporation (1.39 lakhs / 20 percent) are the other cities having more than one lakh slum dwellers.

In a bid to make the state slum-free, the Tamil Nadu government has selected nine urban agglomerations under Rajiv Awas Yojana (RAY) for preparing proper rehabilitation plans. Nine cities including Chennai, Madurai, Coimbatore, Erode, Tirupur, Trichy, Tirunelveli, Salem and Vellore comes under the plan. RAY may be extended to all 25 urban agglomerations with more than 1,00,000 population based on the 2011 Census and subsequently to all urban areas.

Statement of the problem

One consequences of rapid pace of urbanization is the incapacity of developing countries to provide them basic necessities like shelter, water, sanitation, health and education for slum dwellers. Growth of slums in Indian cities seems phenomenal and slum population in India constituted 17.5 percent of urban population in 1981 which rose up to 21.5 percent in 1991 census and the census of 2001 also shows an

increasing trend. Though Tamil Nadu has been acclaimed as a medium Human Development Indicator state (Tamil Nadu Human Development Report 2003) in India, the working and living environment of the urban slum is extremely worse and it created a detrimental effect on their health and health status. Urban poor are largely understood as people living in overcrowded and dilapidated slums or in squatters built on pavements, along railway tracks, besides pipelines, under bridges, on ill-drained marshlands and any vacant land available to them, in the urban areas. Human living conditions in the absence of basic civic amenities such as safe and adequate water supply sewerage and sanitation and toilets, has been precarious and miserable for the health, safety and comfort in such communities. Due to their unhealthy site location and living and working in pollution prone environment, it is easily perceived that it is the urban poor who are bearing the brunt of increasing urban environmental problems.

Urban poverty, ill health and living in slums are intrinsically interwoven. Poverty is the root cause of ill health in the sprawling slums. Urban poverty has many facets that need to be considered – such as housing as well as levels of income and consumption. Poverty is conventionally defined in terms of incomes that are inadequate to permit the purchase of necessities, including food and safe water in sufficient quantity. Food security is a critical health issue for the urban poor –most households are food-insecure.

Proximate causes of ill health in urban slums are lack of adequate basic service (clean toilets/bathing units/garbage disposal/drinking water), inadequate food intake and low levels of nutrition – weakens the immune system thereby making the body prone to infections, lack of financial resources – to ensure sustained medical attention for various diseases, mistreatment and bad behaviour at government hospitals compel the poor to avail of private alternatives and lack of information about proper state owned and managed medical benefits.

Slum dwellers are highly vulnerable because of poor hygiene, over – crowding, lack of basic amenities such as water and sanitation, low availability and use of formal health services. Inadequate sanitation remains a leading cause of diarrheal disease and mortality among children in urban slums. An open sewer runs through the centre of few slums. When it rains, the sewage overflows, making its way into people's homes. The open – air waste attracts rats and is a breeding ground for pestilence and disease. Some of the waste dumped around proved extremely toxic and hazardous, which through their indiscriminate dumping, have brought about the death of livestock, environmental pollutions, and an increasing number of incidents that have caused ill-health and epidemic of diseases which in some cases have led to loss of human lives. Additionally, urban air quality is polluted from industry and vehicles and indoor air can be especially toxic from fumes of indoor cooking stoves. Children are especially susceptible to lung disease from air pollution.

The deprived physical environments present in slums are well-known to have adverse health effects on their residents. However, little is known about the health effects of the social environments in slums. Though there are studies (vide., literature review) which present slum housing problem, environmental conditions, slum upgrading and related policy analysis. There is dearth of studies seeking to correlate the degree of health injuries caused by poor human living environment in urban slum communities.

In addition to health and education, urban slums stem from the lack of access to and more demand for basic amenities. Basic services provisions are either absent or inadequate in slums. Lack of drinking water, clean and sanitary environment, adequate housing, garbage disposal and sewage threats to the health of slum dwellers, particularly for women and children. The people in slum spend the majority of their time in and around an unsanitary environment. The demand for basic services is lacking, because there is no agency or institution (state or central) that is willing to assess the needs and fulfil the demand. Supply side techniques alone cannot solve infrastructure problem – public section agencies and the community participation also need to become more responsive to societal needs. Inability to basic service results from a service of manmade institutional bottlenecks that prevent the poor from accessing services created primarily in their name. Hence an integrated approach among health, education and living environment is attempted in this research study.

Objectives

Following are the objectives of the present research work:

- To make a general study of the socio-economic status (SES) and living environment or urban slums.
- To discuss the demand for health of slum dwellers in the existing urban health care service delivery system.

Methodology

The present study has been carried out with both primary and secondary data. The secondary data was obtained from the Census Reports of Government of India, District Statistical Handbook of Statistics, Report of the Committee on Slum Statistics, and various Government reports published by Bureau of Economics and Statistics, Government of Tamil Nadu. The research is conducted in the City of Salem, Tamil Nadu, India. It is the fifth largest city and a fast growing district in Tamil Nadu. The urban population is 13,90,000, which makes it the second largest city of Tamil Nadu in terms of population density. This district stands 4th place in case of slum population and 3rd in having the number of industries (Tamil Nadu: An Economic Appraisal 2006-07 and 2007-08). Similarly this district falls under the category of medium Human Development Index (HDI) with respect to health and education (Tamil Nadu Human Development Report, 2003)

In order to collect the primary data, a structured and pre-tested questionnaire has been designed in such a way that it satisfies the primary objective of the study. For the collection of primary data, simple random sampling technique has been

employed since the households are thickly spread in the slum region in a uniform size. There are 111 notified slum areas in Salem District consisting of four zones i.e. Suramangalam, Hasthampatti, Ammapet and Kondalampatty zones. The total number of slum households were 39,022 which constitute the total slum population of 2,45,926 in Salem District. From each zone 1 percent of the households were selected as sample respondents. After the completion of data collection and quality response of the respondents, it was restricted to 483 samples. For the purpose of the study, slum areas has been selected based on different income levels and cultural groups, commercially developed area with good transport links, the proximity to labour market, most hazardous slum, and industrialized areas. In order to capture the health status of slum dwellers, the question have been asked with respect to proximity to hospital, number of days the respondent suffered from any disease viz., morbidity of the respondents, expenditure made on different stages of treatment (pre-hospitalization, hospitalization and post-hospitalization) as well opportunity cost of the patients and attender's also captured. In order to capture the health status of the slum dwellers, both quantitative and qualitative information have been collected those who have suffered from any illness or disease prior to three months from the survey time period. Apart from this, Preventive Measure Index (PMI) has been constructed, with the help of various indicators. Likewise to study the enrolment and retention of children in schools, information were gathered about the percent of attendance of children, availability of government sponsored health and nutrition programmes and teachers attendance etc.

For the data analysis the appropriate statistical (mean, percent and Likert scaling technique) and econometric tools (Ordinary Least Square and Logit /Regressions) were employed.

Living Environment Index (LEI) of the Slum dwellers

Based on the facilities available in the households, an index has been constructed to study the Living Environment Index (LEI) of the sample households which is given in the table 1.

The variables used and weightages given to study the standard of living as well as to construct the Living Environment Index (LEI) is presented in the table 1. The LEI score ranges between 5 to 42 and the researcher has categorised the LEI into Low, Medium and High LEI and the mean value is 16.68 of LEI scores. Based on the three categories most of the households were in medium SLI (52 percent) and around 27 percent of the sample households were in high LEI and the balance were in low LEI.

Table 1: Living Environment Index (LEI) of the Slum Dwellers

Variable (s)	Scores	
Separate room for cooking	Yes	- 1
	No	- 2
Type of house	Pucca	- 2
	Semi-pucca	-1
	Kachha	- 0
Source of lighting	Electricity	- 1
	Other	- 0
Fuel for cooking	Gas	- 2
	Kerosene	- 1
	Wood	- 0
Sources of drinking water	Own pipe	- 3
	Shared pipe	- 2
	Public or Street pipe	- 1
	Well water	- 0
Toilet facility	Own toilet	- 3
	Shared toilet	- 2
	Public toilet	-1
	Outer (Open Place)	- 0
Ownership of livestock	Cow	- 2
	Goat	- 1
	Hen	-0
Ownership of durable goods	T.V. Vehicle	- 3
	Fan, Bed, Sewing machine Bicycle, Grinder, Mixie, Table, Chair, Cupboard	-2
Owners of property	Clock/Watch, Radio	- 1
	Property owned	- 1
	No property	- 0
Living Environmental Index	Score Range	- 5 to 42
Categories of SLI	Range	
Low SLI	Below 10	
Medium SLI	10 to 17	
High SLI	18 and above	

Source: Primary Survey

In the above section, we have discussed about the ecological and socio-economic background of the sample households. From the above analysis, it may be positive to make the following generalizations about the sample household in the study area. Out of the total sample half of the sample household members were in productive age group and one fourth were completed primary education and around two fifth have attained secondary level of education. Among three tenth of the total are illiterates. About forty five percent of the respondents are wage earners only about three out of ten are not working which cover housewives also. All others are working under different categories of work. About 3 percent earned as low as Rs. 300 and about 40 percent earned above Rs. 1001.

Reason for non-demanding for health care treatment

The second objective of this research work is to analyse the health statuses of slum dwellers. While suffering from any diseases, some may demand for health care treatment in order to cure the diseases. On the other hand, some may not demand the health care treatment with various reasons.

The following table 2 show the reasons listed by the non-demanders of healthcare treatment. Among the total number of respondents about 618 members were infected with some diseases. Within 618 member only 456 members have taken/demanded healthcare treatment and not by others. Hence the table depicts the reasons for not taking healthcare treatment.

Table 2: Reasons for non-demanding of healthcare treatment

Reason(s)	No. of sample households	Percent
Lack of income	82	50.62
Sample disease	58	35.80
Not interested	22	13.58
Total	162	100.00

Source: Primary Survey

About half of the non-demanders have reasoned out that they do not have enough or sufficient economic power in their hands. Or in other words due to lack of income, they are not in a position to spend enough money for their healthcare treatment. Next to this, more than one third of them (35.8 percent) expressed that, the diseases are not highly infectious and serious one. It means that the diseases are not simple viz., cold, fever, headache and stomach pain etc. The remaining (13.58 percent) were not interested to spend money on health. This shows that they do not have any knowledge about healthcare and investment on health and human resource development. Further this analysis shows an important inference namely, the non-demanding of healthcare is due to only because of lack of awareness about health and healthcare treatment by the general public.

Private expenditures on healthcare treatment

To analyse the cost of expenditure on healthcare treatment by the sample respondents, we have collected the information with respect to the various expenses during the treatment

period. Further, total expenses have categorised into three broad heads viz., ore-hospitalisation, hospitalization, and post hospitalization expenses. Each head includes various components of expenses like doctor, lab fees, travel, food,

medicine and others. The aggregation of these components, gives the broad category of expenses. Based on the above said methodology, the following Table 3 is given below.

Table 3: Healthcare expenditures

Expenses	Categories of expenditure		
	Pre-Hospitalization expenses	Hospitalisation expenses	Post-Hospitalization Expenses
Zero expenses	102 (22.44)	236 (51.71)	334 (73.19)
Less than Rs.100	180 (39.46)	25 (5.44)	56 (12.24)
Rs.101-350	84 (18.37)	31 (6.80)	34 (7.48)
Rs.351-500	40 (8.84)	31 (6.80)	32 (7.09)
Rs.501-1000	28 (6.13)	47 (10.20)	--
More than 1001	22 (4.76)	81 (19.05)	--
Total		456 (100.00)	

Note: Figures in parentheses are percent

Source: Primary Survey

It is found that in case of pre-hospitalisation expenses, about two fifth (39.46 percent) spent less than Rs. 100 for their healthcare treatment. Next to this 18.37 percent were spent between Rs. 101-350 as pre-hospitalisation expenses. Each less than one tenth had spent between various ranges like Rs. 351-500 (8.84 percent), Rs. 501-1000 (6.13 percent) and more than Rs. 1001 (4.76 percent) respectively.

While discussing about the expenditure of healthcare treatment, some of the sample respondents were hospitalized. At the time of hospitalization, the expenditure is too heavy when compared to other categories of expenses say, pre and post-hospitalisation expenses. About half of the sample respondents had not incurred any hospitalization expenses. About half of the sample respondents had not incurred any hospitalization expenses. Around one fifth (19.05 percent) had spend more than Rs. 1000 as a hospitalization expenses. But this hospitalization expenses ranges between Rs1000 to 20,000. And another one tenth have incurred Rs. 501 to Rs.1000 for the same expenses. Each 7 percent incurred the expenses viz., Rs. 101 to Rs.350 and Rs.351 to Rs. 500 as a hospitalization expenses respectively.

The next category of expenditure on healthcare treatment is that post-hospitalisation expenditure. It means that the expenditure incurred after hospitalization of any patient. Hence we have also collected the necessary information for this also. It is found that more than three fourth (76.19 percent) of sample respondents had no expenses as in the form of post-hospitalization health care treatment. About 12.24 percent have incurred less than Rs.100 only. Not even a single sample respondent fall in the range of Rs. 501 to Rs. 1000 and more than Rs. 1000. This shows that only limited respondents have undergone post healthcare treatment.

Apart from this tabular analysis, we are also interested to know the average expenditure on each three categories of healthcare treatment. They are Rs.108.77 for pre-hospitalization. Rs. 1907.60 on hospitalization and Rs.74.70 for post hospitalization. From this we may conclude that the range of expenditure on pre hospitalization was incurred by all the respondents, unlike the post-hospitalization expenditures. This may be due to the type of disease they have suffered. Hence there is possibility of relationship between type of disease and expenditure on healthcare treatment.

Factors Determining Demand for Health Care Services

From the received data, it was observed that among the total household members (2115 members) around one third (618

members) were suffered from some health problem and infected with communicable diseases. Among the 618 members only 456 members only demanded healthcare services and not by others (162 members) Hence to find out the health status of the slum dwellers it is necessary to focus on the factors determining the demand for health care services, the available existing health care services system, utilization of health care services and cost of healthcare treatment also.

Table 4: Logit regression analysis of factors influencing the demand for healthcare

Explanatory variable (s)	Co-efficient	Absolute 't' value (s)
Constant	22.5511	2.1133
Size –fam(in numbers)	.1287	.1170
Fam – inc (in Rs)	.0467*	.0004
Ty – hous1 (dummy)	-.7.8715	.0527
Ty – hous2 (dummy)	-.8615**	.0004
Age (in years)	-.0090***	.0097
Sex (dummy)	-.0732**	.4018
Edu_1 (dummy)	-6.9119**	.0406
Edu_2 (dummy)	7.8616	.5250
Edu_3 (dummy)	6.3797**	.0346
Edu_4 (dummy)	8.5667	.0623
Water_1(dummy)	-5193*	1.5041
Water_2 (dummy)	7.9664	.0174
Hot Water (dummy)	-.4035**	.5369
Toilet_1 (dummy)	-.0145*	1.4434
Toilet_2 (dummy)	-.4247	.4934
Toilet_3(dummy)	.1352*	1.175
Food out	-1.242***	.4173
Expt Veg (in Rs)	-.0039**	1.4227
Prevent (dummy)	-0.004*	.4281
Environ (dummy)	-.0929**	.0655
Wash _ hand (dummy)	-7.9377*	.0173
Dependent variable	DD_Health	(Demanders = 1; Non Demanders = 0)
2 log likelihood iteration		284.754 5
Sample Size		618

Note * - Significant at 1 percent level

** - Significant at 5 percent level

*** - Significant at 10 percent level

From the above Table 4 we infer that the family income of the sample respondent household positively determines the demand for healthcare treatment at 1percent level

significance. It shows that there is positive relationship between income of the household and the demand for healthcare treatment. With reference to hut houses, the RC type house which protects the member from the diseases and negatively influences at 5 percent level on the dependent variable. When we talk about the gender of sample respondent there is a sex discrimination or gender disparity in case of demand for healthcare treatment. Or in other words, this variable influences negatively at 5 percent level of significance. With reference to female respondent, the male member demands healthcare treatment, when compared to females.

The incorporation of educational status of the respondents, which creates much more awareness about the health and nutrition education in order to improve the health. With reference to illiterate, primary level of education negatively determines at 5 percent level of significant on the dependent variable That is lower the educational status leads to lesser and lesser the demand for healthcare treatment. But in case of higher secondary level, it positively influences at 5 percent level on the demand for healthcare treatment.

While discussing about the environmental factors, it is necessary to study the impact of type of water source the respondents are using. Water is the major source for spreading disease among people. The analysis reveals that with reference to street pipe, owned and safety water source has negative impact at 1 percent level of significant on the demand for healthcare treatment. Similarly the variable namely, using hot water for drinking purpose which negatively affects at 5 percent level of significant on the same dependent variable.

Likewise, the type of toilet facility the respondents are using which will definitely influence the demand for healthcare. Because this facility generates more number of communicable diseases through various small insects like misquitos etc., With reference to open space, the owned toilet facility influences negatively on the demand for healthcare at 1 percent level. But those who are using public toilet which affects positively at 1 percent level on the dependent variable. This denotes that the public toilet is not good and clean. Hence the diseases will be easily captured by the public which will lead to greater demand for healthcare.

In case of food pattern, those who are having food from outside the household frequently which influenced at 10 percent level of significant on the demand for healthcare. In association with this variable, expenditure on vegetables per month negatively and significantly influences at 5 percent level. Better the nutrition lesser will be the demand for health care treatment is the concept. The surroundings of the residential area include the sewage, carbage and drainage facilities available in and around the household. If these facilities are good, this creates better environment and health to residents. The analysis shows that this variable influences negatively at 5 percent level of significant on the dependent variable.

Some of preventive measures are also incorporated in our analysis. The pre purchase of medicines in the household reduces and significantly determined the demand for healthcare treatment at 1 percent level. Similarly, washing hands before eating influenced negatively on the dependent variable at 1 percent level. Hence from the analysis, it is inferred that the variables listed and justified are significantly determines the demand for healthcare treatment either positively or negatively.

Summary findings and conclusion

- More or less half of the sample households are living in semi-pucca houses.
- Four fifths have only one room in their house.
- Three fourth of the samples were drawing water through public tap.
- One third (32 percent) in the total sample households were using public and open place as their toilet
- Around four fifth of the households were having electricity facility and rest of the households did not have the same.
- Nearly two third (59.2 percent) of the slum dwellers did not have drainage facilities in their residential area.
- Nearly two third (61.9 percent) of the households had Katcha road followed by Pucca (10.1 percent) and Semi-pucca (28 percent).
- More than two third (64.1 percent) had no arrangements for disposal of household garbages.
- Due to lack of income, the sample households were not in a position to spend enough money for their healthcare treatment.
- Around half of the respondents were suffered from the simple diseases like cold, fever and headache etc.
- About three fourth (76.2 percent) were preferred only allopathy treatment.
- Around four fifth (80.27 percent) have gone to either Primary Healthcare Centres (PHCs) or Government Hospitals (GH).
- More than one third (39.46 percent) spent less than Rs. 100 for their healthcare treatment.
- About half of the sample respondents had not incurred any hospitalisation expenses.
- More than three fourth (76.19 percent) of sample respondents had no expenses as in the form of post-hospitalisation healthcare treatment.
- Around 47 percent spent less than Rs. 100 and they have taken treatment either in PHCs or government hospital
- About one third incurred the foregone earnings of less than Rs. 100.
- The exogenous variables such as, family income and higher secondary level of education were the two variables which influenced the dependent variable of the demand for healthcare treatment. Along with this, there are some independent variables namely, RC type house, age and sex of the respondents, attained primary level of education, owned water source, drinking hot water, owned toilet facility, taking food outside the home, expenditure on vegetables, preventive measures taken for diseases to control, clean environment and washing hand which influences at different levels of significant (1 percent, 5 percent and 10 percent) on the dependent variable.
- Among the age group of less than 5 years, around 514 children (72 percent) were the stakeholders of anganwadi centres. Except interest of the student which scored 'poor' (35.19 percent) and type of school scored 'good' (42.45 percent) and followed by other reasons viz., attendance of teachers (38 percent), access to school (37.06 percent) and behaviour and attitude of teachers (39.33 percent) have scored 'medium' scale.
- Explanatory variables positively influenced nutritional status of children are father's age, father's earning, mother's earning, age sex of the children, quantum of

food intake in households and household expenditure on food items. Similarly variables which influences negatively are mother's age, birth order of the child and length of morbidity on different indices of anthropometry measures of nutritional status.

Conclusion

The fact received from this research analysis, has been substantiated by data that income, educational attainment, sanitation and personal hygiene had impact on the morbidity and the nutritional status of the slum children. Hence, there is an obvious need to improve living conditions and health status of slum dwellers. Moreover, there is an imperative need to have a more inclusive policy that extend services to the slum people as well. This research report helps to provide timely, high-quality information on health and living conditions among the poor in urban areas, as well as residents of slum area, will help to guide the design of effective policies and the implementation of programmes to take the most urgent problem in growing cities in India. This research work emphasises and creates awareness about the concept of community participatory approach in setting up of necessary basic amenities along with the help of third sector in slum areas towards achieving the sustainable goals related to health and living conditions.

References

1. Abdus Salam Md Abdul Alim Md, Toshikuni Noguchi. Spousal Abuse against Women and Its Consequences on Reproductive Health: A Study in the Urban Slums in Bangladesh, *Maternal and Child Health Journal*, 2006;10(1):83-94.
2. African Population and Health Research Center (APHRC) Health and Livelihood Needs of Residents of Informal Settlements in Nairobi City. Nairobi, African Population and Health Research Center, Tanzania, 2002.
3. Alamgir MS, Jabbar MA, Islam MS. Assessing the Livelihood of Slum Dwellers in Dhaka City, *Journal of the Bangladesh Agricultural University*. 2009;7(2):373-380.
4. Ali M, Stevens L. Integrated Approaches to Promoting Sanitation: A Case Study of Faridpur Bangladesh, *Desalination*. 2009;248(1-3):1-7.
5. Alison Bottenheim M. The Sanitation Environment in Urban Slums: Implications for Child Health, Population and Environment. 2008;30:26-47.
6. Benjamin Stanwix. Urban Slums in Gujarat and Rajasthan - Study of Basic Infrastructure in Seven Cities, Mahila Housing SEWA Trust, Ahmedabad, India; c2009.
7. Chandrasekhar S. Growth of Slums, Availability of Infrastructure and Demographic Outcomes in Slums: Evidence from India, paper presented during the session on Urbanization in Developing Countries at the Population Association of America, Annual Meeting, Philadelphia, USA; c2005.
8. Chandrasekhar S, Mukhopadhyay Abhiroop. Multiple Dimensions of Urban Well-Being: Evidence from India, Poverty, Gender, and Youth, Working Paper No: 11, Population Council, New York; c2008.
9. Ghosh S, Shah D. Nutritional Problems in Urban Slum Children *Indian Pediatric*. 2004;41(7):682-696.
10. Goswami Mihir, Kedia Geeta. Socio-Demographic And Morbidity Profile Of Slum Area In Ahmedabad, India, *National Journal of Community Medicine*. 2010;1(2):106-110.
11. Naveen Kumar, Suresh Chand Aggarwal. Patterns of Consumption and Poverty in Delhi Slums, *Economic and Political Weekly*. 2003;38(50):5294-5300.
12. Nidhi Kotwal, Neelima Gupta, Shashi Manhas. Impact of Work and Environment on Women Living in Urban Slums of Jammu City, *Studies on Home and Community Science*. 2008;2(2):93-97.
13. Srivastava Neeraj M, Awasthi Shally, Agarwal Girdhar G. Care-Seeking Behavior and Out-Of-Pocket Expenditure for Sick Newborns among Urban Poor in Lucknow, Northern India: A Prospective Follow-Up Study, *BMC Health Services Research*. 2009;9:61
14. Sundari S. Quality of Life of Migrant Households in Urban Slums in Martin J. Bunch, V. Madha Suresh and T. Vasantha Kumaran, eds., *Proceedings of the Third International Conference on Environment and Health*, Chennai, India, 15-17 December, 2003
15. Yuko Tsujita. Deprivation of Education in Urban Areas: A Basic Profile of Slum Children in Delhi, India, IDE discussion paper No: 199, March 2009, 2009.