

Urban Influence on Public Health in Srinagar City, Jammu and Kashmir

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Abstract—The main objective of this paper is to examine the impact of urbanization on Public Health in Srinagar City. The study area has been divided into five zones on the basis of Household density using census of India data of 2011. The data of the study area has been processed in Arc GIS environment for the preparation of various thematic maps. Both primary and secondary data has been used and analysed with the help of composite Index Technique. The result of the study shows that there is a positive correlation between household density and morbidity with human health in the study area.

Keywords: Urbanization, Household density, Morbidity, Public Health, Correlation, Srinagar city.

Introduction

The human conditions in the urban habitat have degraded throughout the world and the urban environment has become progressively less livable and less attractive to the present urban residents and to possible future migrants to urban areas [5]. Urbanisation is a complex process of social change affecting the entire nations of the world. Living in a large urban area can impact on our health and sense of wellbeing through access to health services and recreational opportunities [7]. Environmental pollution, waste generation and management, built-up areas are all important issues to be considered as urban areas grow and develop [15]. These are key components to quality of health.

Enhancement of health status of the people is one of the major objectives of the process of development. Urbanization is an important social process underpinning the dynamics of human society, and it is especially impactful in the 21st Century. Generally, urbanization is accompanied by an increase in the proportion of urban to rural population, population growth in built-up areas; with urbanism referring to the urban lifestyle and its associated social and behaviour features [9]. Contemporarily, world urbanization has entered a special period with some new features including information cities or smart cities, multi-centred metropolitan areas, and further globalization involving the transmission of novel ideas and risk behaviours beginning in cities [12].

Urbanization and urban expansion result in urban environmental changes, as well as residents' lifestyle change, which can lead independently and synergistically to human health problems. In particular, uncontrolled urbanization has been associated in some contexts with pollution, social isolation, overcrowding, changes in dietary and physical activity patterns, and inadequate service capacity for providing drinking water, sanitation and waste disposal, all of which raise the risk of harms to population health [13].

Literature Review

Various scholars have worked and recognized Quality of health as an important construct in a number of social, Health and medical science disciplines. However, each academic field has developed somewhere different approaches to investigate the health and urbanisation. Some notable contributions are Smith 1979, Akhtar 1979, Pacione 2001, Galea and Vlahov 2005, Agarwal et al 2007, Jensen 2004, Datta 2007, Butsch 2008, Harpham 2009, Gong et al 2012.

Study area

Srinagar is the largest urban centre in terms of area and population amongst all Himalayan urban centers. Srinagar city is located at an average elevation of 1580 meters above mean sea level and it is spread over in the heart of the oval shaped Valley of Kashmir. It is situated between 33°59'14" N to 34°12'37" N latitude and 74°41'06" E to 74°57'27" E longitude.

Srinagar city – Location map

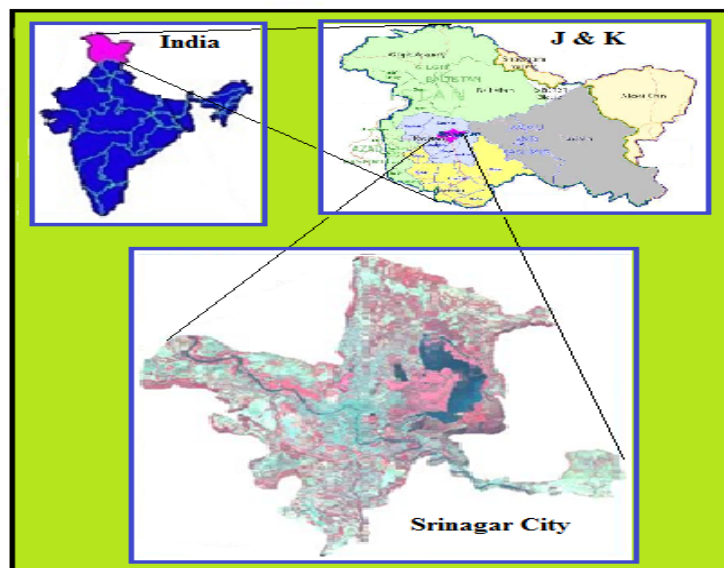


Fig. 1

Data Base

The study is based on both primary and secondary sources of data. Random sampling method of ten wards in five clusters of the Srinagar city was selected. The sample taken consisted of 300 sample households from different socio-economic background of the Study area. A household sample survey was conducted with the help of an interview schedule. The Secondary data was collected from various official reports, Books, Journals etc.

Delineation of Study Area

The study area was delineated on the Srinagar municipal corporation map by geo-referencing SOI topographic maps on scale 1:50000 with the help of ERDAS imagine 9.0 and then digitizing it with the help of Arc-view 3.2a. The study area was divided into five zones, on the basis of household density using the census data , 2011.

Data analysis

The data is analyzed and interpreted with the help of Survey of India Topographic maps 1961 on 1:50000 scale, GIS Software’s i.e Arc-view 3.2a and ERDAS imagine 9.0, Composite Index Technique and Correlation.

Variables used to analyze the public health in Srinagar city

In the present analysis ten variables have been chosen to capture the scenario of the existing Health in the Srinagar city.

Results and Discussions

Table 1: Selected variables for determination Public Health in Srinagar City

Clusters	Morbidity	Health Inst. / Lac	Water Supply (%)	Avlb. Dustbin (%)	Remove Dustbin (%)	Sewerage Facility (%)	Closed (%)	Dustbin (%)	Road (%)	Neigh. Plot (%)
Zone I	0.47	10.45	97.10	26.09	69.57	86.96	42.03	14.50	79.71	5.79
Zone II	0.30	9.09	94.73	77.20	87.72	92.98	92.98	59.65	40.35	0
Zone III	0.64	6.93	92.42	59.09	86.36	87.88	84.85	46.97	51.51	1.52
Zone IV	0.61	5.47	89.09	43.64	89.09	98.18	89.09	36.37	63.63	0
Zone V	0.89	1.32	87.04	24.07	90.74	98.15	94.44	22.22	77.78	0

Source: - Compiled from both primary and secondary sources

Table 2: Composite Index Values for Quality of Health

Clusters	Z ₁	Z ₂	Z ₃	Z ₄	Z ₅	Z ₆	Z ₇	Z ₈	Z ₉	Z ₁₀	Composite Index
Zone I	2	1	1	4	5	5	5	5	5	5	38
Zone II	1	2	2	1	3	3	2	1	1	2	18
Zone III	4	3	3	2	4	4	4	2	2	4	32
Zone IV	3	4	4	3	2	1	3	3	3	2	28
Zone V	5	5	5	5	1	2	1	4	4	2	34

Source: - Compiled from both primary and secondary sources

Note: Higher the values lower the Quality of Health and lower the value higher the Quality of Health.

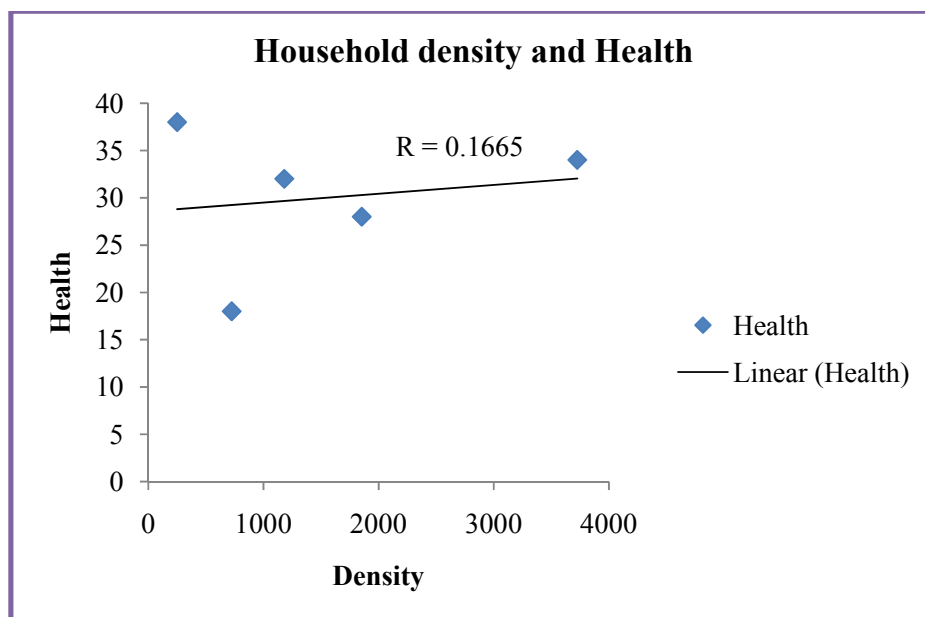
The composite index reflects the level of Quality of Health in the Srinagar city, shown in table 2. The table reveals that Zone II has very high Quality in the field of Health facilities with composite index value 18. Health institute per lakh population is high as compared to other zones in the city. Availability of dustbins, sewerage facility etc. in percentage is high which results the very high quality of health as compared to other zones in the Srinagar city.

The Zone IV exhibit high level of development in their infrastructures with index value 28. In this zone availability of dustbins, closed sewerage facility is high as compared to other zones which results the 2nd rank in the quality of health in the Srinagar city.

The Zone III has achieved a medium level of development in the provision of health related infrastructures with index value 32. It is occupied by the medium income groups, removal of wastage per day, sufficient sewerage facility results the medium level of quality of health.

The low level of health status is in Zone V with composite index value 34. It is the core of the city, which lacks all health related facilities due to substandard environmental sanitation and hygienic condition as a consequence of congestion, overcrowding, low incomes and poor health.

The very low level of quality of Health and its related infrastructures is found in Zone I with composite value 38. New settlement is in a greater pace that results the lack of urban related amenities like closed sewerage, dustbins, health institutes etc. in the zone. All this affects the quality of health.

**Fig. 2**

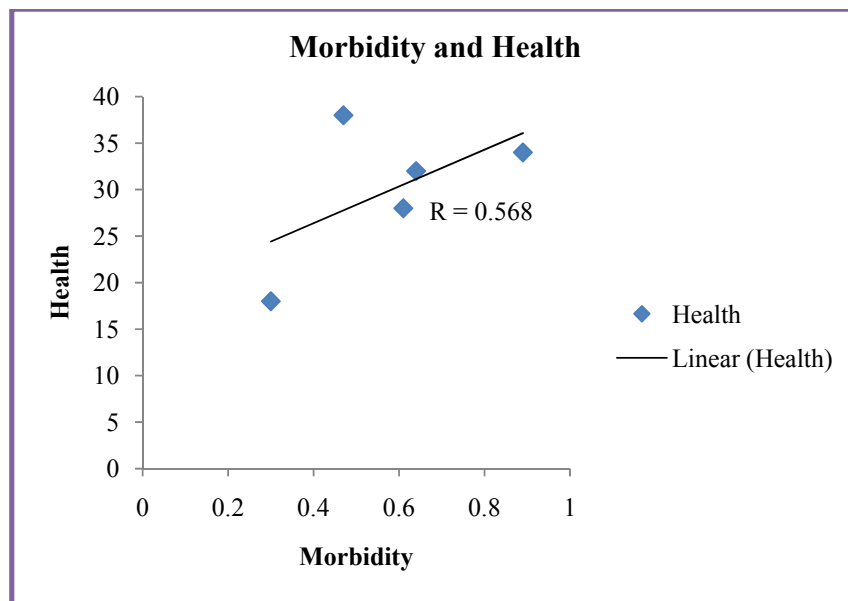


Fig. 3

Analysis of the data reveals that there is positive correlation $r = + 0.166$ between household density and health (Fig.2), and also positive correlation $r = + 0.568$ between morbidity and health (Fig.3).

Conclusion

The present study analyzed and evaluated the impact of household density and morbidity of a people on health in Srinagar city. The study area was clustered into five zones on the basis of household density. The study revealed that there is uneven distribution as well as density of population. Some clusters are densely populated while as others are sparsely populated; same is the case in household distribution and density. The highest number of patients are recorded in zone V and least in zone II, because of the overcrowding of population which results the lack of proper ventilation, lack of proper disposal off sewerage and sanitation conditions. So there is a positive correlation of household density and morbidity with the health in the study area.

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