

## **Housing And Sanitation Conditions In Tirupati City**

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**Key terms:** Sanitation, Contamination, Urban housing, bathroom. diarrhea.

### **ABSTRACT**

Housing should be given high planning priority. Proper and adequate shelter is must for healthy life because it enhances the performance of the residents in their domestic and economic duties. The major objectives of this study is to describe the housing, bathroom and sanitation conditions in the sampled households. Data was collected through field survey.

Nearly 45 per cent of the medium income households live in their own houses. But their houses are small with few rooms. Whereas, 40.43 per cent of the very low and 49.39 per cent of the low income households are also living in their own houses. These houses are mostly unauthorized, illegal and constructed on open spaces or along the roads or railway lines. The development of these illegal houses resulted in the development of slums. Even in these slums the overcrowding was clearly seen during the field survey. About 37.60 per cent of the medium income households reported that they do not have access to bathroom and toilet facility while rest of them have either flush or manual latrines. Where as the lower income households do not have proper bathroom and toilet facility in their houses. They defecate along the roadside or in the open fields. There is a close relationship between the type of latrine facility and prevalence of childhood diarrhea.

The study is based on primary sources of data, regarding Housing conditions, bathroom and sanitation facilities, household water supply, sullage and drainage of water, disposal of garbage and solid waste, household pests, contamination of food, indoor air and noise pollution.

## **INTRODUCTION**

Environmental conditions described in this topic are tied to the individual sampled households (2,185). Indeed the account of housing, bathroom and sanitation conditions is as much a continuation of the background information on the sampled households. It is the first step in describing their environmental conditions. The major objectives of this study is to describe the housing, bathroom and sanitation conditions in the sampled households. Data was collected through field survey.

## **METHODOLOGY**

The study is based on primary sources of data. Data regarding Housing conditions, bathroom and sanitation facilities, household water supply, sullage and drainage of water, disposal of garbage and solid waste, household pests, contamination of food, indoor air and noise pollution and the effect of all these factors on the health of the residents were drawn with the help of a questionnaire from a comprehensive household survey of the 36 wards of Tirupati city. The questionnaire was developed with the help of questions used in similar studies conducted by Stockholm Environment Institute (SEI, 1993, 1994, and 1995) and Tirupati Environment Study Project (DOEN, 1985) and adopted to the situation in Tirupati city. A household has been defined here as consisting of all the persons who occupy the housing unit collectively and join together in making arrangements for providing all the basic necessities.

## **RESULTS AND DISCUSSION**

Housing should be given high planning priority. Proper and adequate shelter is must for healthy life because it enhances the performance of the residents in their domestic and economic duties. “While considering the housing conditions of the respondents the factors which were taken into consideration are the status of the house, use of the house, construction material used, floor area of the house, total number of rooms in the house, average area of the rooms, density of the house, and ventilation conditions.

The overall picture of the 2,185 sampled households is shown in Table 1. It is observed that 53.64 per cent of the households are living in their own houses, 79.87 per cent of the houses are used for residential purposes, 78.17 per cent of the houses are constructed of bricks and concrete, the floor area covered by nearly 50 per cent of the houses is less than 300 square feet, 42,05 per cent of the houses have only one room, the area of the 37.25 per cent of the rooms is less than 100 square feet, 29.62 per cent households are living in less than 20 square feet area and 44.26 per cent of the houses have poor ventilation system.

**Table 1 : Housing Conditions of the Total Sampled Households in Tirupati City**

		<b>Housing Conditions</b>	<b>Percentages</b>
1	Status of the house	1. Own house 2. Private rented house 3. Government house 4. Others (house of the relatives without rent)	53.64 23.02 17.99 5.35
2	Use of the house	1. Residential only 2. Residential and industrial 3. Residential and commercial 4. Residential, industrial and commercial	79.87 8.68 8.59 2.86
3	Type of the house	1. Bricks and concrete 2. Mud/thatched 3. Wood 4. Others (tin sheets,	78.17 20.59 0.92

		asbestos sheet or bamboo)	0.32
4	Floor area of the house	1. Less than 300 square feet 2. 300-1,000 square feet 3. 1,001-2,000 square feet 4. More than 2,000 square feet	49.57 16.89 13.91 19.63
5	No. of rooms in the house	1. 1 2. 2-3 3. 4-5 4. > 5	42.05 30.04 12.03 15.17
6	Average area of the rooms	1. Less than 100 square feet 2. 100-200 square feet 3. 201-300 square feet 4. More than 300 square feet	37.25 28.23 19.29 15.23
7	Floor space per person in sleeping rooms	1. Less than 10 square feet 2. 10-20 square feet 3. 21-30 square feet 4. More than 30 square feet	29.62 29.91 22.47 17.64
8	Ventilation in the house	1. Proper 2. Not proper	55.74 44.26

### Ventilation in the House

Proper ventilation system in the house is a pre-requisite for the dwelling. While constructing the house, the existence of cross ventilation is must. Because living in the dump houses will be very difficult. For a free and healthy life there should be a clear cut cross ventilation system, so that the indoor air pollutants can get fresh air. **Table 2** is showing the distribution of the sampled households according to the ventilation condition in the house.

**Table 2 : Distribution of the sampled households according to the ventilation condition in the house in Tirupati City**

(in percentages)			
Income Group	Proper	Not proper	Total

Very low	9.57	90.43	100.00
Low	16.54	83.46	100.00
Medium	46.61	53.39	100.00
High	100.00	---	100.00
Very high	100.00	---	100.00
<b>Total</b>	<b>55.74</b>	<b>44.26</b>	<b>100.00</b>

It is observed that most of the very low (90.43%), 83.46 per cent of the low and 53.39 per cent of the medium income households do not have proper ventilation system in their houses. This is because their houses are small and congested with very few rooms and have only one door with no windows. The poorer households do not have ventilation in their houses and they cook their meal on wood, coal, dung cake and even on dry leaves. All these fuels emit enormous amount of smoke and due to lack of proper ventilation the smoke gets trapped in the house resulting in acute respiratory infection. Only 10 per cent of the very low and 16.54 per cent of the low income households enjoy proper ventilation system in their houses. This is because they are living in the out houses of the wealthy households especially in the Government, TTD, and university areas and in the newly developed areas of the city. Whereas almost every high and very high income households enjoy proper ventilation in their houses because their houses are big and spacious and properly planned. They have exhaust fans even in the kitchens and bathrooms so that fume from the kitchens and foul smell from the toilets can escape easily.

Thus, the overall picture of the sampled households belonging to different income group shows that the very high and high income households live in their own large, palatial houses which are constructed entirely of brick and concrete. These houses have many spacious and properly ventilated rooms i.e., almost every member of the family has his own bed room. They use their houses exclusively for residential purpose only. Nearly 45 per cent of the medium income households live in their own houses. But their houses are small with few rooms. Whereas, 40.43 per cent of the very low and 49.39 per cent of the low income households are also living

in their own houses. These houses are mostly unauthorized, illegal and constructed on open spaces or along the roads or railway lines. The development of these illegal houses resulted in the development of slums. Even in these slums the overcrowding was clearly seen during the field survey.

### **Bathroom and Sanitation Conditions of Tirupati**

In the past, sanitation was centered on the sanitary disposal of human excreta only. Even now for many people sanitation still means the construction of latrines. In actual fact, the term sanitation is a composite concept which involves the waste disposal system, water supply, sewerage and prevention of environmental pollution. It covers the whole field of controlling the environment with a view to prevent diseases and promote health. In many of the old houses the bathroom is located in the extreme one corner of the house which is meant exclusively for bathing. But now the households have bathroom and latrine both in one room which is attached with the bed rooms. This recent trend has been mostly seen in the households of higher income groups because they are adopting the western style of living.

This topic addresses to the various aspects of bathroom and sanitation conditions like bathroom and toilet facility in the house (present or not), type of latrine (private or public), type of private latrine (flush or manual), mode of disposal from flush latrines (septic tank / municipal sewer or open drains), and number of persons sharing one toilet (none or 1 to 5 or 6 to 10 or more than 10). Data has been collected through field survey.

The overall picture of 2, 185 sampled households shows that 54 per cent of the total sampled households have bathroom and toilet facility in their houses Table 3 Nearly 64 per cent have private latrines, 72 per cent have flush system in their private latrines and 28 per cent have manual latrines. About 82 per cent of the households have flush latrines which is connected with the septic tanks or municipal sewers. Regarding the sharing of the toilet, only 17.17 per cent households were sharing one toilet with more than 10 persons.

**Table 3 : Bathroom and sanitation conditions of the total sampled households in Tirupati City**

		<b>Bathroom and sanitation conditions</b>	<b>Percentages</b>
1	Bathroom and toilet facility	1. Present 2. Not present	54.10 45.90
2	Type of latrines used	1. Private (in their home) 2. Public 3. Roadside 4. Field	63.57 5.58 23.52 7.33
3	Type of private latrines	1. Flush 2. Manual	72.35 27.65
4	Type of flush latrines	1. Septic tank/municipal sewer 2. Open drains	82.19 17.81
5	Number of persons sharing one toilet	1. No sharing 2. 1-5 persons 3. 6-10 persons 4. > 10 persons	22.61 29.52 30.16 17.71

**Bathroom and toilet facility**

Table 4 is showing the distribution of the sampled households according to bathroom and toilet facility in the house.

**Table 4 : Distribution of the sampled households according to the bathroom and toilet facility in the house in Tirupati City****(in percentages)**

<b>Income Group</b>	<b>Present</b>	<b>Not present</b>	<b>Total</b>
Very low	8.33	91.67	100.00
Low	17.76	82.24	100.00
Medium	62.40	37.60	100.00
High	100.00	---	100.00
Very high	100.00	---	100.00
<b>Total</b>	<b>54.10</b>	<b>45.49</b>	<b>100.00</b>

It is observed that most of the very low (91.67%), low (82.24%) and medium

(37.60%) income households do not have bathroom and toilet facility in their houses. Some times bathroom and toilet facility is in the courtyard, sometimes there is a makeshift bathroom. Even today most affluent households in villages have no toilet and bathroom. Both men and women defecate in the fields and take bath in the courtyard in open by putting curtains on one or two sides. Some times men take bath along the roadside under the public hand-pumps or municipal tap water. These households do not have toilets because it has been the belief that the place of defecation will defile the house. This habit landed into a tradition which is now hard to change. But in the cities it is shortage of space, shortage of money, and water. All these factors have resulted in no toilets. While 100 per cent of the high and very high income households have bathroom and toilet facility inside their houses.

**Table 5 : Distribution of the sampled households according to the number of persons sharing one toilet in Tirupati City**

Income Group	(in percentage)				
	No Sharing	1-5	6-10	> 10	Total
Very low	---	---	21.62	78.38	100.00
Low	---	25.00	35.71	39.29	100.00
Medium	---	9.23	48.93	41.84	100.00
High	24.06	48.37	27.57	---	100.00
Very high	52.49	36.32	11.19	---	100.00
<b>Total</b>	<b>22.61</b>	<b>29.52</b>	<b>30.16</b>	<b>17.71</b>	<b>100.00</b>

There is high incidence of toilet sharing among the lower income households. In 78.38 per cent of the very low and 39.29 per cent of the low and 41.84 per cent of the medium income households more than 10 persons are sharing one toilet. This is because their family is big and they have only one toilet. In the 48.93 per cent of the medium income households, 6 to 10 persons share one toilet. But the households of higher income groups i.e., 24,06 per cent of the high and 52.49 per cent of the very high there is no sharing of the toilet. It means that they have separate toilets and

bathrooms attached to their bedrooms. Thus, we can say that the toilet sharing was high among the lower income households. And there are evidences between diarrhoea and the number of persons sharing the toilets.

The field survey regarding the bathroom and sanitation condition of the sampled households belonging to different income groups shows that all the very high and high income households have proper and clean bathrooms and toilets with flush system which is well connected to either a septic tank or to the municipal sewer. About 37.60 per cent of the medium income households reported that they do not have access to bathroom and toilet facility while rest of them have either flush or manual latrines. Where as the lower income households do not have proper bathroom and toilet facility in their houses. They defecate along the roadside or in the open fields. There is a close relationship between the type of latrine facility and prevalence of childhood diarrhoea.

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