

# Difference of the Level of Obesity Between the Rural and Urban Families

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## Abstract

The increasing prevalence of obesity poses a significant public health concern globally. This study investigates the difference in obesity levels between rural and urban populations in Prayagraj, Uttar Pradesh. The rural sample consisted of individuals from Saraighani village and Tezpur block of Baharia, while the urban sample was drawn from Civil Lines and Rajapur. A total of 400 participants (100 males and 100 females from each rural site; 200 males and females from urban areas) aged 20–45 were examined. BMI (Body Mass Index) was used as the primary indicator of obesity. Stratified random sampling was employed to ensure representation across gender and location. Results indicate that urban residents have a significantly higher obesity rate compared to their rural counterparts, suggesting the influence of sedentary lifestyle, processed food consumption, and environmental factors. The findings underscore the need for targeted awareness and interventions in urban areas to mitigate obesity-related risks.

**Keywords:** Obesity, Rural Population, Urban Population, Body Mass Index (BMI), Lifestyle Differences, Physical Activity, Civil Lines, Rajapur, Saraighani, Tezpur Block, Health Risk, Socioeconomic Factors, Gender Comparison, Prayagraj

## 1. Introduction

Obesity has emerged as one of the leading health challenges of the 21st century, with its prevalence rising in both developed and developing nations. In India, this trend is particularly alarming due to rapid urbanization, lifestyle shifts, and dietary changes. While obesity is often associated with affluence and urban settings, rural areas are not immune to this health crisis. However, the level of physical activity, dietary patterns, and socio-economic conditions between rural and urban populations create noticeable differences in obesity levels.

This study aims to compare the obesity levels between rural and urban populations in the Prayagraj district of Uttar Pradesh. The research focuses on two rural regions—Saraighani village and Tezpur block (Baharia)—and two urban localities—Rajapur and Civil Lines.

## 2. Objectives of the Study

1. To assess the level of obesity among rural and urban adults aged 20 to 45.
2. To compare BMI levels between rural (Saraighani and Tezpur) and urban (Rajapur and Civil Lines) populations.

3. To determine gender-wise differences in obesity within each location.
4. To provide recommendations for health interventions based on the findings.

### **3. Methodology**

#### **3.1 Sample and Population**

The study included 400 participants between the ages of 20 and 45 years:

- Saraighani village: 100 participants (50 male, 50 female)
- Tezpur block, Baharia: 100 participants (50 male, 50 female)
- Rajapur: 100 participants (50 male, 50 female)
- Civil Lines: 100 participants (50 male, 50 female)

#### **3.2 Sampling Technique**

Stratified Random Sampling was applied. First, the population was divided into rural and urban strata. Then, within each stratum, participants were randomly selected while ensuring equal representation of gender and locality.

#### **3.3 Tools and Techniques**

BMI (Body Mass Index) was used to measure obesity, calculated as:

$$\text{BMI} = \text{Weight in kilograms} / \text{Height in meters}^2$$

WHO Classification for BMI:

- Underweight: <18.5
- Normal: 18.5–24.9
- Overweight: 25–29.9
- Obese Class I: 30–34.9
- Obese Class II: 35–39.9
- Obese Class III:  $\geq 40$

### **4. Results and Analysis**

| Location | Gender | Normal (%) | Overweight (%) | Obese I & above (%) |
|----------|--------|------------|----------------|---------------------|
|----------|--------|------------|----------------|---------------------|

|            |      |    |    |   |
|------------|------|----|----|---|
| Saraighani | Male | 62 | 30 | 8 |
|------------|------|----|----|---|

|            |        |    |    |    |
|------------|--------|----|----|----|
| Saraighani | Female | 58 | 32 | 10 |
|------------|--------|----|----|----|

|              |        |    |    |    |
|--------------|--------|----|----|----|
| Tezpur Block | Male   | 64 | 28 | 8  |
| Tezpur Block | Female | 59 | 29 | 12 |
| Rajapur      | Male   | 34 | 44 | 22 |
| Rajapur      | Female | 30 | 42 | 28 |
| Civil Lines  | Male   | 36 | 46 | 18 |
| Civil Lines  | Female | 32 | 41 | 27 |

## 5. Discussion of Results

The present study was conducted to compare the levels of obesity between rural and urban populations within the Prayagraj district of Uttar Pradesh. The data collected from 400 individuals aged 20 to 45 across four areas—Saraighani, Tezpur (rural), and Civil Lines, Rajapur (urban)—revealed a noticeable pattern: urban populations are more obese compared to rural ones.

Among the rural participants, over 60% of males and females fell within the normal BMI category. In contrast, in the urban settings of Rajapur and Civil Lines, less than 35% of participants had normal BMI, while a significant percentage were overweight or obese. Notably, urban females showed the highest obesity rates, with 28% in Rajapur and 27% in Civil Lines falling into the Obese Class I or above category.

These results align with existing research that highlights the rapid rise of obesity in urban India, driven largely by lifestyle factors such as sedentary behavior, high-calorie diets, and low physical activity levels. In contrast, rural populations are still largely engaged in physically demanding occupations like farming, construction, and manual labor, which naturally help in maintaining a healthier body composition.

Gender differences in both rural and urban groups are also noteworthy. Women, particularly in urban areas, exhibited higher obesity levels than men. This could be attributed to hormonal differences, social roles, lower levels of physical activity, and increased responsibilities at home, which limit their time and opportunity for physical exercise.

Socioeconomic disparities also play a role—urban families often have more disposable income, leading to greater consumption of processed foods and sugary beverages. Urbanization promotes a lifestyle centered around convenience, with reduced physical exertion due to technology and transport.

These findings have important public health implications. Urban obesity is not only a personal health issue but also an economic burden. Intervention strategies must be location-specific and address demographic needs.

## 6. Conclusion

The study concludes that rural residents of Saraighani and Tezpur are generally fitter and have lower obesity levels than urban residents of Civil Lines and Rajapur. This difference can be attributed to lifestyle, physical activity, and dietary patterns.

**7. Recommendations**

1. Awareness Campaigns: Promote healthy eating and active living in urban areas.
2. Infrastructure Support: Develop parks, walking trails, and fitness centers.
3. School and Workplace Initiatives: Encourage health screenings and fitness activities.
4. Policy Development: Implement city-level interventions to combat obesity.

**8. Limitations**

- BMI alone does not account for body composition differences (e.g., muscle mass).
- The sample was limited to one district; broader studies are needed for generalization.
- Self-reported height and weight might have minor inaccuracies.

**References**

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