

A SYSTEM APPROACH TO GLOBAL OBESITY EPIDEMIC

A Group - 9 Presentation

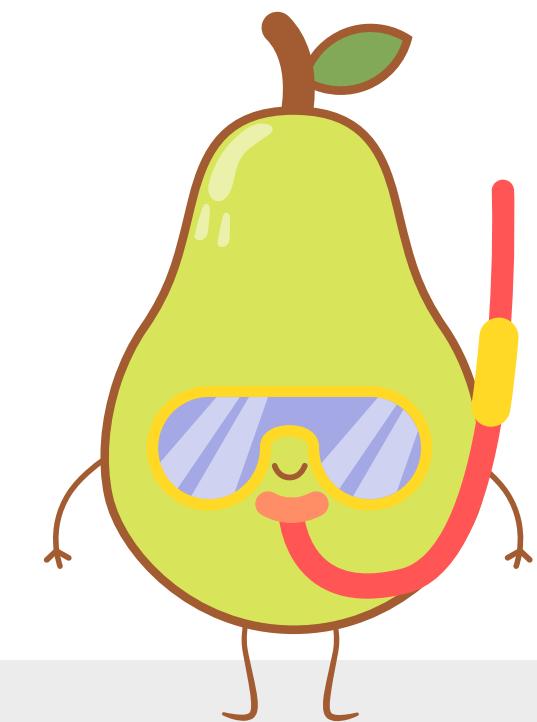
Instructed By : Dr. Jagadeesha R Bhat



Meet the Group



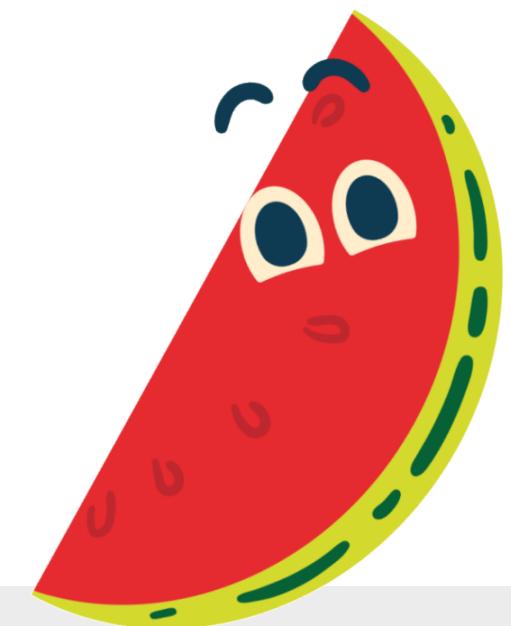
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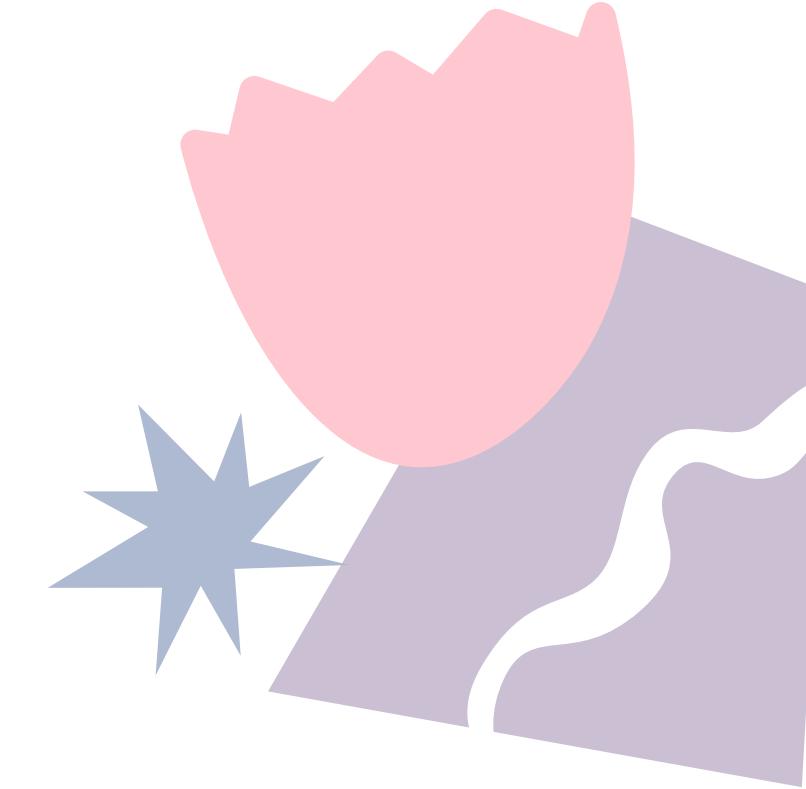


MK
(20BDS048)



Poornima
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Background

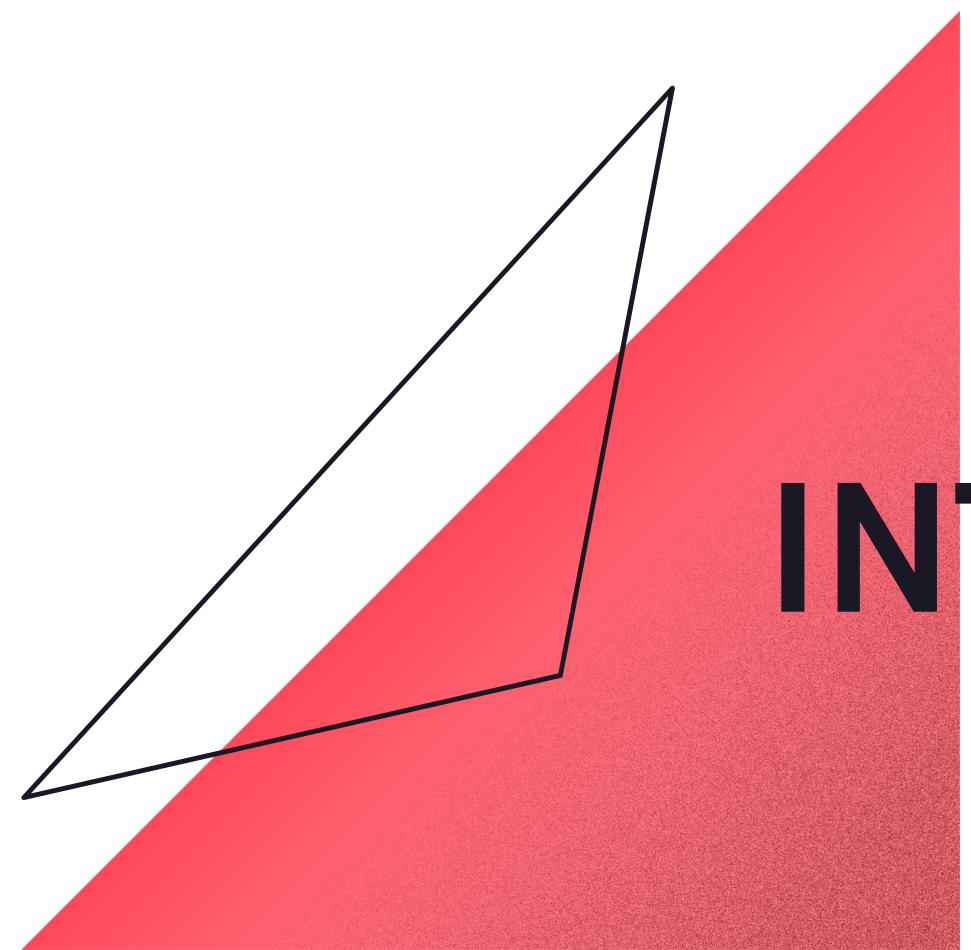


Topic

A System Approach To Global Obesity Epidemic

History

Obesity become a major health issue form past few decades.
Raising a alarm towards a global epidemic.

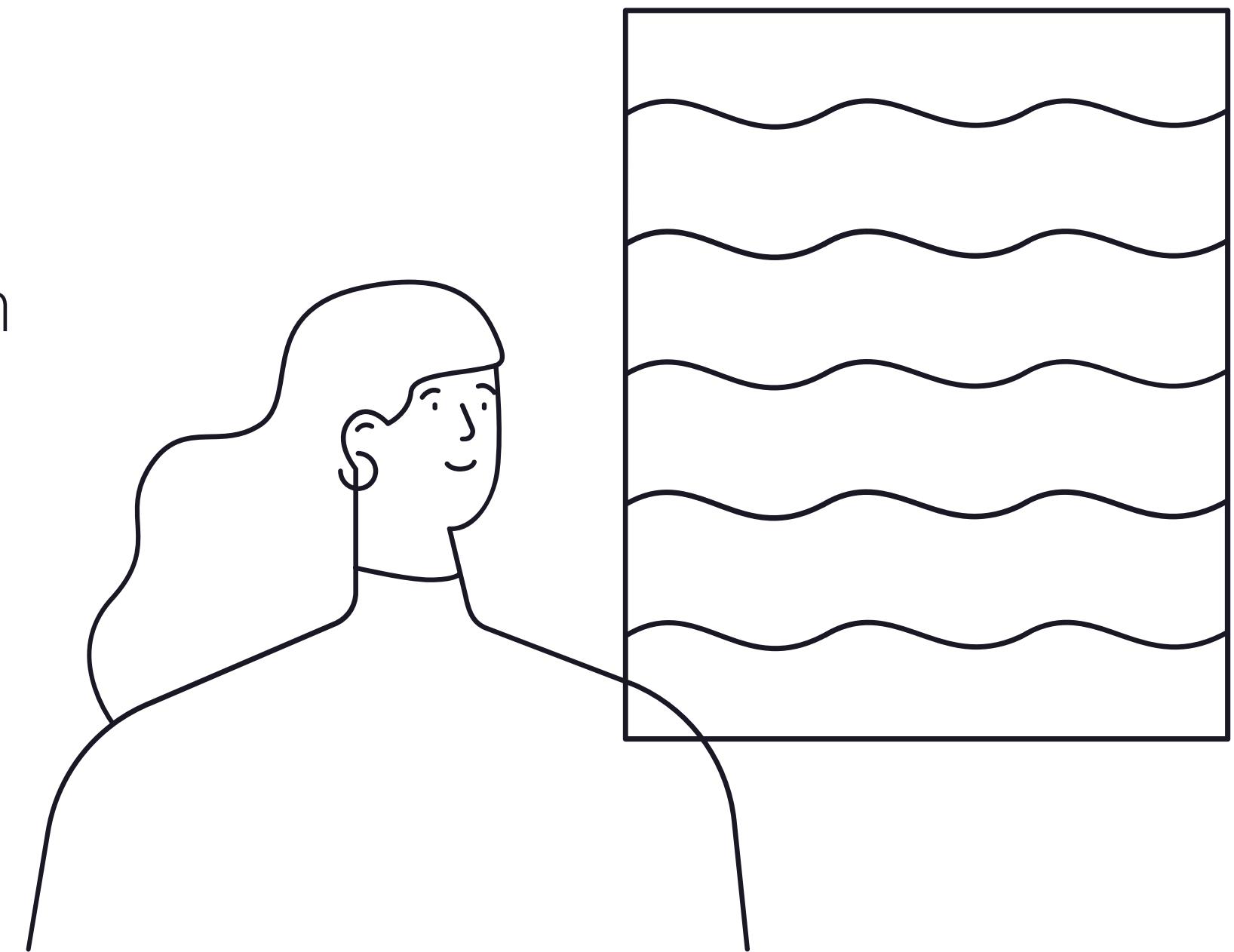


INTRODUCTION



About Project

The project is about the system approach to global obesity epidemic. It shows how global obesity epidemic affected people lives. It gives brief sense of the problem, solutions and approach towards the epidemic.



WHAT IS OBESITY?



Project Goals

1 Problem

2 System Approach

3 Analysis

4 Solutions







Globally more
than 650
Million people
are Obese.

135M Indians
effected by
Obesity _
2015

Globally more
than 1.9Billion
people are
Overweight.

Approximately
2.8M deaths
are reported
as a result of
being obese.



02 **SYSTEM APPROACH**



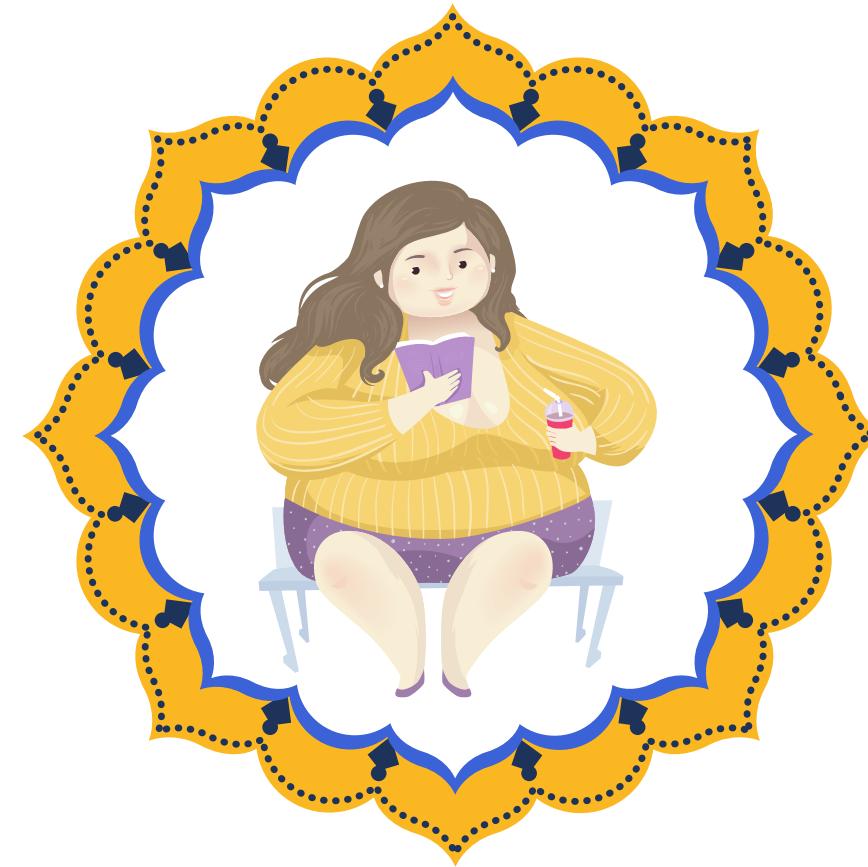


THE PREVALENCE OF OVERWEIGHT AND OBESITY IN INDIA



Obesogenic Environment in India

>135M Indians were affected by obesity.



India positioned at 3rd place.

Prevalence of 11% amongst adolescents and 20% amongst adults.

Stimulus to an epidemic.

Prevalence of obesity, physical inactivity, and undernutrition, a triple burden of diseases during a transition in a developing economy. The Five City Study Group

Objective

The objective of the study was to find out the prevalence of overweight, obesity, undernutrition and physical activity status in the urban populations of India.

Method

A total of 6940 subjects (3433 women and 3507 men) aged 25 years and above were randomly selected from the cities of Moradabad ($n = 2002$), Trivandrum ($n = 1602$), Calcutta ($n = 900$), Nagpur ($n = 894$) and Bombay ($n = 1542$).

Results

Sedentary behaviour was significantly greater in Trivandrum, Calcutta, and Bombay compared to Nagpur. Sedentary behaviour was significantly associated with obesity in both sexes, compared to non-obese men and women.



Conclusion :

Obesity, overweight and central obesity and sedentary behaviour coexist with undernutrition, and have become a public health problem in all the five cities of India.

Central Obesity

It a condition when excessive abdominal fat around the stomach and abdomen has built up to the extent that it is likely to have a negative impact on health.

Sedentary Behaviour

Sedentary behaviour refers to certain activities in a reclining, seated, or lying position requiring very low energy expenditure.

Prevalence of generalised & abdominal obesity in urban & rural India

Objective

The objective of the study was for determining the prevalence of generalised, abdominal and combined obesity in urban and rural India.

Method

The ICMR-INDIAB study was conducted in a representative population of three States [Tamil Nadu (TN), Maharashtra (MH) and Jharkhand (JH)] and one Union Territory (UT)[Chandigarh (CH)] of India.

Results

The prevalence of GO was 24.6, 16.6, 11.8 and 31.3 per cent among residents of TN, MH, JH and CH, while the prevalence of AO was 26.6, 18.7, 16.9 and 36.1 per cent, respectively.



Conclusion :

Prevalence of AO as well as of GO were high in India. Extrapolated to the whole country, 135, 153 and 107 million individuals will have GO, AO and CO, respectively.

Generalised Obesity

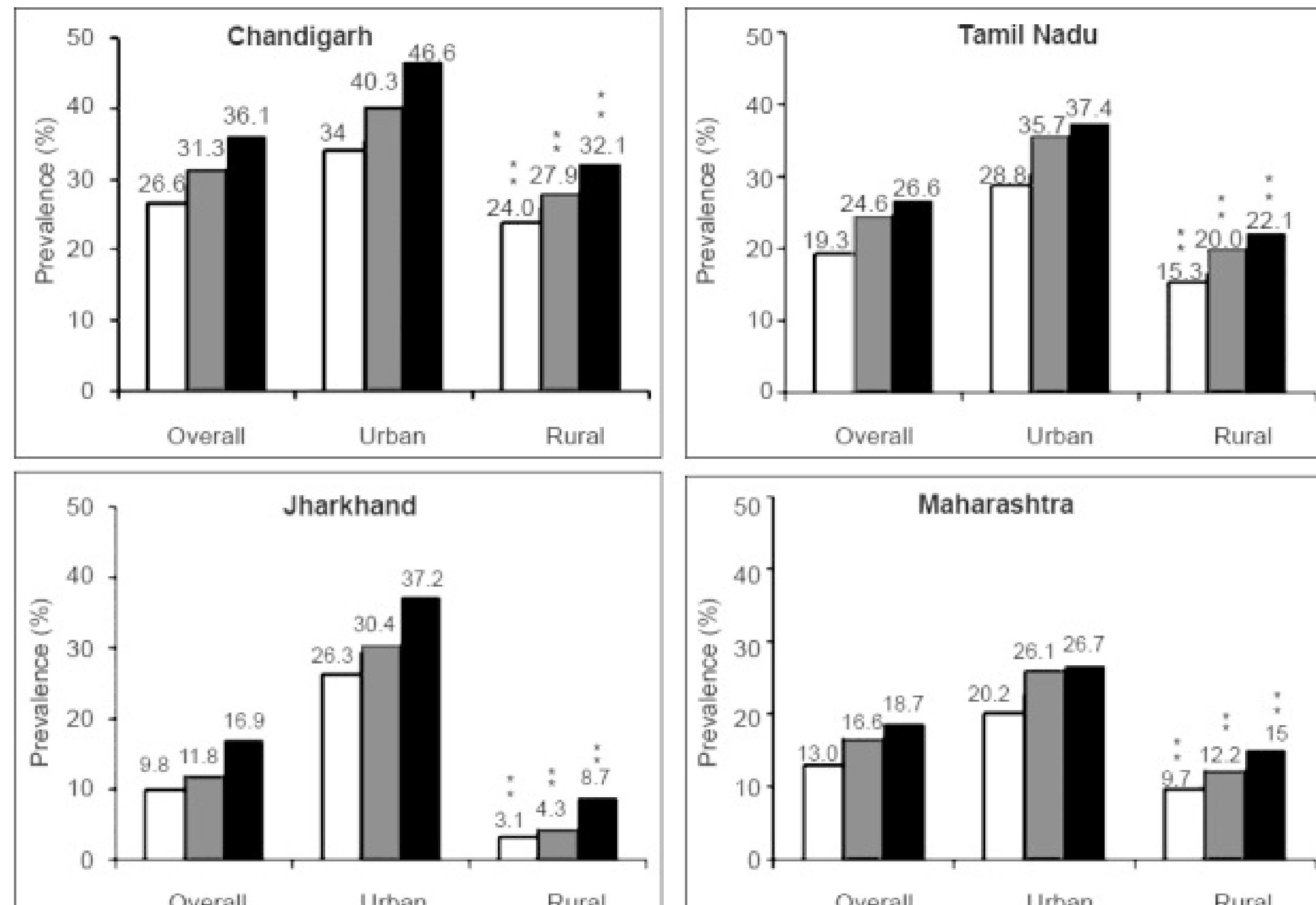
Generalized obesity was defined using the WHO Expert Consultation guidelines as $BMI \geq 23 \text{ kg m}^{-2}$ and abdominal obesity as $WC \geq 90 \text{ cm}$ for men and $\geq 80 \text{ cm}$ for women.

Abdominal Obesity

It is defined as a waist circumference of more than 88 cm (35 inches) in women and more than 102 cm (40 inches) in men.

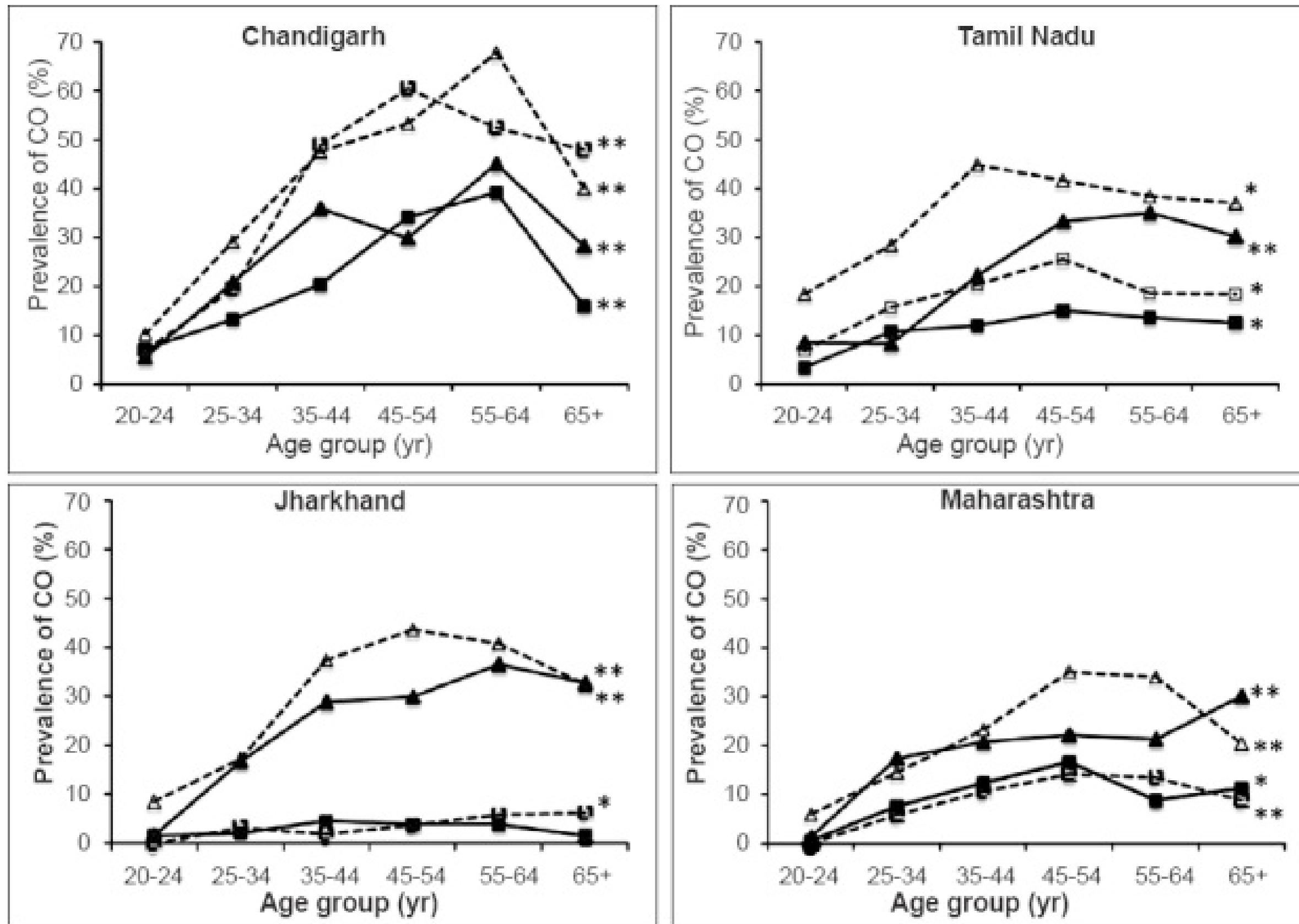
Combined Obesity

It is individuals with both GO and AO



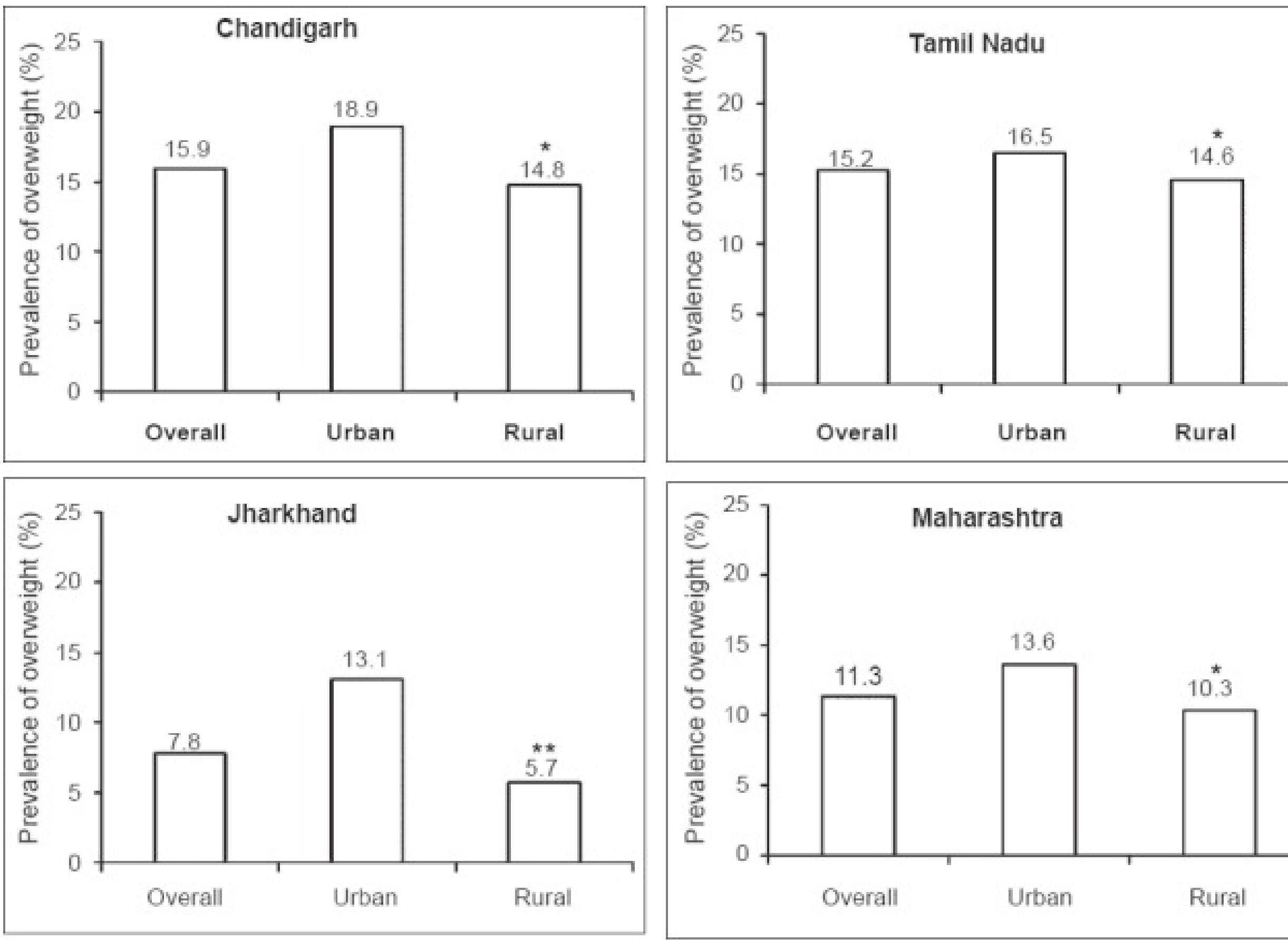
□ CO-combined obesity; ■ GO-generalized obesity; ▨ AO-abdominal obesity; *P<0.001 compard to urban area

Source : Indian J Med Res. 2015 Aug; 142(2): 139–150.



P for trend across age groups *P<0.05; **P<0.001; Rural men: ■—■ Women: □—□ Urban men: ▲—▲ Women: ▲—▲

Source : Indian J Med Res. 2015 Aug; 142(2): 139–150.



$P^*<0.05$, ** <0.001 compared with urban area

Source : Indian J Med Res. 2015 Aug; 142(2): 139–150.

Physical activity and inactivity patterns in India – results from the ICMR-INDIAB study

Objective

Four regions of India (Tamilnadu, Maharashtra, Jharkhand and Chandigarh representing the south, west, east and north of India respectively) with a combined population of 213 million people.

Method

Physical activity was assessed using the Global Physical Activity Questionnaire (GPAQ) in 14227 individuals aged ≥ 20 years [urban- 4,173; rural- 10,054], selected from the above regions using a stratified multistage design.

Results

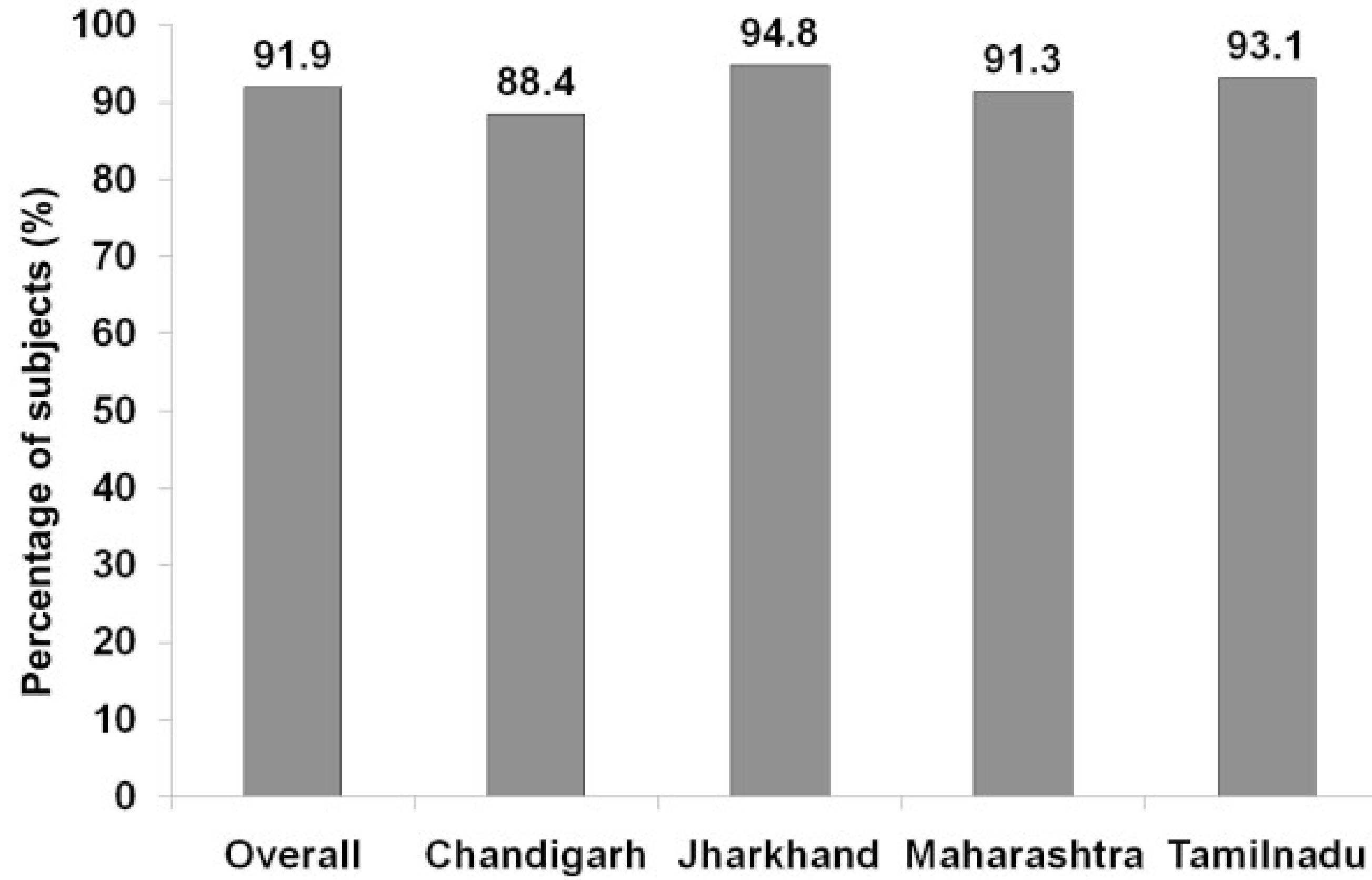
Absence of recreational activity was reported by 88.4%, 94.8%, 91.3% and 93.1% of the subjects in Chandigarh, Jharkhand, Maharashtra and Tamilnadu respectively.



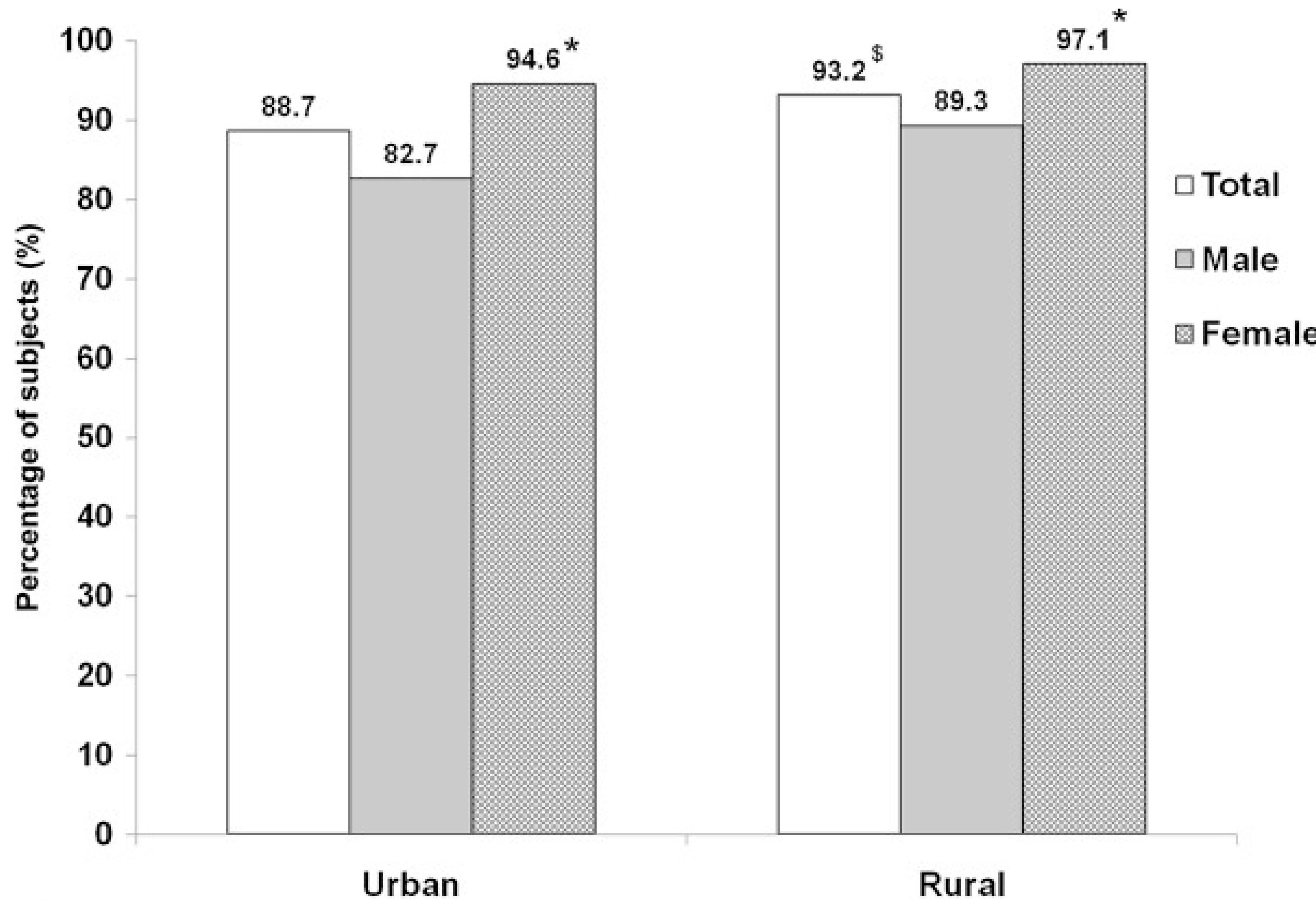
Conclusion :

The study shows that a large percentage of people in India are inactive with fewer than 10% engaging in recreational physical activity.

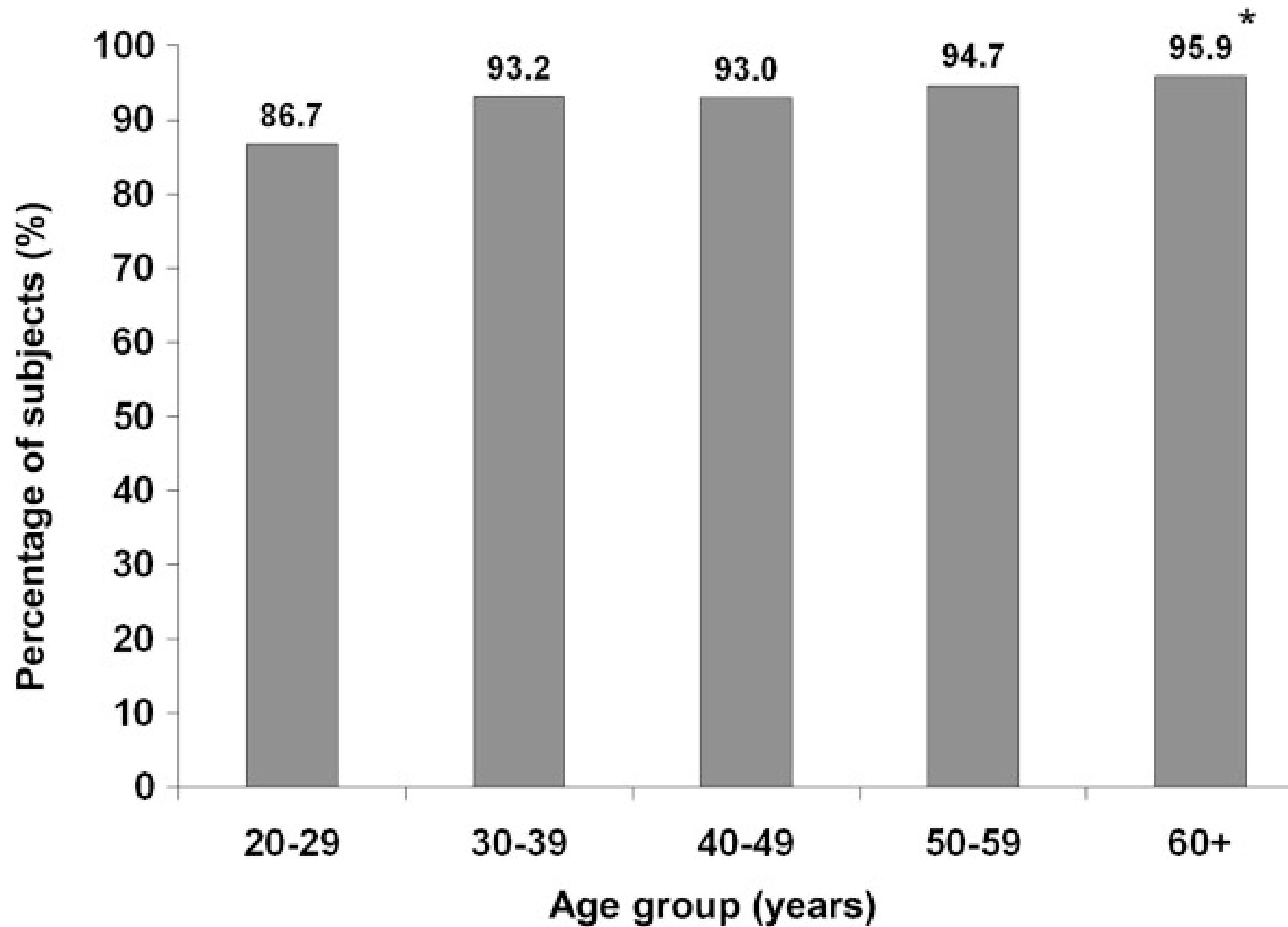




Source :Int J Behav Nutr Phys Act. 2014; 11: 26. .



Source :Int J Behav Nutr Phys Act. 2014; 11: 26..



*Trend Chi square: 199.1; p<0.001

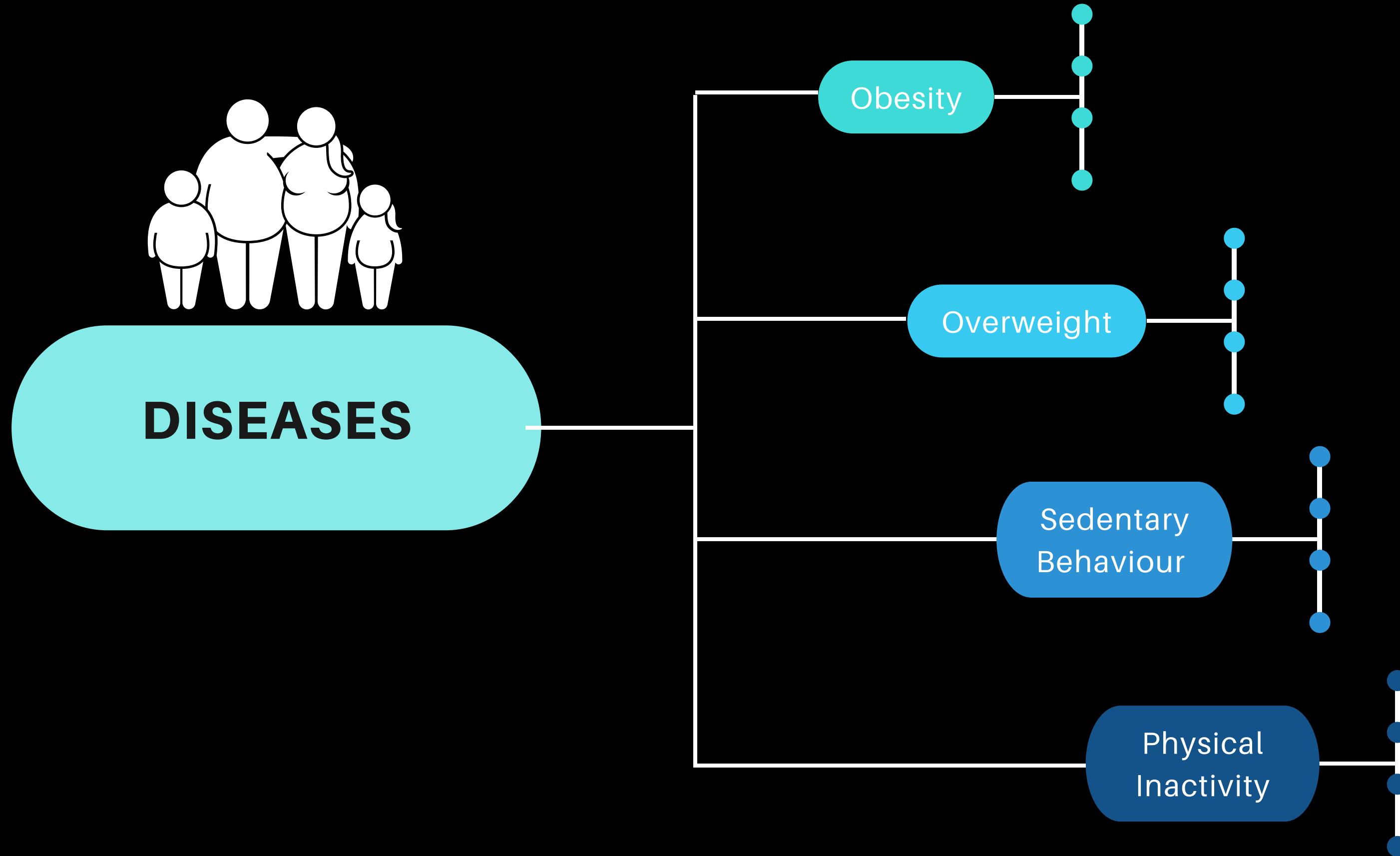
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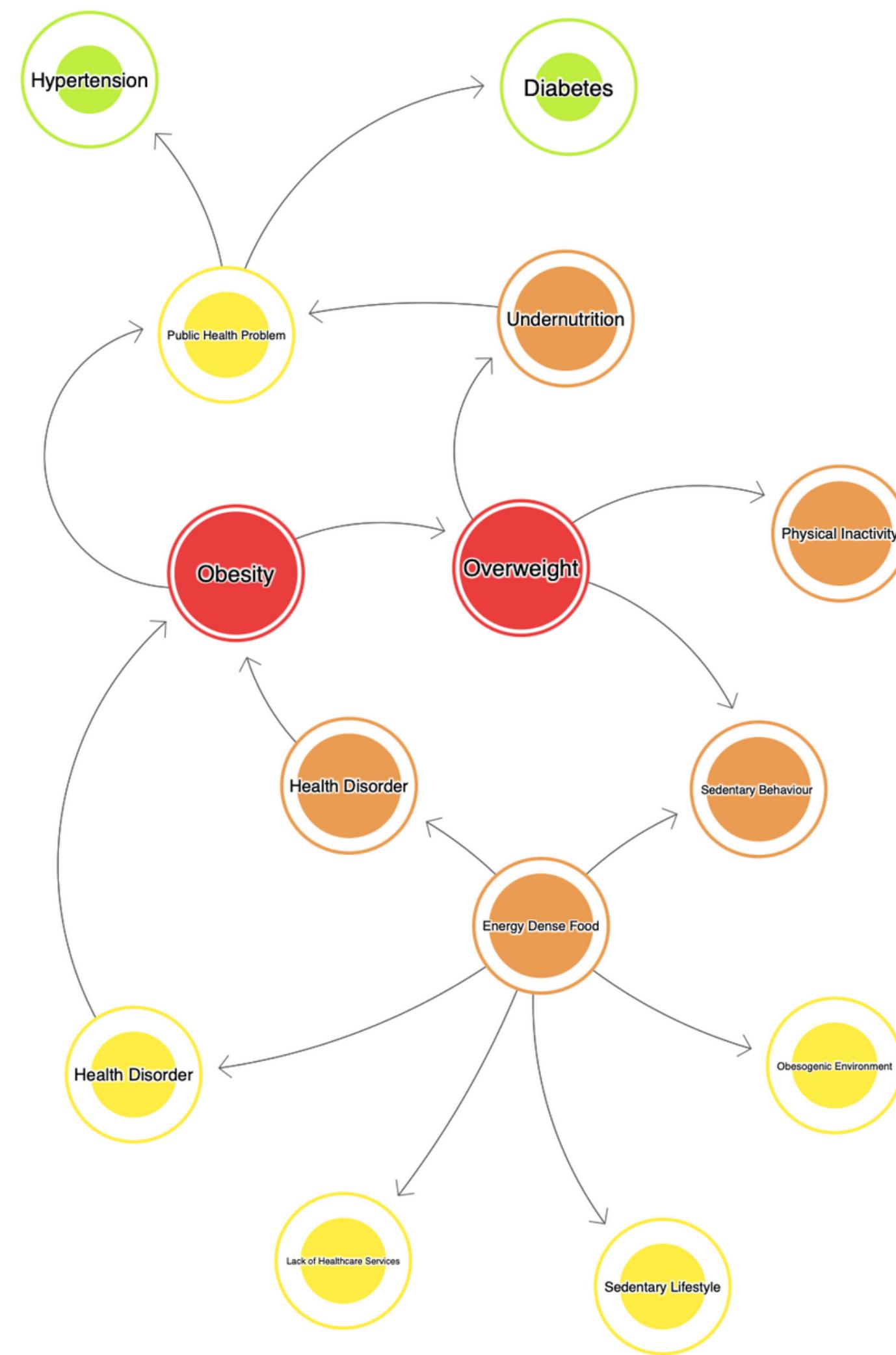
03

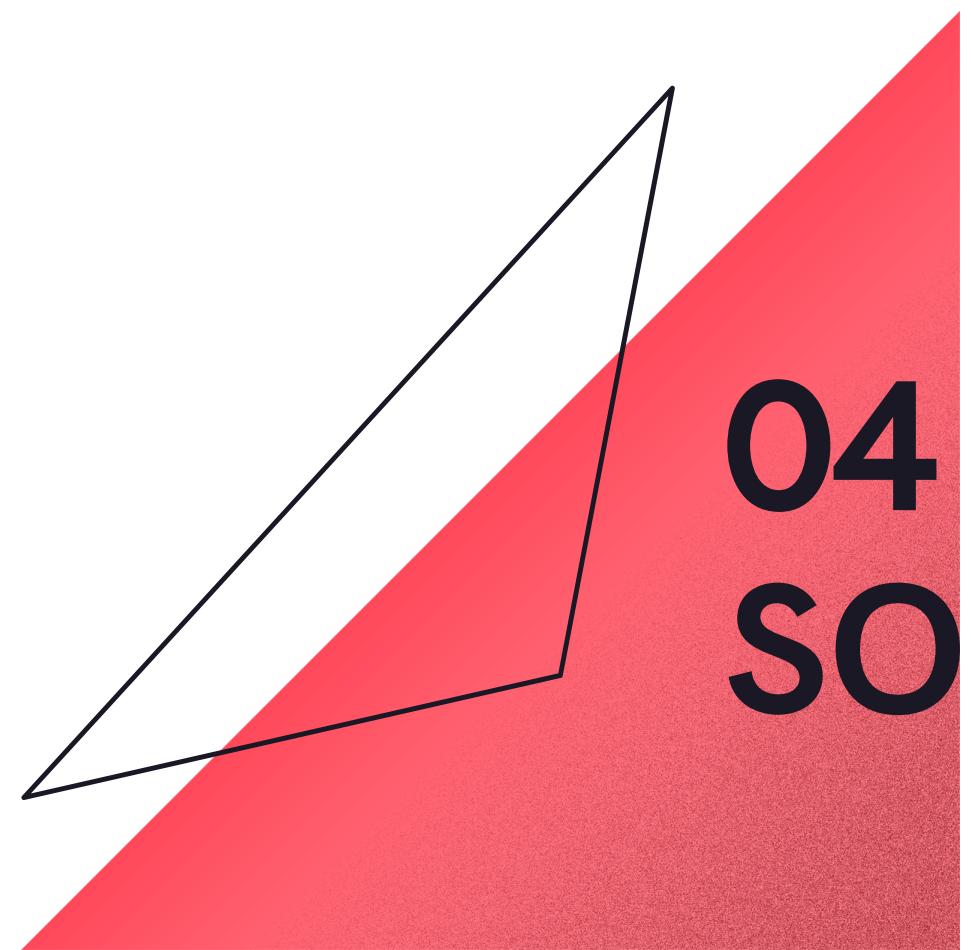
ANALYSIS





Causal Loop:

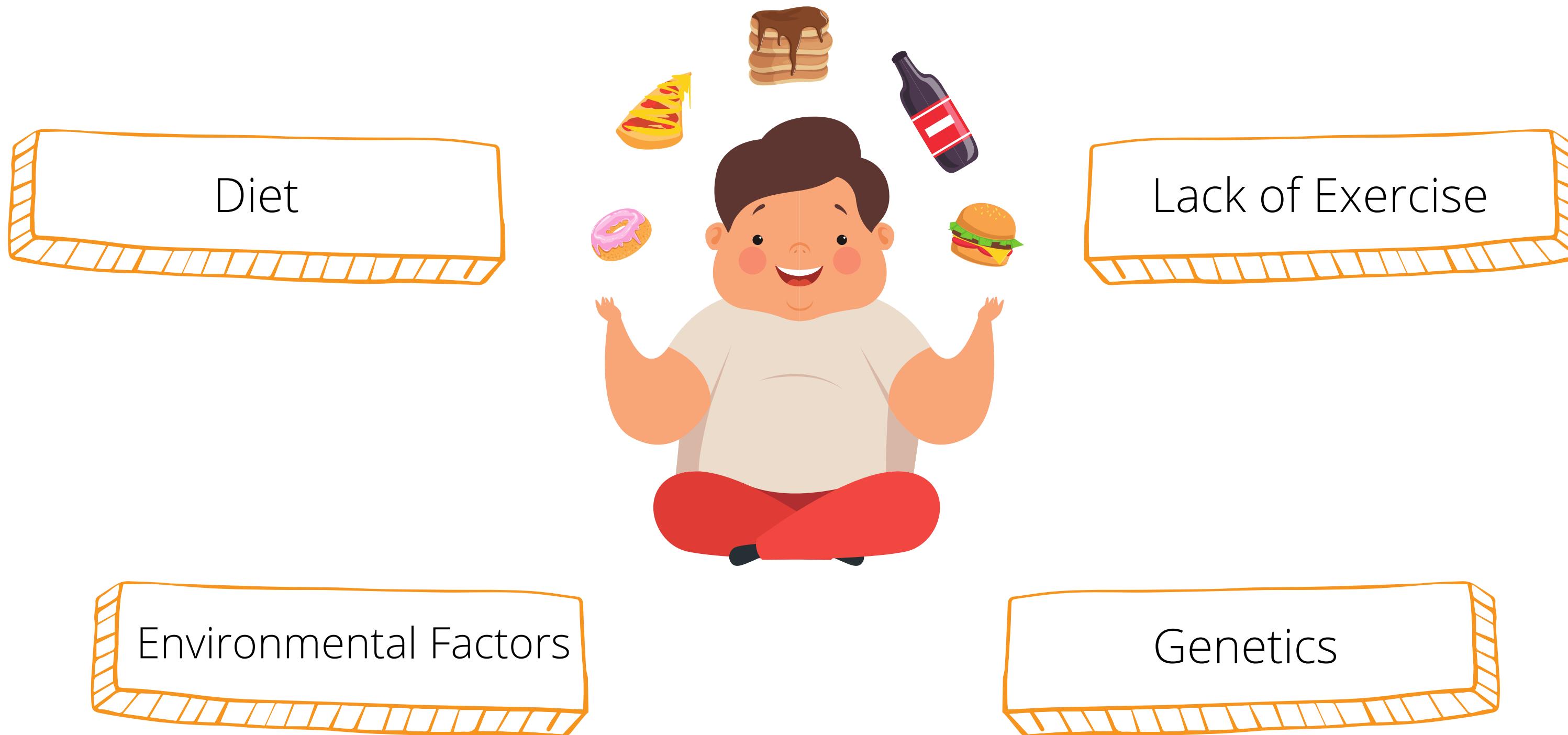




04 **SOLUTIONS**



Factors contributing to the obesity epidemic:



Remedies to Obesity/Overweight :



Nutritious Food



Workout



**Active
Lifestyle**

FOOD CALORIES ESTIMATION USING IMAGE PROCESSING

Presented By :
Group 9

Instructed By :
Dr. Jagadeesha R Bhat



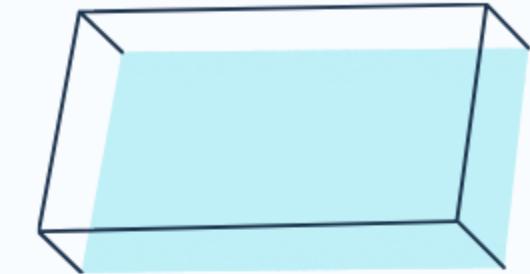
CALORIE ESTIMATOR

THE WEB APPLICATION

Know the calories in your food



Tools and Library



KERAS

We are using for deep learning tasks like creating model, predicting the object etc.

PILLOW AND NUMPY

Pillow we are using for preprocessing the images of our dataset and numpy for the Image matrix handling.

STREAMLIT

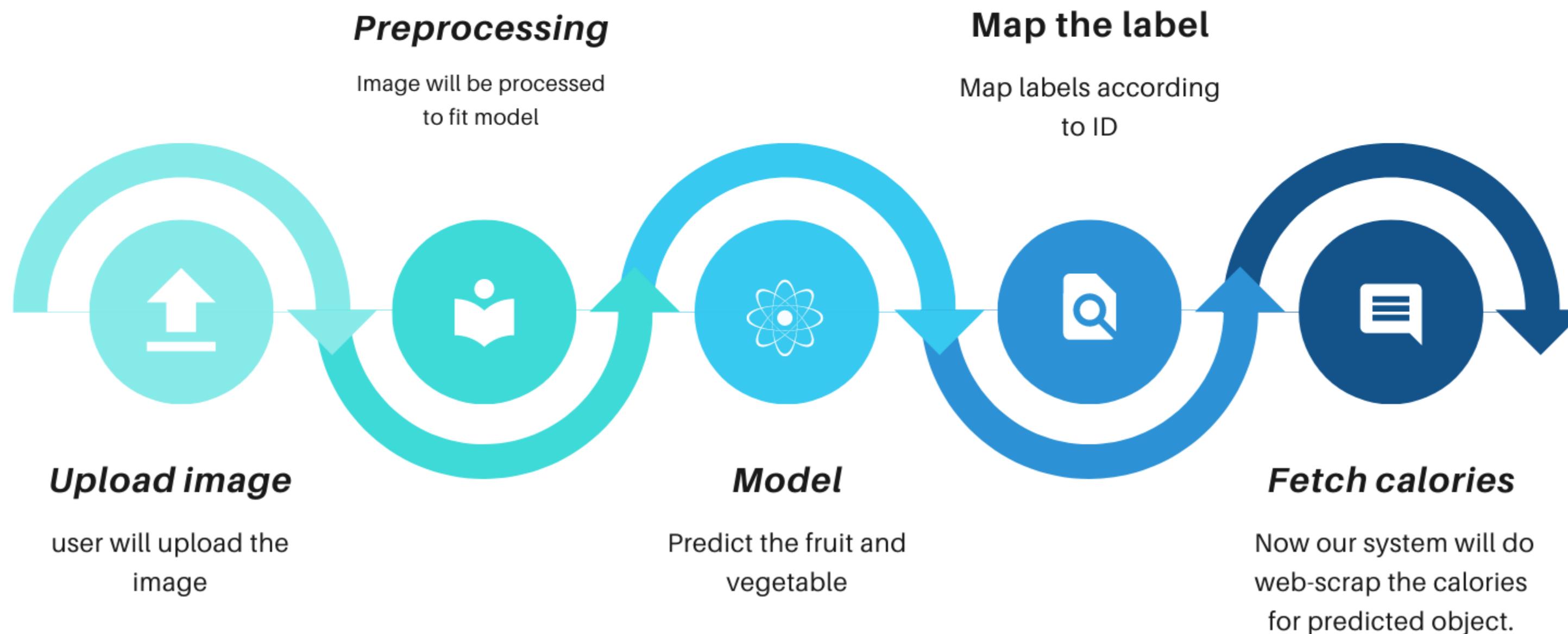
we are using to handle frontend-backend of our web app.

BEAUTIFULSOUP, REQUESTS

We are using it for scraping the calories from the internet for the predicted object.



WORK FLOW



Lets Try The Web app

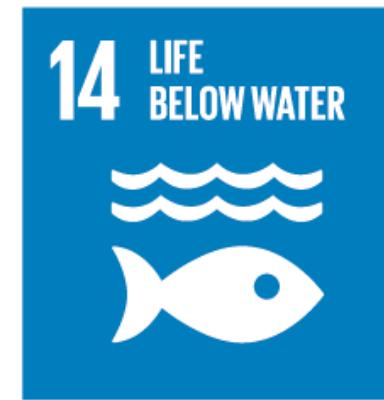
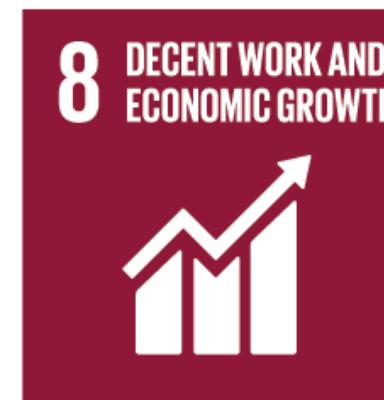


Limitation and Scope



- Classifies only single object
- Actual calories present
- Better user experience

SUSTAINABLE DEVELOPMENT GOALS





Thank you!