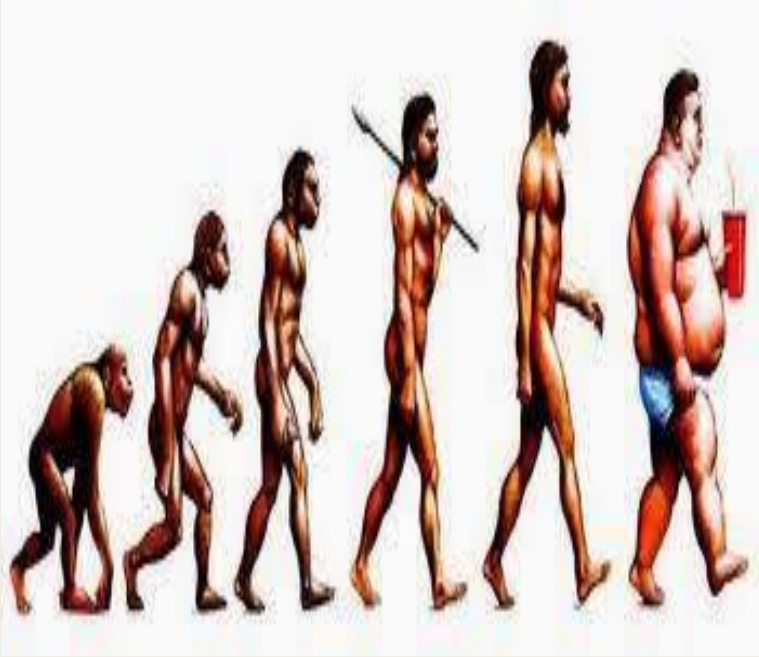




# NUTRITION TRANSITION IN DEVELOPING / MIDDLE INCOME COUNTRIES LIKE INDIA

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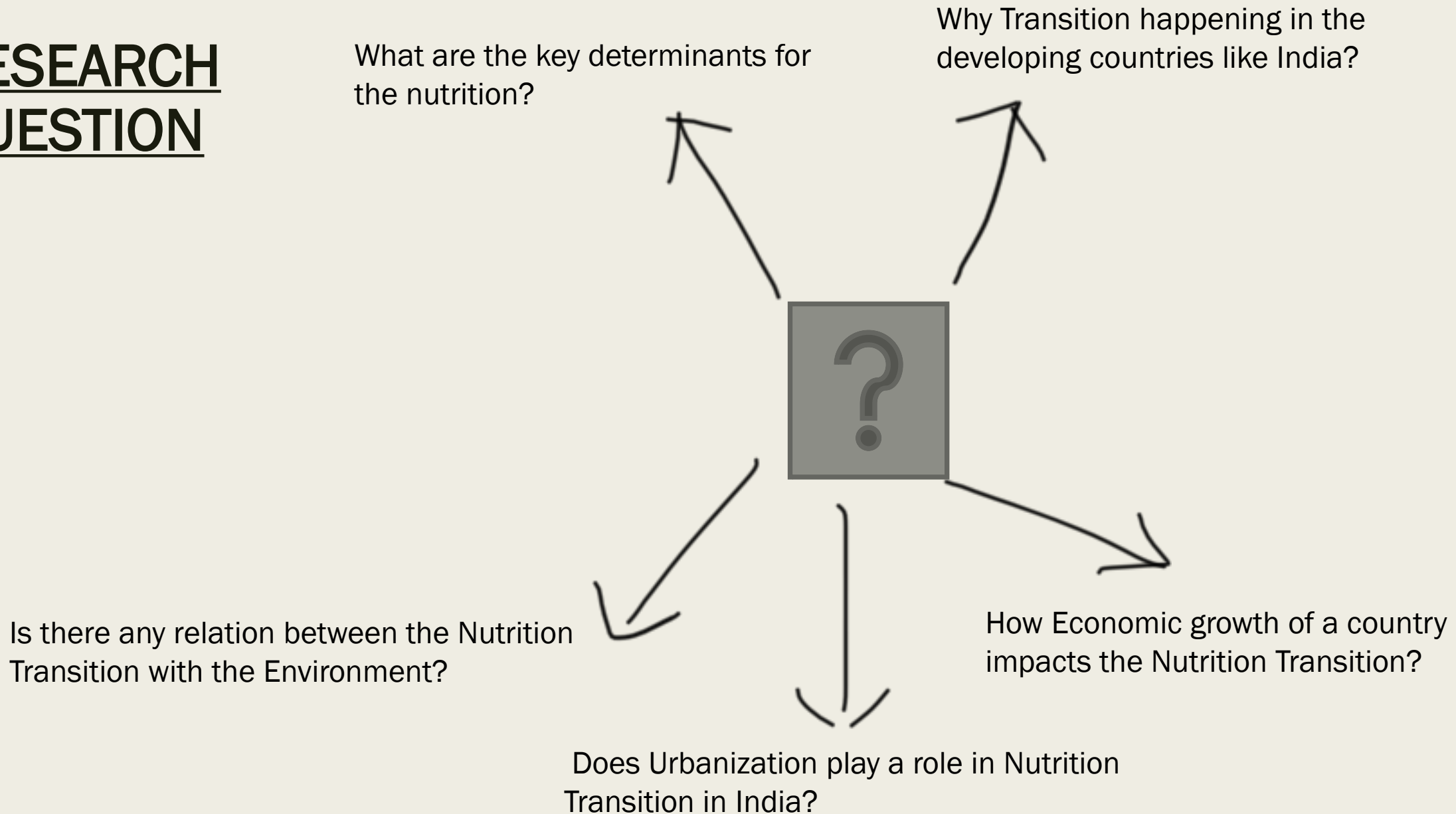
# BACKGROUND

- **DEFINATION :** There is a change in diet, when a country undergoes changes in its economic, political, and social platforms, then the whole process can be recognized as a “Nutritional Transition” ( Popkin 2003).
- The traditional diets (differing by country) compared with processed foods, high on sugar and fats with low in fibre and nutrition rich cereals increase in various health issue along with double burden on the country's system
- **OBJECTIVE :** To study the nutrition transition occurring in developing / middle income countries like India, in relation to its determinants which are helping / accelerating the process leading into epidemic of obesity, chronic non communicable disease & environmental changes in India.

# INTRODUCTION

- After India's independence in 1947, India faced problem in generating enough food production, for population over 3/4<sup>th</sup> were poor, with no food security, lacked necessary nutrition and remained ill, with life expectancy at around 33.
- Now, India as a whole and its different states with a population exceeding 1.3 billion in 2020, contributing 17.7% of the total world population India is self-sufficient and having the fastest growing economy. It's saw a visible reduction in morbidity and more than doubled became the life expectancy at around 73.
- This paper summarizes some issues and deep study of the dietary changes impacts linked with the nutrition transition, occurring commonly in the developing / Low, Middle income countries, while going through economic development which are linked with the leading major health related situations.
- The speed of change in nutrition transition appears unique due to the timing of the economic, technological, and social rapid changes.
- The reasons behind these changes is due to the following key factors on which we will be discussing & stressing more under coming headings :
  - *Globalisation (Expansion of global networking of food market. (Popkin 2003)*
  - *Urbanisation*
  - *Economic growth*
  - *And modernisation of Agriculture*

# RESEARCH QUESTION



# LITERATURE OF REVIEW (LOR)

After undergoing various articles and research papers, I took three studies to discuss further & in depth.



First Study which was done on the **ROLE OF GLOBALISATION AND URBANISATION ON DIETARY CHANGE.**

Third study was done by Rockstrom et al. (2009) on planetary boundaries framework, to estimate the environmental impacts.

The second study which is taken for the review showed “how industrial revolution (1770 through 1850 ) was linked with the nutrition transition occurring in these countries”-

- What is Globalisation? – providing growth to the national economies by exposing the countries to new ideas & technologies, creating more employment opportunities , improving income with positive influence on health and nutrition status of the people across the world.
- The wake of Globalization was first felt in the 1990, which can be marked as the underlying root cause of this shift.
- It has rapidly increased the pace of nutrition transition. The shift seen in dietary and lifestyle patterns seem to be occurring quite rapidly.
- Another determinant adding to this transition is **urbanisation** in these developing countries which is leading to the shift in occupational structure

## First Study -

# Urbanization was linked with 3 major transitions

## Nutrition Transition

- From rural to urban, the lifestyle has a significant change in the dietary habits & change in the pattern of physical activity among the population. Such rapid changes led to emerging problems like unhealthy eating, overweight, malnutrition, obesity (2), prevalence of NCD, and a distinctive difference in the lifestyle of the rural population verse the urban population.

## Demographic Transition

Though there is a decrease in the population growth curve but population development due to *rural-urban shift*, was continuously increasing. With progression seen in Health, there was a significant decline in child mortality and downward curve of fertility & increasing life expectancy was leading to the population development.

## Epidemiological Transition

In different developing countries with varying income, with improvement in the economic conditions, there occurred *triple-burden of malnutrition*. While the Developing countries were still struggling with undernutrition there was an emerging problem due to *overnutrition* such as obesity, overweight, unhealthy snacking, sedentary lifestyle. One of the major causes for leading problem of Obesity was also Nutrition transition, occurring due to influence of the adaptation of the modern culture.

# Second study-

- The factors which initiated Agro-industrial revolution in 1960s in developed countries touch-downed the agricultural & food sectors of the developing countries. Due to the use of high-yield varieties of food, the food input supply was increased in the developing worlds.

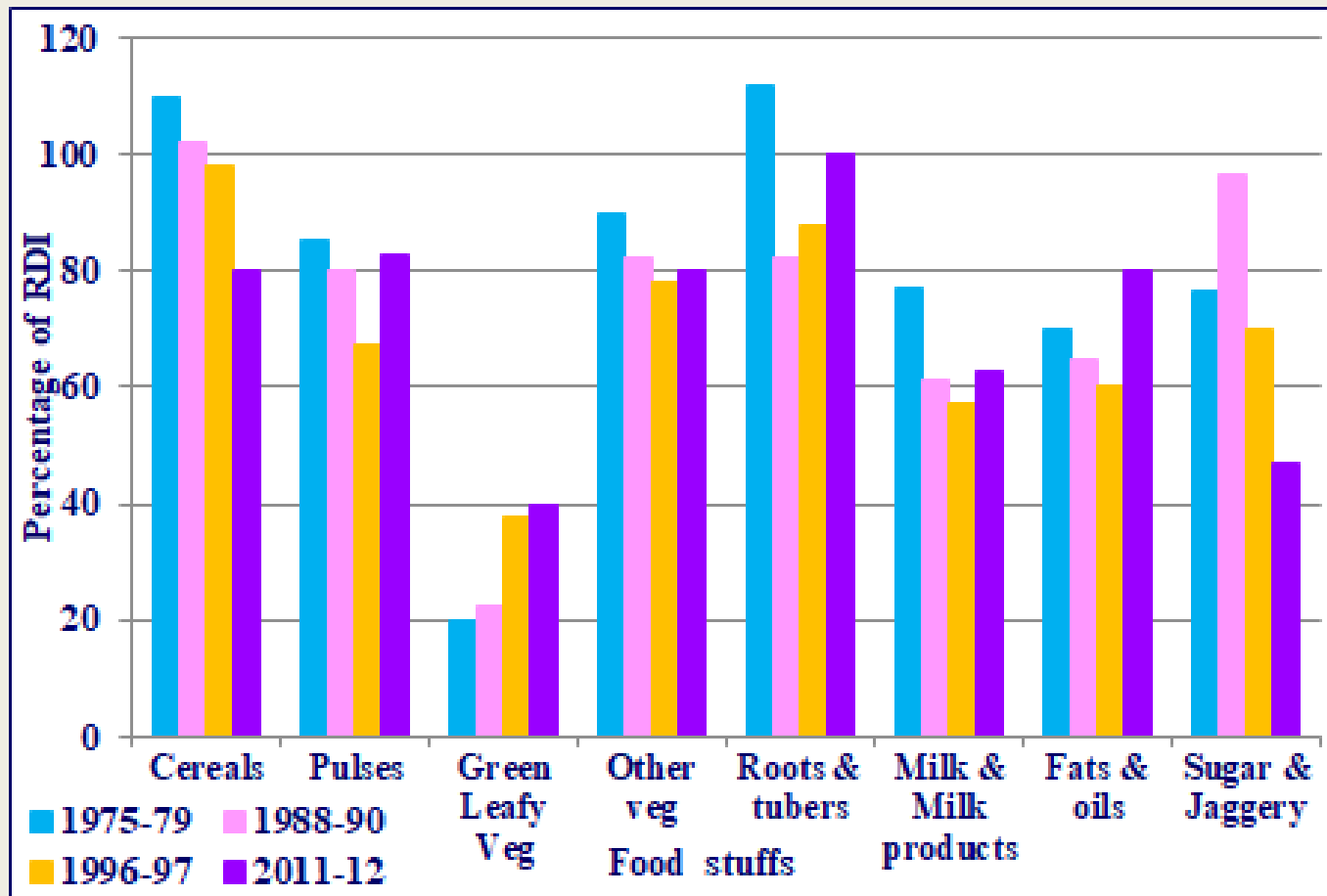
*Did economic growth really play a role in nutrition transition?*

- Even after so many advancements in health and development departments in India, , the burden of children under nutrition and micro-nutrient deficiency remains high. Approximately 70% & 40% of the children suffer from inadequate dietary intake & remain stunted respectively.
- While there has been improvement in food production and its distribution, but most of the rural population and the local communities continue to face problems in terms of food assurance. As per GHI (Global Hunger Index ) over 1/5<sup>th</sup> of India's population still suffers from chronic hunger & ranks 100<sup>th</sup> among 119 countries in the 2017

- Also, there is an association between having a higher parental education with better employment with good income and thus better purchasing power to buy nutrient rich food, by having a proper knowledge for the same.

Why according to India's GDP report showed that with increase in per capita income in last three decades was associated with reduction in per capita energy intake ?

- Due to Globalisation, the developing countries experienced rapid increase in economic growth, resulting in an increase intake of total energy and more consumption of animal foods. Leading into sedentary lifestyles & rapid increase in over nutrient rates
- It's possible that having a healthy lifestyle perceptive, Indian realized that their physical activity has reduced , resulting in decrease in their energy intake. This could explain the slow increase in over-nutrition rates in India.



- There was a considerable decrease in total energy intake & of protein over years, according to the NNMB data on nutrient intake as a percentage of RDA is given in the given graph.



The environmental impact due to nutrition transition were measured through five indicators, namely – GHG emissions, mineral, phosphate, water footprint & land area



It was said that the change in future nutritional habits will have it's impact on GHS ( Greenhouse gas emission) through food production.



The increasing demand for dairy, eggs & meat products are leading to rapid increase in landless, impact on the quality of water, & livestock systems (Liang et al. 2013).



Manure of animal is usually dumped into nearby waters, leading to nitric oxide release.



Eutrophication of water caused by the excessive flow of nutrients with a negative impact on bio diversities and exacerbates climatic changes via nitrogen emissions (Kahiluoto et al. 2014)

## Third Study -

# RESEARCH METHODOLOGY

- This study is based by undergoing representative large-scale surveys in the Developing Middle-income countries, reference to some stats e.g.- FAOSTAT/NNMB data to get a better picture of the major changes happening during the diet transition.
- Used various search engine like Google search, Pub-med., Research-gate and referred various papers for review of literature. It includes a review of the published research papers, literature and other verified documented data on population characteristics.

# RESEARCH DESIGN

- **TYPE OF STUDY:** Observational Descriptive study
- **DUARTION OF STUDY:** Two months ( 20 April 2020 – 20 June 2020)
- **TOOL OF DATA COLLECTION:** Secondary data is collected through online portals with the help of various search engine. Through registered papers , literature available online and by some research articles

# ANALYSIS

- Due to Westernization impact in the country like India, Huge change has been observed as the consumption of more processed food is increased among the generation over the time.
- The rapid shift has been seen in diet of the developing country people.
- With change in the income, Fat consumption is also increased.
- Consistent Increment in the advancement in the food pattern, lead to double burden situation.
- Change in prices also affected the consumption pattern. It impacted all equally either it is rich group or poor group, but undoubtedly most impacted ones are lower-income groups.

# SUMMARY & CONCLUSION

- The ongoing of Nutrition Transition is linked with the double burden on these developing and middle-low income countries so the countries like India has to invest in sustainable programs all the macro, micro and to make them accessible and affordable.
- Nutritional policy should promotion a sustainable dietary model
- Meanwhile newer challenges have emerged in the form of a rise in over nutrition and associated non- communicable disease. There is a need of lifestyle management modifications. The health system of India needs to be reoriented for attaining proper & early detection, prevention and effective system to manage the double nutrition burden. The systems have to strengths the structure as well as correct weaknesses.
- Environment preservation is also kept in mind in this challenging situation
- A diet model which is nutritionally healthy and balanced, rice in biodiversity, conserves and respects the environment and should have a beneficial role in development of the overall population.



THANK YOU

