

HW 02: Formulating a research hypothesis

Brainstorming research questions to investigate

1. Topic area statement

Initially, after going through the metadata of the dataset, I am interested in diet and nutrition of children from various regions. Additionally, I am more interested in studying, how would diet affect the health of child and also what diet should be taken in order to keep out nutrition good. While diet and nutrition has way more to research on but I have not yet decided which variables should I work on as dataset is huge. I need to understand how is diet and nutrition dependent on each other and what happens when anyone goes less or higher in quantity. Moreover, according to regions diet needs changes which is one interesting factor to study on, which will give me more insights about how diet changes with regions and also factor that would affect is maybe environment and availability of food in respective region. I would like to see relationship between environment, diet and nutrition changes as per regions.

2. Personal Codebook

	A	B	C	D	E	F
8						
9		Variable	Label	Type	Response Code	
10		Region	Regions (Location)	Unique Identifier		
11		Vegetables	Vegetables_intake (gm/day)	Quantitative	Between 93 - 300	
12		Fruits	Fruits_intake (gm/day)	Quantitative	Between 67 - 200	
13		Disaggregation	Disaggregation(Location/Gender/Food_Group)	Categorical	0 = Location, 1 = Gender, 2 = Food_Group	
14		Stunting	Stunting (below median height for age in %) (2000-2020)	Quantitative	Between 1 - 50	
15		Wasting	Wasting (below median weight for age in %) (2020)	Quantitative	Between 0 - 15	
16		Overweight	Overweight (above median weight for height in %) (2000 - 2020)	Quantitative	Between 2 - 17	
17		LBW	LBW (Infants born less than 5.51pounds in %) (2000 - 2015)	Quantitative	Between 5 - 33	
18		Planetary_impacts_cropland	Cropland (impact in %)	Quantitative	Between 0 - 161	
19		environmental_impacts_landuse	Landuse (use in 1000 Mkm2)	Quantitative	Between 0 - 58063	
20		environmental_impacts_freshwater	Freshwater (use in km3)	Quantitative	Between 3 - 1700	
21						

3. Research Questions

1. Does regional environment really affect on diet and nutrition of child from 0-59 months?
2. Is there any impact on nutrition by using freshwater?
3. Does crop land affect nutrition of a child?

4. Literature Review

- **Margaret M.C. Thomas, MSW, Daniel P. Miller, PhD, Taryn W. Morrissey, PhD, "Food Insecurity and Child Health." doi: Paediatrics' (2019) 144 (4): e20190397**

According to the authors, it states that food security is important problem faced by children in United States and in order to overcome this they have used propensity scoring techniques to track casual impact of food insecurity on children's health.

Authors use PS methods to investigate effects of food insecurity on child's health. It is used to simulate randomized treatment assignment to estimate treatment effects in observational data. This method stated that children in low-income family have worse health as compared to high income families in United State.

Also, children in insecure households are likely to take late medical care due to cost (146.5%) as they aren't able to afford medical. There are many health issues that come along when there is less food intake.

- **Craig Gundersen, Brent Kreider "Bounding the effects of food insecurity on children's health outcomes. Journal of Health Economics. Volume 28, Issue 5, Sept 2009."**

In this article, authors mainly focus on learning effects of food security on child health. It also states that it cannot be fully identified that impact of food and security on health. Additionally, it states that the survey conducted can be ambiguous as parents of child may provide wrong information. Moreover, its highlighting the statistical identification problems created using selective issues and survey of self-reported food insecurity.

The central goal of it was to gain some insights about the impact of food security on whether child is in good health and have healthy weight. SNAP is one who pursued with goal that it ensures all children stay in healthy and secure home in order to keep their health well.

- *Jef L. Leroy, Marie Ruel, Edward A Frongillo, Jody Harris, Terri J. Ballard, "Measuring the food access dimension of food security: A critical review and mapping of indicators. Volume 36, Issue 3, doi.org/10.1177/0379572115587274"*

In this particular article, authors have identified nine indicators and also grouped them in three categories (experience-based, coping strategies, dietary diversity) in order to analyse efficiently. They mainly recommend us to use HDDS or FCS indicator to access to sufficient food quantity.

They mainly focus on measuring reality of food security using indicators where, experience based are mostly used to identify diet quality. Moreover, authors mainly focus on accessing food at the individual and household levels. The main motive of this mapping indicators was to identify quality, quantity and safety of child food and their health which impacts due to less food intake or improper diet intake.

5. Refined Research Questions

1. How does child's health affect when families have less income and high-income rates?
2. How does it impact using freshwater for cultivation of food on land from rural and urban regions?
3. To what extent does high income family have effect on children health due to high availability of food?