



# Food Insecurity Experience Scale (FIES) Tool and its Application in India: A Critical Review

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*Received 06 June 2025; Revised 12 June 2025; Accepted 12 June 2025*

## SUMMARY

The article critically reviews the Food Insecurity Experience Scale (FIES), a global tool developed by the FAO to assess food insecurity through self-reported experiences over a 12-month period. While FIES supports global monitoring under the SDG Goal 2 (Zero Hunger), the article highlights several limitations when applied to India—such as recall bias, ambiguous question wording, and its focus on household-level data that obscures individual experiences. A detailed analysis of the tool’s questions reveals cultural and contextual gaps that may lead to misinterpretation, calling for revisions that better reflect Indian dietary habits and socio-economic diversity.

The article also includes findings from a perception survey on healthy and nutritious food among Indian respondents, which showed wide variability in definitions, ranging from traditional home-cooked meals to modern high-protein diets. The author echoes concerns raised by the Indian government over the reliability of FIES data used in global hunger reports due to small, unrepresentative samples and lack of methodological transparency. Concluding that hunger measurement in India demands a more robust, locally adapted approach, Author recommends large-scale, nationally representative surveys conducted by agencies like NSSO to ensure accurate and meaningful insights into food insecurity.

*Keywords:* Hunger; Sustainable development goals; Probabilistic sampling methods.

## 1. INTRODUCTION

The United Nations’ Millennium Development Goals (MDGs), set for achievement by 2015, prioritized the eradication of poverty and hunger as the first global objective. Building on this foundation, the Sustainable Development Goals (SDGs) were launched in 2016, with Goal 2 explicitly targeting Zero Hunger by 2030. India is a signatory to both these global development agendas and thus plays a critical role in reporting and addressing food and nutrition insecurity.

Hunger has been defined by key international agencies as follows:

- **FAO:** “Hunger as an uncomfortable or painful physical sensation caused by insufficient dietary energy.”<sup>1</sup>
- **WFP:** “hunger as the discomfort or pain associated with a lack of food, distinct from food insecurity, which involves a lack of regular access to safe and nutritious food.”<sup>2</sup>

- **WHO:** “Hunger is an uncomfortable or painful sensation caused by insufficient energy from diet.”<sup>3</sup>

In lay terms, hunger often reflects inadequate food intake due to poverty or lack of access. This is also captured culturally through the couplet:

“साई इतना दीजिए, जामें कुटुम्ब समाय ।  
मैं भी भूखा न रहूँ, साधु न भूखा जाय ॥”

*(Grant me only so much,  
O Lord, as would suffice my family.*

*So that I don't go hungry,  
and nor does a guest leave my door unfed.)*

## 2. THE FOOD INSECURITY EXPERIENCE SCALE (FIES) TOOL

The Food Insecurity Experience Scale (FIES), developed by the FAO’s Voices of the Hungry project<sup>4</sup>, is a globally standardized tool to assess self-reported

experiences of food insecurity at the household or individual level over a 12-month period. It forms the basis of SDG Indicator 2.1.2: “*Prevalence of moderate or severe food insecurity in the population.*”

### FIES Questionnaire Structure

The FIES consists of eight questions that measure self-reported experiences associated with levels of food insecurity over the last 12 months:

Questions		Standard label
Q1. During the last 12 MONTHS, was there a time when you were <b>worried</b> that you or anyone in your household would not have enough food to eat because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	WORRIED
Q2. During the last 12 MONTHS, you or anyone in your household were unable to eat <b>healthy and nutritious food</b> because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	HEALTHY
Q3. During the last 12 MONTHS, was there a time when, you or anyone in your household ate only <b>a few kinds of foods</b> because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	FEWFOOD
Q4. During the last 12 MONTHS, was there a time when, you or any one in your household had to <b>skip a meal</b> because there was not enough money or other resources to get food?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	SKIPPED
Q5. During the last 12 MONTHS, was there a time when, you or anyone in your household <b>ate less</b> than you thought you should because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	ATE LESS
Q6. During the last 12 MONTHS, was there a time when, your household <b>ran-out</b> of food because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	RUN OUT
Q7. During the last 12 MONTHS, was there a time when, you or anyone in your household were <b>hungry</b> but did not eat because there was not enough money or other resources for food?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	HUNGRY
Q8. During the last 12 MONTHS, was there a time when, you or any one in your household went <b>without eating for a whole day</b> because of a lack of money or other resources?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	WHOLE-DAY

Based on responses using FIES tool, individuals or households are classified into mild, moderate, or severe food insecurity categories.

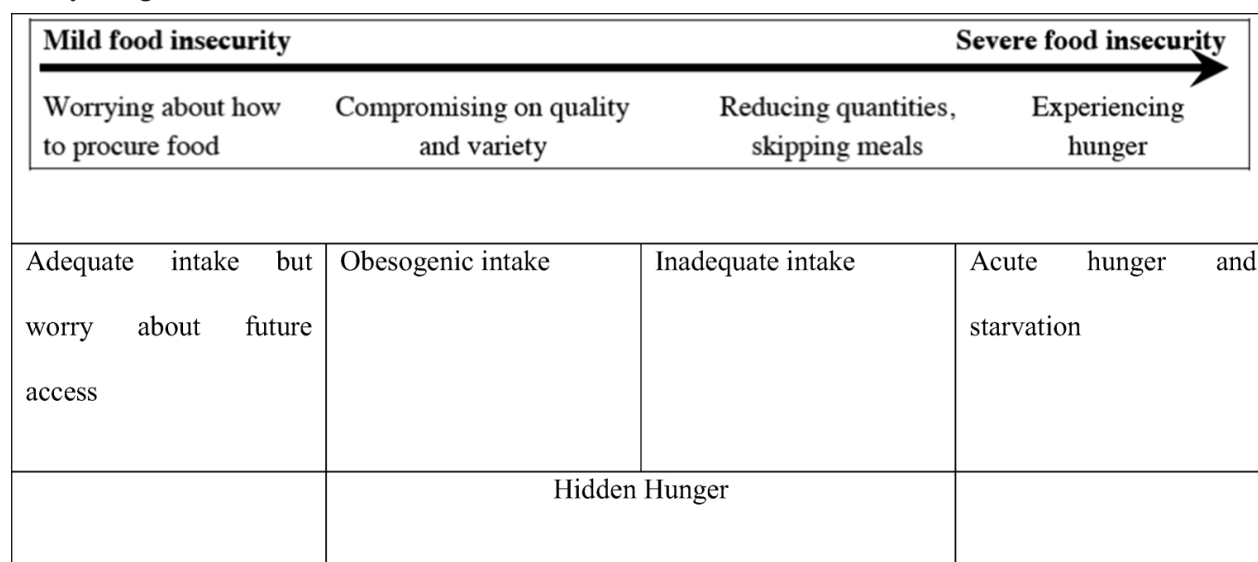


Fig. 1. Food insecurity severity continuum theoretical conceptual framework that brings together emerging issues.

Source: Ballard *et al.* 2013; Hendriks 2015<sup>5</sup>

### 3. GALLUP SURVEY METHODOLOGY IN INDIA

Using FIES tool, FAO utilizes the services of Gallup Inc. to evaluate the prevalence and severity of food insecurity. It is important to mention that Gallup Inc., a global analytics and advisory firm, conducts social and economic surveys worldwide.<sup>6</sup>

Reportedly, Gallup uses probabilistic sampling methods involving random digit dialling for telephone surveys in countries with high phone coverage. In countries with limited phone coverage, Gallup uses area frame design for face-to-face interviews, utilizing stratified multi-stage cluster design.

For India in Gallup surveys on food insecurity, a two-stage probability sampling method is used. First, clusters of households are selected, stratified by region and community size. Then, households within these clusters are selected, and finally, one respondent per household is chosen using age and Kish’s grid method. The total sample size typically consists of 3000 individuals for India as a whole.

### 4. ISSUES AND CONCERNS ON THE FIES TOOL

#### A. Reference Period and Unit of Analysis

##### 1. Household vs. Individual Level:

- FIES captures responses for the entire household. If answer is yes, it could be further split into, say, one member, some members and all the members. Further, the household size can also be recorded.
- It is unclear how many household members actually experienced the reported situation.

In view of this, it is suggested to collect responses for each individual to enhance granularity and accuracy.

##### 2. 12-Month Recall Bias:

- While a 12-month reference period covers seasonal variation, it risks recall bias.
- Recommendation: Supplement with frequency categorization: *Rarely, Sometimes, Often, always.*

### B. Content-Specific Issues in FIES Questions

Q. No.	Concern	Recommendation
Q1	Worrying is anticipatory, not indicative of actual food insecurity.	Use a preamble distinguishing anxiety vs. real experience.
Q2	The term “healthy and nutritious” is subjective.	Ask respondents to first define what they consider healthy food, then assess accessibility.
Q3	“Few kinds of food” may include culturally typical diets.	Consider local food diversity norms before interpreting as insecurity.
Q4	“Skipping a meal” may not be clearly understood.	Specify whether breakfast, lunch, or dinner was skipped.
Q5	“Ate less than thought should” is vague.	Include quantifiers (e.g., ¼ less, ½ less) and ask about perceived sufficiency.
Q6	“Ran out of food” lacks contextual clarity.	Clarify that no food and resources were available.
Q7	Hunger without eating may occur for non-economic reasons.	Exclude cases due to religion, busyness, or choice. Also clarify whether the hunger was due to food scarcity because of lack of money/resources.
Q8	Fasting or dieting can cause going without food.	Clarify that the 24-hour fast must be due to lack of access, not intentional behaviour.

### 5. SURVEY ON PERCEPTIONS ON HEALTHY AND NUTRITIOUS FOOD

To understand public perceptions of what constitutes healthy and nutritious food, a cross-sectional survey was conducted during the month of April – May 2025, using an online questionnaire administered via the Google Forms platform. A total of 74 individuals participated in the survey.

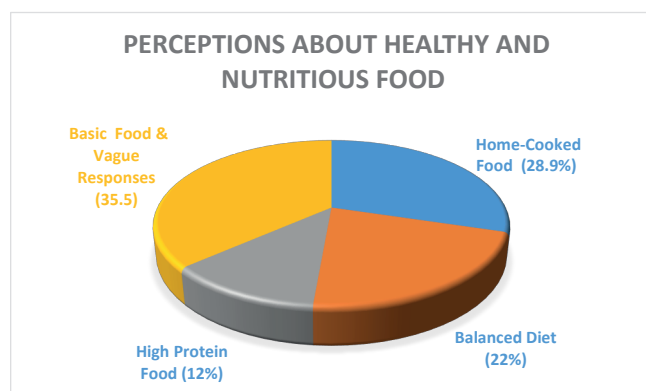
#### Sample characteristics

The background characteristics of the survey respondents are presented in Table 1. The sample included both males and females, with an average age of approximately 35 years, representing a good mix of young, middle-aged, and older individuals. In terms of educational background, respondents ranged from those with secondary school education to postgraduates and individuals with professional or doctoral qualifications.

**Table 1.** Background Characteristics of Respondents

Age		
	Frequency	%
Under 30	38	51.4
31 – 40	10	13.5
41 – 50	5	6.8
51 – 60	3	4.1
More than 60	12	16.2
Gender		
Male	46	62.2
Female	28	37.8
Education Level		
Secondary School	6	8.1
Graduate	16	21.6
Post Graduate	29	39.2
Doctoral/Higher Degrees	23	31.1

Regarding distribution as per occupation and profession nearly one-third of respondents were academicians, researchers, scientists, and statisticians. Medical, health, and nutritional professionals made up 31% of the sample. Students accounted for 22.9%, while the remaining 13.1% comprised of government and private sector employees.

**Fig. 2.** Respondents profile according to profession

### Perceptions of Healthy and Nutritious Food

The respondents' perceptions of what constitutes healthy and nutritious food have been summarized under the following heads:

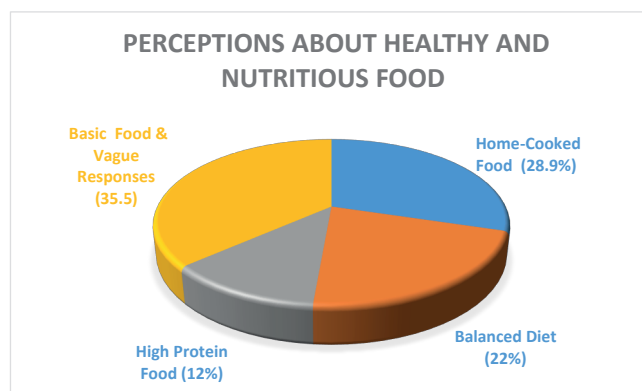
**Table 2.** Perceptions of Healthy and Nutritious Food

S. No.	Perception Category	Description
1	Holistic Traditional Indian Home-Cooked Food	Trust in culturally familiar Indian meals such as chapatis, dal, vegetables, curd, and seasonal fruits
2	Nutrition Science-Based View: Balanced Diet	Focus on balanced intake of macronutrients and micronutrients like proteins, vitamins, fiber, etc.
3	Modern Health & Wellness: High Protein Focus	Emphasis on organic, high-protein, low-sugar/fat diets; includes meat/egg-based diets for fitness and strength
4	Basic Whole Food & Vague Responses	General or unclear references to fruits, vegetables, pulses, milk, natural foods, non-veg, banana

The analysis indicated that perceptions varied widely (Fig. 2). The largest proportion (35.5%) associated healthy food with basic, simple, and natural items like fruits, vegetables, pulses, and milk—often expressed in vague terms. A significant number (28.9%) believed that traditional Indian home-cooked food represented healthy eating, emphasizing culturally familiar meals like chapati, dal, vegetables, curd, and fruit.

Another 21.1% described healthy food from a nutrition science-based perspective, referring to balanced diets rich in macronutrients and micronutrients (e.g., protein, vitamins, fiber). A smaller group (11.8%) adopted a modern wellness approach, emphasizing high-protein, organic, and low-fat/sugar diets.

Cross-tabulations between responses and demographic variables (such as age, education, and profession) revealed no significant associations, indicating diverse perceptions across all groups.

**Fig. 3.** Perceptions according to broad categories

## 6. OFFICIAL CONCERNS BY THE MINISTRY OF WOMEN AND CHILD DEVELOPMENT (MWCD), GOVERNMENT OF INDIA

Ministry of women and child development, GOI is the nodal ministry dealing with the subject of hunger. In October 2022,<sup>7</sup> the Ministry issued a strong critique of the Global Hunger Index (GHI) methodology, which uses FIES-based data. Key objections include:

- FIES estimates for India are based on just 3,000 respondents, insufficient to represent 1.4 billion people.
- No transparent data on sampling weights, region-wise representation, or rural-urban split was shared.
- The FIES data was collected as part of Gallup's opinion poll, not a dedicated, rigorous survey.
- The subjective nature of questions and reliance on recall over a 12-month period introduces bias.

## 7. CONCLUSIONS AND RECOMMENDATIONS

Measuring hunger is a complex methodological challenge that cannot be adequately addressed through the application of a one-size-fits-all tool like the Food Insecurity Experience Scale (FIES) without appropriate contextualization. While FIES holds value for facilitating international comparisons, its application in India requires significant adaptation to reflect the country's diverse socio-cultural, dietary, and economic contexts.

Key areas for contextualization include:

- Shifting from household-level to individual-level data collection for greater accuracy and granularity;
- Enhancing the clarity and cultural sensitivity of the questions;
- Accounting for regional variations in food habits and perceptions of nutrition;
- Incorporating more nuanced response scales to capture frequency and intensity of experiences.

It is recommended that a revised version of the FIES be pilot-tested in India. Moreover, national assessments of food security should not rely solely on small-sample, perception-based tools. Instead, they

must be complemented with large-scale, representative data on household food consumption and access to ensure a comprehensive and credible measurement of food insecurity in the country.

In my opinion, a large scale sample survey should be conducted by National Agency like NSSO, NewDelhi, incorporating the suggestions of the author, to build the estimates of Food Insecurity level at State and national level in view of country's diverse socio-economical, dietary and cultural conditions.

## ACKNOWLEDGEMENTS

The support received from Ms. Khushboo Sharma, Research Coordinator, Cankids Kidscan in analysis of data and manuscript preparation is gratefully acknowledged. Author is also thankful to the study participants for their participation in the survey.

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