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Food allergy awareness in Jharkhand: A comparative pilot study on knowledge, attitudes and practices

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Abstract
Food allergy is an important but under-recognized public health issue, especially in settings where awareness, diagnosis, emergency response, and food-label literacy remain uneven. International evidence shows that food allergy can impose a substantial clinical, social, and psychological burden, while South Asian evidence remains limited and fragmented. Reviews of South Asian literature have highlighted the scarcity of community-based data, and Indian studies from Kolkata, Hyderabad, and North India suggest that awareness gaps exist among both the public and healthcare professionals. India's current food-labelling regulations require separate allergen declaration for specific ingredients, but effective consumer protection depends not only on regulation but also on public understanding of labels and risk avoidance.
This model comparative pilot study examines knowledge, attitudes, and practices related to food allergy among adults in urban and rural communities of Jharkhand. An illustrative cross-sectional pilot sample of 200 respondents was used, equally divided between urban and rural participants. Data were assumed to be collected through a structured questionnaire covering socio-demographic characteristics, food-allergy knowledge, attitudes toward prevention and management, and food-related safety practices. The illustrative findings suggest that urban respondents showed higher knowledge and better routine practices than rural respondents, although attitudes toward the seriousness of food allergy were relatively positive in both groups. The widest gap appeared between awareness and action: many respondents expressed support for food-allergy precautions, but fewer regularly read labels, asked about ingredients, or sought formal medical advice after reactions. These model findings imply that food-allergy education in Jharkhand should focus on symptom recognition, label interpretation, cross-contact prevention, and timely care-seeking. Community campaigns, school-based education, and locally understandable food-safety messaging may help translate favourable attitudes into safer practices.

Keywords: Food allergy, awareness, Jharkhand, knowledge, attitudes, practices, pilot study, food labelling, public health, comparative study

Introduction

Food allergy is a clinically significant immune response to specific food proteins and is distinct from food intolerance, which does not involve the same immunologic mechanism. Contemporary reviews describe food allergy as a major public-health concern because it can affect quality of life, family routines, school participation, food choice, and, in some cases, lead to severe reactions including anaphylaxis. The epidemiologic burden is best documented in high-income settings, but the broader literature also emphasizes that many low- and middle-income regions still lack reliable community-level data, standardized diagnosis, and public awareness systems.

In South Asia, the evidence base remains comparatively thin. A review of food-allergy prevalence in South Asia found that the regional literature was limited and drew on a relatively small number of eligible studies, underscoring the need for locally grounded epidemiological and awareness-focused research. This gap matters because food allergy is not only a clinical issue; it is also shaped by food habits, diagnostic access, literacy, packaging comprehension, and public understanding of risk.

The Indian evidence that does exist suggests both emerging recognition and significant gaps. A hospital-based survey conducted in Kolkata examined food allergy in an eastern Indian population and highlights that food-allergy research in this part of the country is still sparse. Another India-based study from Hyderabad examined the knowledge, attitudes, and practices of medical clinicians regarding food allergy and anaphylaxis, showing that food-allergy preparedness is a relevant issue even among healthcare providers. More recently, a study of urban and rural school children from North India reported that the burden of food allergy in that setting was low, but also stressed the broader lack of reliable epidemiological data in India. Together, these studies show that the Indian discussion is evolving, yet public awareness studies at the community level remain limited.

Awareness is especially important because food allergy management depends heavily on prevention. People need to recognize symptoms, distinguish allergy from ordinary digestive discomfort, identify common trigger foods, read food labels correctly, avoid cross-contact, and seek timely medical care when severe symptoms occur. Educational studies among parents and caregivers have repeatedly found knowledge gaps. Gupta and colleagues reported important issues in parental food-allergy knowledge and beliefs; Goossens and colleagues similarly found that parental understanding was often incomplete; and Taha and colleagues, in a recent cross-sectional study, reported a median knowledge score of 7 out of 15, with higher scores linked to education, income, and discussion with health professionals. Educational interventions have also shown promise: LeBovidge and colleagues found that a handbook-based intervention could improve parental knowledge and confidence.

Review of literature

1. Gupta *et al*. (2010) [6]

Gupta and colleagues examined food-allergy knowledge, attitudes, and beliefs among parents of food-allergic children in the United States. Their study showed that even among directly affected families, understanding was not uniformly strong. Misconceptions remained around symptom interpretation, risk, and everyday management..

2. Goossens *et al*. (2013) [5]

Goossens and colleagues studied parental knowledge of food allergy and explicitly asked whether low knowledge might still be common among caregivers. Their work found that food-allergy knowledge was often incomplete, reinforcing the view that recognition of the condition does not automatically translate into safe management behaviour.

3. Dey *et al*. (2014) [3]

Dey and colleagues conducted a hospital-based survey in Kolkata, India, among 5,161 patients, combining questionnaire-based assessment with skin prick testing. The study remains important because it provided one of the clearer India-based snapshots of food allergy from eastern India and demonstrated the feasibility of structured assessment in the local context.

4. Jain *et al*. (2020) [7]

Jain and colleagues examined the knowledge, attitudes, and practices of medical clinicians regarding food allergy and anaphylaxis in Hyderabad, India. The study is relevant because clinician awareness shapes diagnosis, counselling, emergency care, and patient confidence.

5. Sehgal *et al*. (2024) [9]

Sehgal and colleagues studied the burden of food allergy among urban and rural school children from North India. Their work is especially important for the present article because it directly engages the urban–rural dimension within the Indian setting. The study concluded that food allergy prevalence in the surveyed area was low, but also emphasized the wider paucity of reliable Indian epidemiological data.

Objectives of the Study

The study was guided by the following objectives:

- To assess the level of knowledge regarding food allergy among adults in selected urban and rural communities of Jharkhand.
- To examine attitudes toward the seriousness, prevention, and management of food allergy.
- To evaluate routine practices related to food selection, label reading, ingredient checking, and care-seeking.
- To compare knowledge, attitudes, and practices between urban and rural respondents.

Research Methodology

Research Design

The study was designed as a comparative cross-sectional pilot study. A cross-sectional design was appropriate because the objective was to capture the current status of public knowledge, attitudes, and practices related to food allergy at one point in time. The comparative element enabled observation of possible differences between urban and rural respondents.

Study Area

For the purpose of this model article, the study was conceptualized in selected urban and rural communities of Jharkhand. The urban sample may be understood as representing respondents from municipal or semi-municipal areas, while the rural sample represents respondents from village-based communities. This urban–rural comparison was central to the study because food exposure patterns, packaged-food use, educational attainment, and access to health information may vary substantially across these settings.

Study Population

The target population consisted of adults aged 18 years and above who were involved in household food purchasing, meal preparation, child care, or food-related decision-making. This population was selected because food-allergy prevention often depends on everyday household decisions such as selecting foods, interpreting labels, and responding to symptoms.

Sample Size

As a pilot study, the sample size was kept modest but balanced. An illustrative total sample of 200 respondents was used:

- **Urban respondents:** 100
- **Rural respondents:** 100

A balanced sample was chosen to make group comparison straightforward and to generate preliminary evidence for future larger studies.

Sampling Technique

A purposive and convenience-based pilot sampling strategy was used. Respondents were approached through households, community gathering points, local networks, and public-access spaces. In a full-scale study, a multistage random sampling design would be preferable; however, for a pilot inquiry intended to explore patterns and test feasibility, a non-probability sampling approach was considered acceptable.

Tool for Data Collection

A structured questionnaire was developed with four sections:

1. **Socio-demographic profile**
   Age, sex, education, occupation, family type, and prior experience with allergic reactions.

2. **Knowledge section**
   Items assessed recognition of common allergenic foods, difference between food allergy and food intolerance, symptom awareness, awareness of emergency signs, understanding of food labels, and knowledge of cross-contact.

3. **Attitude section**
   Statements assessed perceived seriousness of food allergy, support for allergen labelling, willingness to learn, support for school or workplace precautions, and trust in medical care.

4. **Practice section**
   Items assessed routine label reading, ingredient checking while eating out, avoidance behaviour, consultation-seeking, documentation of suspected trigger foods, and emergency preparedness.

Scoring Pattern

For this model draft, the following scoring framework was used:

- **Knowledge score:** 15 items; correct answer = 1, incorrect/do not know = 0
- **Attitude score:** 10 items on a 5-point Likert scale
- **Practice score:** 10 items scored according to safe behaviour frequency

For interpretation

- **Adequate knowledge:** 60% or more of the total knowledge score
- **Positive attitude:** above the sample median attitude score
- **Good practice:** 60% or more of the total practice score

Pilot Testing

The questionnaire was assumed to be pre-tested on a small number of adults from a similar background to assess clarity, simplicity, and relevance. Based on pilot feedback, ambiguous items would be modified before final administration.

Method of Data Collection

Data were assumed to be collected through face-to-face interviews using the structured schedule. This method was suitable because it reduced non-response from low-literacy participants and allowed clarification of unfamiliar terms such as "food allergy," "cross-contact," and "anaphylaxis."

Data Analysis

Data were organized in tabular form and analysed through descriptive statistics such as frequency, percentage, mean, and standard deviation. For the comparative purpose of the study, urban and rural responses were contrasted across key knowledge, attitude, and practice indicators. In a full pilot analysis, chi-square tests and comparison of means may also be used.

Results and Discussion

Illustrative Pilot Findings

Table 1: Socio-demographic profile of respondents (N = 200)

Variable	Urban n=100	Rural n=100	Total
Female	56	60	116
Male	44	40	84
Mean age (years)	31.9	33.7	32.8
Secondary or below	24	61	85
Higher secondary	22	24	46
Graduate and above	54	15	69
Homemaker	38	44	82
Salaried/self-employed	49	28	77
Student/other	13	28	41
Reported prior family experience of suspected food reaction	21	14	35

The illustrative sample shows clear educational contrast between the two groups. Urban respondents were more likely to be graduates, whereas rural respondents were concentrated in secondary-level education or below. This difference is important because food-allergy awareness, label interpretation, and emergency care-seeking usually require both basic health literacy and confidence in reading packaged information. The literature also suggests that higher education and interaction with health professionals are associated with better food-allergy knowledge.

Table 2: Knowledge regarding food allergy by residence

Knowledge indicator	Urban (%)	Rural (%)	Total (%)
Had heard of food allergy before survey	82	59	70.5
Could identify at least three common allergenic foods	63	38	50.5
Knew that food allergy is different from food intolerance	54	27	40.5
Recognized itching/rash as a possible symptom	71	49	60.0
Recognized breathing difficulty as a danger sign	62	33	47.5
Knew food allergy can be life-threatening	69	41	55.0
Knew cross-contact can trigger reactions	46	21	33.5
Knew medical diagnosis is better than self-diagnosis	73	52	62.5
Knew labels may mention allergens separately	58	29	43.5
Adequate knowledge score (≥60%)	61	32	46.5

The model results indicate moderate but uneven awareness. General familiarity with the term "food allergy" was reasonably high overall, but deeper knowledge was weaker. Less than half of all respondents could distinguish food allergy from food intolerance, and fewer than half recognized breathing difficulty as a danger sign. Knowledge about cross-contact was particularly poor. These findings matter because many serious reactions are not caused only by intentionally eaten foods but also by hidden ingredients and accidental contamination.

The urban group performed substantially better than the rural group across almost all indicators. The biggest gaps appeared in knowledge of emergency signs, label awareness, and the concept of cross-contact. This is consistent with the broader literature showing that food-allergy knowledge is shaped by educational exposure, access to information, and prior counselling. It also aligns with the Indian context, where reliable awareness data are still limited and public understanding may not keep pace with regulatory requirements.

Table 3: Attitudes toward food allergy and its management

Attitude statement (positive response)	Urban (%)	Rural (%)	Total (%)
Food allergy is a serious health issue	84	73	78.5
Schools should have precautionary measures for allergic children	88	76	82.0
Packaged foods should clearly display allergen information	93	88	90.5
Severe reaction should be treated by a doctor immediately	81	63	72.0
Community awareness programmes are necessary	91	89	90.0
Families should inform schools/workplaces about severe allergies	79	61	70.0
Traditional home remedies alone are not enough in severe reactions	74	51	62.5
Positive attitude score above median	68	49	58.5

Attitudes were more favourable than knowledge. A large majority in both groups supported clear allergen labelling and community awareness programmes. This is an important finding because it suggests that public resistance may not be the central barrier. People may be willing to support prevention, even when they do not fully understand the clinical details.

However, attitudes were weaker when questions shifted from general support to action-oriented beliefs. For example, confidence that severe reactions require immediate medical care was lower, especially in the rural group. This gap between general concern and actionable belief is common in health-behaviour research: people may agree that a condition matters but still underestimate the urgency of correct response.

The strong support for allergen labelling is notable in light of current Indian regulations. FSSAI already mandates separate declaration of key allergens and permits "May contain" statements in cases of cross-contamination. The public response in this pilot draft suggests that such regulation is likely to be socially acceptable; the challenge is making it visible, understandable, and usable at the point of purchase.

Table 4: Practices related to food allergy prevention and management

Practice indicator	Urban (%)	Rural (%)	Total (%)
Regularly reads ingredient labels on packaged foods	49	24	36.5
Looks specifically for allergen information	41	18	29.5
Asks vendors/restaurant staff about ingredients	34	18	26.0
Avoids foods after suspected reaction	57	39	48.0
Sought formal medical consultation after repeated reaction	38	21	29.5
Keeps note/mental record of trigger foods	19	8	13.5
Knows nearest health facility for emergency reaction	27	12	19.5
Carries or stores prescribed anti-allergic medicine when needed	11	4	7.5
Informs school/workplace/family about known severe allergy	22	9	15.5
Good practice score (≥60%)	35	16	25.5

Practice scores were the weakest part of the KAP pattern. Even in the urban group, fewer than half regularly read ingredient labels, and only about one-third specifically looked for allergen information. Behaviour related to eating outside the home was even weaker. This matters because avoidance in informal food environments depends on asking about ingredients and preparation methods, especially where unpackaged or mixed foods are common.

The rural group showed consistently poorer practices. Only 12% knew the nearest health facility for emergency response, and very few reported carrying or storing prescribed medication when needed. While this pilot draft does not attempt to measure actual access to emergency allergy treatment, the pattern suggests that awareness campaigns cannot stop at knowledge. They must be linked to practical advice: when to seek help, what symptoms require urgent care, how to read labels, and how to ask about ingredients outside the home.

This knowledge–practice gap also resembles wider Indian food-label literacy concerns. Recent reviews of food-labelling in India highlight persistent gaps between awareness of labels and actual engagement with them during purchasing decisions. In other words, seeing labels and meaningfully using them are not the same thing.

Table 5: Comparative mean KAP scores

Score	Urban (Mean ± SD)	Rural (Mean ± SD)	Total
Knowledge (out of 15)	9.2 ± 2.8	6.1 ± 2.7	7.7 ± 3.1
Attitude (out of 50)	39.6 ± 5.1	35.8 ± 5.8	37.7 ± 5.7
Practice (out of 10)	4.1 ± 2.0	2.3 ± 1.7	3.2 ± 2.0
Composite KAP score	52.9 ± 8.6	44.2 ± 8.1	48.6 ± 9.1

The mean-score summary confirms the main pattern: attitudes were highest, knowledge was intermediate, and practice was lowest. Urban respondents scored higher than rural respondents on all three dimensions, but the urban advantage was strongest for knowledge and practice. This suggests that education, exposure to packaged food markets, and access to formal health information may help awareness translate into behaviour.

Table 6: Adequate knowledge by selected respondent characteristics

Characteristic	Adequate knowledge (%)
Secondary or below	25
Higher secondary	41
Graduate and above	68
Prior family history of suspected food reaction	70
No such family history	39

This table suggests that both education and prior household exposure are strongly associated with higher knowledge. That pattern is consistent with previous studies, including the recent parental knowledge literature showing that education and health-professional communication are important determinants of better understanding. This has clear intervention value: awareness programmes in Jharkhand should especially target lower-literacy households and communities with little prior exposure to formal allergy information.

Discussion

The pilot findings suggest that food-allergy awareness in Jharkhand may be best described as partially informed but operationally weak. Respondents often recognized that food allergy is serious and supported clearer safeguards, yet their day-to-day prevention practices were limited. This pattern is important because food-allergy safety depends less on abstract agreement and more on concrete behaviour.

The first major finding is the unevenness of knowledge. While many respondents had heard of food allergy, fewer could distinguish it from food intolerance, identify emergency symptoms, or understand cross-contact. This mirrors the international literature on parents and caregivers, where awareness frequently proves shallower than expected. It also fits the Indian context, where public evidence remains limited and structured counselling may not be widely available outside specialist settings.

The second major finding is the relatively favourable attitude pattern. Most respondents endorsed school precautions, community education, and clear allergen declarations. This is encouraging because it means public-health communication efforts may find a receptive audience. Rather than first overcoming resistance, policymakers and educators may be able to focus on improving comprehension and practical confidence.

The third and most important finding is the weakness of protective practices. Label reading was inconsistent, ingredient checking while eating outside the home was infrequent, and emergency preparedness was poor. This is where regulation and awareness meet everyday behaviour. India's food-labelling regulations already require allergen declarations on pre-packaged foods, including separate mention of key allergenic ingredients and allowance for "May contain" statements for cross-contamination. Yet safe behaviour remains unlikely unless people know what to look for and why it matters.

The urban–rural contrast is also noteworthy. Urban respondents were better informed and more likely to adopt safer practices. This does not necessarily mean rural communities are less concerned; indeed, rural attitudes were often positive. Rather, it suggests that concern does not automatically become action when educational resources, medical guidance, and label familiarity are limited. The North Indian urban–rural child study by Sehgal and colleagues reinforces the value of comparing settings within India rather than assuming one national pattern.

From a public-health perspective, the findings suggest several practical directions for Jharkhand. First, food-allergy education should emphasize recognition of danger signs, especially breathing difficulty and rapid-onset systemic symptoms. Second, awareness campaigns should teach people how to use labels in simple terms: identify the allergen declaration, understand "may contain," and be cautious about mixed foods. Third, schools, anganwadi-linked family outreach, community health workers, and local food vendors could be included in awareness efforts. Fourth, rural communication should use short, plain-language messaging rather than medically dense content. Educational studies indicate that knowledge can improve when information is structured and delivered accessibly.

Conclusion

This comparative pilot study draft suggests that food-allergy awareness in Jharkhand is likely to be uneven across knowledge, attitudes, and practices. The illustrative findings indicate that both urban and rural respondents may consider food allergy important, but many may still lack the practical knowledge needed to prevent exposure and respond appropriately. Urban respondents appear more advantaged in terms of label awareness, symptom recognition, and safer food-related behaviour, while rural respondents may require more focused support.

The study points to a broader lesson: awareness is not just about having heard of food allergy. It includes recognizing high-risk symptoms, distinguishing allergy from intolerance, understanding cross-contact, reading labels accurately, and seeking timely medical care. Since Indian regulations already provide a framework for allergen declaration, the next step is strengthening consumer literacy and household-level response capacity.

As a pilot exercise, this study provides a useful template for a larger community-based investigation in Jharkhand. A future full-scale study should use probability sampling, larger district representation, and actual field data to test the patterns suggested here. Even at the pilot level, however, the message is clear: food-allergy education in Jharkhand should move beyond awareness slogans and focus on usable prevention skills.

References

1. Arakali SR, Green TD, Dinakar C. Prevalence of food allergies in South Asia. Annals of Allergy, Asthma & Immunology,2017:118(1):16-20.
2. Bartha I, Almulhem N, Santos AF. Feast for thought: A comprehensive review of food allergy 2021-2023. Journal of Allergy and Clinical Immunology,2024:153(3):576-594.
3. Dey D, Ghosh N, Pandey N, Gupta Bhattacharya S. A hospital-based survey on food allergy in the population

of Kolkata, India. International Archives of Allergy and Immunology,2014:164(3):218-221.
4. Food Safety and Standards Authority of India. Food Safety and Standards (Labelling and Display) Regulations, 2020 (Version III; operationalized 1 July 2022). FSSAI, 2022.
5. Goossens NJ, Flokstra-de Blok BMJ, van der Meulen GN, Botjes E, Burgerhof HGM, Gupta RS, *et al*. Food allergy knowledge of parents - is ignorance bliss? Pediatric Allergy and Immunology,2013:24(6):567-573.
6. Gupta RS, Springston EE, Smith B, Kim JS, Pongracic JA, Wang X, *et al*. Food allergy knowledge, attitudes, and beliefs of parents with food-allergic children in the United States. Pediatric Allergy and Immunology,2010:21(6):927-934.
7. Jain PD, Gupta RS, Chadha AS, Warren CM, Rao VV, Putcha UK. Knowledge, attitude, and practices of medical clinicians regarding food allergy and anaphylaxis in Hyderabad, India. Annals of Allergy, Asthma & Immunology,2020:125(5):560-564.
8. LeBovidge JS, Michaud A, Deleon A, Harada L, Waserman S, Schneider L. Evaluating a handbook for parents of children with food allergy: A randomized clinical trial. Annals of Allergy, Asthma & Immunology,2016:116(3):230-236.
9. Sehgal S, Gupta N, Dadha P, Nagarajan S, Gupta R, Verma MJ, *et al*. Understanding the burden of food allergy among urban and rural school children from north India. World Allergy Organization Journal, 2024, 17(6).
10. Taha S, Rabaiah R, Dweikat A, *et al*. Parental knowledge and attitudes toward food allergies: A cross-sectional study on determinants and educational needs. BMC Public Health,2024:24:2668.
11. Warren CM, Jiang J, Gupta RS. Epidemiology and burden of food allergy. Current Allergy and Asthma Reports,2020:20(2):100-120.