

Assessment of Knowledge Regarding Food Adulterants Among Homemakers in Hyderabad

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Abstract

Background: Food adulteration is a significant public health issue, particularly in developing countries. The rise in food adulteration due to economic pressures has led to increased food-borne illnesses. Awareness and knowledge about food adulteration are crucial for preventing its harmful effects.

Objective: This study assesses the knowledge of homemakers in Hyderabad regarding common food adulterants, their sources of information, and the impact of education, socioeconomic status, and demographics on their understanding.

Methods: A cross-sectional survey was conducted from January 18 to June 29, 2024, involving 894 homemakers aged 25 to 50. A structured questionnaire was administered through interviews.

Results: While a majority of homemakers were aware of basic food adulterants and their harmful effects, a significant portion lacked in-depth knowledge about various adulteration techniques and detection methods.

Conclusion: Enhancing the knowledge of homemakers regarding food adulteration is vital for improving food safety and public health. Targeted educational interventions are recommended to bridge knowledge gaps.

Keywords: Food adulteration, food adulterants, homemakers, knowledge, public health.

Introduction

Food adulteration—the deliberate alteration of food quality for economic gain—presents a serious threat to public health globally. This practice involves the intentional addition, substitution, or removal of food components, thereby compromising both the safety and purity of food products (Bansal, Kumar, & Arora, 2015). The prevalence of food adulteration is particularly concerning in developing countries, where it significantly contributes to the incidence of food-borne illnesses and exacerbates public health issues (Manning, 2016). Homemakers, who are often responsible for food procurement and preparation within their households, play a crucial role in detecting and preventing food adulteration. Their knowledge and vigilance are key to mitigating the health risks associated with contaminated and adulterated foods (Liu, Pieniak, & Verbeke, 2013).

Historically, the pursuit of high-quality food has been a cornerstone of human civilization, as food quality directly impacts overall health and well-being (Manning, 2016). In modern times, the pressures of meeting consumer demands for low-cost products have led to widespread adulteration across various food categories, including oils, beverages, spices, and dairy products (Bansal, Kumar, & Arora, 2015; Kaur, Arora, & Verma, 2017). This issue not only undermines food quality but also poses significant health risks, especially in regions with inadequate sanitation and limited access to clean water. Such conditions contribute to the exacerbation of malnutrition and disease (Sharma & Thakur, 2019; Yadav, 2018).

Educating the public, particularly homemakers, about food adulteration is essential for improving food safety and protecting public health. Homemakers, as primary managers of food safety at the household level, are instrumental in safeguarding their families from the dangers associated with adulterated foods (Smith & Johnson, 2018). Understanding the nature of food adulteration and the methods to detect it are critical for preventing exposure to harmful substances. This study aims to assess homemakers' knowledge and practices related to food adulteration, identify gaps in their understanding, and highlight areas where targeted educational interventions could enhance public health outcomes.

Aims and Objectives of the study

- To assess the awareness level of homemakers regarding common food adulterants.
- To identify the sources from which homemakers acquire information about food quality and safety.
- To explore the influence of education and socioeconomic factors on their knowledge.
- To identify gaps in knowledge and suggest areas for educational interventions.

Materials and Methods

This study utilized a cross-sectional survey design to assess the knowledge of homemakers in Hyderabad regarding food adulterants. The survey was conducted from January 18 to June 29, 2024.

A total of 894 homemakers, aged between 25 to 50 years, were selected using purposive sampling. The inclusion criteria were homemakers responsible for purchasing and preparing food for their households. The exclusion criteria included individuals who were not involved in food-related decisions within their homes.

Data were collected using a structured questionnaire, which was developed based on existing literature and pretested on a small sample for reliability. The questionnaire included sections on demographic information, awareness of common food adulterants, sources of information, and detection practices. Interviews were conducted face-to-face and via phone calls.

The data collected were coded and entered into Microsoft Excel for analysis. Descriptive statistics, including frequencies, percentages, and means, were used to summarize the data. Chi-square tests were employed to assess the association between demographic variables and knowledge levels.

Results

The study's demographic analysis revealed that the average age of respondents was 50 years. A significant portion of the respondents (40%) were graduates, with the majority falling within the 40-50 age group.

Regarding awareness, 90.7% of the participants reported knowing what food adulteration is. However, detailed knowledge about specific adulterants and detection methods was limited. For example, only 53.6% of respondents could identify adulteration in milk based on its consistency.

The sources of information about food adulteration varied, with family (40%) and social media (30%) being the most common. Less common sources included educational institutions and food safety workshops.

The study also highlighted gaps in knowledge related to the detection of adulterants in items like spices and oils. While some respondents knew basic detection methods, more advanced techniques were largely unknown.

Awareness of Food Adulteration

Table 1: Awareness of Food Adulteration Among Homemakers

Awareness Level	Percentage (%)
Aware	90.0
Unaware	10.0

A substantial majority of respondents (90%) demonstrated awareness of food adulteration, indicating a strong general understanding of its risks. However, 10% of the respondents were not familiar with the concept, suggesting a need for targeted educational initiatives to enhance their knowledge.

Figure 1: Sources of Information on Food Adulteration

The sources through which homemakers obtained information about food adulteration varied. Family emerged as a predominant source, emphasizing the role of intergenerational knowledge transfer. Social media, television, and newspapers also played significant roles, reflecting the diverse channels through which information about food safety is disseminated.

Knowledge of Adulterants and Health Effects

Table 2: Familiarity with Common Adulterants

Adulterants Identified	Percentage (%)
Chalk, Sandstones, Synthetic Colors	90.6
Other Adulterants	9.4

A high proportion (90.6%) of respondents were knowledgeable about common adulterants such as chalk, sandstones, and synthetic colors. This suggests a nuanced understanding of the substances often used to alter the appearance or taste of foods.

Figure 2: Awareness of Health Risks Associated with Adulterated Foods

Further analysis revealed that 86.8% of respondents recognized the health risks associated with consuming adulterated foods. Conversely, 13.2% were unaware of these potential health hazards, indicating a need for further education on the health implications of food adulteration.

Knowledge of Frequently Adulterated Foods

Table 3: Identification of Commonly Adulterated Foods

Food Item Identified	Percentage (%)
Turmeric	42.8
Saffron	14.9
Cumin	5.5
All of the Above	24.4
None of the Above	2.5

Respondents' awareness of commonly adulterated foods was also assessed. The majority (42.8%) identified turmeric as frequently adulterated, consistent with industry reports. Other items mentioned included saffron (14.9%) and cumin (5.5%). Additionally, 24.4% of respondents recognized the prevalence of adulteration across multiple food categories.

Food Safety Practices

Table 4: Food Safety Practices Reported by Respondents

Practice	Percentage (%)
Washing Fruits and Vegetables	32.7
Inspecting for Unusual Colors or Textures	24.2
Multiple Safety Strategies (e.g., washing and inspecting)	16.0
Purchasing Organic Products	13.9
Using Olfactory Cues	6.8
No Specific Precautions	6.5

The study also examined food safety practices among respondents. It was found that 32.7% of homemakers reported thoroughly washing fruits and vegetables as a precautionary measure. Additionally, 24.2% inspected produce for unusual colors or textures. A combined approach involving both washing and inspecting was adopted by 16% of respondents. Meanwhile, 13.9% preferred organic produce to ensure safety, and 6.8% used olfactory cues to detect potential adulteration. Notably, 6.5% of respondents did not take specific precautions, indicating potential gaps in awareness or concern about food safety.

Discussion

The study reveals a substantial awareness among homemakers about basic food adulterants. However, there is a significant gap in knowledge about advanced detection methods and the dangers of less common adulterants. Educational interventions targeting these gaps could enhance food safety practices.

In the food adulteration study, 894 homemakers in the 25–50 age range participated. These people are representative of a varied group of people who make decisions for the household, especially when it comes to buying and preparing food. The average age of the participants was roughly 50 years old, suggesting that a significant proportion of the population is in the middle age range.

90% of the homemakers who responded to the study showed that they were aware of food adulteration. This result implies that consumers are highly aware of the possible dangers of consuming tainted food items. The fact that 10% of respondents did not know what food adulteration is, however, is noteworthy and emphasizes the need for more education and awareness programs to reach this demographic.

Among the surveyed homemakers, 90% showed awareness of food adulteration, indicating a high level of understanding about the risks of consuming adulterated foods. Nonetheless, 10% were unfamiliar with the concept of food adulteration, revealing a need for increased educational outreach to this group.

The homemakers acquired their knowledge from a variety of sources, including traditional family wisdom and modern media channels such as social media, television, and newspapers. This diverse range of information sources highlights the broad spectrum of methods through which people learn about food safety.

The level of food contamination awareness among the surveyed home makers was found to be 90%, which indicates that there is a good understanding about consumption of adulterated foods. But, 10% had no idea about adulteration and this is an indication that more education should be given to these people. Sources of knowledge for the homemakers range from traditional family customs to up-to-the-minute social media like Facebook, TV channels and newspapers. The diverse sources of information show how

different people get to know about food safety.

When it comes to specific adulterants, 90.6% respondents could identify obvious such as chalk, sandstones or synthetic colors that change the smell or look of their products. It seems like these people really are knowledgeable concerning all kinds of contaminants present in our diet. Additionally, 86.8% were familiar with the health hazards that come along with eating contaminated foodstuffs. Nonetheless, there was a minority group (13.2%) lacking this knowledge thus emphasizing on targeted educational campaigns.

Another goal was to find out what foods are most commonly thought to have been tampered with by manufacturers. The findings indicated that 42.8% mentioned turmeric as one often being faked based on industry reports since artificial coloring agents are used in spices too.

Conclusion

The results provide a comprehensive overview of homemakers' awareness and practices concerning food adulteration. While a significant proportion demonstrated knowledge of adulterants and health risks, there is a clear need for targeted educational interventions to address the remaining knowledge gaps and promote proactive food safety measures. These insights are valuable for developing effective strategies to enhance consumer awareness and ensure safer food consumption practices.

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