

Assessment of Knowledge and Perception Regarding Food Adulteration among Homemakers in Selected Areas of Kamrup District

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Abstract: ***Background and aims:** Food Adulteration is an age old problem, which not only affects the health status of consumers but also exploits consumers economically by providing inferior quality of foodstuffs despite being paid reasonably. Adequate knowledge and favorable perception can help the society to mitigate the evil of adulteration. **Method:** A descriptive quantitative research approach and descriptive survey design was adopted for the study. 270 homemakers were selected using multistage random sampling technique. **Results:** Out of 270 homemakers, 181 (67%) had moderately adequate knowledge and 162 (60%) had moderately favorable perception. Moderate positive correlation was found between knowledge and perception ($r=0.516$). Significant association was found between knowledge and age, religion, types of family, monthly income and sources of information. Similarly, significant association was found between perception and age, religion, monthly income and sources of information. **Conclusion:** Majority of the homemakers had moderately adequate knowledge and moderately favorable perception. Interventional measures are necessary for improving the level of knowledge and perception regarding Food Adulteration.*

Keywords: Foodstuffs, Consumers, Health hazards

1. Introduction

Food is the basic requirement of all living beings and it is the right of every citizen to have access to clean, safe and nutritious food.¹

With the increase in population, urbanization and demand for more convenient, available, and ready-to-serve food products, the temptation of adulteration and economically motivated profit has increased. The final target of such misconduct is mostly the consumer who unknowingly buys and consumes these foods and may suffer from health related issues.²

Food Safety and Standards Authority of India (FSSAI) in its report (2018-2019) alarmingly revealed that 28% of food samples were adulterated and that adulteration had doubled since 2012.³

The World Health Organization declared that exposure to chemicals in food can result in 3% of all developmental defects, such as neural tube and heart deformities, 25% genetic deformities, male sterility, neurobehavioral disorders, proliferative lung disease and allergic sensitization.⁴

Food Adulteration is a menace that has serious impact on the public health. Realizing its grave danger, the investigator felt the need to conduct a study on homemaker's knowledge and perception regarding Food Adulteration, as it was the pressing priority to create awareness among them to prevent the unlawful practice of Adulteration.

2. Review of Literature

Pillai S, Chakraborty J (2017) conducted a study on knowledge of food adulteration among homemakers regarding food safety standards in selected rural community. The overall analysis of knowledge score of the rural homemakers regarding food adulteration and its detection revealed that 50% had poor knowledge, 26.6% had average knowledge, 20% had good knowledge and 3.33% had excellent knowledge. The maximum knowledge score among the home makers were in the area of food adulteration (64.3%) followed by detection of food adulterant (51.34%) and Consumer Protection Act (38.7%).⁵

Chandila, J, Puri D (2019) conducted a comparative study on consumer perception towards packaged spices among rural and urban women. The study showed that unpackaged turmeric powder was adulterated with artificial color and impurities (dust and dirt). It was seen that 36% rural women and 86% urban women preferred packaged spices. The study showed that urban women were most conscious to know about the brands of spices and ill effects of using unpackaged spices while rural people mostly ignore the brands and gave priority to taste and price of the spices.⁶

Problem Definition

"Assessment of knowledge and perception regarding Food Adulteration among homemakers in selected areas of Kamrup district."

Objectives of the study

1) To assess the knowledge regarding Food Adulteration among homemakers.

- 2) To assess the perception regarding Food Adulteration among homemakers.
- 3) To find out the correlation between knowledge and perception regarding Food Adulteration among homemakers
- 4) To find out the association between knowledge regarding Food Adulteration with selected demographic variables of homemakers.
- 5) To determine the association between perception regarding Food Adulteration with selected demographic variables of homemakers.

3. Methodology

A community based descriptive survey approach and descriptive survey design were adopted for the study. This study was conducted among 270 homemakers of age group 20-60 years residing in selected villages under Hajo Block PHC using multistage random sampling technique. The obtained data were analyzed using descriptive and inferential statistics. Institutional Ethics Committee clearance were obtained before the commencement of the study. Verbal and written consent were obtained from all the participants prior to data collection. The participants were assured of the confidentiality of the obtained data. To assess the correlation between variables, Spearman Brown's correlation coefficient was used. Pearson's chi-square test was used to test any association between research variables and demographic variables. A p-value less than or equal to 0.05 was considered significant.

4. Results

Majority i.e., 31.9% of the homemakers belonged to the age group of 40-49 years. The educational qualification of the majority group was high school passed (35.2%). Most of the homemakers belonged to Hindu religious faith (57.8%). Majority, i.e., 35.6% of homemakers belonged to the monthly income bracket of Rs 29,973-49,961. Nuclear family was predominant in the study setting (77%). Greater number of the homemakers obtained Food Adulteration related information from the health personnel, i.e., 41.9%.

Among 270 homemakers, greater number had moderately adequate knowledge (67%), 20.7% had inadequate knowledge and only 12.3% had adequate knowledge. Regarding perception, majority had moderately favorable perception (60%), followed by unfavorable perception (21.9%) and favorable perception (18.1%).

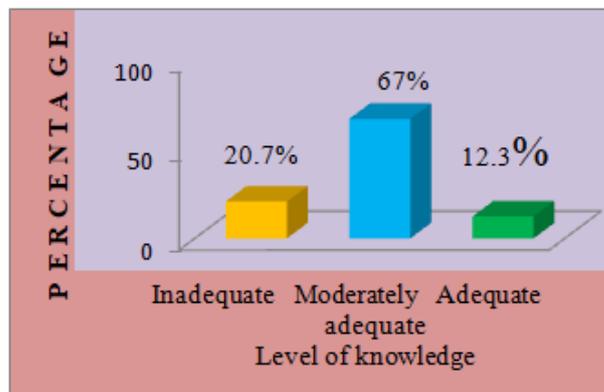


Figure 1: Percentage distribution of level of Knowledge regarding Food Adulteration

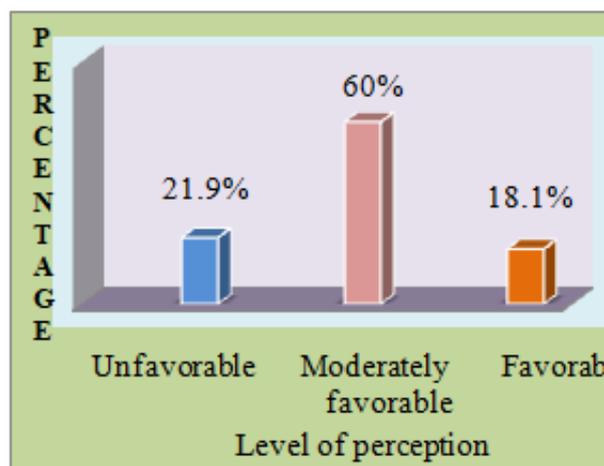


Figure 2: Percentage distribution of level of perception regarding Food Adulteration

The study tested the correlation between knowledge and perception of the homemakers regarding Food Adulteration using Spearman Brown's correlation coefficient. Obtained value ($r=0.516$, $p=0.001$) indicates moderately positive correlation between knowledge and perception regarding Food Adulteration and the result is depicted in Table 1

Table 1: Correlation between knowledge and perception regarding Food Adulteration among homemakers, n=270

Variables	Mean	SD	Correlation coefficient (r)	p- value
Knowledge	12.37	2.479	0.516	0.001
Perception	21.69	2.733		

The study associated the level of knowledge of homemakers regarding Food Adulteration with the selected demographic variables using Pearson's chi square test. The findings showed significant association of knowledge with age, religion, types of family, monthly income of the family and sources of information. The findings are depicted in Table 2.

Table 2: Association between knowledge regarding Food Adulteration with demographic variables, n=270

Demographic variables	Level of knowledge			Chi square	df	p value
	Inadequate	Moderately adequate	Adequate			
Age (Years)				18.12	6	0.006
a) 20-29	21	31	4			
b) 30-39	20	54	10			
c) 40-49	12	62	12			
d) 50-60	3	34	7			
Religion						

a) Hindu	21	98	37	20.96	4	0.001
b) Islam	38	63	12			
c) Christian	0	1	0			
Types of family						
a) (a) Nuclear	40	125	43	12.17	4	0.016
b) (b) Joint family	18	37	6			
c) (c) Extended family	1	0	0			
Monthly income (Rs)						
a) ≥199,862	1	1	0	21.14	12	0.047
b) 99,931-199,861	2	1	0			
c) 74,755-99,930	1	0	0			
d) 49,962-74,754	5	22	1			
e) 29,973-49,961	12	70	14			
f) 10,002-29,972	16	56	11			
(g) 10,001	19	31	7			
Sources of information						
a) Mass media	13	29	2	20.97	6	0.002
b) Health personnel	24	80	9			
c) Family member	9	445	19			
d) Neighbors	10	27	3			

Association between perception regarding Food Adulteration and selected demographic variables showed that perception was significantly associated with age, religion, monthly income of the family and sources of information. The findings are shown in Table 3.

Table 3: Association between perception regarding Food Adulteration with demographic variables, n=270

Demographic variables	Level of perception			Chi square	df	p value
	Unfavorable	Moderately favorable	Favorable			
Age (years)						
(a) 20-29	23	24	9	22.24	6	0.001
(b) 30-39	21	48	15			
(c) 40-49	12	59	15			
(d) 50-60	3	31	10			
Religion						
(a) Hindu	21	98	37	10.21	4	0.001
(b) Islam	38	63	12			
(c) Christian	0	1	0			
Monthly income (Rs)						
(a) ≥199,862	1	1	0	24.53	12	0.017
(b) 99,931-199,861	2	1	0			
(c) 74,755-99,930	1	0	0			
(d) 49,962-74,754	5	21	2			
(e) 29,973-49,961	12	63	21			
(f) 10,002-29,972	17	50	16			
(g) <10,001	21	26	10			
Sources of information						
(a) Mass media	15	25	4	17.12	6	0.009
(b) Health personnel	02-May	72	16			
(c) Family member	9	41	23			
(d) Neighbors	10	24	6			

5. Discussion

The study findings shows that majority (67%) of homemakers had moderately adequate knowledge. The finding is supported by another study conducted by Kurup AS (2020), which showed that majority (62.5%) of adolescent had average knowledge regarding food adulteration.⁷

The study finds significant correlation ($r=0.516$, $p=0.001$) between knowledge and perception regarding Food Adulteration among homemakers. Nyalo M (2020) in his study also found significant correlation between knowledge and attitude among food handlers.⁸

The association between knowledge of Food Adulteration and selected demographic variables showed that knowledge was significantly associated with age, religion, types of family, monthly income of the family and sources of information. Gupta R, Panchal P (2009), in their study also highlighted that knowledge of food adulteration was positively correlated with family income.⁹ Another study conducted by Thangraj SS, Dastan LC (2009) also supported the present study as it found that higher education brings more awareness on Food Adulteration.¹⁰

In the present study, the findings related to association between perception regarding Food Adulteration and selected demographic variables showed that perception was

significantly associated with age, religion, monthly income and sources of information. Pal AD, Jain A (2018), also highlighted in their study that levels of perception regarding adulteration was comparatively higher in high income group than the low income group.¹¹ Ruslan AAA, Kamarulzaman NH, Sanny M (2018) also highlighted in their study that age, gender and occupation had significant relationship with food fraud issues.¹²

6. Conclusion

As the homemakers are the principal person for preparing food in the family, her knowledge and perception regarding food safety directly influence the health of the entire family. The present study revealed that majority of the homemakers had moderately adequate knowledge and moderately favorable perception. Hence, it is essential to create community awareness and take interventional measures for the health and wellbeing of the community.

7. Future Scope

Similar study may be replicated on a larger sample size of the same characteristics for better generalization of the findings. There is a scope for conducting a comparative study in rural and urban settings. An experimental study can be carried out to determine the effectiveness of planned teaching programme to improve the knowledge of homemakers regarding Food Adulteration. Also a comparative study can be carried out on the health status among family members with greater and lesser exposure to adulterated food

References

- [1] Abidfaheem TK, Nayak SB, Andrae M. Food adulteration and family's knowledge on food adulteration in selected village of Udupi taluk, Karnataka. Nitte University Journal of Health Science. 2013 June [cited 2021 Feb]; 3(2):33-37. Available from <http://nitte.edu.in>
- [2] Essuman EK, Teye E, Dadzie RG, Sam-Amoah LK. Consumer's knowledge of food adulteration and commonly used methods of detection. Journal of Food Quality [Internet]. 2022 [cited 2022 Jun]. Available from <https://doi.org/10.1155/2022/2421050>
- [3] Jyotsna K, Dubey A. Critical analysis of food adulteration in India. International Journal of Creative Research Thoughts. [Internet], 2021 Aug 8 [cited 2021 Dec 12]; 9(4): 521-27. Available from <https://ijcrt.org/papers/IJCRT2108391.pdf>
- [4] Indu S. A comparative study to assess the knowledge regarding food adulteration and its detection and to create awareness among homemakers in selected rural and urban community of Durg district, Chattisgarh. Pondicherry Journal of Nursing. [Internet], 2019 [cite 2020 Mar 5]; 12(2): 31-7. Available from <https://pjn.sbvjournals.com/abstractArticleContentBro wse/PJN/20293/JPJ/fullText>
- [5] Pillai S, Chakraborty J. A study to assess the knowledge regarding food adulteration among homemakers regarding food safety standards in selected rural community .Asian journal of Nursing Education and Research [Internet]. 2017[cited 2021 Jan15];7(1):77-8.Availablefrom <https://ajner.com/HTMLPaper.aspx?Journal=Asian%20Journal%20of%20Nursing%20Education%20and%20Research;PID=2017-7-1-16>
- [6] Chandila J, Puri D. A comparative study on consumer perception towards packaged spices among rural and urban women. International Journal of Health Sciences and Research [abstract]. 2019 Aug[cited 2020 Dec 23];9(8):399-405)Available fromhttps://www.ijhsr.org/IJHSR_Vol.9_Issue.8_Aug 2019/55.pdf
- [7] Kurup AS. A study to assess the knowledge of adolescent regarding food adulteration in selected school of Chennai, Tamilnadu. Journal of Molecular Clinical Medicine [Internet]. 2020 [cited 2021 Jan 5]; 07(07):6090-1. Available from: https://ejmcm.com/article_6007_52c075a720a0e8f258e76429c2dcddf1.pdf
- [8] Nyalo M. Relationship between knowledge, attitudes and practices on food safety among food handlers in Nairobi, Kenya: A case study of a teaching and referral hospital. US International University, Africa [Internet] 2020 [cited 2021 Jul 19]:76. Available from <http://41.204.183.105/bitstream/handle/11732/6059/M WANIKI%20NYALO%20MBA%202020.pdf?sequence=1&isAllowed=y>
- [9] Indu S. A comparative study to assess the knowledge regarding food adulteration and its detection and to create awareness among homemakers in selected rural and urban community of Durg district, Chattisgarh. Pondicherry Journal of Nursing. [Internet]. 2019 [cited 2021 Mar 8]; 12(2):31-7. Available from <https://pjn.sbvjournals.com/doi/PJN/pdf/10.5005/jp-journals-19984-12112>
- [10] Thangraj SS, Dastan LC. The extent of consumer awareness on food adulteration influencing the buying behavior of consumers with special reference to Chennai city. GIS Business [internet]. 2019 [cited 2021 Feb5]:14(6),105-10.Available.from<https://www.gisbusiness.org/index.php/gis/article/download/11684/7358>
- [11] Pal AD, Jain A. Adulteration in commonly used cooking oils of consumer perception and detection of adulterants. International Journal of Health Sciences and Research [Internet]. 2018 Dec [cited 2021 Jul 21];8(12)"31-7. Available from www.ijhsr.org
- [12] Ruslan AAA, Kamarulzaman NH, Sanny M. Muslim consumers' awareness and perception of halal food fraud. International Food Research Journal [Internet]. 2018 Dec [cited 2021 Jun 3]; 25(1): 87-96. Available from [http://www.wifrij.upm.edu.my/25%20\(07\)%202018%20supplementary%201/11%20-%20IFRJ18582R1%20Edited.pdf](http://www.wifrij.upm.edu.my/25%20(07)%202018%20supplementary%201/11%20-%20IFRJ18582R1%20Edited.pdf)