



# A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING FOOD ADULTERATION AMONG THE ADULTS AT SELECTED COMMUNITY AREA

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## ABSTRACT

**Introduction:** Adulteration of food is the intentional deterioration of the quality of food offered for sale by either the addition or substitution of an inferior substance or by the omission of a valuable ingredient. Food is the basic thing of life which is absorbed by our body to run metabolic processes and sustain life. Food is essential for growth, and various life processes. An array of food in our daily diet includes vegetables, fruits, legumes, pulses, grains, etc. All of these are either consumed raw or made into delicacies and savoured. But, nowadays, we are observing some changes in the food like very thin milk due to mixing of water, white, yellow, or black pebbles in raw pulses, white tiny stones mixed with rice, and so on. This mixing of elements with food items is adulteration. Adulterants are mostly harmful and pose the ability to lower the potency of the product. Hence the present study aimed to assess the knowledge regarding Food adulteration among adults residing at DV Puram, Thiruthani. **Objectives:** To assess the level of knowledge regarding Food adulteration among the adults. To assess the effectiveness of structured teaching program regarding Food adulteration among the adults. To associate the level of knowledge regarding Food adulteration among the adults with selected demographic variables. **Methodology:** Quantitative research design was used for this study. 30 samples who fulfilled the sample selection criteria were selected as sample by using non probability purposive sampling technique and assessed through structured questionnaire. **Results:** The study reveals that in the pretest mean score of knowledge was  $11.27 \pm 3.67$  and the posttest mean score was  $16.13 \pm 2.01$ . The mean difference score was 4.86. The calculated paired “t” test value of  $t=7.657$  was statistically significant at  $p < 0.001$  level which clearly indicates that Structured Teaching Programme on knowledge regarding food adulteration among adults was effective in improving the level of knowledge among them in the post test. **Conclusion:** The study concluded that majority of the adults had inadequate knowledge in the pretest. After structured teaching programme, there was an improvement in their knowledge scores.

## INTRODUCTION

Food adulteration has become a very common Need practice in our country and we are consuming these

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foods almost every day, which have numerous harmful effects to our health. Every day we watch in the TV news how the unhygienic and spurious foods are entering into our houses. Adulteration of foods has many effects on individuals as well as on the community health.



Food adulteration is the process through which the quality of food is lowered. Food are organic substances consumed for energy, growth, and nutritional purpose. Every living thing requires food to survive. Clean, fresh, and healthy foods are important to human health. Today, food is affected by various artificial things. Adulteration of food is the intentional deterioration of the quality of food offered for sale by either the addition or substitution of an inferior substance or by the omission of a valuable ingredient. Food is the basic thing of life which is absorbed by our body to run metabolic processes and sustain life. Food is essential for growth, and various life processes.

Food adulteration remains a significant problem in India, with FSSAI (Food Safety and Standards Authority of India) data showing a high rate of non-conforming samples in recent years, such as over 33,000 out of 1.5 lakh (150,000) in 2023–24. While rates vary by region and year, studies indicate consistently high percentages, like 25% in Rajasthan in 2024 and ~20% across South India from 2021-2024. Common adulterants include water in milk, sugar syrup in honey, and non-food substances added to increase weight or improve appearance, posing serious public health risks.

#### OBJECTIVES:

1. To assess the level of knowledge regarding Food adulteration among the adults.
2. To assess the effectiveness of structured teaching program regarding Food adulteration among the adults.
3. To associate the level of knowledge regarding Food adulteration among the adults with selected demographic variables.

#### MATERIALS AND METHODS:

The research approach used was quantitative research approach and research design was pre-experimental one group pretest and posttest design. The study was conducted to assess the knowledge and practice regarding Food adulteration among the adults residing at DV Puram, Tiruttani. The target population selected for this study was all the adults residing in Tamil Nadu. Sample consist of 30 adolescent. The sample selected for this study by using a convenient sampling technique. The research develops tool necessary for the present study as per expert's opinion. It consists of Part-I: Demographic Variables. Part –II: Multiple choice question to assess the

knowledge and practice regarding Food adulteration. The Score interpretation for knowledge questionnaire consist of 30 multiple choice questions with four options among them only one was the correct answer. The correct answer was given a score of '1' and the wrong answer was scored as '0' and the total score on knowledge was 30. The Score interpretation for practice consist of 10 questions with yes or no option about dengue fever and hence, a " YES" response was scored 1 and "NO" was scored '0'. The total score was 10. For the purpose of study, the total score was converted in to percentage and interpreted as 50% and below-Inadequate knowledge 51%-75% -Moderate adequate knowledge > 75% -Adequate knowledge. The demographic variables were analysed by using descriptive statistics (mean, SD), Association between the knowledge on students with the selected demographic variables were analyzed by using inferential statistics (Chi-square).

#### RESULT:

The above table 1 shows that in the pretest, 15 (50.0%) had inadequate knowledge regarding the impacts of consanguineous marriage and 10 (33.3%) had moderately adequate knowledge and 5 (16.7) had adequate knowledge after the intervention, 21 (70%) had adequate knowledge and 9 (30.0 %) had moderately adequate knowledge regarding impacts of consanguineous marriage among the adults.

The table 2 shows that the pretest mean score of knowledge was  $11.27 \pm 3.67$  and the posttest mean score was  $16.13 \pm 2.01$ . The mean difference score was 4.86. The calculated paired "t" test value of  $t = 7.657$  was statistically significant at  $p < 0.001$  level which clearly indicates that Structured Teaching Programme on knowledge regarding food adulteration among adults was effective in improving the level of knowledge among them in the post test.

The table 4 shows that the demographic variable family income ( $\chi^2 = 12.814, p = 0.046$ ) and Religion of family ( $\chi^2 = 7.778, p = 0.020$ ) had shown statistically significant association with posttest level of knowledge regarding food adulteration among the adults at  $p < 0.05$  level respectively and the other demographic variables had not shown statistically significant association with posttest level of knowledge regarding food adulteration among the adults at  $p < 0.05$ .

**Table 1: Frequency and percentage distribution of pre-test and post-test level of knowledge among adults (n = 30)**

Knowledge	Inadequate Knowledge (0 – 10)		Moderately Adequate knowledge (11 – 15)		Adequate Knowledge (16 – 20)	
	No.	%	No.	%	No.	%
Pretest	15	50.0	10	33.3	5	16.7
Post Test	0	0	9	30.0	21	70.0



**Table 2: Effectiveness of structured teaching programme On knowledge Regarding food Adulteration Among The Adults. N=30**

Knowledge	Mean	S.D	Mean Difference	Paired 't' test Value
Pretest	11.27	3.67	4.86	t = 7.657 p = 0.0001 S***
Post Test	16.13	2.01		

\*\*\*p<0.001, S – Significant

**Table 3: Association of posttest level of knowledge regarding food adulteration among the adults with their selected demographic variables. (N=30)**

Demographic Variables	Moderately Adequate knowledge (11 – 15)		Adequate Knowledge (16 – 20)		Chi-Square Test
	No.	%	No.	%	
<b>Age in years</b>					$\chi^2=3.182$ d.f=3 p=0.264 N.S
20 – 30	0	0	2	6.7	
31 – 40	3	10.0	2	6.7	
41 – 50	3	10.0	9	30.0	
51 – 60	3	10.0	8	26.6	
<b>Sex</b>					$\chi^2=2.134$ d.f=1 p=0.144 N.S
Male	2	6.7	1	3.3	
Female	7	23.3	20	66.7	
<b>Educational status</b>					$\chi^2=7.864$ d.f=6 p=0.248 N.S
Professional degree	2	6.7	0	0	
Graduate or post graduate	0	0	2	6.7	
Intermediate or post High School Diploma	2	6.7	2	6.7	
High school certificate	0	0	3	10.0	
Middle School Certificate	1	3.3	2	6.7	
Primary school certificate	1	3.3	4	13.3	
Illiterate	3	10.0	8	26.7	
<b>Occupation</b>					$\chi^2=7.479$ d.f=6 p=0.279 N.S
Professional (White Collar)	4	13.3	3	10.0	
Semi- professional	1	3.3	5	16.7	
Clerical, shop owner, farm	0	0	1	3.3	
Skilled worker	3	10.0	8	26.7	
Semi- skilled worker	0	0	3	10.0	
Unskilled worker	0	0	1	3.3	
Unemployed	1	3.3	0	0	
<b>Family income</b>					$\chi^2=12.814$ d.f=6 p=0.046 S*
>52,734	2	6.7	0	0	
26,355 – 52,733	1	3.3	0	0	
19,759 – 26,354	0	0	2	6.7	
13,161 – 19,758	3	10.0	2	6.7	
7,887 – 13,160	1	3.3	10	33.3	
2,641 – 7886	1	3.3	5	16.7	
<2640	1	3.3	2	6.7	
<b>Social status of the family</b>					$\chi^2=0.385$ d.f=3 p=0.943 N.S
Upper (26-29)	-	-	-	-	
Upper middle (16-25)	2	6.7	6	20.0	
Lower middle (11-15)	4	13.3	9	30.0	
Upper lower (5-10)	2	6.7	3	10.0	



Demographic Variables	Moderately Adequate knowledge (11 – 15)		Adequate Knowledge (16 – 20)		Chi-Square Test
	No.	%	No.	%	
Lower (01-04)	1	3.3	3	10.0	
<b>Type of family</b>					$\chi^2=1.978$ d.f=2 p=0.372 N.S
Joint family	0	0	3	10.0	
Nuclear family	9	30.0	17	56.7	
Extended family	0	0	1	3.3	
Orphan	-	-	-	-	
<b>Religion of family</b>					$\chi^2=7.778$ d.f=2 p=0.020 S*
Hindu	6	20.0	21	70.0	
Muslim	2	6.7	0	0	
Christian	1	3.3	0	0	
Others	-	-	-	-	
<b>Area of residence</b>					$\chi^2=5.000$ d.f=2 p=0.082 N.S
Rural	7	23.3	21	70.0	
Urban	1	3.3	0	0	
Semi-urban	1	3.3	0	0	
<b>Number of children in Family</b>					$\chi^2=4.115$ d.f=3 p=0.249 N.S
1 child	2	6.7	1	3.3	
2 children	5	16.7	8	26.7	
3 children	2	6.7	11	36.7	
4 & above	0	0	1	3.3	

\*p<0.05, S – Significant

N.S – Not Significant, p>0.05

## DISCUSSION:

Among 30 samples most of the adults, 12(41%) were aged between 41 – 50years,27(90%) were female,11(36.7%) were illiterates respectively,11(36.7%) were Skilled worker,11(36.7%) had family income of between 7,887 – 13,160, 13(43.3%) belonged to lower (1 – 4) social status of the family, 26(86.7%) belonged to nuclear family, 27(90%) were Hindus, 28(93.4%) were residing in ruralareaand13(43.3%)had 2 children in the family and 3 children respectively.

The first objective was to assess the frequency and percentage distribution of pretest and post test level of knowledge regarding food adulteration among the adults.

The above table shows that inthepretest,15(50.0%) had inadequate knowledge regarding the impacts of consanguineous marriage and 10(33.3%) had moderately adequate knowledge and 5(16.7) had adequate knowledge after the intervention, 21(70%) had adequate knowledge and 9 (30.0 %) had moderately adequate knowledge regarding impacts of consanguineous marriage among the adults.

The study is consistent with Abhay Singh, Mukesh Shukla. et al., [2025] A community-based cross-sectional study was conducted among 310 women of Rahi block of Raebareli, India.The mean age of the

women was  $37.1 \pm 11.7$  years. Among 183 study participants, about 59.0% of women had knowledge about food adulteration. Among all the food groups, 288 (92.9%) women knew about adulteration in milk and milk products, 240 (77.4%) knew about adulteration in oils and fats and 230 (74.2%) knew about adulteration in spices. Around 157 (50.7%) and 153 (49.3%) women had low and high FAI scores respectively. The education of secondary-level or higher (AOR 3.4; 95% CI 1.9-6.1), knowledge of food adulteration (AOR 2.2; 95% CI 1.2-4.1), and experience of health issues after consuming food from the market (AOR 2.7; 95% CI 1.3-5.6) were associated with high FAI scores.

## The second objective was to assess the effectiveness of Structured Teaching Programme on knowledge regarding food adulteration among the adults.

The above table shows that the pretest mean score of knowledge was  $11.27 \pm 3.67$  and the post test mean score was  $16.13 \pm 2.01$ . The mean difference score was 4.86. The calculated paired “t” test value of  $t=7.657$  was statistically significant at  $p<0.001$  level which clearly indicates that Structured Teaching Programme on knowledge regarding food adulteration among adults was effective in improving the level of knowledge among them in the post test.

The study is consistent with Neelam Shahu [2023] Who



conducted the study to formulate structured teaching programme, to assess the pre test and post-test knowledge regarding food adulteration and food adulterant detection, to assess the effectiveness of structured teaching programme, and to find out the association between pre-test knowledge regarding food adulteration and food adulterant detection selected socio-demographic variables. The study design was an exploratory research design. 60 samples of people living in community area who fulfil the inclusive criteria were selected based on random sampling technique, after getting informed consent from the study participant, the structured teaching programme was administered at People of selected area of Khamtarai Bilaspur, C.G. The study findings revealed that in pre- test score of the community people had knowledge score good 11(18.3%) were average and 40(66.7%) were poor 9(15%). pre-test mean score was 917(50.94%) and SD is 4.912. The Third objective was to assess the association of post test level of knowledge regarding food adulteration among the adults with their selected demographic variables.

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## CONCLUSION:

Quantitative research design was used for this study. 30 samples who fulfilled the sample selection criteria were selected as sample by using non probability purposive sampling technique. and assessed through structured questionnaire. The study concluded that majority of the adolescents had in adequate knowledge in the pretest. After structured teaching programme there was improvement their knowledge scores.

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## RECOMMENTATIONS

- The study can be conducted in larger sample.
- The study can be conducted as true experimental study.

This study can be conducted in various sections like standard of educational institutions.

