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## Effect of education on women's knowledge, attitude and practice (KAP) behavior as a consumer towards food adulteration and its safety measures in Lucknow district

Anita Gautam, Sandeep Kumar, Suneeta Paswan and Ragini Kumari

### Abstract

Food adulteration is undoubtedly a social evil which can be regarded as the outcome of an interaction between a number of social, economic, technical and human behavioural factors. It is a manifestation of a sick society and can be regarded as a crime similar to other crimes like theft, burglary or murder. It is felt that there is an urgent need for an impartial scientific study to determine the prevalence of food adulteration at household level in the country. It is equally important for the consumer to know the common adulterants and their effect on health. On the basis of pilot study 300 samples were selected from three different areas of Lucknow district through multistage random sampling technique. For the study married women of age groups (i.e. 15 to 49) were considered as study subjects who carried their families. Further, to carry out the study pre-designed and pre tested questionnaire was used. The result of the study shows that, statistically no significant difference among different educational groups was observed with respect to mean scores of type of adulteration of different food items except cereals and fruits. Regarding frequency of adulteration except for items rice-stone, mango-carbide, banana-carbide, pepper-papaya seed and chilly-brick powder non for items a significant difference among different educational groups was observed. Statistically no significant differences among different educational groups were observed with respect to awareness scores for harmful effects of adulteration. It was also found that there is no significant association between education and KAP scores for different variables except for food marks was observed ( $p>0.05$ ) for consumer education.

**Keywords:** Adulteration, KAP

### Introduction

According to Bagchi (1984) <sup>[6]</sup> Food adulteration is undoubtedly a social evil which can be regarded as the outcome of an interaction between a number of social, economic, technical and human behavioural factors. It is an indication of a sick society and can be considered as a crime similar to other crimes like theft, burglary or murder. Like any other crime, food adulteration is expected to continue in our society as long as the existing factors which generate crime will continue.

Khapse *et al.* (2011) <sup>[3]</sup> found that 68.5% Households, wife buys the grocery. Majority of them never read the food labels. All the selected food items were adulterated ranging from 76% to 11%. According to them mean percentage of purity was found highest in literates (47.5±22.48) than illiterates and just literates. Also found that food borne illness was prevalent in household with low purity of foods.

Forty five per cent families, the home maker took the major decisions for purchasing food for their families. Regarding buying practices includes the type of packaging used while purchasing, brand, choice, shop choice and purchase frequency of the selected items undertaken for study. Result depicted that majority, that is, two third of the respondents were moderately aware about the rights and responsibilities related to food quality and food adulteration regarding consumer awareness according to Gupta & Panchal (2009) <sup>[2]</sup>.

According to Kumar (2011) <sup>[4]</sup>, Every housewife loves to search on newer recipes, putting into too much time together of labour in kitchen to prepare the various recipes and serve to her family members. It gives them huge pleasure. But it always haunts their mind whether there are any kind of adulterations in the food items they have used.

Adulterated food can harm consumer health that is a serious offence. A complaint can lodged under the Acts for the goods which will be hazardous to life and safety depicted by

Maheshwari & Hiremath (2014) [5] when used. In some cases consumer forum awarded compensation for the injury caused by the consumption of unsafe food by treating it a deficiency of service.

Legal enforcement is only one measure for the prevention of food adulteration according to Bagchi (1984) [6] and it will not have any appreciable impact unless and until there is adequate supply of food at a reasonable price which the average consumer can afford, awareness of the small traders about the food standards which they are expected to maintain, awareness of the common consumer regarding dangers of adulterations and how to take advantage of the legal machinery to force the traders to get the proper food and lastly, a sense of honesty among the food.

Food is essential for sustenance of life. Adulteration of food cheats the consumer and can pose serious risk to health. There for, there is a need of an adequate precautions taken by the consumer at the time of purchase of such produce can make him alert to avoid procurement of such food. It is equally important for the consumer to know the common adulterants and their effect on health.

**Methodology**

Since the objective of the present study is the Effect of Education on Women’s Knowledge, Attitude and Practice

Behaviour as a Consumer towards Food Adulteration its Safety Measures. A pilot study was conducted among the women to estimate the approximate percentage of knowledge of consumer toward adulterant in the population and prevalence of health hazard due to adulterated foods and its safety measures. In the pilot study, 40 women were randomly selected other than study area. According to the study, the knowledge of consumer education toward adulterant was determined.

On the basis of pilot study 300 samples were selected from three different areas of Lucknow district through multistage random sampling technique. For the study married women of age groups (i.e. 15 to 49) were considered as study subjects who carried their families. Further, to carry out the study pre-designed and pre tested questionnaire was used.

**Results**

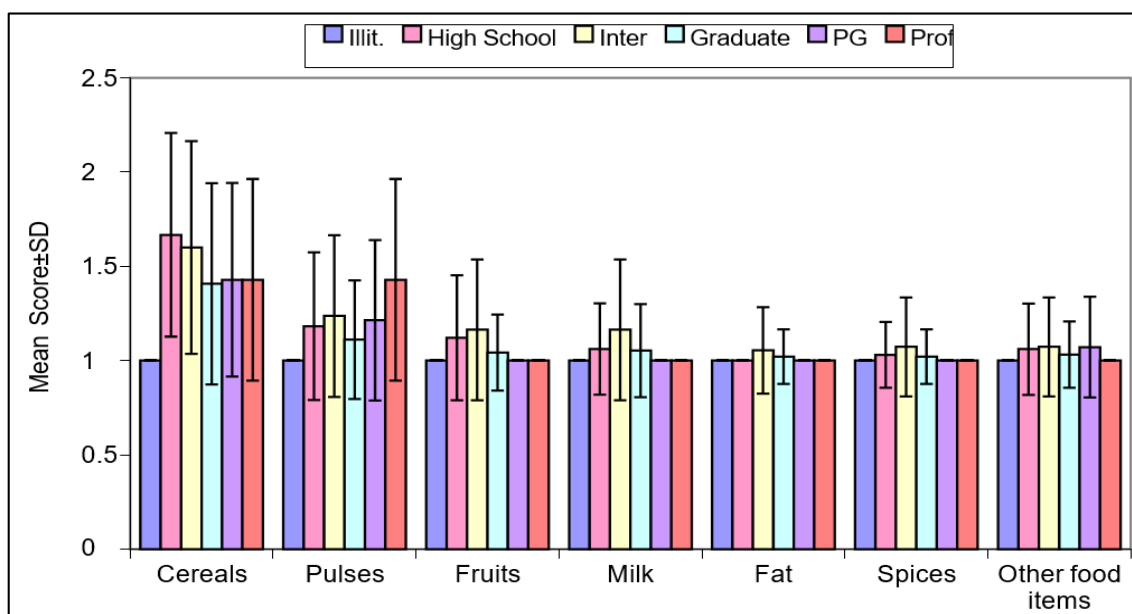
**1. Effects of education on awareness about type of adulteration in food stuffs**

The existing KAP scores consumer’s in Table-1 shows that, Statistically there is no significant difference among different educational groups was observed with respect to mean scores for type of adulteration of different items excepting cereals and fruits.

**Table 1:** Association between Type of adulteration and consumer education

(N=300)

SN	Variable	Illiterate (n=2)		High school (n=33)		Inter (n=55)		Graduate (n=189)		Post- graduate (n=14)		Professional (n=7)		ANOVA	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Me an	SD	Mean	SD	F	P
1.	Cereals	1.00	0.00	1.67	0.54	1.60	0.56	1.41	0.53	1.43	0.51	1.43	0.53	2.360	0.040
2.	Pulses	1.00	0.00	1.18	0.39	1.24	0.43	1.11	0.32	1.21	0.43	1.43	0.53	2.147	0.060
3.	Fruits	1.00	0.00	1.12	0.33	1.16	0.37	1.04	0.20	1.00	0.00	1.00	0.00	2.597	0.026
4.	Milk	1.00	0.00	1.06	0.24	1.16	0.37	1.05	0.25	1.00	0.00	1.00	0.00	1.839	0.105
5.	Fat	1.00	0.00	1.00	0.00	1.05	0.23	1.02	0.14	1.00	0.00	1.00	0.00	0.740	0.594
6.	Spices	1.00	0.00	1.03	0.17	1.07	0.26	1.02	0.14	1.00	0.00	1.00	0.00	0.930	0.462
7.	Other food items	1.00	0.00	1.06	0.24	1.07	0.26	1.03	0.18	1.07	0.27	1.00	0.00	0.528	0.755



**Fig 1:** Association between Type of adulteration and consumer education

For cereals and fruits mean scores of those educated upto High School and inter were maximum while those of illiterates were minimum.

**2. Effects of education on frequency of adulteration**

The KAP scores of consumer’s in Table-2 depicted that except for items rice-stone, mango- carbide, banana-carbide,

pepper-papaya seed and chilly-brick powder, for none of the items a significant difference among different educational group was observed. For rice-stone mean scores of those educated upto graduation, postgraduation and professional qualification were higher as compared to other educational

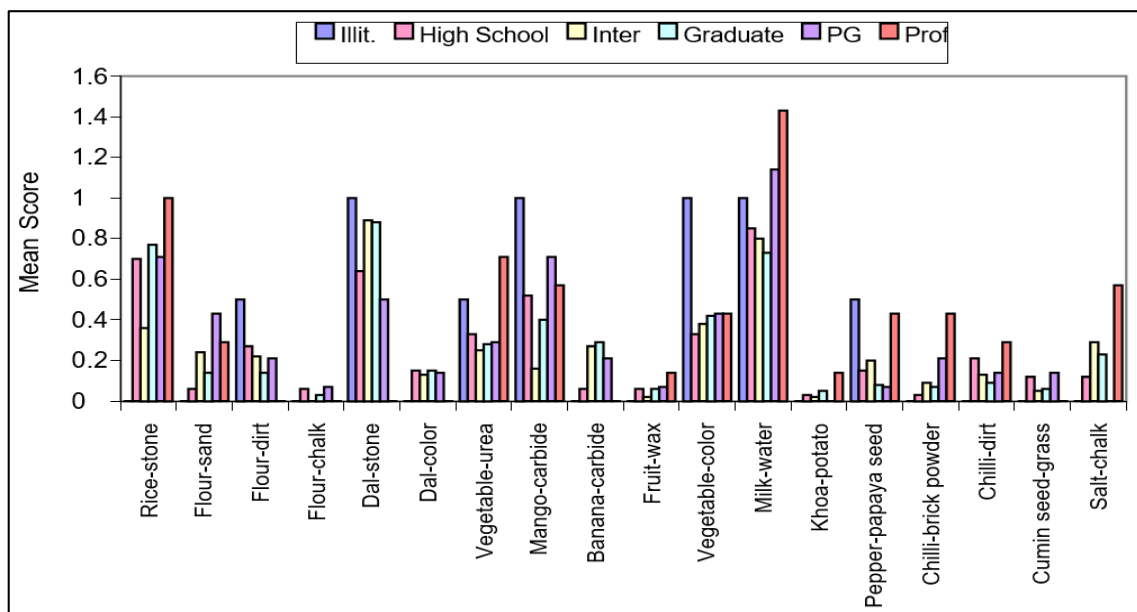
groups. Mean scores of illiterates were 0 for this item ( $p=0.018$ ). For mango-carbide, mean scores of illiterates were maximum and those educated upto intermediate were minimum ( $p<0.001$ ).

**Table 2:** Association between Frequency of adulteration and consumer education

(N=300)

SN	Variable	Illiterate (n=2)		High school (n=33)		Inter (n=55)		Graduate (n=189)		Post-graduate (n=14)		Professional (n=7)		ANOVA	
		Me an	SD	Me an	SD	Me an	SD	Me an	SD	Me an	SD	Me an	S D	F	P
1.	Rice-stone	0.00	0.00	0.70	0.77	0.36	0.56	0.77	0.85	0.71	0.83	1.00	0.82	2.778	0.018
2.	Flour-sand	0.00	0.00	0.06	0.24	0.24	0.58	0.14	0.43	0.43	0.85	0.29	0.76	1.674	0.141
3.	Flour-dirt	0.50	0.71	0.27	0.63	0.22	0.60	0.14	0.43	0.21	0.58	0.00	0.00	0.927	0.464
4.	Flour-chalk	0.00	0.00	0.06	0.24	0.00	0.00	0.03	0.18	0.07	0.27	0.00	0.00	0.772	0.571
5.	Dal-stone	1.00	1.41	0.64	0.86	0.89	0.94	0.88	0.95	0.50	0.85	0.00	0.00	1.951	0.086
6.	Dal-color	0.00	0.00	0.15	0.36	0.13	0.34	0.15	0.36	0.14	0.36	0.00	0.00	0.331	0.894
7.	Vegetable-urea	0.50	0.71	0.33	0.60	0.25	0.52	0.28	0.57	0.29	0.61	0.71	0.76	0.908	0.476
8.	Mango-carbide	1.00	0.00	0.52	0.51	0.16	0.37	0.40	0.49	0.71	0.47	0.57	0.53	5.192	<0.001
9.	Banana- carbide	0.00	0.00	0.06	0.24	0.27	0.45	0.29	0.46	0.21	0.43	0.00	0.00	2.292	0.046
10.	Fruit-wax	0.00	0.00	0.06	0.24	0.02	0.13	0.06	0.23	0.07	0.27	0.14	0.38	0.551	0.738
11.	Vegetable- color	1.00	0.00	0.33	0.48	0.38	0.49	0.42	0.49	0.43	0.51	0.43	0.53	0.782	0.563
12.	Milk-water	1.00	1.41	0.85	1.00	0.80	0.99	0.73	0.97	1.14	1.03	1.43	0.98	1.143	0.338
13.	Khoa-potato	0.00	0.00	0.03	0.17	0.02	0.13	0.05	0.22	0.00	0.00	0.14	0.38	0.752	0.585
14.	Pepper-papaya seed	0.50	0.71	0.15	0.36	0.20	0.40	0.08	0.28	0.07	0.27	0.43	0.53	3.063	0.010
15.	Chilli-brick powder	0.00	0.00	0.03	0.17	0.09	0.29	0.07	0.25	0.21	0.43	0.43	0.53	3.319	0.006
16.	Chilli-dirt	0.00	0.00	0.21	0.42	0.13	0.34	0.09	0.29	0.14	0.36	0.29	0.49	1.320	0.256
17.	Cumin seed- grass	0.00	0.00	0.12	0.33	0.05	0.23	0.06	0.24	0.14	0.36	0.00	0.00	0.689	0.632
18.	Salt-chalk	0.00	0.00	0.12	0.70	0.29	1.05	0.23	0.94	0.00	0.00	0.57	1.51	0.521	0.760

Score= Daily=5; Twice a week=4; Weekly=3; Fortnightly=2; Monthly=1; Never=0



**Fig 2:** Association between Frequency of adulteration and consumer education

For banana-carbide mean scores of illiterates and professionally qualified were 0 while those of graduates were maximum (0.29±0.46) ( $p=0.046$ ). For pepper-papaya seed illiterates and professionals had maximum score and those educated upto post graduation and graduation were minimum ( $p=0.010$ ). For chilly-brick powder mean scores of professionals were maximum and those of illiterates were minimum ( $p=0.006$ ).

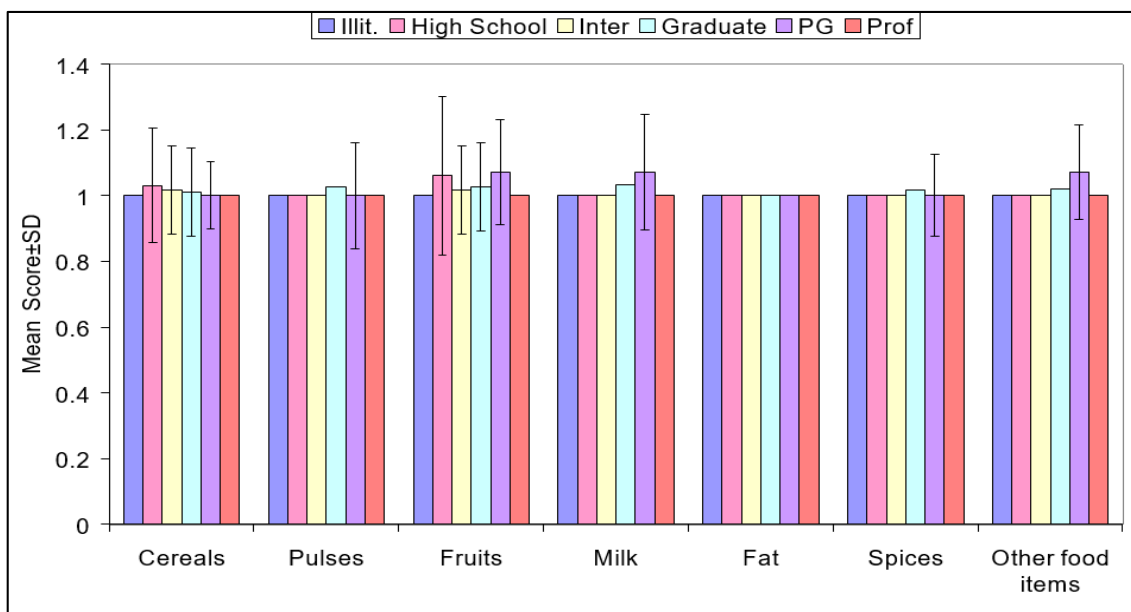
**2. Effects of education on general awareness about harmful effects of adulteration**

Table-3 shows that statistically there is no significant difference among different educational groups were observed with respect to awareness scores for harmful effects of adulteration.

**Table 3:** Association between harmful effects of adulteration and consumer education

(N=300)

SN	Variable	Illiterate (n=2)		High school (n=33)		Inter (n=55)		Graduate (n=189)		Post-graduate (n=14)		Professional (n=7)		ANOVA	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F	P
1.	Cereals	1.00	0.00	1.03	0.17	1.02	0.13	1.01	0.10	1.00	0.00	1.00	0.00	0.244	0.943
2.	Pulses	1.00	0.00	1.00	0.00	1.00	0.00	1.03	0.16	1.00	0.00	1.00	0.00	0.591	0.707
3.	Fruits	1.00	0.00	1.06	0.24	1.02	0.13	1.03	0.16	1.07	0.27	1.00	0.00	0.496	0.779
4.	Milk	1.00	0.00	1.00	0.00	1.00	0.00	1.03	0.18	1.07	0.27	1.00	0.00	0.860	0.508
5.	Fat	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	-	-
6.	Spices	1.00	0.00	1.00	0.00	1.00	0.00	1.02	0.13	1.00	0.00	1.00	0.00	0.351	0.881
7.	Other food items	1.00	0.00	1.00	0.00	1.00	0.00	1.02	0.14	1.07	0.27	1.00	0.00	0.883	0.493



**Fig 3:** Association between harmful effects of adulteration and consumer education

**3. Effects of Education on Consumer Education**

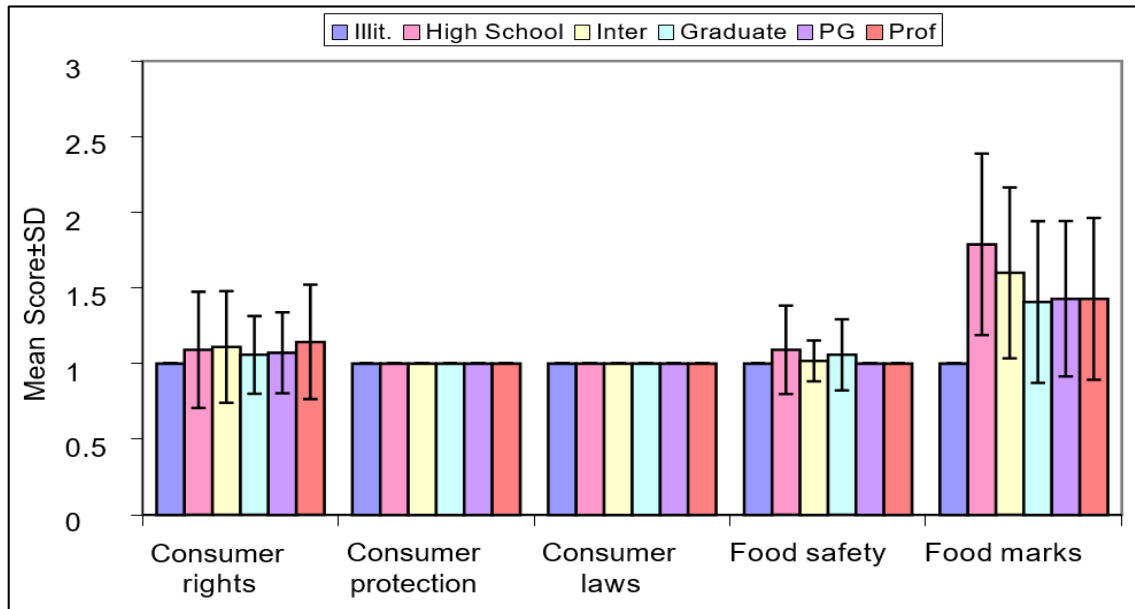
It is evident from Table-4 that Statistically there is no significant association between education and KAP scores for

different variables except for food marks was observed ( $p>0.05$ ).

**Table 4:** Association between KAP Scores and consumer education

(N=300)

S N	Variable	Illiterate (n=2)		High school (n=33)		Inter (n=55)		Graduate (n=189)		Post-graduate (n=14)		Professional (n=7)		ANOVA	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F	P
1.	Consumer rights	1.00	0.00	1.09	0.38	1.11	0.37	1.06	0.26	1.07	0.27	1.14	0.38	0.378	0.864
2.	Consumer protection	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	-	-
3.	Consumer laws	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	-	-
4.	Food safety	1.00	0.00	1.09	0.29	1.02	0.13	1.06	0.23	1.00	0.00	1.00	0.00	0.757	0.582
5.	Food marks	1.00	0.00	1.79	0.60	1.60	0.56	1.41	0.53	1.43	0.51	1.43	0.53	3.649	0.003



**Fig 4:** Association between KAP Scores and consumer education

For food marks mean scores were maximum among those educated upto High school ( $1.79 \pm 0.60$ ) and minimum among those who were illiterate ( $1.00 \pm 0.00$ ), thus showing a significant intergroup difference ( $p=0.003$ ).

### Conclusion

It can be concluded that for majority of items regarding adulteration in food stuffs, frequency, harm full effects of adulteration and consumer education, statistically no significant association between consumer education and mean scores.

### Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Reference

1. Bagchi K. Prevention of food adulteration: some thoughts. *Perspectives & Issues*. 2000;7(3):167-175
2. Gupta N, Panchal P. Extent of Awareness and Food adulteration Detection in Selected Food Items Purchased by Home Makers. *Pakistan Journal of Nutrition*. 2009;8(5):660-667.
3. Khapre MP, Mudey A, Chaudhary S, Wagh V, Dawale A. Buying Practices and Prevalence of Adulteration in Selected Food Items in a Rural Area of Wardha District: A Cross- Sectional Study. *Online Journal of Health and Allied Sciences*, 2011, 10(3).
4. Kumar A. Tips for detecting the adulteration present in food items; c2011. [www.Google.com](http://www.Google.com). Retrieved 29.11.2011.
5. Maheshwari S, Hiremath. Research Scholar, Deptt. of Law, G.U. Gulbarga. *Indian Streams Research Journals*, 2014, 1(4).
6. Bagchi B, Oxtoby DW, Fleming GR. Theory of the time development of the Stokes shift in polar media. *Chemical physics*. 1984 Jan 1;86(3):257-267.