

Effect of age on women's knowledge, attitude and practice (KAP) behaviour as a consumer towards food adulteration its safety measures

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■ **ABSTRACT :** Food is the basic necessity of life. One works hard and earns to satisfy our hunger and relax (enjoy) later. But at the end of the day, many of us are not sure of what we eat. 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. It is found in the study that, there is no significant association between age and KAP scores was observed for all the items except cereals and spices regarding adulteration in food stuffs. Except for the frequency of adulteration in mango-carbide, banana-carbide, milk-water, chilli-brick powder, chilli-dirt for all the other items, the difference among different age groups was not significant statistically ($P>0.05$). Except for harmful effects of cereals, for none of the other items a significant difference among different age groups was observed ($P>0.05$). For cereals, mean scores of those aged 15-24 yrs were significantly higher as compared to all the other age groups ($P<0.001$). The KAP scores of consumer's shows that, statistically there is no significant association between consumer age and mean scores was observed for the variables consumer rights, consumer protection, consumer laws and food safety. However, for the item food marks an inverse relation between KAP scores and age was observed which was also significant statistically ($P=0.002$).

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Food is the basic necessity of life. One works hard and earns to satisfy our hunger and relax (enjoy) later. But at the end of the day, many of us are not sure of what we eat. 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. Like any other crime, food adulteration is expected to continue in our society as long as the existing factors which generate crime will continue.

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. The results of such a study will be an eye opener for the consumers, law enforcers and also for those who are brooding for decades as to the reasons of food adulteration and how to prevent this menace.

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.

■ RESEARCH METHODS

The sample size is representative of ideal population. Its determination for any study is crucial because reliability of the estimates depends largely on the size of sample.

To determine the knowledge of consumer behaviour towards the adulterant in food stuffs at the household level and its effect on health was taken as the parameter

to decide the sample size. The pilot study was conducted among the women to estimate the approximate percentage of knowledge of consumer toward adulterant in the population, 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.

■ RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Effects of age on awareness about type of adulteration in food stuffs:

It is evident from Table 1 that, there is no significant association between age and KAP scores was observed for all the items except cereals and spices regarding adulteration in food stuffs.

For both these items mean scores of consumers in younger age group were significantly higher as compared to those in older age groups ($P=0.025$).

Effects of age on frequency of adulteration :

Table 2 shows that, except for the frequency of adulteration in mango-carbide, banana-carbide, milk-water, chilli-brick powder, chilli-dirt for all the other items,

| Table 1: Association between awareness scores about type of adulteration and consumer age (n=300) | | | | | | | | | | | |
|---|------------------|-----------------|------|------------------|------|-------------------|------|----------------|------|-------|-------|
| Sr. No. | Variable | 15-24 Yrs (n=4) | | 25-34 Yrs (n=59) | | 35-44 Yrs (n=179) | | >44 Yrs (n=58) | | ANOVA | |
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F | P |
| 1. | Cereals | 1.50 | 0.58 | 1.66 | 0.58 | 1.43 | 0.54 | 1.40 | 0.49 | 3.160 | 0.025 |
| 2. | Pulses | 1.25 | 0.50 | 1.19 | 0.39 | 1.13 | 0.34 | 1.17 | 0.38 | 0.482 | 0.695 |
| 3. | Fruits | 1.25 | 0.50 | 1.12 | 0.33 | 1.07 | 0.25 | 1.02 | 0.13 | 2.233 | 0.084 |
| 4. | Milk | 1.00 | 0.00 | 1.10 | 0.30 | 1.08 | 0.29 | 1.02 | 0.13 | 1.170 | 0.321 |
| 5. | Fat | 1.00 | 0.00 | 1.03 | 0.18 | 1.03 | 0.17 | 1.00 | 0.00 | 0.641 | 0.589 |
| 6. | Spices | 1.25 | 0.50 | 1.05 | 0.22 | 1.03 | 0.17 | 1.00 | 0.00 | 3.176 | 0.025 |
| 7. | Other food items | 1.25 | 0.50 | 1.07 | 0.25 | 1.04 | 0.19 | 1.02 | 0.13 | 2.014 | 0.112 |

Table 2: Association between frequency of adulteration and consumer age (n=300)

| Sr. No. | Variable | 15-24 Yrs (n=4) | | 25-34 Yrs (n=59) | | 35-44 Yrs (n=179) | | >44 Yrs (n=58) | | ANOVA | |
|---------|---------------------|-----------------|------|------------------|------|-------------------|------|----------------|------|-------|-------|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F | P |
| 1. | Rice-stone | 0.25 | 0.50 | 0.47 | 0.70 | 0.77 | 0.83 | 0.69 | 0.82 | 2.350 | 0.073 |
| 2. | Flour-sand | 0.00 | 0.00 | 0.14 | 0.47 | 0.18 | 0.49 | 0.14 | 0.48 | 0.386 | 0.763 |
| 3. | Flour-dirt | 0.50 | 0.58 | 0.17 | 0.50 | 0.18 | 0.51 | 0.12 | 0.42 | 0.812 | 0.488 |
| 4. | Flour-chalk | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.17 | 0.07 | 0.26 | 1.673 | 0.173 |
| 5. | Dal-stone | 1.25 | 0.96 | 0.86 | 0.94 | 0.83 | 0.94 | 0.71 | 0.92 | 0.620 | 0.603 |
| 6. | Dal-colour | 0.00 | 0.00 | 0.17 | 0.38 | 0.15 | 0.35 | 0.10 | 0.31 | 0.583 | 0.627 |
| 7. | Vegetable-urea | 0.50 | 1.00 | 0.31 | 0.56 | 0.27 | 0.55 | 0.33 | 0.63 | 0.318 | 0.812 |
| 8. | Mango-carbide | 0.75 | 0.50 | 0.32 | 0.47 | 0.35 | 0.48 | 0.57 | 0.50 | 4.313 | 0.005 |
| 9. | Banana-carbide | 0.00 | 0.00 | 0.10 | 0.30 | 0.32 | 0.47 | 0.21 | 0.41 | 4.577 | 0.004 |
| 10. | Fruit-wax | 0.00 | 0.00 | 0.03 | 0.18 | 0.05 | 0.22 | 0.09 | 0.28 | 0.643 | 0.588 |
| 11. | Vegetable-colour | 0.50 | 0.58 | 0.36 | 0.48 | 0.41 | 0.49 | 0.45 | 0.50 | 0.393 | 0.758 |
| 12. | Milk-water | 1.00 | 1.15 | 0.98 | 1.01 | 0.64 | 0.93 | 1.07 | 1.01 | 3.960 | 0.009 |
| 13. | Khoa-potato | 0.00 | 0.00 | 0.05 | 0.22 | 0.04 | 0.21 | 0.03 | 0.18 | 0.125 | 0.945 |
| 14. | Pepper-papaya seed | 0.25 | 0.50 | 0.15 | 0.36 | 0.10 | 0.30 | 0.16 | 0.37 | 0.816 | 0.486 |
| 15. | Chilli-brick powder | 0.00 | 0.00 | 0.05 | 0.22 | 0.06 | 0.24 | 0.19 | 0.40 | 3.714 | 0.012 |
| 16. | Chilli-dirt | 0.00 | 0.00 | 0.19 | 0.39 | 0.07 | 0.26 | 0.19 | 0.40 | 3.291 | 0.021 |
| 17. | Cumin seed-grass | 0.00 | 0.00 | 0.03 | 0.18 | 0.06 | 0.24 | 0.14 | 0.35 | 1.943 | 0.123 |
| 18. | Salt-chalk | 0.00 | 0.00 | 0.20 | 0.89 | 0.18 | 0.83 | 0.41 | 1.23 | 1.041 | 0.375 |

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

Table 3: Association between awareness scores of harmful effects of adulteration and consumer age (n=300)

| Sr. No. | Variable | 15-24 Yrs (n=4) | | 25-34 Yrs (n=59) | | 35-44 Yrs (n=179) | | >44 Yrs (n=58) | | ANOVA | |
|---------|------------------|-----------------|------|------------------|------|-------------------|------|----------------|------|-------|--------|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F | P |
| 1. | Cereals | 1.25 | 0.50 | 1.02 | 0.13 | 1.01 | 0.11 | 1.00 | 0.00 | 6.274 | <0.001 |
| 2. | Pulses | 1.00 | 0.00 | 1.00 | 0.00 | 1.03 | 0.17 | 1.00 | 0.00 | 1.144 | 0.332 |
| 3. | Fruits | 1.25 | 0.50 | 1.03 | 0.18 | 1.03 | 0.17 | 1.02 | 0.13 | 2.369 | 0.071 |
| 4. | Milk | 1.00 | 0.00 | 1.00 | 0.00 | 1.03 | 0.17 | 1.03 | 0.18 | 0.658 | 0.578 |
| 5. | Fat | 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 | 1.02 | 0.13 | 1.00 | 0.00 | 0.678 | 0.566 |
| 7. | Other food items | 1.00 | 0.00 | 1.00 | 0.00 | 1.02 | 0.13 | 1.03 | 0.18 | 0.726 | 0.537 |

Table 4 : Association between KAP scores and consumer age (n=300)

| Sr. No. | Variable | 15-24 Yrs (n=4) | | 25-34 Yrs (n=59) | | 35-44 Yrs (n=179) | | >44 Yrs (n=58) | | ANOVA | |
|---------|---------------------|-----------------|------|------------------|------|-------------------|------|----------------|------|-------|-------|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F | P |
| 1. | Consumer rights | 1.25 | 0.50 | 1.07 | 0.25 | 1.08 | 0.33 | 1.03 | 0.18 | 0.882 | 0.451 |
| 2. | Consumer protection | 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 | - | - |
| 4. | Food safety | 1.00 | 0.00 | 1.07 | 0.25 | 1.04 | 0.21 | 1.05 | 0.22 | 0.235 | 0.872 |
| 5. | Food marks | 2.00 | 0.82 | 1.69 | 0.59 | 1.43 | 0.54 | 1.40 | 0.49 | 5.200 | 0.002 |

the difference among different age groups was not significant statistically ($P>0.05$).

For mango-carbide, mean scores were maximum in 15-24 years age group and minimum in 25-34 years age group, thus, showing a significant difference among different age groups ($p=0.005$). For banana-carbide, chilli-brick powder and chilli-dirt mean scores were 0 among those aged 15-24 years. For milk-water, mean scores were minimum in agegroup 35-44 years and maximum among those aged >44 years ($P=0.009$).

Effects of age on general awareness about harm full effects of adulteration:

In Table 3 it is depicted that except for harmful effects of cereals, for none of the other items a significant difference among different age groups was observed ($p>0.05$). For cereals, mean scores of those aged 15-24 yrs were significantly higher as compared to all the other age groups ($P<0.001$).

Effects of age on awareness scores about consumer education:

The existing KAP scores of consumer's in Table 4 shows that, statistically there is no significant association between consumer age and mean scores was observed for the variables consumer rights, consumer protection, consumer laws and food safety.

However, for the item food marks an inverse relation between KAP scores and age was observed which was also significant statistically ($P=0.002$). Similar work related to the present investigation was also carried out by Chakrabarti (2013); Gahukar (2014); Gautam and Singh (2013, 2014 and 2016); Kamthania *et al.* (2014); Khapre *et al.* (2011) and Sudershan *et al.* (2009).

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 age and mean scores.

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