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Impact Analysis of Knowledge Practice for Food Safety in Urban Area of Varanasi

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Abstract: The present study was planned with main objective of identifying buying practices of homemakers and their awareness in food practices in Varanasi (urban area). For this objective, questionnaire was prepared and distributed among selected people depends on their age group, sex and educational background. Statistical test were carried out on the basis of frequency of male and female respondents obtained in total respondents (n = 300). Chi square test were carried out and the calculated value were compared with value of t test (0.05) and on this basis, conclusion were drawn. Correlation between different variables was determined for their impact. Study revealed that educated people of both sexes follow slightly good buying practices while homemakers are not following food practices and also they differ significantly in following the practices in term of use of quality water which affects the family health. Study also revealed that age and awareness are not interlinked while education is interlinked with good practices.

Key words: Food safety behavior, buying practices, education

INTRODUCTION

India is the world's 2nd largest producer of food next to China. With India's food production likely to increase significantly during the next decade. There has been a long debate in India and abroad regarding food quality and safety issues. Varanasi is situated at 5°N, located in the middle of Ganga valley of North India and its population is 1.90 of total population of UP (16,6052,859) according to 2001 census government of India UP. The urban agglomeration is stretched between 82°56'E-83°03'E and 25°14'N-25°23'. Generally food security for the urban people is closely related to many factors like their purchasing power, food items bought from retailer, stockiest, local market, or from supermarket. Other factor like scarcity of clean water for processing, cooking, drinking, washing lack hygienic aspects, due to lack of awareness and improper sanitation in food preparation has great impact on health. Most of the above practices directly affect the health of urban food consumers. Beside this, threats to consumer health are due to various factors like dust and airborne pollutants, poor hygiene, improper storage, deteriorating urban environments and finally, the threat of communicable diseases being spread via the food system.

Buying practices involves the determination by market agencies of kind, qualities and quantities of goods desired by consumer. Buyer has to find out the desired qualities of goods sold at satisfactory prices. Effective buying requires a specialized knowledge of content of goods, their resources and their use (Kotler, 1990). The studies conducted by Nimkar (1976) reveal that homemakers were the actual buyers for the food in the family. "Availability of money resource and availability of

the product" in the market were the most important factors, whereas "food habit" and "nutritional requirements" were the least important factors while buying a product. Among home makers retail shops were more used than wholesale shops for purchasing grains, monthly purchasing was most common among the employed and unemployed homemakers for grains and grocery.

According to Howes *et al.* (1996), Attitudes, is an important factor besides knowledge which ensures trend of food borne illnesses. A number of studies (Howes *et al.*, 1996; Powell *et al.*, 1997) have indicated that although training may bring about an increased knowledge of food safety this does not always result in a positive change in food handling behavior. It has been suggested that this disparity between knowledge and practice occurs because much of the existing training, particularly formal certificated training, is designed using the KAP model (Rennie, 1995). This approach assumes that an individual's behavior or Practice (P) is dependent on their Knowledge (K) and suggests that the mere provision of information will lead directly to a change in Attitude (A) and consequently a change in behaviour. It has been suggested that this model is flawed in its assumption that knowledge is the main precursor to behavioral change (Ehiri *et al.*, 1997). According to Nidhi and Priti (2009), education, family income and occupation are major factor that effect extent of awareness but overall education has highest impact. The present study was planned with main objective to find about homemakers and their awareness in food practices in Varanasi (urban area) and in aim to know the factors affecting purchasing decisions of food products and for their perception of food quality.

MATERIALS AND METHODS

Based on literature survey, a list of relevant variables was prepared. A questionnaire was prepared to capture the relevant variables, which was initially pre-tested at urban area of Varanasi. After its finalization; primary data was collected from 300 respondents in Varanasi, Uttar Pradesh. The data were then tabulated processed and analyzed by chi square test, student t-test, f test and link between various factors were determined by correlation. Age group selected for study were 18-25, 26-35, 36-45 and >46 including both M and F respondents while education background were selected from below matric to graduate. For buying practices tendency data were collected for food items selection from retailer, stockiest, local market, or from supermarket. In buying practices various factor such as type of packaging used, branded verses local were studied. While for kitchen practices application and use of available knowledge on water quality and their impact on health were studied. On the basis of the response, the observed and expected frequency were calculated for chi-square value and on the basis of degree of freedom in row and column t 0.05 value was compared for decision of null hypothesis. F test and correlation was perform to know the significance and impact of age and education on buying practices, water quality practices and their impact on health.

Objective of the study:

Effect of education, and age group on

- Buying practice
- Application of knowledge in kitchen (kitchen behavior practice) and
- Their impact on health

RESULTS AND DISCUSSION

Demographic profile of respondents: Age group selected for study were 18-25 (22.8%), 26-35 (28.9%), 36-45 (23.6%) and > 46 (24.5%) of total M and F respondents studied. Education background were selected from junior high school to graduate.

The demographic profile of respondents in terms of age, and their education level, has been presented in Table 1 and educational distribution has been depicted in pie chart Fig. 1. From the demographic Table 1 it can be seen (out of total 38% M and 62% F), 52% of the M and 36% of F respondent were up to intermediate level and up to graduate level the ratio of respondent were just half 32% M and 16% F, at matric level F (36%) respondent were more than male (10%) and almost same pattern was found in below matric education (F, 25% and M 6%).

Buying practices: Data and percentages of respondent are shown in Table 2 and 3, Fig. 2 and 3. It can be observed that 50.8% M purchased from the local market, while 36% M purchased from stockiest in Varanasi and only 3.5% purchased from supermarket. Out of total

Table 1: Demographic characteristics (n = 300)

Age category	Male	Male (%)	Female	Female (%)
18-25	26	8.6	42	14
26-35	33	28.9	65	21
36-45	27	23.6	40	13.3
>46	28	9.3	39	13
Educational level				
Below matric	7	6.1	47	6.1
Matric	11	9.6	68	36.5
Intermediate	59	51.7	42	22.5

Table 2: Number and percentage of respondent for market practices

Market practices	Male	Male (%)	Female	Female (%)
Local	58	50.8	130	69.8
Stockiest	42	36.8	36	19.35
Supermarket	4	3.5	2	1
Other	10	8.7	18	9.6

Table 3: Number and percentage of respondent for buying practices

Buying practices	Male	Male (%)	Female	Female (%)
Open	33	28.9	35	18.8
Local seal	22	19.2	60	32.2
Brand seal	32	28	49	26.3
Any	27	23.6	42	22.5

respondent 69.8% F purchased these items from local market and 19.5% purchased from stockiest, while 9.6% from other market and only 1% from supermarket.

Statistical analysis shows that calculated χ^2 value of was greater than t 0.05 at 3 df (15.15>7.815). Therefore, it can be concluded that difference is significant and thus hypothesis is rejected. In other word it can be concluded that both male and female together following a slightly good buying practice.

At individual level male [χ^2 9.37>t 0.05 (3) 7.815] are more aware and follow slightly good buying practices as compare to female [χ^2 5.817>t 0.05 (3) 7.815], it means in such household where buying of kitchen item are based on male this practices are followed at significant level.

Table 3 and Fig. 3 shows in Table 4, Statistical analysis of buying practices show that calculated χ^2 is slightly more than the t 0.05 at 3df (7.9>7.81) which rejects the null hypothesis that respondent are concerned about the buying practices in buying kitchen items. From Table 3 it is clear that male are little concern with the quality of kitchen item but equal percentage of respondent are buying kitchen items from branded sources (local 28.9%, and branded 28%). This means that either male are aware of these practices and not following or they are not well aware of the practices, but data suggests that those who are well aware are following the practices. This statement is strengthened by the correlation data presented in Table 4 which shows that education has positive correlation of 0.759 (p<0.007) in buying practices.

In Table 3 female respondent are buying local but sealed items in higher percentage than the branded items (local seal, 32%; branded item 26.3%) equally. Impact of age and education on market practice were

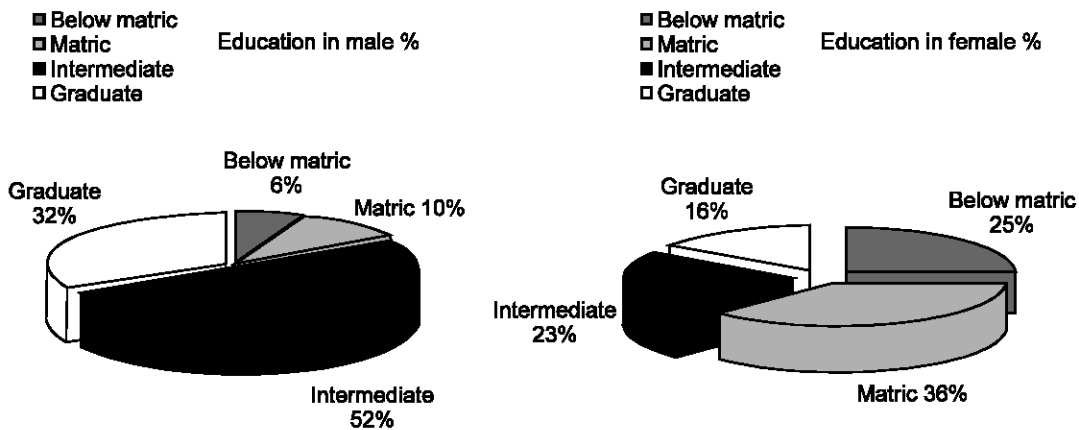


Fig. 1: Pie chart of educational distribution of respondents

Table 4: Comparative correlation of age, education and water on all the variables studied

Correlation (r)	Age	Education	Impact on health	Buying practices	Market practices	Water
Age (r)	0	-0.023	-0.032	-0.024	0.016	0.013
P<0.05		(0.333)	(0.002)	(0.136)	(0.010)	(0.043)
Education (r)	0		-0.6861	0.759	-0.464	-0.0351
P<0.05			(0.004)	(0.007)	(0.023)	(0.088)
Water (r)			0.042			0
P<0.05			(0.057)			
df	3	3	3	3	3	3
χ^2	1.321	56.599	9.37	7.869	15.157	8.9

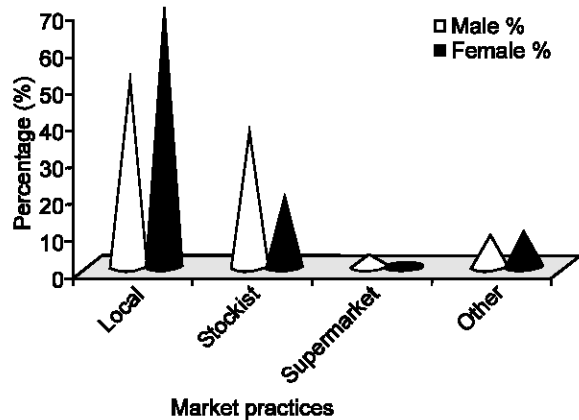


Fig. 2: Percentage of respondent for market practices

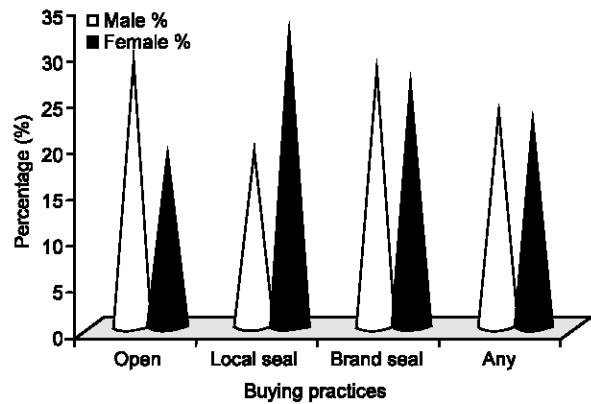


Fig. 3: Percentage of respondent for buying practices

compared by correlation calculation which is shown in Table 4. A correlation value of 0.016 ($p < 0.010$) was found with respect to age on market practices which shows that impact of age has slight impact on market practices, while education has negative correlation of -0.464 ($p < 0.023$) on market practices. Therefore, the previous conclusion is also supported by the correlation data.

Similar conclusion has been made by Rimal (2001) that educating consumers about preventive methods to reduce food safety threats will lead to reduced concerns and changes in food consumption habits. Kathy Hamilton (2009) concluded that there is

connections between the poverty narrative and the family decision making individual control in purchasing and budgeting decisions. Therefore, it may be one of the causes for not following good buying practices.

Food and water practices: The summaries of result are given in Table 5 and 6 and Fig. 4 and 5. It is most commonly observed that water mostly effects health and proper educational background and availability of water both effects whole family health.

Table 5 shows that about 36.8% male ($n = 114$) uses supply water, while 31.5% uses filtered water while other 29% uses water from Hand pump (ground water) while

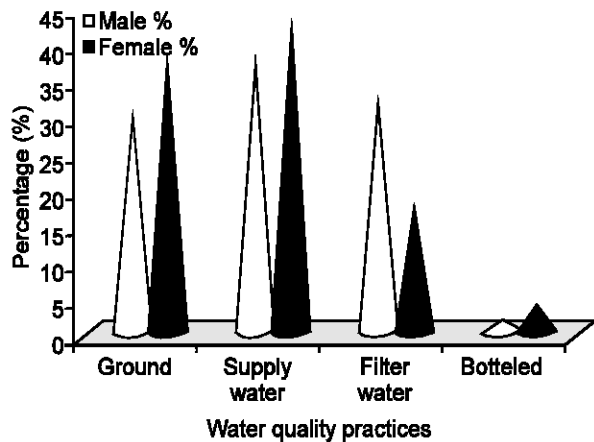


Fig. 4: Percentage of respondent following different water quality practices

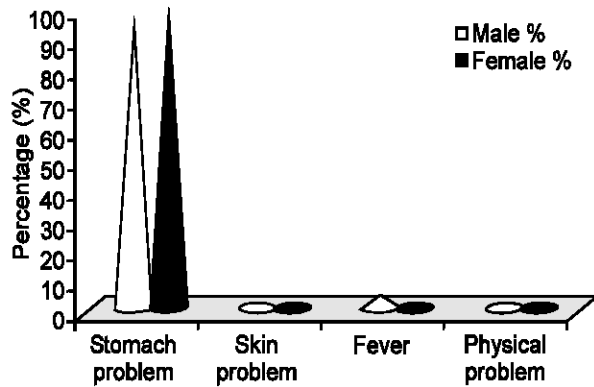


Fig. 5: Percentage of respondent affected by using bad food practices

Table 5: Number and percentage of respondent for Water quality practices

Water quality practices	Male	Male (%)	Female	Female (%)
Ground	34	29.8	69	37
Supply water	42	36.8	78	41.9
Filter water	36	31.5	32	17.2
Bottled	2	1.7	7	3.7

in female (n = 186) 41.9% prefer to use supply water perhaps because of availability, while 37% uses hand pump water and only 17.2% uses filtered water. This means that male are also not well aware of hygienic aspects of water quality and they are relying on supply water but still some respondent are there that are following good hygienic health practices (using filtered water = 31%). In females, similar observation was made in which 41.9% are still using supply water while 37% are using ground water and only 17.2% are using filtered water. In both male and female there is low percentage for using bottled water. Therefore, it can be concluded that both male and female respondent are not following good quality water practices.

Table 6: Number and percentage of respondent for Health problems due to bad food practices

Health problems due to bad food practices	Male	Male (%)	Female	Female (%)
Stomach problem	107	93.85	180	96.77
Skin problem	2	1.75	3	1.61
Fever	5	4.38	3	1.61
Physical problem	0	0	0	0

Calculated χ^2 was slightly more (8.9>7.82) than t-test at 0.05 a 3 degree of freedom. Therefore, it can be concluded that difference is significant and hypothesis is rejected. Knowledge is less followed and use of water is more dependent on availability of water. It was seen that still some frequency are there which follows good water practices by using filtered water which decide overall family health. Therefore, some data were also collected regarding the impact on the health. Table 4 correlation data shows that age has slightly positive correlation with use of quality water 0.013 (p<0.043) while education has slightly negative correlation with use of quality water -0.0351 (p<0.088).

Table 5 health problem shows that 93% male and 96% female were having problem related to stomach and other were minor problem. Calculated (χ^2) was less than t 0.05 (3) value (2.21<7.81). Therefore, difference is insignificant and hypothesis is valid that due to bad food practices respondents are not healthy and effected by some problems. Water quality has significant impact over health of both male and female especially stomach related problem. Water is shown to have high positive correlation with health 0.042 (p<0.057) as shown in Table 4.

Conclusion and suggestions: From the present study, it could be concluded that age has no impact in following buying practices of homemakers and their awareness in food practices in Varanasi (urban area). Study also revealed that educated people of both sexes follow slightly good buying practices while homemakers are not following both buying as well as food practices and also they differ significantly in following the practices in term of use of quality water which affects the family health. Study also revealed that age and awareness are not interlinked while education is interlinked with good practices. This may be due to various reasons like income, awareness and less education of impacts on health. Now a day's various private ("Jago Re") and government agencies ("Jago Grahak Jago") are making good effort for making the consumer well aware of these running various slides on TV and radio but still people are not following good buying and food and water practices.

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