

Research article

Knowledge, Attitude and Practice regarding food hygiene among food handlers: A cross sectional study

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ABSTRACT

Background and objectives: Food is an important basic necessity, its procurement, preparation and consumption is vital for the sustenance of life. However, diseases that spread through food are common and persistent problems result in appreciable morbidity and occasionally in death. Eating establishments provide food on a large scale and are important from the point of view of epidemiology of food borne diseases in the community. This study is carried out to assess the Knowledge, Attitude and Practice (KAP) regarding food hygiene among food handlers working in food establishment in Nehru Nagar, Belgaum City.

Material and Methods: A descriptive cross sectional study was conducted in food establishment in Nehru Nagar, Belgaum City. Sample is a subset of a population selected to participate in a study. Total number of food establishment's functioning in Nehru Nagar is 103. . From each food establishment's one cook, one helper and one service staff was selected randomly. Hence the total number of samples in the study is 103x 3= 309. Pre-tested structured questionnaire was used to gather information regarding practices of food hygiene. Data were coded and entered into SPSS sheet and analyzed by using SPSS software (SPSS 20.0 Version). Proportions were calculated wherever required from frequency tables. Chi square test was used.

Results: The maximum number of subjects 251(81.2%) had average knowledge, 237 (76.7%) had average attitude and 262 (84.8%) had average practice. There is a statistically significant association found between demographic variables such as, nationality, religion, education, marital status, duration of employment, with knowledge of food handlers at the $p < 0.05$ level of significance.

Conclusion: The food hygiene is an important aspect in food establishments made it compulsory for food handlers to provide clean food and free from contamination.

Key Words: Assess Knowledge, Practice, Food Handlers, Food hygiene, Food Establishments

INRODUCTION

Food is an important basic necessity, its procurement, preparation and consumption is vital for the sustenance of life. However, diseases that spread through food are common and persistent problems result in appreciable morbidity and occasionally in death. Eating establishments provide food on a large scale and are important from the point of view of epidemiology of food borne diseases in the community. They have been identified as an important source for contamination of food and food borne disease outbreaks [1].

Food hygiene and food safety is also one of the main problems worldwide especially in the developing countries like India. Worldwide, even in industrialized countries approximately 30% of all emerging infections over the past 60 years were caused by pathogens commonly transmitted through food [2].

Food hygiene and sanitation implies cleanliness in the producing, preparing, storing and serving of food and water. Food sanitation is an essential aspect of food preparation. It needs to be emphasized at every step of food handling and preparation. Some of the items which need attention to ensure that food is safe for consumption are a safe and potable water supply, selection of wholesome ingredients and hygienic handling to prevent the entry of spoilage and pathogenic organisms, both during preparation and serving. In addition all the equipment coming in contact with food should be scrupulously clean, the surroundings should be clean and there should be a proper and safe method for the disposal of waste. Inculcation of hygiene habits would help in preventing foods from being contaminated during handling. In large

scale cooking, food passes through many hands, thereby increasing the chances of food contamination due to improper handling. Deliberate or accidental contamination of food during large scale production might endanger to the health of the consumers, and have very expensive repercussion on a country [3].

Food is a product that is rich in nutrients required by microorganisms and may be exposed to contamination with the major sources from water, air, dust, equipment, sewage, insects, rodents and employees/ food handlers. Due to the changes in food production, handling and preparation techniques as well as eating habits, the fact remains that food is the source for microorganisms that can cause illness. The US Centers for Disease Control and Prevention (USDHHS-CDC 1996) revealed that the outbreaks of food borne diseases which resulted from foods of animal origin had caused approximately 76 million illness, 325,000 hospitalizations and 5000 deaths each year. Data obtained from United Kingdom (UK) and United State of America (USA) suggest that 20–40% of such illness is associated with the consumption of contaminated food where catering establishments are the most frequently cited sources of sporadic and outbreak food borne infection [4].

Food handlers are responsible in providing safe food for the consumption of their customers. Hence, it is compulsory for them to undergo food handler training upon working in any foodservice establishments in order to gain knowledge and understand the importance of food hygiene [5].

Assessment of knowledge, attitude and practices of the food handlers regarding food hygiene will reflect the current services

offered by them. Furthermore, health profile of the food handlers is more important.

Hence, this study will be useful to identify existing knowledge, practices and health status which will act as baseline entity to improve food hygiene.

MATERIALS AND METHODS

Study Area: The study was conducted in all employees working as food handlers in all type of food establishments in Nehru Nagar, Belgaum.

Study Design: cross sectional study.

Study Period: The study period was conducted for a period of one year January to September 2013.

Study Population: All food handlers working in all type of food establishments in Nehru Nagar, Belgaum.

Sample Size and Sampling Technique: Total number of food establishment's functioning in Nehru Nagar is 125. Out of them, 22 food establishments manager not give the permission to conduct the study, therefore, 103 food establishments were selected for the study. From each food establishment's one cook, one helper and one service staff was selected randomly. Hence the total number of samples in the study is $103 \times 3 = 309$.

Inclusion Criteria: Those who were working in food establishment during research period.

Exclusion Criteria: Those who do not give informed consent.

Data Collection: A formal permission to conduct the study was obtained from the manager of the food establishment. A structured interview schedule with the option for food handlers to know the knowledge,

attitude and practices of food hygiene was used.

Data Analysis: Collected Data were compiled systematically in group wise. These data was entered and analyzed using SPSS software (20.0 Version). The data were expressed in percentage and Chi-square test was used for association. The scoring system in knowledge was included. Attitudes was assessed by using 3-point Likert scale (Agree, Disagree, Don't know).

Classification of knowledge and practices score was done as shown below:

- $(X+SD)$ = Good knowledge Score
- $(X+SD)$ to $(X-SD)$ = Average knowledge Score
- $(X-SD)$ = Poor knowledge Score

Ethical Considerations: Prior to data collection, external review and necessary ethical clearance from Institutional Ethics Committee (IEC) of J.N.M.C, KLES was obtained for the study. Consent of respective food establishment authority was obtained after explaining objectives as well as the methods of the study. Participants were fully informed and written consent was taken from all respondents before data collection.

RESULTS

Out of 309 respondents, majority number of subjects 128 (41.5%) were in between 21-30 years of age group, 282 (91.3%) were male. About one third 297 (75%) food handlers were from Hindu religion and majority was Indian ethnicity (Citizen). Regarding educational status of the food handlers, almost half of the subjects 151(48.9%) had

got secondary level of education. About 20% (62) were Illiterate (Non Schooling) and 22 (7.1%) had collage level education. About 80% (246) subjects had one year of working experience and maximum number of subjects 208 (63.3%) were married.

Table 1: Association of knowledge with demographic characteristics

Description of respondents		Level of knowledge		Total
		Poor & Moderate (%)	Good (%)	
Education	Non- school	57(91.9)	5(8.1)	62
	Primary	34(77.3)	10(22.72)	44
	Secondary	120(79.5)	31(20.5)	151
	Higher Secondary	22(73.3)	8(26.7)	30
	College	18(81.8)	4(18.2)	22
$\chi^2= 12.511, d.f.= 4, p= 0.0139$				
Marital status	Single	71(71.7)	28(28.3)	99
	Married	178(85.6)	30(14.4)	208
	Widow/Widower	2(100.0)	0(0.0)	2
$\chi^2= 32.8, d.f.= 2, p= 0.001$				
Duration current employments	0-4 months	11(84.6)	2(15.4)	13
	5-8 months	17(81.0)	4(19.0)	21
	9-12 months	16(55.2)	13(44.8)	29
	>1 years	207(84.1)	39(15.9)	246
$\chi^2= 32.94, d.f.= 3, p= 0.001$				

Table 2: Association of attitude with demographic characteristics

Description of respondents		Attitude of food handlers			Total
		Poor (%)	Average (%)	Good (%)	
Education	Non- School	4(6.5)	42(67.7)	16(25.8)	62
	Primary	3(6.5)	33(75.0)	8(18.2)	44
	Secondary	3(2.0)	120(79.5)	28(18.5)	151
	Higher secondary	2(6.7)	23(76.7)	5(26.7)	30
	College	0(0.0)	19(86.4)	3(13.6)	22
$\chi^2= 16.981, d.f.= 8, p= 0.0302$					
Marital status	Single	4(4.0)	75(75.8)	20(20.2)	99
	Married	8(3.8)	162(77.9)	39(18.3)	208
	Widow/Widower	0(0.0)	0(0.0)	2(100)	2
$\chi^2= 17.458, d.f.= 4, p= 0.001$					
Duration of current employments	0-4 months	1(7.7)	9(69.2)	3(23.1)	13
	5-8 months	3(14.3)	14(19.0)	4(19.0)	21
	9-12 months	2(6.9)	7(24.1)	7(24.1)	29
	>1 year	6(2.4)	194(78.9)	46(18.7)	246
$\chi^2= 11.561, d.f.= 6, p= 0.0725$					

The maximum number of subjects 251(81.2%) had average knowledge, 237 (76.7%) had average attitude and 262 (84.8%) had average practice. There is statistically significant association found

between demographic variables such as education, marital status, duration of employment with knowledge and attitude of food handlers at the $p < 0.05$ level of significance.

Table 3: Association between practice and demographic characteristics of food handlers

Description of respondents		Practices of food handlers		Total
		Poor(%)	Average & Good (%)	
Education	Non Schooling	10(16.1)	52(83.9)	62
	Primary	4(9.1)	40(90.9)	44
	Secondary	26(17.2)	125(82.8)	151
	Higher Secondary	4 (13.3)	26(86.7)	30
	College	3(13.6)	19(86.4)	22
$\chi^2= 3.284, d.f.= 4, p= 0.7806$				
Marital Status	Single	19(19.2)	80(80.8)	99
	Married	28(13.5)	180(86.5)	208
	Widow/Widower	0(0)	2(100.00)	2
$\chi^2= 20.02, d.f.= 2, p= 0.001$				
Duration of current employments	0-4 Months	2(15.4)	11 (84.6)	13
	5-8 Months	5(23.8)	16(76.2)	21
	9-12 Months	6(20.7)	23(79.3)	29
	> 1 Year	34(13.8)	212(86.2)	246
$\chi^2= 4.299, d.f.= 3, p= 0.233$				

But there was no significant difference showed between education and duration of employment with practice. There is a statistically significant association found between demographic variables such as,

gender, ethnicity and marital status with practice of food handlers at the $p < 0.05$ level of significance Table(1,2,&3)

DISCUSSION

This study noted that 62 (20.1%) of food handlers were illiterate, 44 (14.2%) had studied up to primary level, 151(48.9%) had studied up to secondary level, 30 (9.7%) had studied up to higher secondary level and 22 (7.1%) were graduated. In this study majority of participants had studied up to secondary level which was similar to the study conducted in Malaysia, Nigerian [5]. Study conducted in Aligarh, Ethiopia, Maharashtra showed majority of participant were illiterate [1, 2, 3].

Among all food handlers, 99 (32%) were single or not married, 208 (67.3%) were married and 2 (0.6%) were widow/widower respectively. Majority 208 (67.3%) of participants were married in this study whereas study conducted in Malaysia and Ethiopia noted higher number of unmarried cases [5, 6].

With regard to working periods, 13 (4.2%) were employed from 4 months, 21(6.8%) Were from 5-8 months, 29(9.4%) were from 9-12 months and 246(79.6%) were employed from more than 1 years. Majority of participants had working for more than 1 year which was similar to the study conducted in Malaysia [4]. Among all food handlers, 99% had knowledge of hand washing practice before preparation/cooking of food which was similar to the study done in Kolkata [7].

CONCLUSION

Food safety in food establishments needs continuous monitoring. This study showed

that food handlers had less understanding of risk of microbial and chemical contamination. Overall, from this study it can be seen that food handlers in Nehru Nagar, Belgaum need to improve their knowledge, attitude and practices on food hygiene especially their personal hygiene. Furthermore, it can be highlighted and action can be taken to help increase their awareness of food hygiene.

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