



## **STUDY ON IMPACT ANALYSIS OF TRAINING PROGRAMME ON FOOD SAFETY KNOWLEDGE OF FOOD HANDLERS IN AKOLA AND NAGPUR CITY**

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### **ABSTRACT**

The issue of food safety has been in public eye as never before. Current socio economic trends influence the food choices and eating behaviours of consumers to enjoy a variety of foods getting themselves expose to pathogens. Various studies are conducted regarding the awareness of food safety knowledge by the consumers, but the studies regarding the awareness of the knowledge of food safety by the food handlers appear negligible and therefore an attempt has been made in the present study to organize the training of food handlers and assess its impact. For the present study 45 food handlers each from Akola and Nagpur working in different food service establishments were randomly selected and their training was organised at two locations namely Patient mess hall of Govt. medical college Akola and Girls hostel hall of Dr. P. D. K. V. Nagpur. From the present study it is concluded that the maximum per cent of food handlers from Nagpur (44.44%) belonged to high impact category. While in respect of Akola (46.67%) maximum trained food handlers fall in medium impact category. This indicates that training has moderate impact and there is still a scope for improvement in food handlers towards food safety knowledge and practices. A higher variability in impact indices of the trained food handlers of Nagpur (12.14%) was observed as compared to that of Akola (10.77%). The results of 'Z' test indicated that there was not a significant difference in impact of imparted information related to food safety given to the food handlers, through training programs of Nagpur with that of Akola.

**Keywords:** Food safety knowledge, Training, Impact

### **INTRODUCTION**

Food is the most complex part of the environment to which human population is exposed to variety of contaminants. Access to

safe food and nutritionally adequate is the right of every individual declares WHO (2002). "Food that looks good, smell good and even taste good can contain



millions of bacteria may be hazardous to health and therefore food safety has become an important public health issue across the globe. The percentage of population suffering from food borne diseases has been about thirty per cent in USA, UK etc. (Almanaz and Nesmith, 2004). Unfortunately the magnitude of this is not known in developing countries.

In the recent years, there has been a marked increase in the consumption of food outside the home. This is very common in industrialized countries. Similarly, migration of hundreds of students and youths from one place to another for education and better jobs opportunities need food outside their homes. Their need of food is met by cafeteria of the respective institutes. The quality of food served in these institutes and eateries are more often compromised due to variety of reasons. In order to economise the cost of food demanded by the students and labour class of industries, the food service staff

employed in food service establishments are from poor economic background with low salaries. These food servers and cooks etc. have poor knowledge regarding personal hygiene and sanitation.

The issue of food safety has been in public eye as never before. Current socio economic trends influence the food choices and eating behaviours of consumers to enjoy a verity of foods getting themselves expose to pathogens. Various studies are conducted regarding the awareness of food safety knowledge by the consumers, but the studies regarding the awareness of the knowledge of food safety by the food handlers appear negligible and therefore an attempt has been made in the present study to organize the training of food handlers and assess its impact.

### **Objectives**

1. To create the awareness in the focused group regarding food safety knowledge by organizing training programme.



2. To study the impact of training programme on food handlers regarding food safety knowledge, attitude and practices.

iv) Personal health, hygiene and clean habits, the need of high standards.

v) Food safety regulations.

vi) Questions and answers.

### **MATERIAL AND METHODS**

For the present study 45 food handlers each from Akola and Nagpur working in different food service establishments were randomly selected and their training was organised at two locations namely Patient mess hall of Govt. medical college Akola and Girls hostel hall of Dr. P. D. K. V. Nagpur. The course content was formulated for the training programme and syllabus for training was decided in consultation with the experts in the field. The topics covered were appropriate to food handler's jobs. They were as follows:

- i) Introduction, explaining the priority of food safety topic in the present scenario and the role of food handlers.
- ii) Wholesome diet.
- iii) Food-borne diseases cross contamination, its causes and how to prevent it.

### **Analytical tools**

The impact of training was ascertained in terms of sum of percentage change in knowledge, attitude, personal hygiene practices and habits of food handlers and providers. For assessment of impact a Before-After experimental research design was adopted. The participant trainees were administered the knowledge, attitude, hygiene and habit scales prior to training and after exposure to training. The sum of percentage change in knowledge, attitude, personal hygiene practices and habits was taken as an impact of training. At the end of training the trainees were appealed to use the knowledge they gained during the training and share the responsibility of food safety.

The categorization of the respondents was then undertaken in the categories as given below



considering the mean ( $\bar{X}$ ) and standard deviation ( $\sigma$ ) of the distribution.

Sr. No.	Category	Range of percent change
1	Low	Less than Mean - 1SD
2	Medium	Between Mean -1SD and Mean + 1SD
3	High	More than Mean + 1SD

Following statistical techniques were considered appropriate and used for analysis of data for drawing conclusions.

1. Arithmetic mean ( $\bar{X}$ )
2. Standard deviation ( $\sigma$ )
3. Coefficient of variation (C.V.)
4. 'Z' test of mean differences

## RESULTS

The change in knowledge, attitude, personal hygiene and good habits of food handlers pertaining to food safety due to intervention through imparted information given through training programs was ascertained and the results are presented and discussed below.

### 1. Change in knowledge about food safety practices

The change in knowledge of the trainee food handlers working in various food service establishments of Nagpur and Akola about food safety practices

was ascertained and the results are presented in Table 1.

The distribution of food handlers according to change in level of knowledge in Table 1 reveals that out of the total 45 trainee food handlers who have attended the training program, working in various food service establishments of Nagpur, maximum per cent (48.89%) of them were found in medium category of change in knowledge. It was followed by 46.67 per cent of these food handlers belonging to high knowledge change category and very meagre per cent of them (4.44%) were in low knowledge change category. Similar trend was observed in the trainee food handlers of Akola. Maximum per cent of them (44.44) were in medium knowledge change category. It was followed by 31.12 per cent who were found in high knowledge category of change in food safety practices. Remaining near about one fourth per cent (24.44%) of them belonged to low knowledge change category.



## **2 Change in attitude towards adoption of food safety practices**

The change in attitude of the trainee food handlers towards use of food safety practices of Nagpur and Akola was worked out and the results are presented in Table 2.

The distribution of trainee food handlers according to change in level of attitude towards food safety handling practices in Table 2 showed that out of the total trainee food handlers working in various food service establishments at Nagpur, near about fifty per cent (48.89%) of them were found in high change in attitude category. It was followed by 46.67 per cent of these food handlers who were found in medium change category. Very less per cent of them (4.44%) belonged to low change in attitude category.

In case of the trainee food handlers of Akola, more than fifty per cent of them (51.11%) belonged to medium change category of attitude towards food safety practices. It was followed by 46.67 per cent who were found in the high attitude change category. Very meagre per cent of them

(2.22%) falls in the low attitude change category.

## **3 Change in adoption of personal hygiene practices**

Adoption of personal hygiene practices by the food handlers is defined as the degree of actual use of hygienic practices by the food handlers while working in food service establishments to avoid threat to the safety of food. The change in hygienic practices adoption by the trainee food handlers due to intervention through imparted information through training programs was assessed and the findings are given in Table 3.

The Table 3 reveals that majority of trainee food handlers of Nagpur (57.78%) and Akola (75.56%) were found in high category of change about adoption of hygiene practices. It was followed by 40 per cent of these food handlers from Nagpur and 20 per cent from Akola who were found in medium change category. Very meagre per cent of them from both the places were in low change category of adoption of hygienic practices.



#### **4 Change in adoption of good habit practices**

The change in adoption good habit practices of the trainee food handlers working in various food service establishments of Nagpur and Akola related to food safety was worked out and the results are presented in Table 4.

The distribution of 45 trainee food handlers from Nagpur, according to change in level of adoption of good habits in Table 4 reveals that 48.89 per cent each of the food handlers of Nagpur were found in high and medium categories about change adoption of good habits. Only 2.22 per cent trainee food handlers were found in low habit change category.

In respect of the trainee food handlers of Akola, maximum per cent (46.67%) of them were in medium change in adoption of personal good habits practices category. It was followed by 42.22 per cent who were in the high change category. There were only 11.11 per cent of them belonging to low change category.

#### **5 Impact of training programme on food safety on the food handlers**

Efforts have been made to ascertain the impact of training programs, on knowledge about food safety, attitude towards food safety practices, personal hygiene practices to be adopted for food safety and also good habits to be cultivated by the food handlers.

The effect of per cent change in dependent variables i.e. knowledge, attitude, personal hygiene and good habits of the trainee food handlers working in various food service establishments of Nagpur and Akola about food safety was worked and the results are given in the Table 5.

The distribution of trainee food handlers according to impact in terms of Knowledge, attitude, personal hygiene and good habit practices about food safety practices in Table 5 showed that out of the total sample of 45 trainee food handlers working in various food service establishments of Nagpur, 44.44 per cent each of them were found



to appear in high and medium impact categories respectively. The remaining 11.12 per cent of these food handlers were found in low impact category.

In case of the trainee food handlers of Akola, maximum per cent of them (46.67%) belonged to medium impact category. It was followed by 31.11 per cent who were included in the high impact category. Remaining 22.22 per cent of them were in the low impact category.

The mean impact score of trainee food handlers from Nagpur (62.88) was observed to be higher than that of Akola (60.01). A higher variability in impact indices of the trainee food handlers of Nagpur (12.14%) was observed as compared to that of Akola (10.77%). The results of 'Z' test indicated that there was not a significant difference in impact of imparted information related to food safety given to the food handlers, through training programs of Nagpur with that of

Akola as the value of 'Z' (1.083) was observed to be statistically non significant.

The impact of the present research findings showed that when the food handlers were imparted information through trainings revealed that it has resulted in changes and improvements. These findings collaborate with the observation of Costello *et al.* (1997), Cotterchio *et al.* (1998), Almanza and Nesmith (2004) who indicated that the training of food handlers helped to enhance the overall improvement and had positive impact. Sheth *et al.* (2006) concluded that the food safety education (FSE) could be successfully used as one of the intervention strategy.

## CONCLUSION

From the present study it is concluded that training has moderate impact and there is still a scope for improvement in food handlers towards food safety knowledge and practices.

**Table 1. Distribution of food handlers trained group according to change in knowledge about food safety practices**

Sr. No .	Change in knowledge categories	Nagpur		Akola	
		No (45)	Per cent	No (45)	Per cent
1	Low	2	4.44	11	24.44
2	Medium	22	48.89	20	44.44
3	High	21	46.67	14	31.12
	Total	45	100	45	100
	Mean	58.35		51.24	
	S D	17.72		18.17	
	C V	30.38		35.47	
	'Z' value within	0.496		0.425	
	'Z' value between		<b>1.678</b>		

**Table 2. Distribution of food handlers trained group according to change in attitude towards food safety practices**

Sr. No .	Change in attitude categories	Nagpur		Akola	
		No (45)	Per cent	No (45)	Per cent
1	Low	2	4.44	1	2.22
2	Medium	21	46.67	23	51.11
3	High	22	48.89	21	46.67
	Total	45	100	45	100
	Mean	61.14		63.28	
	S D	14.69		11.14	
	C V	24.03		17.62	
	'Z' value within	0.627		0.856	
	'Z' value between		<b>0.556</b>		

**Table 3. Distribution of food handlers trained group according to change in hygiene practices adoption**

Sr. No .	Change in hygiene practices adoption categories	Nagpur		Akola	
		No (45)	Per cent	No (45)	Per cent
1	Low	1	2.22	2	4.44
2	Medium	18	40.00	9	20.00
3	High	26	57.78	34	75.56
	Total	45	100	45	100
	Mean	65.77		66.60	
	S D	14.18		15.90	
	C V	21.56		23.88	
	'Z' value within	0.699		0.631	
	'Z' value between		<b>0.096</b>		

**Table 4. Distribution of food handlers trained group according to change in adoption in good habit practices**

Sr. No .	Change in adoption of good habit practices categories	Nagpur		Akola	
		No (45)	Per cent	No (45)	Per cent
1	Low	1	2.22	5	11.11
2	Medium	22	48.89	21	46.67
3	High	22	48.89	19	42.22
	Total	45	100	45	100
	Mean	66.22		58.90	
	S D	10.07		14.46	
	C V	15.20		24.56	
	'Z' value within	0.991		0.614	
	'Z' value between		<b>2.091*</b>		

\* indicates statistical significance at 5 per cent level

**Table 5. Distribution of food handlers according to impact of training programme about food safety**

Sr. No .	Impact categories	Nagpur		Akola	
		No (45)	Per cent	No (45)	Per cent
1	Low	5	11.12	10	22.22
2	Medium	20	44.44	21	46.67
3	High	20	44.44	14	31.11
	Total	45	100	45	100
	Mean	62.88		60.01	
	S D	7.63		6.47	
	C V	12.14		10.77	
	'Z' value within	1.234		1.399	
	'Z' value between		<b>1.083</b>		

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