

Study of Health Status of Food Handlers Working At Food Establishments in Jalgaon City, Maharashtra.

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Abstract

Research question:- What is the health status of food handlers working in various food eating establishment in Jalgaon city.

Objectives: - To assess the socio-demographic profile and health status of food handlers.

Study design: - A cross sectional study was conducted in Jalgaon city. There were 417 food establishments in Jalgaon Municipal Corporation area consisting of 2094 food handlers. Out of this 10% sample was selected by simple random sampling technique. Thus 210 food handlers comprised the study group. After obtaining permission from hotel management and oral consent of food handlers, interviews were taken and physical examinations of food handlers were done to assess their health status.

Result :- Most of the food handlers were male (74.76%) and female were 25.23%. Maximun of them (88.1%) were above 30 years of age. 47.14% of food handlers were illiterate and just literate. 22.85% of food handlers had poor personal hygiene. Most of food handlers where not using gloves, but were washing and hands before serving. Nails were cut and clothes were clean in most of the food handlers. A statistically significant association was found between literacy and personal hygiene.

Keywords:- Food handlers, Health status, Hotel workers

I. Introduction

Food is a basic human need for survival. Through centuries, food has been recognized as an important need for humans in health and disease. The health of people depends to a large extent on the food they eat, but food is frequently subjected to contamination by a variety of micro-organisms. These contaminations may occur at any point during the journey of food from the producer to the consumer. The chances of food getting contaminated depend largely on the health status of the food handlers, their personal hygiene, knowledge of food hygiene and above all, the proper application of that knowledge.⁽¹⁾

A major risk of food contamination lies with the food handlers. Dangerous organisms present in or on, the food handler's body can multiply to an infective dose, given the right conditions, and come into contact with food, or surfaces used to prepare food.^(2,3)

The incidence of food borne infection is an important problem worldwide which accounts for approximately 30% of deaths resulting from food-borne illnesses in the United States.⁽⁴⁾ *S. typhi* is transmitted through food or water that has been contaminated with faeces from either acutely infected persons, persistent excretors or from chronic asymptomatic carriers handling food. Humans are the only host for *S typhi*; there are no environmental reservoirs.⁽⁵⁾ Typhoid fever is still a major public health problem in many developing countries.⁽⁶⁾ It is a sporadic disease in developed countries that occurs mainly in returning travelers with occasional point source epidemics.⁽⁷⁾ In endemic areas, identified risk factors for the disease include eating food prepared outside the home, such as ice cream or flavored iced drinks from small hotels and street vendors.⁽⁸⁾

Also in recent years, there has been an increasing trend toward the sale and consumption of outside foods. This trend is more obvious in the urban areas, where due to the increasing population, changing lifestyle, breakdown of joint family system, and increasing number of working women compel people to depend on "ready to eat" foods. The individuals may be able to satisfy their taste and nutrition needs, but they pay little attention to hygiene and food safety. The food handling personnel play a vital role in the transmission of food-borne diseases. The health of the food handlers is of great importance for maintaining hygienic quality of food prepared and served by them.⁽⁹⁾ Besides unhealthy food handlers, disease carriers handling the food also play an equally important role in transmitting these diseases and impose a great threat to the health of the public. Certainly, there are many other modes also by which the food borne diseases are transmitted. These include

preparation of food in the utensils infected by handling or washing in the contaminated water or flies alighting on food after feeding on exposed infected faeces or during storage of food by insects, rodents etc. The role of food handlers in the transmission of food borne diseases comes a top. ⁽¹⁾ Considering the above facts in mind the present study was undertaken with following objectives.

II. Aims And Objectives

- 1) To study the health status of food handlers in Jalgaon city.
- 2) To study the socio-demographic profile of food handlers in Jalgaon city.
- 3) To study the association of literacy and personal hygiene of food handlers.
- 4) To study the association of duration of service and morbidity pattern of food handlers.

III. Materials And Methods

The present cross sectional study was conducted in Jalgaon city. There were 417 food establishments in Jalgaon Municipal Corporation area consisting of 2094 food handlers. Out of this 10 % sample was selected by simple random sampling technique. Thus 210 food handlers comprised the study group. After taking the permission of the hotel management and explaining the purpose of study, oral consent was obtained from food handlers. Information was collected in predesigned pretested proforma.

Information regarding age, sex, occupation status, food habits and certain personal habits like smoking, alcohol consumption, tobacco chewing etc was collected. History of any past illness in 6 months was taken. Those who found or suspected ill, were investigated and treated accordingly.

The nutritional status was assessed according to the BMI obtained. ⁽¹³⁾ An arbitrary scale of 10 points was devised for classifying the level of personal hygiene by food handlers. The scale includes hygiene and sanitation component about wearing clothes, use of gloves, cutting of hairs, washing hands, cutting nails, use of towels, bathing frequency, brushing of teeth and use of footwear. They were classified as good >7 score, satisfactory 4-6 score and poor <3 score.

IV. Results

Table no 1 reveals that 74.76% of food handlers were male and 25.23% were female. Out of 210 food handlers maximum number 185(88.1%) were above 30 years of age, of which 136 (73.5%) were male and 49(26.5%) were female. Only 9(4.28%) were 60 years of age.

Table no 2 reveals that maximum number 78(37.14%) of food handlers were cook out of which 73(93.58%) were male and only 5(6.42%) were females. Also out of 64(30.47%) waiters, 61(95.31%) were males and only 3(4.68%) were female while out of 63(30%) dish washers 44(69.84%) were female.

Table no 3 reveals that illiterate (those who can't read and write) were 10(4.76%). Just literate (those who can read only) comprised 89(42.38%). Thus 99(47.14%) were illiterate and just literate. Only 6 (2.85%) were graduate.

Table no 4 reveals that 42 (20%) of food handlers were without any addictions, out of which 33(78.57%) were females, and only 9(21.42%) were males. Maximum number 53(25.23%) had mix habit of both smoking as well as alcohol consumption. Tobacco chewing was most common addiction found in females 11 (5.23%). Smoking was found in 29 (13.8%) and alcohol consumption was found in 32 (15.23%) of food handlers.

Table no 5 reveals that 92(43.80%) were apparently healthy and 118(56.19%) were suffering from some illness. Out of the apparently healthy 83(90.21%) were male. The most common morbidity in food handlers was anaemia 54(25.71%). Skin diseases were seen in 25(11.90%) of food handlers. Ringworm 12(48%), scabies 8(32%), boils 5(20%) were common skin problems manifested in food handlers. Poor nutritional status was found in 12(5.71%) of food handlers, of which 9(75%) were females. Angular stomatitis (3.33%), Acid peptic disease (2.85%) and caries teeth (2.38%) were also common manifestations mostly in males. The high morbidity in food handlers could probably be due to poor environmental conditions, poor personal hygiene and low socio-economic status.

Table No 6 shows relationship between literacy and personal hygiene .Chi square value is 38.832 with degree of freedom 8 with $p < 0.001$. Statistically significant difference was found between literacy and personal hygiene. Thus illiterate food handlers had poor personal hygiene.

Table no 7 shows relationship between duration of service and morbidity pattern in food handlers. Statistically significant difference was found between duration of service and morbidity pattern, as the duration of service increases morbidity in food handlers also increases.

V. Discussion

A food handler is any person who handles food, regardless whether he actually prepares or serves it. Unhealthy food handlers are potentially dangerous to the health of consumers they can transmit a number of food-borne diseases like diarrhoea, dysentery, cholera, typhoid through their hands.

According to present study 88.1% were above 30 years of age and 4.28% was above 60 years of age. This finding is in contrast to the study conducted in Amritsar city⁽¹⁾ in which 71.90% of food handlers were below 30 years of age and only 2.33% were in the age group of 60 years and above. Gupta and Ketkar⁽¹⁰⁾ from Nagpur in their study on food handlers observed that 22.3% of them were below 25 years of age. In the similar study by Chitnis⁽¹¹⁾ from Pune, it was found that 73.87% of food handlers were below 30 years of age.

In the present study 74.76% were male food handlers and 25.23% were female. But the study conducted in Amritsar⁽¹⁾ 96.2% of food handlers were males. This difference may be because the study conducted in Amritsar city was done only in eating establishments of educational and health institutions, where females were working only in girls' hostel kitchen. In a study by Chitnis⁽¹¹⁾ there was no female food handler, while in another study by Gupta and Ketkar⁽¹⁰⁾ from Nagpur, 28.9% were females.

In the present study 37.14% were cooks similar to the study conducted in Amritsar city⁽¹⁾, where 49.54% were cooks. But according to the study conducted in Birjapur city maximum were suppliers⁽¹²⁾

In the present study 47.14% were illiterate which is similar to the study in Amritsar (38.31%)¹. But the finding differs from the study conducted in Birjapur⁽¹²⁾, in which 71% were literate.

In the present study smokers were only 13.80% which differs from the study conducted in Amritsar where 53.74% were smokers⁽¹⁾. Gupta and Ketkar (1981)⁽¹⁰⁾ in their study reported that 50% of the food handlers were habituated to pan chewing and 40.1% to chewing tobacco.

In the present study 29.04% of food handlers gave a history of some illness during past 6 months, in which cough and cold were maximum which was 36.06%. But the study conducted in Amritsar shows that 20.91% of food handlers gave the history of some illness during the past 3 months, in which diarrhoea was most common 34.88%.⁽¹⁾ Chitnis (1982)⁽¹¹⁾ observed that 25.33% of food handlers suffered one or the other illness in the past 6 months.

In the present study 43.80% were apparently healthy, in which anaemia was 25.71% and skin diseases were 11.90%. But according to the study conducted in Amritsar city, 38.32% were apparently healthy. Anaemia was found in 18.22% followed by parasitic infestations in 13.08%.⁽¹⁾ Chitnis (1985)⁽¹¹⁾ who had reported 74.13% overall morbidity, found that parasitic infestation (44.53%) and anaemia (22.13%) were the most frequently seen morbid conditions. Gupta and Ketkar (1981)⁽¹⁰⁾ observed that 69.7% food handlers suffered from intestinal parasitic infestations and 32.09% were anaemic.

VI. Conclusions

Food hygiene can be best promoted by educating the food handlers about the personal hygiene. The findings highlight about the importance of food hygiene education among the food handlers. The knowledge of food hygiene should be imparted to the food handlers to understand the need to good personal hygiene. The health status and the level of personal hygiene of food handlers the eating establishments were found to be unsatisfactory. Awareness with regard to food and personal hygiene need to be created among the workers and the management of eating establishment and food joints. Although most of the workers are covered under the Employee's State Insurance scheme to be entitled to medical and other benefits, daily inspection of the workers regarding to the health and personal hygiene should be conducted by the management.

VII. Tables

Table 1: Age and sex wise distribution of food handlers

Age groups (yrs)	Male (%)	Female (%)	Total (%)
20-29	21 (84)	04 (16)	25 (100)
30-39	68 (64.15)	38 (38.85)	106 (100)
40-49	55 (88.71)	7 (11.29)	62(100)
50-59	07 (87.5)	01 (12.5)	08 (100)
>60	06 (66.67)	03 (33.33)	09 (100)
Total	157(74.76)	53 (25.23)	210 (100)

Table 2: Distribution of food handlers according to type of work

Type of work	Male (%)	Female (%)	Total (%)
Manager	4 (80)	1(20)	5(100)
Cook	73 (93.6)	5 (6.4)	78(100)
Waiter	61 (95.3)	3 (4.7)	64(100)
Dish washer	19 (30.2)	44 (69.8)	63(100)
Total	157(74.8)	53(25.2)	210(100)

Table 3: Literacy status of food handlers

Education	Number	%
Illiterate	10	4.76
Literate	89	42.38
Primary	67	31.90
Middle	28	13.33
High secondary	10	4.76
Graduate	6	2.85
Total	210	100

Table 4: Addiction status of food handlers

Addiction	Male (%)	Female (%)	Total (%)
Smokers	26 (89.66)	03 (10.34)	29 (100)
Alcoholics	32 (100)	0(0.00)	32 (100)
Tobacco chewers	30 (73.17)	11 (26.83)	41 (100)
Betel chewers	07 (53.85)	6 (46.15)	13 (100)
Mixed habits	53 (100)	0(0.00)	53 (100)
No addictions	9(21.43)	33 (78.57)	42 (100)
Total	157(74.76)	53(25.23)	210(100)

Table 5: Distribution of food handlers according to current morbidity

Morbidity	Male (%)	Female (%)	Total (%)
Apparently healthy	83(90.22)	9(9.78)	92(100)
Anaemia	31(57.41)	23(42.59)	54(100)
Skin			25(100)
1.Ringworm	5(41.67)	7(58.33)	12(100)
2.Scabies	6(75)	2(25)	8(100)
3.Boils	4(80)	1(20)	5(100)
Poor nutritional status	3(25)	9(75)	12(100)
Angular stomatitis	5(71.43)	2(28.57)	7(100)
Acid peptic diseases	6(100)	0(0.00)	6(100)
Caries teeth	5(100)	0(0.00)	5(100)
Fever	4(100)	0(0.00)	4(100)
Hypertension	3(100)	0(0.00)	3(100)
Diabetes	2(100)	0(0.00)	2(100)

Table 6: Association of literacy status and personal hygiene of food handlers

Literacy	Personal hygiene			Total (%)
	Poor (%)	Fair (%)	Good (%)	
Illiterate	31(31.31)	49(49.49)	19(19.19)	99(100)
primary	9(13.43)	45(67.16)	13(19.40)	67(100)
middle	8(28.57)	14(50)	6(21.43)	28(100)
HSC	0(0.00)	2(20)	8(80)	10(100)
graduate	0(0.00)	1(16.67)	5(83.33)	6(100)
total	48(22.86)	111(52.86)	51(24.28)	210(100)

$$X^2=39.54, df=8, p<0.0001$$

Table 7: Association of morbidity and duration of service of food handlers

Duration of service (years)	Morbidity		Total (%)
	Present (%)	Absent (%)	
<1	3(13.04)	20(86.96)	23(100)
1-2	5(14.71)	29(85.29)	34(100)
2-3	9(69.23)	4(30.77)	13(100)
3-4	13(72.22)	5(27.78)	18(100)
4-5	32(72.73)	12(27.27)	44(100)
>5	56(71.79)	22(28.21)	78(100)
total	118(56.19)	92(43.81)	210(100)

$$X^2=56.54, df=5, p<0.00$$

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