

Research Article

## Knowledge, Attitude and Practice among food handlers on food borne diseases: A hospital based study in tertiary care hospital

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**Abstract**

**Background:** Food handlers play an important role in ensuring food safety throughout the chain of production, processing, storage and preparation. *Staphylococcus aureus* infections used to respond to  $\beta$ -lactam and related group of antibiotics but the emergence of Methicillin-resistant *S. Aureus* (MRSA) has posed a serious therapeutic challenge.

**Objectives:** To assess the food hygiene Knowledge, Attitude and Practice (KAP) among the food handlers.

**Method and material:** In this hospital based cross sectional study, subjects were all 60 food handlers working in three canteens. This study was performed for the period of four months in June to September 2013. The data was obtained by the predesigned proforma. The swabs from nose, both axilla and both hands were taken. Also stool samples from all cases were obtained with the consent of the study subjects.

**Results:** The study was conducted in 60 food handlers of which were 22 males and 38 females. Wearing the gloves and other protective cover usage was very rare among them. But majority of them know about the usage of the protective covers but not practicing this hygiene.

**Conclusion:** The hygiene and the cleanliness practiced by the food handlers were satisfactory. However there is need to increase the hygiene level of food handlers and environmental premises.

**Keywords:** Food handlers, food hygiene, KAP

### 1. Introduction

*Staphylococcus aureus* is responsible for causing a variety of human infections, which may range from minor skin diseases to life-threatening infections.<sup>1</sup> It colonizes healthy individuals and causes severe infection in hospitalized patients. *Staphylococcus Aureus* infections used to respond to  $\beta$ -lactam and related group of antibiotics but the emergence of Methicillin-resistant *S. aureus* (MRSA) has posed a serious therapeutic challenge.<sup>2</sup>

The factors which play an important role in spread of food borne diseases are consequence of contaminated food, lack of appreciation of nature and extent of food safety measures, lack of organized consumer demand for food safety and lack of periodic evaluation and lack of updating of food safety policies.<sup>3</sup> Diseases spread through food still remain a common and persistent problems resulting in appreciable morbidity and occasional mortality. Food handlers play an important role in ensuring food safety throughout the chain of production, processing, storage and preparation.<sup>4</sup>

Approximately 10 to 20% of food-borne disease outbreaks are due to contamination by the food handler. The mishandling of food and the disregard of hygienic measures enable pathogens to come into contact with food and, in some cases, to survive and multiply in sufficient numbers to cause illness in consumers. Personal hygiene and environmental sanitation are key factors in the transmission of foodborne diseases.<sup>5,6</sup>

About 10-30% of healthy persons carry bacteria in the nose and skin, axilla, perineum and throat.<sup>7</sup> This study was undertaken to assess the food borne diseases and food hygiene Knowledge, Attitude and Practice (KAP) among the food handlers.

### 2. Material methods

The present cross sectional study was performed for the period of six months from Jun to November 2013. The study subjects were included all 60 food handlers working in girls hostel, boys hostel and hospital kitchen. The data was obtained by the predesigned proforma. After explaining the importance of study, written informed consent was taken from subjects.

The data was collected on pre designed proforma by face to face interview. The proforma contains socio-economic demographic data of food handlers. The knowledge, attitude and practice (KAP) regarding food borne diseases and food hygiene were assessed among the food handlers.

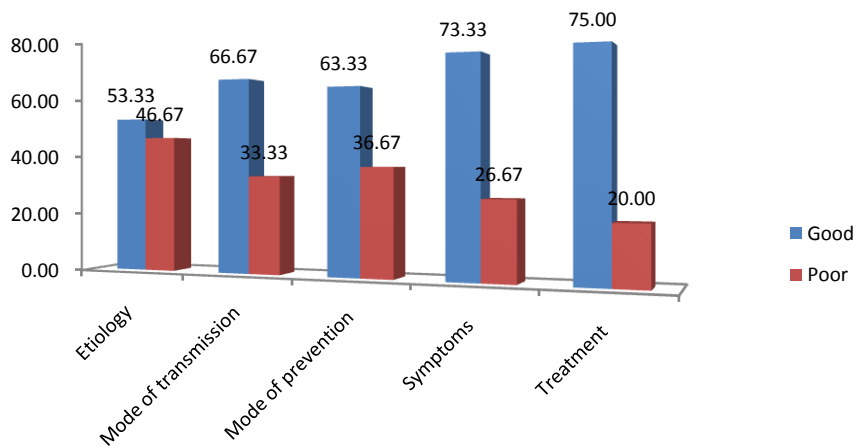
Food handler was defined as a person in the food trade or someone professionally associated with it, such as an inspector who, in his routine work, comes into direct contact with food in the course of its production, processing, packaging or distribution (including raw milk for direct consumption).<sup>8</sup>

The data was analysed using online statistical software Open epi 2.3.1. The score of knowledge, attitude and practice were categorized as: poor/good knowledge, poor/ good attitude and poor/ good practice based on the summation of individual scores of the variables. Thus, for interpretation of results, knowledge, attitude and practice were expressed as percentages of poor and good scores. The potential influencing factors towards KAP were examined by using univariate analysis. The results were interpreted in percentages, Odds Ratio (OR) and 95% Confidence Interval (CI). Chi square test was applied with the p value of less than 0.05 considered as significant.

### 3. Results

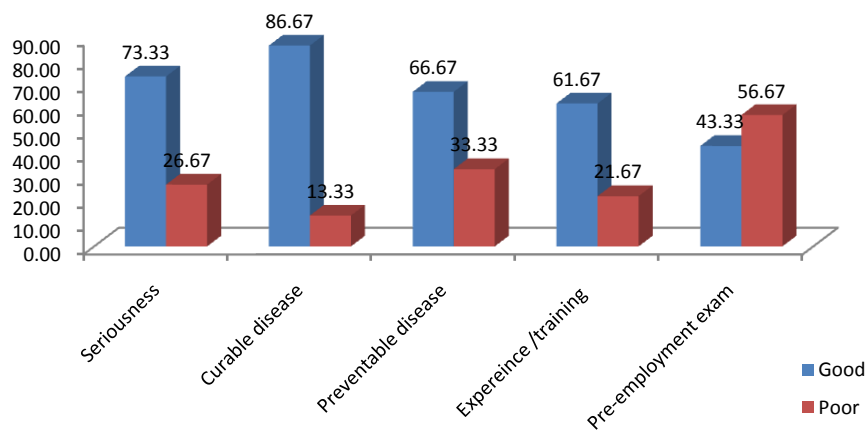
The study was conducted in all 60 food handlers of which 22 were males and 38 females. Fig 1 shows that most of the food handlers had adequate knowledge about symptoms (73.33%) and treatment (75%). They had poor knowledge in aetiology (46.67%), mode of transmission (33.33%) and mode of prevention (36.67%) of food-borne diseases.

**Figure No. 1. Assessment of Knowledge among Food Handlers regarding food borne disease**



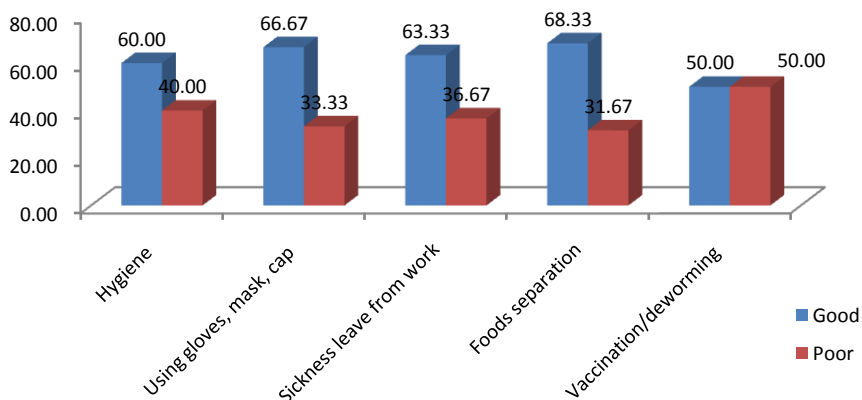
Attitude towards food-borne diseases was good in awareness of seriousness (73.33%), belief as a curable disease (86.67%), belief as a preventable disease (66.67%) and belief of the importance of training program (61.67%) except poor in pre evaluation before employment (56.67%) as shown in Fig 2.

**Figure No. 2. Assessment of Attitude among Food Handlers regarding food borne disease**



The practice towards food-borne disease and food safety was good in view of hand washing and personal hygiene (60%), using gloves, mask, cap while handling food (66.67%) and during sickness leave from work (63.33%) as shown in Fig 3.

**Figure No. 3. Assessment of Practice among Food Handlers regarding food borne disease**



On univariate analysis, significant differences were found between poor and adequate knowledge regarding education below 7<sup>th</sup> standards. The food handler's attitude was significantly poor in terms of age below 45 years and sex being male. However no significant was seen regarding practice of food hygiene.

**Table No. 2. Univariate analysis of relationship between KAP regarding food borne disease and socio-demographic factors**

Variables		Poor No (%)	Good No (%)	Odds ratio (95% CI)	p value
Knowledge	Age < 45 years	08(33.33)	16(66.67)	0.36(0.11-1.06)	0.06
	Male	10(45.45)	12(54.55)	0.33(0.11-1.01)	0.05
	Education<7 <sup>th</sup> stand	11(26.19)	31(73.81)	0.28(0.09-0.90)	<b>0.03</b>
	Occ.serving/cooking	16(36.36)	28(63.64)	0.44(0.14-1.42)	0.17
	Marital status	05(41.67)	07(58.33)	0.51(0.14-1.84)	0.30
	Experience	04(44.44)	05(55.56)	0.56(0.10-2.34)	0.42
Attitude	Age < 45 years	07(29.17)	17(70.83)	0.26(0.09-0.79)	<b>0.01</b>
	Male	07(31.82)	15(68.18)	0.17(0.05-0.53)	<b>0.00</b>
	Education<7 <sup>th</sup> stand	16(38.1)	26(61.9)	0.77(0.25-2.45)	0.65
	Occ.serving/cooking	15(34.09)	29(65.91)	0.86(0.26-2.86)	0.81
	Marital status	04(33.33)	08(66.67)	0.70(0.14-3.08)	0.60
	Experience	04(44.44)	05(55.56)	1.24(0.30-5.18)	0.77
Practice	Age < 45 years	09(37.5)	15(62.5)	0.84(0.29-2.42)	0.75
	Male	07(31.82)	15(68.18)	0.58(0.19-1.74)	0.33
	Education<7 <sup>th</sup> stand	18(42.86)	24(57.14)	0.75(0.25-2.27)	0.26
	Occ.serving/cooking	15(34.09)	29(65.91)	0.67(0.21-2.145)	0.49
	Marital status	05(41.67)	07(58.33)	1.09(0.30-3.94)	0.10
	Experience	06(66.67)	03(33.33)	3.37(0.62-22.78)	0.10

#### 4. Discussion

The present study showed that food handlers had poor knowledge of food borne diseases in terms of etiology (46.67%), mode of transmission (33.33%) and mode of prevention (36.67%). Poor attitude was observed in pre evaluation before employment (56.67%). In the present study important practices were observed that may negatively impact food safety, such as vaccination/deworming treatment. Maizun MohdZain and Nyi Nyi Naing reported that poor knowledge was in etiology (58.8%), symptoms (59.3%) and treatment (52.6%); poor attitude in terms of awareness of personal hygiene (55.8%) and practice towards food-borne disease and food safety was poor in view of hand washing (50.9%), personal hygiene (63.7%), treatment (50.2%) and safety food handling (54.7%).<sup>4</sup>

In the present study, socio-demographic variables such as low educational level influences the knowledge of food borne diseases, and attitude was determined by age below 45 years and male food handlers. This findings agrees with Green et al., 2007 that a chain of personal, social and workplace factors influences the practices of the food handler, and these factors need to be investigated in order for a change in behaviour to take place.<sup>9</sup>

#### 5. Conclusion

The lack of knowledge and attitude regarding food borne diseases was being served as potential risk in our tertiary hospital. There is an urgent need of training programme for food handlers. The hygiene and the cleanliness practiced by the food handlers were satisfactory. They should be firmly insisted to wear the glove, hair cap and mask to prevent spread via nasal carriers and uncleaned hands. The results of this study may help in identifying proper and suitable methods for planning health education programs for food handlers that will improve their knowledge, attitudes, and practices.

#### Limitations of Study

Sample size was less for studying prevalence of MRSA and food handlers were working in medical college campus included.

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