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## Research Article

# A STUDY TO DETERMINE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE OF HAND HYGIENE AMONG FOOD HANDLERS IN SELECTED CANTEENS IN MANGALORE

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### ABSTRACT

**Background:** A bulk of food borne disease outbreaks are attributable to poor hygienic practices and improper handling of food.

**Objective:** To determine the effectiveness of structured teaching programme on hand hygiene among food handlers.

**Materials and methods:** An evaluative approach with pre-experimental (one group pre-test post-test) design was adopted for the study. A structured knowledge questionnaire and observation checklist was developed to assess the knowledge and practice of food handlers. Convenient sampling technique was used to select 40 food handlers from selected canteens in Mangalore.

**Results:** The study showed that the structured teaching programme was effective in improving the hand hygiene among food handlers and there is significant difference between pre-test and post-test I and II knowledge scores ( $t=32.6$  and  $28.7$ ,  $p<0.05$ ) and there is significant difference between pre-test and post-test I and II practice scores ( $t=9.6$  and  $11.1$ ,  $p<0.05$ ). The pre-test knowledge and practice scores were independent of all the demographic variables such as age, gender, religion, educational status, type of work and total years of experience.

**Conclusion:** The finding of the study concluded that the structured teaching programme was effective to improve hand hygiene among food handlers which in turn help to reduce foodborne diseases. The researcher suggested to exhibit posters and pamphlets on hand hygiene in the hand washing area as constant reminders to improve hand hygiene.

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## INTRODUCTION

Hand washing is one of the primary methods used to prevent food borne diseases. Investigations of food borne illness outbreaks have shown that poor personal hygiene, primarily ineffective hand washing, is an important contributor to food borne illness<sup>1</sup>. The infections which are likely to be transmitted by the food handlers through unhygienic practices are diarrhoea, dysentery, typhoid fever, viral hepatitis, streptococcal and staphylococcal infections and salmonellosis<sup>2</sup>. In the food – service industry, studies indicated that inadequate hand washing and cross-contamination is responsible for as much as 40% of food borne illnesses, including salmonella<sup>3</sup>. There is a general consensus in the public health community that regular hand washing is one of the most effective defenses against the spread of food borne illnesses<sup>4</sup>. Proper hand washing will reduce risk of transmitting disease-causing microorganisms such as bacteria, viruses, and other agents to people who eat the food<sup>5</sup>. Food handlers should be equipped with good knowledge

regarding hand hygiene and should practice proper hand washing technique to reduce the rate of food-borne disease outbreaks.

## MATERIALS AND METHODS

The research design selected for this study was pre experimental, one group pretest- posttest design. In the study one group is observed three times, i.e., one observation before and two observations after introducing the independent variable. The study was conducted in Yenepoya hospital canteen and college canteen, located in Yenepoya University campus, Mangalore, Karnataka.

Forty food handlers were selected based on convenience sampling technique. The knowledge was assessed using structured knowledge questionnaire and practice using observation checklist. Demographic data of food handlers was collected through structured baseline questionnaire with 8 items which comprises of age, gender, religion, education, years of experience, type of work, working area and

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participation in hand hygiene programme. Structured knowledge questionnaire consist of 20 items regarding the importance of hand hygiene, hand washing procedure and food-borne diseases. Observation checklist on hand hygiene consists of 14 items which includes the techniques of hand washing. The reliability and validity of the tool was established before data collection. Pilot study was conducted to determine the feasibility of the study. Structured teaching programme was given after assessing the level of knowledge and practice and post –test I and II was conducted on the 6<sup>th</sup> and 12<sup>th</sup> day of pretest. Data collected from the samples were analyzed by descriptive and inferential statistics.

## RESULTS

### Demographic data

The study revealed that most of the participants (57.5%) were in the age group of 21 - 40 years and majority of them were males (70%) and belongs to Hindu religion (52.5%). Maximum of them (52.5%) are working in the food serving area and 37.5% had completed high school education and are having below 3 years of experience (35%). All food handlers were full time workers and were untrained in hand hygiene practices.

#### Level of knowledge of food handlers

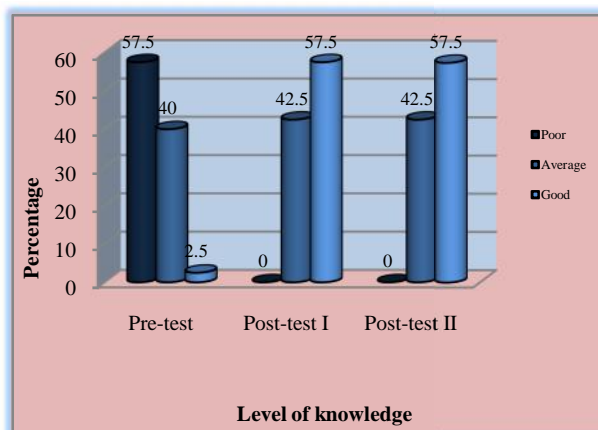


Figure 1 Cylindrical diagram showing the frequency and percentage distribution of pre-test and post-test knowledge scores of food handlers.

#### Level of practice of food handlers

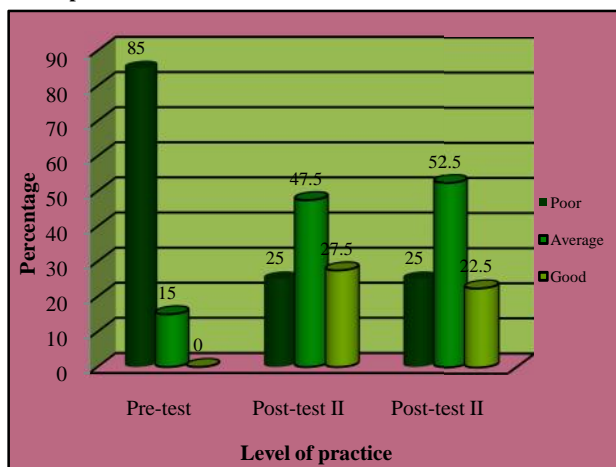


Figure 2 Cylindrical diagram showing the frequency and percentage distribution of food handlers on pre-test and post-test practice scores

### Level of knowledge

The findings of the study shows that the mean post test knowledge scores (14.98 and 14.93) was apparently higher than the mean pre-test knowledge score (7.98). In the pre test 57.5 % of the participants had poor knowledge, 40 % had average knowledge and only 2.5 % had good knowledge whereas in both post test I and post test II, 42.5 % had average and 57.5% had good knowledge. The data presented in figure 1.

### Level of practice

The study revealed that the mean post-test practice scores (7.2 and 7.1) were apparently higher than mean pre-test practice scores (3.1). In the pre test 85 % of the participants had poor practice and 15 % had average practice whereas in post test I, 25 % had poor, 47.5% average and 27.5% had good practice and in post test II, 25% had poor practice, 52.5% had average and 22.5% had good practice. The data is presented in figure 2.

For determining the effectiveness of teaching programme given in terms of gain in knowledge and practice of food handlers, paired 't' test was used to test the significance. There is significant difference between pre-test and post-test I and II knowledge scores ( $t=32.6$  and  $28.7$ ,  $p<0.05$ ) and there is significant difference between pre-test and post-test I and II practice scores ( $t=9.6$  and  $11.1$ ,  $p<0.05$ ).

The pre-test knowledge and practice scores were independent of all the demographic variables such as age, gender, religion, educational status, type of work and total years of experience.

## DISCUSSION

The findings of the study shows that the mean post test knowledge scores (14.98 and 14.93) was apparently higher than the mean pre-test knowledge score (7.98). The mean post-test practice scores (7.2 and 7.1) were apparently higher than mean pre-test practice scores (3.1). The study showed that there is significant difference between pre-test and post-test I and II knowledge scores ( $t=32.6$  and  $28.7$ ,  $p<0.05$ ) and there is significant difference between pre-test and post-test I and II practice scores ( $t=9.6$  and  $11.1$ ,  $p<0.05$ ).

The study is supported by a study conducted in Christian medical college, Ludhiana to assess the effectiveness of structured teaching programme on knowledge and practices related to hand washing technique among food handlers. The study was conducted in the mess of Christian Medical College and Hospital, Ludhiana (Punjab). The Pretest mean knowledge score was 43.7% and post test mean knowledge score was 83.1%. Pretest mean hand washing practice score, found 49.3% and post test mean practice score was 92%. There was no significant relationship found between knowledge and practices with the variables like age, education, experience etc. The study concluded that food handlers had poor knowledge and hand washing practices, and structured teaching had been significantly effective increasing their knowledge and practice scores.<sup>6</sup>

This study is supported by another quasi-experimental study aimed to identify the impact of a promotion programme on hand hygiene practices and its effect on nosocomial infection rates in a neonatal intensive care unit of a university hospital in Thailand. After implementing a hand hygiene promotion

programme, compliance with hand hygiene among nursing personnel improved significantly from 6.3% before the programme to 81.2% 7 months after the programme. All participants agreed that promotion programme implemented in this project motivated them to practice better hand hygiene<sup>7</sup>.

The present study is supported by another study conducted in 2006 among food handlers in north Delhi to assess: 1) Prevalence of enteroparasite infestation among food handlers working in food service establishment located in the campus of a medical college, 2) Presence of enteric organism on their hand and nails and their hand washing practices. A total of 151 food handlers were interviewed regarding their socio-demographic and professional characteristics. Their hand washing practice was also observed. Stool examination for enteroparasites and stool culture for salmonella and shigella and culture of nail clippings / nail bed swabs for detecting presence of enteric organisms were also carried out. Prevalence of enteroparasite infestation was observed to be 41.1%. None of the stool samples was observed to be positive for salmonella or shigella. Enteric organism was isolated from nail clippings / nail bed swab samples of 76 (73.1%) study subjects. Hand washing practices were observed to be poor with low use of soap. Finding highlight importance of periodic stool examination and deworming of food handlers and need to educate them about importance of maintaining hand hygiene with a focus on improving their hand washing practices.<sup>8</sup>

## CONCLUSION

The study revealed that the structured teaching programme was effective in improving the level of knowledge and practice on hand hygiene among food handlers. On provision of adequate information to the food handlers regarding the hand hygiene and importance of hand hygiene the rate of food-borne disease outbreaks can be reduced to a minimum level.

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