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Original Article

Effectiveness of an intervention package on knowledge, attitude, and practices of food handlers in a tertiary care hospital of north India: A before and after comparison study



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ABSTRACT

Background: Food-borne illnesses have been a recognized hazard for decades. Recent promulgation of Food Safety and Standards Act (FSSA), 2006, indicates the concern of our Govt. for food safety. Research on effectiveness of food safety interventions in our country is remarkably scarce. Hence, the present study was conducted in a tertiary care hospital of north India to create evidence-based results for food safety interventions.

Methods: The study was before and after intervention trial which was registered with CTRI. Data collection was paperless using a software. All food handlers ($n = 280$) working inside the hospital were recruited. Intervention package comprised Self-Instructional Manual in Hindi for food handlers, short film for sensitization of food handlers on food safety titled 'Gravy Extra', and a documentary titled 'Food Safety from farm to Fork'. Chi square test, paired t test, and Wilcoxon sign rank test were used.

Results: The mean age of food handlers was 35 ± 2 years. Majority (61.7%) of food handlers were educated less than 10th standard. Nearly 60% of them had up to five years of experience. At base line majority (68.9%) had a fair knowledge about food safety issues. There was a significant improvement in food safety knowledge and practice score of food handlers after the intervention ($p < 0.05$). Their attitude toward food safety changed in a positive direction ($p < 0.05$).

Conclusion: The intervention package was useful in improving the knowledge, creating a positive attitude and enhancing the food safety practices of food handlers working inside a tertiary care hospital.

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Introduction

Food-borne transmission of pathogenic and toxigenic micro-organisms has been a recognized hazard for decades.¹ Worldwide, food borne illnesses (FBI) are responsible for significant morbidity and mortality. Majority of these cases occur in children less than 5 years of age due to unsafe water and food.² In developing countries, the burden of FBI is much more enormous than developed countries, as a result of inadequate food safety provisions there. However, there is no data to show its magnitude since many such cases go unreported and unrecognized. In India also FBI is a serious public health problem.³ Integrated Disease Surveillance Programme (IDSP) reports food poisoning cases across the country.⁴ In fact, out of the total outbreaks reported to IDSP, approximately 60% are related to food-borne infections.⁵ To fight the challenges of food safety and realizing the need of safe food at all levels, WHO dedicated the World Health Day theme "From farm to plate, make food safe" on 7th April 2015. Recent promulgation of Food Safety and Standards Act (FSSA), 2006, indicates the concern of Govt. of India for food safety.

In hospitals also, food safety is an area of extreme importance. Yet, it is often neglected. Food service facilities in a hospital are used by hospital staff, patients as well as their visitors. Patients are prescribed special diets as per the disease suffered by them (renal/diabetic/hypertension diet). Hospitals should take a lead in providing safe food not only to patients but also to hospital employees and visitors.

Like everywhere else, food safety in hospital is a daily challenge. Every day, large volumes of food are prepared/brought in by Food Business Operators (FBOs) and served to a large number of patients. Food contamination can occur at any point from its journey to procurement of raw material to it being served to the patients. Handling of food in an unsafe manner has been implicated in 97% of all FBI.⁶ However, most of these are preventable through proper implementation of food safety measures and strict enforcement of food hygiene standards. Indifferent attitude toward food safety and incorrect practices by these persons can jeopardize food safety and cause FBI. The main tools to fight this battle are implementation of legislative measures, training of food handlers and managers and sanitary inspections which in turn can improve food safety. The patients and the hospital staff would be the greatest beneficiaries, as it would result in better quality of care and safety.

Though the fact that all training interventions in public health need to be evaluated very few studies have attempted to evaluate effectiveness of training food handlers. Research on effectiveness of food safety interventions is remarkably scarce. None of such studies have been conducted in our country till now. Hence, the present study was conducted in a tertiary care hospital of north India to ascertain the determinants of knowledge, attitude, and practices of food handlers regarding food safety and to document the effectiveness of an intervention package on food safety.

Materials and Methods

This was a before and after intervention study. Prior clearance from ethics committee of institute was taken for the study. The trial was registered with Clinical Trial Registry of India. A tool was designed to elicit the knowledge, attitude, and practices of food handlers working in eating establishments of a hospital about various aspects of food safety. For creating this tool, a base line survey of all kitchens in the hospital was done and common mistakes were observed. Using this data, a questionnaire with photographs was prepared. This was a paperless study as data from food handlers was collected through interview schedule directly in software using a laptop. For assessment of food safety practices situation-based questions were asked. The software ensured that no question was skipped. The sample size was calculated using significant improvement in mean (8%) from previous studies which was 236. All food handlers ($n = 280$) working inside the hospital were recruited in the trial. 16 food handlers left the trial and final data was analyzed for 264 subjects (attrition diagram Fig. 1). Written informed consent was taken before collection of data. Intervention package on food safety was developed. It comprised the following items:

- Self-Instructional Manual in Hindi for food handlers
- Short film for sensitization of food handlers on food safety titled 'Gravy Extra' and a short documentary on safe food practices titled 'Food Safety from farm to Fork' (now made available at you tube)

After baseline data collection training sessions were held both at the site of work and centrally. Training methodology adopted was 'High Tech – High Touch' which implied that all interventions were conducted with an emotional content and

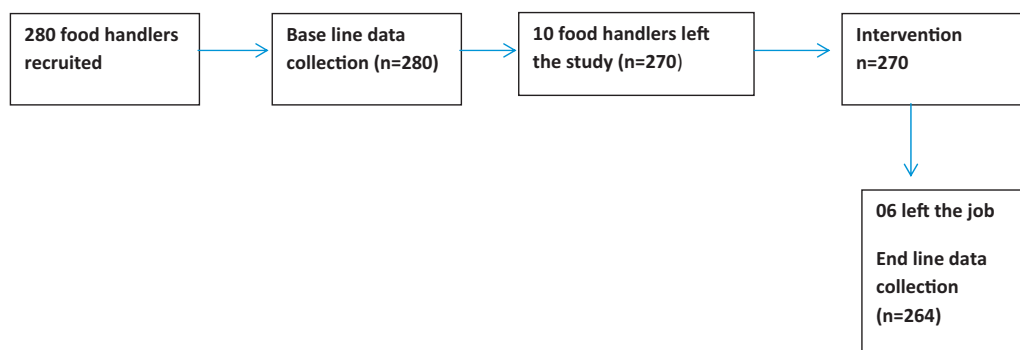


Fig. 1 – Trial attrition diagram.

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