Introduction

Hand hygiene is one of the most effective methods for preventing cross-contamination. Food handlers have a major role in the prevention of foodborne disease during food production. However, food handlers’ failure to properly wash hands is frequently reported to be implicated in the occurrence of foodborne illness.

Although informative, subjective food safety cognitions are not indicative of actual hand hygiene practices and may be subject to biases. Therefore, further research is needed to explore the feasibility of conducting video observation in factories to assess food handler hygiene behaviours at retail/catering settings.

Purpose

To assess the feasibility of using video observation of food handlers in food and drink manufacturing and processing businesses to evaluate hand hygiene practices.

Methods

- In-depth interviews with 38 food industry practitioners (n=11) to identify hand hygiene protocols, training procedures and the acceptability of observational assessment approaches.
- One FDMPB was selected to conduct the observational study.
- Footage from the production hand hygiene area (24 hours) was reviewed to assess compliance with the hand hygiene procedure. Observed practices were recorded using a specified PocketWatch database.
- Recorded data included observation of food handlers (placement, gender, role: food handlers), observation protocol, procedure adequacy and compliance.
- Descriptive analysis and inferential statistics were conducted using Microsoft Excel database and IBM SPSS Statistics package.

FDMPBs had unique hand hygiene protocols with variable details. Interviews identified positive attitudes towards using video-observation to assess hand hygiene compliance. Although it was common for FDMPBs to have cameras recording activities in factories including hand hygiene areas, none had the resource to conduct frequent/structured observation of footage, cameras were used for security and would be referred to in the event of an incident.

Results

Hand hygiene compliance entering production

A total of 1,333 entries in the production hygiene lobby were observed over a period of 24 hours, of which 674 were entering production and 669 were exiting production.

Compliance of each entry into the hygiene lobby was observed for compliance with the FDMPB hand hygiene protocol (Figure 1).

Enter hygiene lobby in correct PPE

The majority of hand washing attempts were followed by hand decontamination procedures, however 12.3% of attempts at point of entry were in adherence with the procedure (40+ seconds).

Hand hygiene duration and drying malpractices

The FDMPB protocol states the duration of the entire hand decontamination procedure should take 40-45 seconds (from washing hands through to drying of hands).

As indicated in Figure 2, hand hygiene duration ranged from 1-48 seconds. In total, the duration of only 8.2% of attempts at point of entry were in adherence with the procedure (40+ seconds).

The median duration of the entire hand decontamination procedure was 17 seconds.

Significant behavioural differences between staff

A significant difference in the hand hygiene duration when entering production was determined between staff roles.

Food handlers were significantly more likely to implement a hand hygiene procedure.

Food safety cognitions are not indicative of actual hand hygiene practices and may be subject to biases. Therefore, there is a need to explore the feasibility of conducting video observation of food handlers in FDMPBs to assess hand hygiene practices.

Conclusions

- Video-observation data provided an in-depth insight into hand hygiene compliance when entering production and thus illustrated a valuable and useful resource for FDMPBs.
- Although the majority implemented hand hygiene practices, extensive malpractices were observed that were contrary to FDMPB hand hygiene protocols. This may compromise food safety during food production.
- The study identified site-specific issues to inform the development of a training and educational intervention to improve hand hygiene practices amongst staff.
- Cognitive research is required to explore potential factors that influence hand hygiene differences between hygiene/engineering staff and food handlers and identify the potential barriers that exist for staff to adequately implement hand hygiene practices.

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References