

# Assessment of Trainee-dietitians' Food Safety Awareness and Training Experiences in Lebanon.

Ellen W. Evans<sup>1\*</sup>, Vicky J. Gould<sup>2</sup>, Elizabeth C. Redmond<sup>1</sup>, Nisreen Alwan<sup>3</sup> and Laura Hjeij<sup>3</sup>

<sup>1</sup>ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom.

<sup>2</sup>Cardiff School of Sport and Health Sciences, Cardiff Metropolitan University, Cardiff, United Kingdom.

<sup>3</sup>School of Health Sciences, Modern University for Business & Science (MUBS), Beirut, Lebanon.

\*Corresponding author: elevans@cardiffmet.ac.uk

## Introduction

Patients with compromised immunity (including young children, pregnant women, people receiving chemotherapy for the treatment of cancer, people with diabetes and people living with HIV) have an increased risk of foodborne infection, consequently efforts are required to reduce the risk.<sup>1</sup>

To enable this, patients and their family caregivers need to be informed of food safety risks and enabled to implement risk reducing food safety practices through the provision of food safety information.<sup>2</sup>

Dietitians are key gatekeepers that provide food-related information to patients, and are perceived as trusted sources for food safety information by patients.<sup>3</sup> Delivery of food safety advice by adequately trained dietitians can inform vulnerable patients of increased foodborne illness risks and enable risk-reducing food safety practices.<sup>4</sup>

Gaps in Registered Dietitians food safety knowledge have been identified.<sup>5</sup> Dietitians need appropriate and adequate knowledge and skills to deliver effective food safety advice to vulnerable patients, which can be gained as trainee dietitians.<sup>6</sup>

Currently, information detailing the training experiences and awareness of trainee dietitians in Lebanon regarding the need for food safety information is lacking.

## Purpose

The purpose of the study was to assess trainee dietitians' knowledge, attitudes and training regarding the provision of food safety information.

## Methods

**Data Collection:** Paper-based questionnaires to determine food safety cognition and training experiences were completed by trainee dietitians at the Modern University for Business and Science (MUBS), Beirut, Lebanon.

**Data analysis:** Thematic analysis of data was conducted using NVivo to identify themes in food safety perceptions.

**Ethical Approval:** Approval was obtained from the Health Care and Food, Ethics Panel at Cardiff Met., and the Ethics Panel at MUBS, Lebanon.

## Acknowledgements

Cardiff Met., the ZERO2FIVE Food Industry Centre and MUBS, wish to acknowledge the students that completed the questionnaire.

## References

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## Results

Trainee dietitians ( $n=25$ ) undertaking a Bachelor of Science in Nutrition and Dietetics at MUBS completed the questionnaire. All respondents were female and aged 18-29 years. Half were second year students and half were third year students, 53% studied full-time and 48% studied part-time.

### Food safety knowledge of trainee dietitians

#### Foodborne pathogens

The majority (64-92%) indicated awareness of common foodborne pathogens. Greatest reported awareness was for *E. coli* and *Salmonella* (92%) and associated foods (60-64%), only 36-52% were aware of food products associated with the other four most common foodborne pathogens (Figure 1).

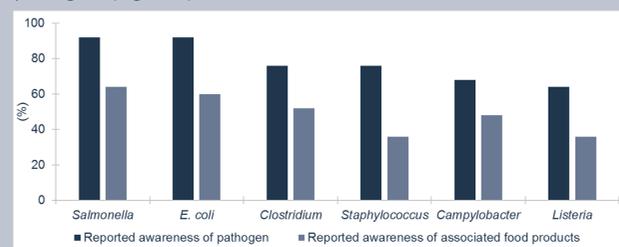


Figure 1. Awareness of foodborne pathogens and associated food products.

#### Refrigeration

Positive attitudes were expressed towards checking refrigerator operating temperatures by 96% and 92% indicated knowledge of recommended refrigeration temperatures ( $\leq 5^{\circ}\text{C}$ ).

#### Cooking

Awareness of cooking adequacy were lacking. Although 100% believed they knew the temperature to be achieved when cooking meat/poultry to ensure food safety, only 24% stated the correct temperature ( $>75^{\circ}\text{C}$ ), 25% did not think a meat thermometer was required to determine cooking adequacy.

#### Handwashing

Although the vast majority were aware of the need to implement handwashing before handling ready-to-eat foods (100%) and after handling raw meat (96%), only 80% identified the need to implement handwashing before commencing food preparation (Figure 2).

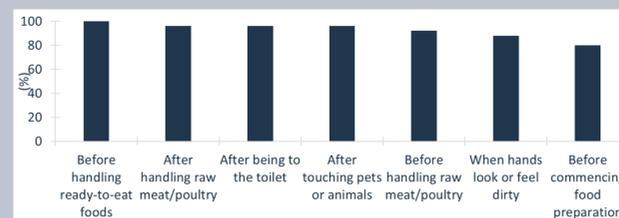


Figure 2. Awareness of occasions that require handwashing.

### Attitudes towards food safety provision

The majority had positive attitudes toward the role of dietitians in the provision of food safety information. Positive attitudes towards the role of dietitians in reducing the risk of foodborne infection among vulnerable patients were expressed (Figure 5).

- 91% were aware that people with compromised immune systems have an increased risk of foodborne illness.
- 76% thought vulnerable patients needed to be given food safety information.
- 72% disagreed that the role of the dietitian is to only provide nutritional advice, not food safety information.
- 75% believed that dietitians should be responsible for providing food safety information for vulnerable patients.

Figure 5. Attitudinal responses of trainee dietitians regarding food safety information provision.

#### Date labelling

Confusion regarding date labelling was indicated with only 32% aware the 'use by' date to be the best indicator of food safety whilst 40% believed it to be the 'best before end' date, and 16% believed all date labels to have the same meaning (see Figure 3).

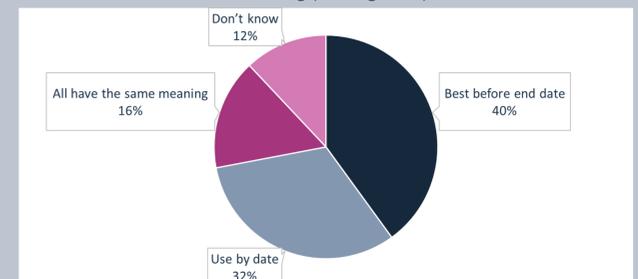


Figure 3. Reported awareness of date labelling indicating food safety.

#### Storage duration

Awareness of appropriate storage duration of RTE food products was lacking, 44-84% were unaware of the recommendation to consume RTE food products within two days of opening.

#### Cross-contamination

Although the majority were aware that failing to clean, or using the same chopping board after raw chicken before preparing salad (92%) would increase the risk of cross-contamination, awareness of other practices were lacking. Less than half (40%) were aware washing raw meat increases cross-contamination risk, concernedly, 28% believed failing to do so would increase the risk of cross-contamination.

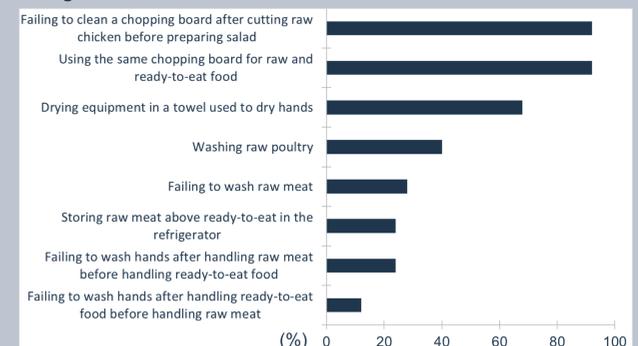


Figure 4. Awareness of practices associated with cross-contamination risks.

### Food safety training of trainee dietitians

All trainee dietitians reported having studied food safety as part of their degree course in modules such as 'food microbiology and parasitology', 'food hygiene' and 'food service management', however, many indicated the desire to learn more (Figure 6).

- 72% believed they still had more to learn to enable them to inform patients about food safety in the home.
- 40% felt the food safety education they received was not clinically applicable.
- 76% agreed a continual professional development (CPD) course would ensure dietitians are knowledgeable of food safety.
- 76% agreed that educating dietitians to inform vulnerable patient groups of the importance of food safety during may reduce the risk of foodborne illness.

Figure 6. Attitudinal responses of trainee dietitians towards the food safety training of dietitians.

## Significance of study

- Completion of the study has determined that although trainee dietitians in Lebanon attend lectures on food safety, knowledge of some key food safety recommendations were lacking. It must also be considered that knowledge of food safety does not equate to the ability to disseminate food safety advice to vulnerable patient groups.
- Consequently, there is a need for specifically-targeted training for trainee dietitians to inform and enable vulnerable patients groups of food safety risks and risk reducing practices.
- The need for further research has been identified through completion of this study, including a comparison study whereby different approaches are taken to educate trainee dietitians in food safety, investigate the need for a food safety CPD programme for registered dietitians and explore the need for a standardised resources to support dietitians in the delivery of food safety information to vulnerable patients.