

Consumer Food Safety Concerns Inside the Home Compared with Outside of the Home in Lebanon

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Introduction

Food safety in Lebanon is a major public health issue (El Fadel *et al.*, 2003), potentially associated with the countries' unique public health infrastructure and political challenges regarding policy and strategy. Foodborne illness is reportedly widespread in Lebanon, but the absence of a proper disease reporting mechanism makes incidence difficult to quantify (El Fadel *et al.*, 2003.)

There is a lack of routine inspection and control measures as set by The Lebanese Food Safety Authority to ensure compliance in advised food hygiene regulations (Ghadia *et al.*, 2014). Many food businesses operate without a licence of regulation (Ministry of Tourism, 2013) and studies on food safety knowledge of food business owners has been found to be inadequate (Faour-Klingbeil *et al.*, 2015).

Other factors such as unstable power supply may cause households and retail outlets to face electricity shortages during the day (Hassan *et al.*, 2014) having potential impact on the safe storage of food.

Implementation of safe food preparation, storage and handling behaviours is critical to reduce the risk of foodborne illness to health. Research has established that food safety knowledge as well as attitude towards food safety practices influences behaviour (Redmond and Griffith, 2005).

A study by Hassan and Dimassi (2014), showed that Lebanese university students had low levels of food safety knowledge. Further research is required to establish consumer food safety concerns in Lebanon.

Purpose

The aim of the research was to determine and explore Lebanese consumers' risk perceptions of food safety issues inside the home and outside of the home.

Methods

Recruitment: Consumers (aged >18 years) who approached the MUBS 'Health Day' stand at a shopping mall in Beirut, Lebanon on 9th September 2017 were invited to participate in the study.

Data Collection: Qualitative face-to-face interviews were undertaken with a piloted interview schedule to explore the food safety perceptions of consumers. Demographic data were captured and informed consent was obtained prior to conducting the interviews.

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. (reference no: 9299) and the Ethics Panel at MUBS, Lebanon.

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References

- El-Fadel, M. Maroun, R. Semerjian, L and Harajli, H. (2003) A health based socio-economic assessment of drinking water quality: the case of Lebanon. *Management of Environmental Quality: An International Journal*. Vol. 14 No. 3 pp. 1477-1835.
- Faour- Klingbeil, D. Kuri, V and Todd, E. (2015) Investigating a link of two different types of food business management to the food safety knowledge, attitudes and practices of food handlers in Beirut, Lebanon. *Food Control*. Vol 55. Pp. 166-175.
- Ghaida, T.A. Spinnler, H.E. Soyeux, Y. Hamieh, T. and Medawar, S. (2014) Risk-based food safety and quality governance at the international law, EU, USA, Canada and France: Effective system for Lebanon as for the WTO accession. *Food control*. Vol 44. Pp. 267-282.
- Hassan F. and Dimassi, H. (2014) Food safety and handling knowledge and practices of Lebanese university students. *Food Control*. Vol. 40 pp. 127-133.
- Hassan F. Dimassi, H. and El Amin, R. (2104) Survey and analysis of internal temperatures of Lebanese domestic refrigerators. *International Journal of Refrigeration*. Vol 50. Pp. 165-171
- Redmond, E.C. and Griffith, C. (2005) Consumer perceptions of food safety education sources- Implications for effective strategy development. *British Food Journal*. Vol.107 No.7 pp. 467-483

Results and Discussion

A total of 43 Lebanese consumers took part in the study. 58% (N= 25) were male and 42% (N= 18) were female. The age of participants ranged between 18 and 69 years. Thematic analysis explored key areas of concern which related to food safety practices in the home, food safety concerns outside of the home and factors affecting choice of location to consume food. Findings highlighted food safety issues unique to Lebanon.

Food safety concerns at home

As indicated in figure 1, many consumers indicated they believed that foodborne illness was less likely to occur from food prepared in the home than when eating out.

Many believed considered themselves to follow good hygiene and sufficient food safety practices to prevent the incidence of foodborne illness.

"Very rare to get food poisoning as I always take care of the food produced at home and the cleanliness in the kitchen"

(Participant 11)

"Very unlikely at home due to hygiene, good sources of food, stable power supply fridge always on"

(Participant 42)

"At home, I always wash my vegetables, meat, poultry- I follow all proper cleaning and sanitation guidelines"

(Participant 44)

Figure 1. Consumer food safety concerns when preparing food at home

Food safety concerns outside of the home

Restaurants were cited by many consumers as a very likely place to contract a foodborne illness, with some participants reporting to avoiding eating outside of the home altogether (Figure 2).

Respondents perceived that restaurants fail to ensure supervision of staff and adherence of food safety guidelines. Furthermore, concerns regarding hygiene standards were expressed.

"Restaurants and food related organisations do not abide by the necessary guidelines of food safety"

(Participant 3)

"There is no supervision in restaurants"

(Participant 33)

"There is a lot of restaurants / food service organizations who serve expired food – there is a big chance to get food poisoning from these places"

(Participant 38)

Figure 2. Consumer food safety concerns when eating outside of the home

Food safety concern affecting choice of location to consume food

Many consumers reported that their food safety concerns about food prepared outside of the home caused them to make particular choices as to where they consume their food as illustrated in figure 3.

"Foodborne illness...Very unlikely for me... as I eat at home due to hygiene, good sources of food, stable power supply fridge always on"

(Participant 42)

"I avoid buying from vending trolleys on the streets because the storage and handling food on those food trolleys is not good"

(Participant 11)

"It is when I eat out I worry the most since I am not sure about the sanitation level in restaurants"

(Participant 44)

"I do not eat in restaurants in Lebanon to protect my health and the health of my kids and to avoid any microbes found in ready to eat food"

(Participant 3)

Figure 3. Food safety concern affecting choice

Consumer food safety concerns unique to Lebanon

A common perception of consumers is that Lebanon has its own unique food safety concerns. Frequently reported concerns amongst the participants included electricity interruptions which were believed to be associated with unsafe food storage practices both at home and in shops and restaurants. Concerns regarding the accuracy and adherence of expiry dates on food products purchased from retail outlets, and issues around the quality and safety of water in Lebanon were all major discussion points (figure 4).

"In Lebanon, we do not have electricity 24/24 hrs and this is a huge defect when storing food in fridges because the temperature in those fridges goes up"

(Participant 42)

"The electric current is not always available so food in the fridge gets poisoned sometimes"

(Participant 7)

"Supermarkets and restaurants do not abide by the expiry dates"

(Participant 48)

"Concern over non-inspected distributed water to houses and food service organizations"

(Participant 15)

Figure 4. Consumer food safety concerns unique to Lebanon

The reported concerns regarding the electricity problems have particular impact on the ability of individuals and business's to safely store perishable foods, increasing the risk of foodborne illness (Hassan *et al* 2014), particularly with the climate in Lebanon. This appeared to be more of a concern for participants regarding food served outside of the home as they had no knowledge or control over safe food storage.

Significance of study

- Consumers in Lebanon indicated different food safety concerns outside of the home compared with inside of the home
- Food safety concerns impacted on the location of consumers choice of food consumption
- Food-safety concerns which are particularly unique to Lebanon have been identified and these require consideration when developing future consumer training, education and prevention strategies.

