

# Cancer Patients and Caregivers Risk Perceptions, Awareness of Food Safety and Self-Reported Receipt of Food Safety Information During Chemotherapy



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## Introduction

Chemotherapy patients have an increased risk of foodborne illnesses due to immunosuppression<sup>1</sup>. Indeed, cancer patients are reported to have a five-fold increased risk for development of listeriosis<sup>2</sup>.

Therefore, to minimise the risk of foodborne illness it is important that cancer patients' consume foods prepared/stored at home according to recommendations and avoid risk associated food products to ensure food safety<sup>3</sup>.

Personal invulnerability and perception of current behaviours endangering health is reported to decrease implementation of risk-reducing behaviours<sup>4</sup>.

However, research detailing cancer patients and family caregivers perceptions and awareness of food safety during chemotherapy is currently lacking<sup>5</sup>.

Consequently, this study aims to establish patients and family caregivers awareness of foodborne illness risk during chemotherapy in-conjunction with reported receipt of educational materials.

Such data will increase understanding of perceptions and aid development of future targeted food safety communication approaches.

## Aim

This study aims to determine the food safety awareness of chemotherapy patients and family caregivers, their perceptions of risk, control and responsibility, and self-reported receipt of food safety information during chemotherapy.

## Methods

A self-complete questionnaire (online and paper-based) was completed by chemotherapy patients (70%) and caregivers (30%) responsible for food-preparation ( $n=172$ ).

Attitudes towards food safety risks and self-reported receipt of food safety information were determined.

Statistical analyses were conducted using IBM SPSS to determine significant differences and correlations in perceptions and recall of information.

## References and acknowledgements

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## Results

### Awareness of food safety during chemotherapy

Although some patients and carers were aware of food safety risks during chemotherapy, however, changes in food safety practices were lacking

- 68% of respondents were aware of the increased risk of foodborne disease during chemotherapy treatment, (75% caregivers, 64% patients)
- 54% reported that their food safety practices changed during chemotherapy treatment (52% patients, 61% carers).
- 70% believed that getting food poisoning from food prepared in the home to be unlikely – extremely unlikely.
- 61% were more concerned about diet and nutrition than food safety during chemotherapy treatment.

### Perceptions of risk, control and responsibility

Prior to cancer diagnosis, respondents perceived themselves to be at a lower risk of food poisoning than the general population, however respondents perceived an increased risk of food poisoning during chemotherapy treatment, however 'other people undergoing chemotherapy treatment' were perceived as having a greater level of risk, indicating the perception of personal invulnerability. Perceptions of risk, control, responsibility and hygiene consciousness were perceived to be significantly greater ( $p<0.05$ ) during chemotherapy treatment than before cancer diagnosis (Table 1).

Table 1 Comparison of perceptions of risk, control, responsibility and hygiene consciousness pre-diagnosis/during treatment ( $n=145$ )

Perceptions	'Before cancer diagnosis' Median (mean)	'During chemotherapy treatment' Median (mean)	Comparison of perceptions (Wilcoxon Signed Rank Test)
Risk 1: very high risk – 10: very low risk	8 (7.26)	4 (4.71)	$Z=-8.120, p<0.001, r=-0.5$ .
Control 1: total control – 10: no control	2 (2.7)	2 (2.45)	$Z=-2.257, p<0.05, r=-0.1$ .
Responsibility 1: no responsibility – 10: total responsibility	9 (7.8)	9 (8.1)	$Z=-2.996, p<0.01, r=-0.2$ .
Hygiene consciousness 1: extremely conscious – 10: not at all conscious	3 (3.3)	1 (1.94)	$Z=-7.931, p<0.001, r=-0.5$ .

Although perceptions of risk increased during chemotherapy, increases in perceptions of control may indicate the illusion of control among patients and carers, suggesting that patients and carers may not take sufficient measures to safeguard food during domestic food preparation to reduce the risks associated with foodborne illness.

Correlations were determined for perceptions of risk, control, responsibility and hygiene consciousness (Table 2), those perceiving the greatest levels of risk, control and responsibility were most likely of perceiving themselves of having the greatest levels of hygiene consciousness. Those with a greater level of perceived responsibility had a greater level of perceived control. Those perceived to have the greatest levels of risk perceived to have the greatest levels of control.

### Recall of receiving food safety information during chemotherapy

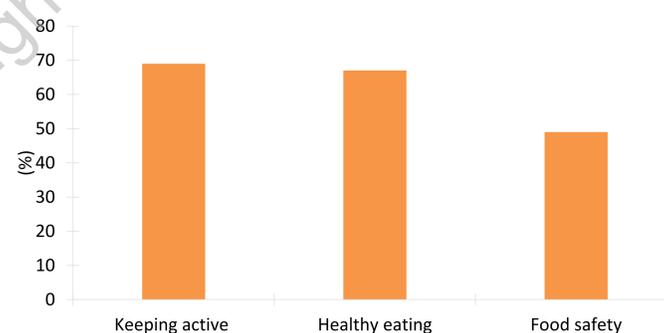


Figure 1. Recall of health related information received during chemotherapy ( $n=130$ )

- Less than half (49%) recalled receiving food safety information during chemotherapy, indeed it was determined that significantly ( $p<0.05$ ) greater proportions (67 – 69%) recalled receiving information on healthy eating and keeping active during chemotherapy.
- It was determined that neutropenic, blood related cancer and transplant patients were significantly more likely to receive food safety information during chemotherapy treatment ( $p<0.05$ ).
- The majority (68%) believed that there was a lack of food safety information available specifically for cancer patients.

### Potential impact of food safety information on perceptions of food safety during chemotherapy

Significant differences in perceptions of food safety risk, control and responsibility during chemotherapy treatment were determined between those that recalled receiving food safety information (receivers) and those that did not recall receiving food safety information (non-receivers):

- RISK: Significantly greater among receivers (Mdn:3, M:4.1) than non-receivers (Mdn:5, M:5.3) ( $U=1531.5, z=-2.097, p<0.05, r=-0.2$ ).
- CONTROL: Significantly greater among receivers (Mdn:2, M:2.3) than non-receivers (Mdn:2, M:2.5) ( $U=1549.0, z=-2.077, p<0.05, r=-0.2$ ).
- HYGIENE CONSCIOUSNESS: Receivers (Mdn:1, M:1.6) significantly greater than non-receivers (Mdn:1, M:2.3) ( $U=1511.0, z=-2.562, p<0.01, r=-0.2$ ).
- RESPONSIBILITY: No significant differences in perceived responsibility for food safety between receivers and non-receivers ( $p>0.05$ ).

## Significance of the study

- Information regarding food safety for cancer patients and family caregivers was considered to be insufficient and sought-after.
- Despite increased perception of the risk of foodborne illness during chemotherapy, changes in food safety practices during chemotherapy were lacking. Patients and family caregivers indicated perceived personal invulnerability and illusion of control.
- Provision of food safety information to patients at greatest risk increase hygiene consciousness and perceptions of risk and control.
- Data will inform the development of targeted food safety risk communication for chemotherapy patients and family caregivers.