Comparison of Listeriosis Risk Factors Among Three ‘At-Risk’ Consumer Groups: Pregnant Women, Older Adults and Chemotherapy Patients

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Introduction

Due to a weakened immune function, listeriosis is particularly associated with ‘at-risk’ consumers, predominately affecting pregnant women, older adults (aged ≥60 years) and people receiving chemotherapy for the treatment of cancer (1). The incidence of listeriosis is frequently related to Ready-to-Eat (RTE) food products consumed in the domestic kitchen (2). In the UK, the consumption of RTE foods is a significant risk factor for listeriosis (3), with 60% of cases associated with listeriosis and colleagues recommending interventions (4).

Ongoing changes in UK epidemiology trends have identified a reduction in pregnancy associated cases and increased older adult and chemotherapy associated cases (5). This may be attributed to the reduced consumption of RTE foods in the homes of ‘at-risk’ consumers, there is a need for targeted food safety education for older adults and chemotherapy patients and their families to enable successful engagement with education to reduce the incidence of listeriosis among these ‘at-risk’ consumer groups. The authors wish to acknowledge Prof. Louise Fielding (1968 to 2013) for her contributions to the reduction in pregnancy associated listeriosis cases in the UK.

Objective

The aim of the study was to compare the cognitive and behavioural risk factors associated with listeriosis among three ‘at-risk’ consumer groups: pregnant women and chemotherapy patients/family caregivers.

Methods

Questionnaire development: A systematic review of literature informed design and development of a questionnaire to identify self-competence questionnaire to measure food safety knowledge, self-reported practices and attitudes relating to domestic food handling and storage practices associated with listeriosis.

Sample: Participants were recruited according to predetermined criteria, the study included:

● Older adults (aged ≥60 years) (n=172)

● Pregnant and post-partum (≤12 months) women (n=40)

● Chemotherapy patients and family caregivers (n=40)

Data analysis: IBM SPSS Statistics (17.0), Microsoft Office 2007 and Access 2007 were used to conduct statistical analysis and quantitative analysis of the data.

Results

Adhere to ‘use-by’ dates on RTE foods

The study determined that older adults were significantly less knowledgeable (p<0.01) of ‘use-by’ dates, had more negative attitudes (p<0.01) towards ‘use-by’ dates and were more likely to report safety malpractices associated with listeriosis. Pregnant women and chemotherapy patients/family caregivers also reported significantly more negative attitudes among older adults.

No significant differences in knowledge and self-reported practices were determined, with majority of ‘at-risk’ consumers (≥80%) reporting consumption of foods beyond the ‘use-by’ date (p>0.05) indicating awareness of consuming RTE foods within two days of opening.

Consumption RTE foods within two days of opening

Although older adults attitudes in this study were determined to be significantly (p<0.01) more negative towards consuming RTE foods within two days of opening than pregnant women and chemotherapy patients/family caregivers. No significant differences in knowledge and self-reported practices were determined, with majority of ‘at-risk’ consumers (≥80%) reporting consumption beyond the ‘use-by’ date (p>0.05).

Significance of study

● Significant differences in knowledge, attitudes and self-reported practices between ‘at-risk’ consumers may indicate why reduced pregnancy associated cases and increased older adult and chemotherapy associated cases are reported in the UK. Engagement with targeted food safety education may contribute to the observed reduction in pregnancy associated listeriosis cases in the UK.

● Lack of knowledge, negative attitudes and reported implementation of food safety malpractices among older adults may increase the risks associated with listeriosis in the home which may contribute to the increased association of this consumer group with incidence of listeriosis.

● Consequently, to increase the knowledge of listeriosis risk factors, to improve attitudes towards domestic food safety, and to enhance food safety practices in the homes of ‘at-risk’ consumers, there is a need for targeted food safety education for older adults and chemotherapy patients and their families to enable successful engagement with education to reduce the incidence of listeriosis among these ‘at-risk’ consumer groups.

Acknowledgement

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Table 1: Comparison of adults (aged ≥60 years) (n=172), pregnant and post-partum (≤12 months) women (n=40) and chemotherapy patients/family caregivers (n=40) knowledge, attitudes and self-reported practices of listeriosis risk factors

Purpose

LISTERIOSIS RISK FACTORS

Ensure safe refrigeration temperatures

13% were aware of recommended refrigeration temperatures (≤5˚C)
25% were aware of recommended refrigeration temperatures (≤5˚C)
57% were aware of recommended refrigeration temperatures (≤5˚C)
53% had positive attitudes towards refrigeration recommendations
68% had positive attitudes towards refrigeration recommendations
45% reported to ‘never’ check refrigerator operating temperatures
45% reported to ‘never’ check refrigerator operating temperatures
58% reported to ‘never’ check refrigerator operating temperatures

Significant difference determined (p<0.001)

10% difference determined (p<0.01)

No significant differences determined (p>0.05)

Knowledge of ‘use-by’ dates and ‘sell-by’ dates

72% were knowledgeable of ‘use-by’ dates and indicating food safety
65% were knowledgeable of ‘use-by’ dates and indicating food safety
75% were knowledgeable of ‘use-by’ dates and indicating food safety
65% had positive attitudes towards consumption of foods within their recommended dates (60% negative)
65% had positive attitudes towards consumption of foods within their recommended dates (55% negative)
65% had positive attitudes towards consumption of foods within their recommended dates (80% negative)
65% had positive attitudes towards consumption of foods within their recommended dates (84% negative)
65% had positive attitudes towards consumption of foods within their recommended dates (86% negative)

Significant difference determined (p<0.001)

10% difference determined (p<0.01)

No significant differences determined (p>0.05)

Ensuring foods would be consumed within 2 days after opening

64% of women and chemotherapy patients/family caregivers reported consuming RTE foods within a recommended two days after opening
64% of pregnant women reported consuming RTE foods within a recommended two days after opening
64% of women and chemotherapy patients/family caregivers reported consuming RTE foods within a recommended two days after opening
65% had negative attitudes towards consuming foods within the recommended two days after opening
64% had negative attitudes towards consuming foods within the recommended two days after opening
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65% had negative attitudes towards consuming foods within the recommended two days after opening
65% had negative attitudes towards consuming foods within the recommended two days after opening

Significant difference determined (p<0.05)

No significant differences determined (p>0.05)

References


