Food Safety Behavioural Influences of Two Consumer Groups: Implications For Targeted Food Safety Education Strategies
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Introduction

The majority of foodborne illness is reported to be sporadic (FSA, 2000); a substantial proportion of which is believed to be associated with food prepared in the domestic kitchen (Redmond & Griffin, 2003) resulting from unsafe food handling practices by consumers (Scott, 2003). Cross-contamination and inappropriate storage practices are reported to be contributing factors to foodborne illness (Gormley et al., 2011), as such malpractices can cause microbial contamination or give the opportunity for pathogens to grow.

Previous consumer food safety research suggests that two consumer groups may be associated with an increased risk of foodborne illness than the general population:

• Young adults (aged 18 – 25 years old) due to increased frequency of unsafe practices (Byrd-Bredbenner et al., 2007, Osaki et al., 2011, Samuel et al., 2007)
• Older adults (≥ 60 years) as a result of age associated decreased immunity (Buzby, 2002, Karidai et al., 2006)

Consequently, to improve domestic food safety practices of these ‘at-risk’ consumers, there is a need for consumer food safety education; however, to enable effective targeted risk communication, there a need to determine potential cognitive influences upon behaviours implemented by the two consumer groups when preparing food in the domestic kitchen.

Methods

A systematic review of consumer food safety literature was conducted to inform development of a quantitative survey which was piloted to ensure feasibility and reliability.

The survey was designed to ascertain food safety knowledge, self-reported food storage and handling practices and attitudes towards food safety risks. Participants (n = 200) were recruited according to predetermined criteria. Self-complete questionnaires were administered to young adults (YA) aged 18 – 25 years attending universities (n = 100) and older adults (OA) aged ≥ 60 years (n = 100) from South Wales. Survey completion took ~20 minutes.

Data was entered into a specifically designed Microsoft Access 2007 database; statistical analysis was conducted using IBM SPSS Statistics 20.

Results

As indicated in Table 2, statistical analysis by means of a Chi-Square test with Yates Continuity correction determined significant differences between the reported awareness of pathogens among the two consumer groups.

Furthermore, a Chi-Square test with Yates Continuity correction determined a significant difference between the perceived severity of food poisoning and the consumer groups (X²(1, n = 200) = 38.138, p < 0.001, phi = 0.344) with a significantly greater number of older adults (65%) than young adults (35%) of the belief that food poisoning can result in mortality.

Discussion

Overall, this study increases our understanding of food safety knowledge of young adult and older adult consumers. Findings demonstrate a diversity of food safety knowledge and self-reported practices among the two groups of consumers, which consequently highlights the need for targeted food safety education strategies for different groups of consumers within the population.

Conclusions

Findings from this study have determined that food safety knowledge of both young adult and older adult consumers was lacking; however significant differences were determined between the two consumer groups which may have implications for the design and risk communication approach used in food safety interventions.

Table 1: Gender, age distribution and cooking frequency of participants (n = 200)

<table>
<thead>
<tr>
<th>Gender</th>
<th>OA (%)</th>
<th>YA (%)</th>
<th>OA (%)</th>
<th>YA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

As indicated in Table 1, the majority of participants (70%) were female, food preparation from raw products and cooking frequency was greatest among older adults.

Table 2: Significant differences of food safety malpractices determined between consumer groups

<table>
<thead>
<tr>
<th>Practice</th>
<th>OA (%)</th>
<th>YA (%)</th>
<th>OA (%)</th>
<th>YA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported to ‘always’ wash raw meat/poultry before cooking</td>
<td>32</td>
<td>45</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>Failure to indicate the need for hand washing prior to preparing RTE foods</td>
<td>4</td>
<td>42</td>
<td>5</td>
<td>41</td>
</tr>
<tr>
<td>Unaware that prolonged storage (&gt;4 hours) of leftover food at non-refrigerated temperatures may become unsafe</td>
<td>68</td>
<td>21</td>
<td>70</td>
<td>19</td>
</tr>
</tbody>
</table>
| Failure to recognise the need to implement hand washing prior to handling ready-to-eat food was determined to be significantly greater among young adults (p<0.05), whilst unawareness of safe refrigeration practices was significantly greater among older adults (p<0.05).

References