

Consumer awareness and perception to food safety hazards in Trinidad, West Indies

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Abstract

Little is known on consumer perception and awareness to food safety in Trinidad, West Indies. A survey was conducted on 121 consumers who handled meat on food safety knowledge and handling practices at homes. Most ($P < 0.01$; 83.2%) categorised food safety as 'very' important. Consumers differed ($P < 0.05$) in their perception as to the most feared food hazard. *Escherichia coli* (89.7%) and *Salmonella* (85.7%) were most known ($P < 0.01$) of microbial types. Restaurant (55.0%) was regarded to be the most likely place where food poisoning could occur. There was no distinct ($P > 0.05$) trust in food safety authorities. Gender had ($P > 0.05$) no influence on responses. The study highlighted gaps in food safety knowledge and critical violations in food handling. © 2005 Elsevier Ltd. All rights reserved.

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1. Introduction

Food safety is a growing concern for consumers and professionals in the food and foodservice sectors (Scheule & Sneed, 2001). It has been defined as the conditions and measures that are necessary during production, processing, storage, distribution and preparation of food to ensure that it is safe, sound, wholesome, and fit for human consumption (WHO, 1984). Food-borne illnesses were estimated to be the cause of 76 million illnesses, 325,000 hospitalisations, and 5000 deaths in the United States each year (DeWaal, 2003; Mead et al., 1999). The Caribbean Epidemiology Centre (CAREC, 2002) reported that there were 2597 reported cases of food-borne illness in 2000 and 1905 cases in

2001 (as up to 8th February, 2002) for CAREC member countries.

The population of Trinidad and Tobago is very small of 1.3 million (Tobago 150,000 persons) tracing their roots back to Africa (40%), India (40%), Europe, the Mediterranean, the Middle East and China (Trinidad & Tobago Hotel & Tourism Association, 1998). A survey which was conducted to measure consumers' knowledge, risk perception and practices of food safety in the Caribbean (Jamaica, St. Vincent and Grenadines, Belize and Barbados), revealed that although consumers were aware of correct safety practices, many still did not attribute certain illnesses to being foodborne and thought it was possibly due to their own actions (Jackson, Morris, Henry, Copeland, & Johnson, 2003). A newspaper article in Trinidad and Tobago, with caption 'Bad food handling practices in T&T' (under express yourself column) highlighted: the poor food handling practices among vendors, concerns of the public, consequences of poor food handling and the call for

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education on safe and healthy food handling practices at home and when consumers eat out (Express, 2003). There was a closure of a popular milk plant at Palo Seco Trinidad in 2003, after several students fell ill after consuming milk produced by the company. In 2004, many food service operations were temporarily closed due to poor sanitary operating conditions. In a study of the bacteriologic quality of 10 ready-to-consume foods and drinks sold in Trinidad, black pudding posed the greatest risk of staphylococcal intoxication, colibacillus and salmonellosis (Adesiyun, 1995). A recent study by Mankee et al. (2003) in Trinidad, reported a high prevalence of unfit for consumption of ready-to-eat fast food 'doubles'. This was coupled with significantly higher proportion of consumers as compared to non-consumers, who were aware that the product could cause food-poisoning and definitely posed a health risk to those who ate 'doubles'. In a Trinidad survey, the majority of cases of food-borne illness in homes were never reported to the relevant authorities (Surujlal & Badrie, 2003).

Changes in food consumption patterns have led to increased consumption of foods outside the home (Riethmuller & Morrison, 1995). Certain processes or handling practices by consumers in the home have been identified as being essential or critical in preventing food-borne illness (Altekruse, Street, Fein, & Levy, 1995). Bryan (1988) identified the most common food handling mistakes: serving contaminated raw food; cooking, heating, or re-heating foods inadequately; obtaining food from unsafe sources; cooling food inappropriately; allowing too much of a time lapse. Research on adult food safety education, food preparation practices and perceived risk of foodborne illness has guided educational programs and material development (Ellis, Sebranek, & Sneed, 2003). The objectives of the study were to determine consumer perception and awareness to food safety hazards and food handling and safety practices at homes in Trinidad, West Indies.

2. Methodology

2.1. Survey

Table 1 shows the demographics of the 120 consumers by sex, age, ethnicity, and having access to the basic amenities of electricity and water. These respondents were interviewed face-to-face by structured questionnaire by three trained interviewers. Approximately 63% of the questionnaires was filled in by the respondents, while 37% was guided in filling the questionnaires. Only those who handled and prepared meals and in particular to meats at homes and had at least a secondary education (at least 6 years of schooling) were selected for the study. The association of food poisoning outbreaks with meat is significant in many countries (Soc-

Table 1
Demographics of study population

| Variables | <i>n</i> | % |
|--------------------------------------|----------|------|
| Sex (120) ^a | | |
| Males | 62 | 51.7 |
| Females | 58 | 48.3 |
| Age years (120) ^a | | |
| <20 | 8 | 6.6 |
| 21–30 | 50 | 41.3 |
| 31–40 | 23 | 19.0 |
| 41–50 | 27 | 22.3 |
| >51 | 15 | 12.4 |
| Ethnicity (118) ^a | | |
| East Indian | 28 | 23.7 |
| African | 61 | 51.7 |
| Mixed | 28 | 23.7 |
| Chinese | 1 | 0.9 |
| Water/electricity (120) ^a | | |
| Regular water supply | 102 | 85.0 |
| No regular supply of water | 18 | 15.0 |
| Regular supply of electricity | 110 | 92.0 |
| No regular supply of electricity | 10 | 8.0 |

^a The number of participants who responded to the questions is indicated in parentheses.

ett, 1995). Meat has been the most frequently named food followed by poultry as the respondents' attributions of foods that caused illness in the data of two surveys on food safety conducted in 1988 and 1993 in the United States (Fein, Jordan Lin, & Levy, 1995). Questionnaires were filled out at homes, business places, shopping malls and on streets located in the North, South and Central of Trinidad, West Indies and at the University of the West Indies. Each questionnaire took an average of 25 min to administer.

2.2. Questionnaires

Questionnaires were designed to obtain information on demographics (age, gender, ethnicity, educational level, religion, location) of respondents. Areas of inquiry included food safety perceptions, awareness of food-borne pathogens, sources of food safety information, confidence in food safety authorities, food handling and safety practices at homes. The questionnaire was pilot tested on 10 comparable consumers for clarity and validity; adjustments were made where necessary.

2.3. Statistical analysis

Results were analysed by Minitab Statistical Software, version 14.0 for Windows (Minitab, 1998, Enterprise State College, PA 16801-3008). Mean responses as well as percentages of responses in each category were computed. Analysis of variance investigated the effect of gender on food safety responses and significant differences in means.

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