



Public perceptions and worry about food safety hazards and risks in Ghana

Rose Omari^{a,*}, Godfred K. Frempong^a, Winifred Arthur^b

^a Science and Technology Policy Research Institute, Council for Scientific and Industrial Research, P.O. Box CT 519 Cantonments, Accra, Ghana

^b Food Research Institute, Council for Scientific and Industrial Research, P.O. Box M20, Accra, Ghana



ARTICLE INFO

Keywords:

Food safety
Food safety hazards
Food safety risks
Worry
Concern
Public

ABSTRACT

Food safety has become an important public health concern and many governments have put in place measures to manage the risks. Most often however, people's attitudes to health and food safety and how they respond to such information depend on their level of concern about the risks. This study assessed public level of concern about specific food safety hazards and risks to provide better insights into food safety issues that the public is most concerned about, the possible drivers of the concerns as well as interventions that could be designed to manage the concerns. Upon receiving ethical approval, a cross-sectional survey was conducted in Accra to gather data on public perceptions and concerns about twelve microbiological and chemical hazards and risks. Findings showed that majority of the public was either extremely or very worried about all the twelve hazards and risks. Also, when people worried about one risk they were also likely to worry about all the other risks. However, the level of concern about unhygienic selling, cooking and serving environments was significantly more severe than concern for all other risks while statistically the same level of concern was expressed about chemical hazards such as excess artificial food flavours and colours, Sudan dye in palm oil, pesticides residues, and leaked contaminants from plastic packages. Furthermore, the public was relatively least worried about safety of foods produced around mining sites and aflatoxin contamination as compared to other food safety risks. The degree of concern about food safety risks was influenced by gender and possibly people's level of knowledge and awareness about the risks. In conclusion, public institutions should continuously interact with the public and share relevant information on food safety hazards and risks including preventive and mitigation measures to minimise their concerns.

1. Introduction

Poor food safety systems are responsible for foodborne diseases, which are an important cause of morbidity and mortality, and a significant impediment to socioeconomic development worldwide. According to the 2015 estimates of global burden of foodborne diseases, 31 hazards together caused 600 million foodborne illnesses and 420,000 deaths in 2010 (WHO, 2015). Of these hazards, bacteria such as *Campylobacter* sp, *Salmonella enterica*, *Salmonella typhi*, and chemical toxin such as aflatoxin are among the most frequent causes of foodborne illnesses (WHO, 2015).

Ghana currently faces numerous food safety challenges such as microbial contamination; mycotoxin contamination; polycyclic aromatic hydrocarbons (PAH) in smoked fish and meats; mercury in fish; pesticide residues in grains, legumes, vegetable, and fruits; food adulteration; and misuse of food additives all of which impact public health (Ministry of Health, 2013; RASFF, 2004–2007). In Ghana with a population of about 25 million, the annual out-patient reported cases of

foodborne illnesses such as diarrhoea, typhoid, and cholera is estimated to be 420,000 with annual death rate not less than 65,000 (Food and Drug Authority, 2006). In 2006 alone, a total of 90,692 people died from food- and personal hygiene-related illnesses in the country (Food and Drug Authority, 2006). Other food safety challenges are poor harvesting and drying systems for grains resulting in the production and accumulation of fungal toxins as well as poor handling and packaging of fresh produce at the farm level leading to food spoilage and wastes.

Omari and Frempong (2016) found that some consumers in urban Ghana were concerned about food safety hazards such as pesticide residue in vegetables, excessive use of artificial flavouring and colouring substances, bacterial contamination, and leaked harmful substances from plastic packages. The same study reports that consumers were also concerned about foodborne diseases such as cholera, typhoid fever and food poisoning due to their past personal experiences and stories they heard about people affected by these illnesses.

Public worry or concern is an important determinant of people's attitudes to health and food safety and on how they respond to

* Corresponding author.

E-mail addresses: romari@csir-stepri.org, rose.omari@yahoo.com (R. Omari), gkfrempong@csir-stepri.org, goddie58@yahoo.com (G.K. Frempong), winarts20@yahoo.com (W. Arthur).

<https://doi.org/10.1016/j.foodcont.2018.05.026>

Received 23 February 2018; Accepted 15 May 2018

Available online 23 May 2018

0956-7135/ © 2018 Elsevier Ltd. All rights reserved.

information about health and food safety (European Commission, 2006). **Worry** is defined by the English Oxford Living Dictionary as the state of being anxious and troubled over actual or potential problems. The Cambridge Dictionary defines **concern** as a worried or nervous feeling about something, or something that makes you feel worried. People have different levels of concern about issues. For example, the extent to which people worry about food safety has been found to differ in relation to gender, age, and social class (Miles et al., 2004; Omari & Frempong, 2016; Omari, Ruivenkamp, & Tetteh, 2017).

In view of the above discussions, this study sought to assess public level of concern about specific food safety hazards and risks. The following research questions were posed:

- (1) To what extent does the public worry about specific food safety hazards and risks?
- (2) Which of the food safety hazards and risks is the public most concerned about?
- (3) What factors possibly influence public level of concern about food safety hazards and risks?

In Ghana, few studies have examined the level of public concern about general food safety and specific food safety hazards and risks. Research conducted by Omari and Frempong (2016) examined food safety issues that are of concern to fast food consumers. This current study focused on the public (that is, the more general consumers) in both urban, peri-urban and rural communities within the capital city of Accra and examined their level of concern about several food safety issues some of which were not covered by Omari and Frempong (2016). The paper discusses the findings and highlights some factors that could influence public level of concern about food safety hazards and risks.

Findings from this study might be useful for government institutions in designing strategies for improving public awareness of food safety risks as well as what the institutions are doing to manage the risks. The study also provides better insights into which specific food safety issues the public is most concerned about as well as intervention options that could be designed to minimise food safety risks and allay consumer concerns.

2. Method

A paper-based cross-sectional survey of consumers' perception and concern about food safety risks was conducted in Accra, the capital city of Ghana from October to November 2017. Based on about 2 million population of the Accra Metropolitan Area, a sample size of 385 was obtained using a 5% margin of error and 95% confidence level. In total however, 444 respondents completed the semi-structured questionnaire administered to members of the public (18 years and older) selected by convenience sampling technique from the four geographical regions (east, west, north, south) of Accra. This sampling technique was used because of the expectation that participation would be based on a self-selection of individuals willing to participate in the survey. The interview was conducted face-to-face by research assistants who were trained to ensure mutual understanding and translation of the questionnaire into the local language when necessary. The interview lasted for approximately 10–15 minutes. The questionnaire contained both closed and open-ended questions on respondents' perceptions and concerns about food safety in Ghana.

The study was reviewed and approved by the Institutional Review Board of the Council for Scientific and Industrial Research (CSIR) in Ghana with the approval code RPN009/CSIR-IRB/2017. The public was informed that participation in the study was voluntary hence only willing participants signed the consent form and took part in the study.

2.1. Measures

Data collected included demographic and socio-economic

information namely age, sex, level of education and primary occupation. Public concern about twelve specific author defined food safety hazards and risks were assessed to determine the extent to which respondents worry about each of them. These were measured on a five-point Likert scale where 1 = Extremely worried; 2 = Very worried; 3 = Moderately worried; 4 = Slightly worried; 5 = Not at all worried.

Six of the specific food safety issues were based on those (hazards and other conditions that compromise food safety) identified by Omari and Frempong (2016). These issues were pesticides residues in fruits and vegetables, bacterial contamination, excessive use of artificial flavours, excessive use of food colours, leaked substances from plastic packages, and unhygienic cooking and selling environment (Omari & Frempong, 2016). Six new food safety issues were added based on Authors' current knowledge and public discussions on food safety in Ghana and Africa as a whole. These were adulteration of palm oil with Sudan dyes, aflatoxin, food infested with moulds, visibly spoilt food, foods left uncovered, and foods produced near illegal mining sites. To test whether these additional food safety issues were indeed of concern to consumers, the questionnaire was pretested with 20 consumers and all the risks that had over 30% respondents being worried about them were included in the list of twelve hazards and risks.

2.2. Data analysis

Data was analysed using Statistical Package for Social Sciences (SPSS, version 20). Initial data analysis included descriptive statistics of respondents' level of worry about the twelve food safety issues. The data was further analysed using repeated measures analysis of variance (ANOVA) followed by pairwise comparison test to determine the differences in mean scores for level of concern for all the food safety issues. A two-way Mixed ANOVA was also performed using level of worry about food safety risks as the within-subject factors (dependent variables) and gender, age and educational background as the 'between-subject factors' (independent variables).

3. Results

Four hundred and forty-four people made up of 73% youth (18–35 years old), 59% female, 41% male, 54% with tertiary level of education, 28.2% with basic and 5.2% with no education took part in the survey.

As shown in Table 1, the mean score for public concern about various food safety hazards and risks ranged from 1.46 ± 0.776 to 2.32 ± 1.248 on a scale of 1–5, where 1 represents 'extremely worried', and 5 represents 'not at all worried'.

For all the food safety risks, between 56.9% and 90.8% (Fig. 1) of the public were either extremely or very worried about them. Findings in Fig. 1 further showed that for all the food safety risks, a lowest proportion of 56.9% of respondents were either extremely or very worried about safety of food produced from mining sites

Table 1
Public level of worry about specific food safety issues.

Food safety hazards and risks	Mean	Range
Cooking, selling or serving food in unhygienic environments	1.46 ± .776	1–5
Visibly spoilt food	1.69 ± .996	1–5
Uncovered food	1.70 ± .992	1–5
Food infested with moulds	1.79 ± .938	1–5
Bacteria or germs in food	1.82 ± .942	1–5
Excessive use of artificial flavours	1.87 ± .915	1–5
Excessive use of artificial colours	1.89 ± .991	1–5
Sudan dye in palm oil	1.93 ± 1.059	1–5
Leaked contaminants from plastic packages	2.04 ± 1.043	1–5
Pesticides residues in fruits, vegetables and other food	2.01 ± 1.142	1–5
Aflatoxin	2.25 ± 1.204	1–5
Foods produced near mining sites	2.32 ± 1.248	1–5

Download English Version:

<https://daneshyari.com/en/article/8887702>

Download Persian Version:

<https://daneshyari.com/article/8887702>

[Daneshyari.com](https://daneshyari.com)