



A Study on Food Safety Knowledge and Perceptions among Poultry Consumers in Mauritius

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ABSTRACT

Although previous research has been conducted to understand Mauritian consumers' knowledge of food safety risks, there is a lack of research on their knowledge, perception, and behavior towards risks associated with poultry sold in markets. Recently, there has been heightened concern regarding a particular market located in the capital of Mauritius. The market was previously sanctioned for malpractices due to unsafe trade of poultry. The target group identified in this study was therefore customers who regularly purchased poultry from the mentioned market who are thought to have inadequate knowledge in food hygiene, safety and microbiology. Therefore a study was carried out at the market to investigate the knowledge and perceptions of Mauritian consumers, on safe and hygienic handling of poultry, shed light on their domestic poultry preparation practices, and understand their attitudes and disposition towards poultry safety. A survey instrument was developed and administered, and data were collected during the period of June-November 2014. The results of this study showed that respondents often lacked knowledge of basic concepts in food safety, rendering them more prone to unsafe food practices. Moreover, poultry consumers, particularly the young demographic, were found to display unsafe food behaviors due to an optimistic bias, an illusion of control or habitual behavior. Poor regard to prevention of cross-contamination was noted. Lack of specific technical knowledge was estimated to be the central reason for unsafe behavior during poultry preparation. It was therefore recommended that education on food safety should start at an early age. Moreover, food labels should be designed to protect consumers from health risks due to consumption of unsafe food and the media should wield a greater role in educating consumers on food safety.

Key words: Food safety, Knowledge, Perceptions, Poultry, Consumers

INTRODUCTION

Food safety is the degree of assurance that food will not present any adverse effects on the health of the consumer when it is handled, prepared, cooked and consumed according to its intended use (WHO, 2005). Potential hazards in foods cover a broad range, from natural (e.g. mycotoxins) and environmental contaminants (e.g. dioxins) to agrochemicals. Most cases of foodborne illness are preventable if food protection principles are adopted at all stages along the production to consumption continuum (Bucknavage and Cutter, 2011). Given that it is currently impossible for food manufacturers to ensure a pathogen-free food supply, the consumer is a critical link in the chain to prevent foodborne illness in the domestic setting. Thus, home food preparers need to know how to minimize the presence of hazards in their food.

Food can be mishandled at a number of places during food preparation, handling and storage, and studies show that consumers have inadequate knowledge of measures needed to prevent foodborne illnesses in the home (Medeiros et al., 2001; Bearth et al., 2014). Indeed, contaminated raw foods, inadequate cooking, and consumption of food from an unsafe source were the factors most commonly associated with reported outbreaks of domestically acquired foodborne illnesses (Medeiros et al., 2001). Studies have estimated that 50-87% of the reported food poisoning incidences have incriminated homemade food (Redmond and Griffith, 2002). Common malpractices noted included serving food products that were originally contaminated, cooking or heating food insufficiently, handling food by infected or carrier persons, having little consideration for food hygiene (WHO, 1997),

engaging in food preparation practices that lead to cross-contamination (Sneed et al., 2015).

Since 1990, there have been an ascending number of food poisoning incidents and malpractices in Mauritius that have undermined the confidence of Mauritian consumers (Statistics Mauritius, 2013). Recent trends observed in Mauritius relate to particular concern about new foodborne pathogens that have resulted in major food poisoning outbreaks (Hotee, 2011).

Chicken is one of the most highly consumed meat in Mauritius and its growing popularity is a result of increasing prosperity. The preference for chicken will cause a rise in its production to 128 metric tons a year by 2020 and the proportion reaching global markets will grow too, from approximately 14% to 17% of total output (The Economist, 2013). In Mauritius, the Hindu community generally does not eat beef whereas the Muslim community does not consume pork, but both consume poultry meat (Heetun, 2014). The annual per capita of poultry consumption in Mauritius has increased from 14.3 kg in 1990 to 27 kg in 2006 coupled with an increase in poultry production (Statistics Mauritius, 2007). In the event of contamination of the fresh chicken meat supply, a considerable proportion of the population will be at risk of food poisoning. Indeed, a recent outbreak of salmonellosis in Mauritius incriminating raw chicken and eggs has been the cause of significant concern among regulatory authorities and more importantly Mauritian consumers (Le Defi, 2016). Therefore knowledge of food safety and safe food preparation is of paramount importance to minimize cases of food poisoning caused by consumption of contaminated poultry.

Therefore a study was carried out at a highly frequented market located in the Capital City of Mauritius to (i) investigate the knowledge and perceptions of Mauritian consumers, on safe and hygienic handling of poultry, (ii) shed light on their domestic poultry preparation practices, and (iii) understand their attitudes and disposition towards poultry safety. Knowing the baseline knowledge and behaviors in this target group will be essential for the development of effective health educational programs.

MATERIALS AND METHODS

For this study, data was collected at one of the main markets of the capital city of Mauritius, during the period spanning June-November 2014 via a self-administered questionnaire. A total of 150 customers from different geographical regions visiting the market were approached using a non-random convenience sampling method i.e.

without any probability-based selection method (Price, 2013). Participants included adults, of all ages, who purchased poultry at the market fair. Participation was on a voluntary basis contingent on 1) attending the market fair, 2) choosing to respond to the survey and 3) limited to those who reported purchasing poultry that day at the market.

The survey instrument was developed after undertaking a desk review of prior research conducted on a similar target population. The draft instrument contained screener questions and the actual questionnaire. The questions aimed to assess the consumers' awareness of the following aspects: (i) safe temperature for refrigeration and freezing, (ii) safe temperature for cooking and cooling of chicken, (iii) knowledge of cross-contamination, (iv) knowledge of food safety hazards, (v) poultry preparation practices (vi) and their general attitudes vis a vis food safety. The survey comprised mostly of close-ended with some open-ended questions. The latter were preferably used when specific answers were not required and when it was important to know the opinion of the interviewed person.

A field test of the draft instrument was first conducted prior to the actual survey administration whereby participants (n = 12) reviewed the instrument for any sources of ambiguity or missing information. Several caveats noted were that (i) some questions led to biased answers, (ii) interviewed persons had little time to devote to answering all questions and (iii) some respondents were not able to answer open-ended questions, which required specific answers. Consequently, amendments were made to the initial version to enhance ease of survey taking and these included rephrasing the questions in plain English, shortening of the questionnaires to speed up the interview and converting open-ended questions, which required specific answers, to closed-ended questions.

For the actual survey, the majority of the participants were approached as they were leaving the market to ensure that they had made a purchase. Typically, customers carrying goods were approached and were more willing to participate in the research study. If a participant were within the targeted age range and indicated that they had purchased poultry from the market, they were directed into the survey questionnaire. The final instrument began with a consent form and consisted of two parts, screener questions and survey questions. To guarantee anonymity of responses, numbers were randomly assigned to each questionnaire. Items in the questionnaire were explained where necessary and administered at one sitting as far as possible. Each questionnaire took approximately 10 minutes to administer. Data was collected on weekday

afternoons or during midday on weekends. Analysis of data was carried out using Excel and SPSS (Version 17.0) statistical package. Mean responses for the different questions were determined by computing the average number of responses for each category while percentages of responses for each category was calculated by dividing the number of responses of a certain category by the total number of responses obtained for that particular question and multiplying by 100, and presented in charts.

Ethical approval

The authors solemnly declare that publication ethics and good conduct were adhered to during preparation, reviewing, processing and proofreading of this article.

RESULTS AND DISCUSSION

Profile of respondents and disposition towards food safety

A total of 150 questionnaires were filled, out of which only 125 were analyzable. All survey respondents were customers who had the primary responsibility for food preparation in the home. None of them were professional food handlers. 76% of the respondents were females, 64% were married, and 24%, 48% and 28% were primary, secondary and tertiary school graduates respectively (Figure 1). All (100%) of the respondents mentioned having a positive inclination and disposition towards safe food practices.

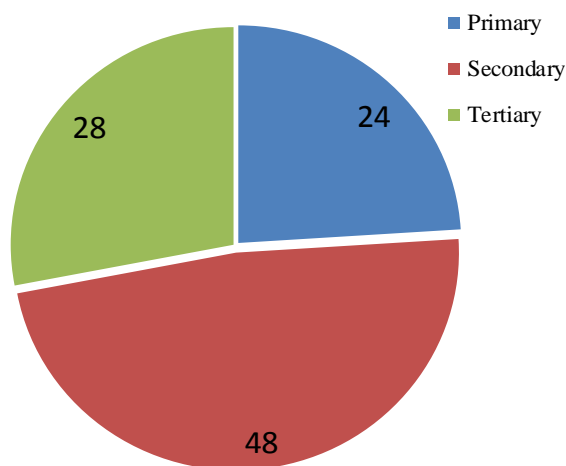


Figure 1. Percentage of survey participants with different level of education

Consumption rates of poultry

Eighty percent of the respondents stated that they consumed poultry two to three times per week compared

with 12% of consumers who mentioned consuming poultry only once weekly. A minority (8%) of the respondents mentioned that they consumed poultry only occasionally. Most respondents reported that their diet regularly included chicken compared with other meat. This is in agreement with other studies, which revealed that the consumption of poultry worldwide is higher than other meats (The Economist, 2013). These findings can thus corroborate the significant rise in poultry consumption in Mauritius (Statistics Mauritius, 2013), Africa and Europe (Global Poultry Trends, 2012). A negative consequence of increased poultry consumption is that a larger population is at risk of contracting poultry-borne infections. Therefore poultry consumers should have a sound knowledge in food safety and should put this knowledge into practice.

Drivers for poultry consumption

The study revealed that the most important considerations for purchasing poultry were ‘taste’ (36%), ‘hygienic quality and safety’ (32%) followed by ‘high level of protein and low cholesterol’ (24%) and ‘culinary versatility’ (8%) (Figure 2).

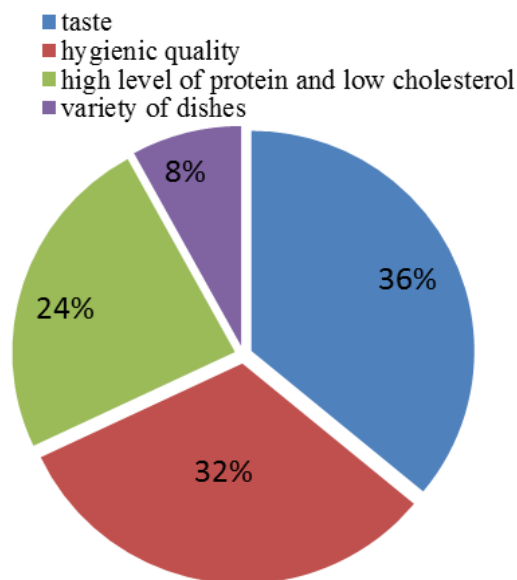


Figure 2. Drivers for consumption of poultry meat in Mauritius

Hence considerations such as ‘safety and hygienic quality’ of the products were actually secondary to ‘taste’ of the products. This reveals risky behavior on the part of consumers because unsafe foods may not exhibit any change in taste, flavor and color. In fact, it was expected that respondents would give more importance to safety rather than taste given their level of education, age and experience. As expected, most of the respondents who

opted for reasons other than food safety were in the age group of 20-49, while most of the respondents who opted for safety considerations were of age higher than 49. This result is also congruent with those of Brennan et al. (2007) and Kennedy et al. (2005) where it was found that older people were more concerned about food safety practices and hazards. Therefore, our findings reveal that younger consumers have less food safety knowledge and therefore their food preparation practices call for improvement (Sanlier, 2009). Patil et al. (2005) further mentioned that young adults (18–29 years) are particularly vulnerable individuals to food poisoning although the propensity to adopt safe poultry practices is higher.

Confidence and food safety knowledge of consumers

Respondents were mostly (84%) confident in the safety of poultry purchased at the market and in their domestic preparation practices of poultry-based dishes. In addition, they showed little concern with regard to the safety of the food supply possibly due to a false sense of confidence and from a high internal locus of control (Green, 2004). The fact that survey participants perceived their food preparation practices as adequate suggests that they might be predisposed to an optimistic bias (Benkendorf et al., 1997). Indeed, Williamson et al. (1992) mentioned that survey participants generally perceive their homes to be locations at which the acquisition of food poisoning is improbable. Fein et al. (1996) indicated that the fact that consumers were not readily inclined to accept an association between home food-handling practices and foodborne illnesses is considered a serious impediment to convincing consumers to change inappropriate food-handling behaviors. Redmond and Griffith (2003) mentioned that members of focus groups expressed more concern about acquiring foodborne illnesses from locations away from the home, because they perceived themselves to have more control at home (Redmond and Griffith, 2001). This underestimation of personal risk posed by food poisoning may prevent consumers from taking the necessary steps to reduce their exposure to food hazards (Sammarco and Ripabelli, 1997). A large proportion (90%) of consumers from the United Kingdom perceive that there is a very low risk of getting food poisoning from food that they had prepared themselves (Redmond, 2002), and this finding corroborates the results obtained by Frewer et al. (1995) indicating that consumers associate the lowest personal risk of food poisoning with home-produced food. Hence consumers perceive themselves to have greater control over their own food

safety than others, thus indicating judgments of optimistic bias (Redmond and Griffith, 2002).

Moreover, 76% of the participants were also confident of their knowledge in food safety. Redmond and Griffith (2003) similarly mentioned that the majority (80%) of consumers interviewed in their study thought themselves to be adequately informed regarding food safety. Almost everyone indicated familiarity with the term foodborne illness (97%). However, they also demonstrated a lack of awareness of other food safety concepts. The lack of familiarity with all food safety principles is in agreement with findings of Bruhn and Schultz (1999). The majority of the survey studies in the literature similarly concluded that consumer knowledge of food safety was generally inadequate and required improvement (Redmond and Griffith, 2003). Inadequate knowledge not only leads to implementation of common unsafe food preparation practices but also contributes to foodborne illnesses (Kerslake, 1995).

The highest level of education attained by consumers of poultry was secondary followed by tertiary and primary schooling (Figure 1). No respondents encountered were illiterate. This shows that the customers interviewed, who were recipient of a certain level of education but were still inclined to purchase their poultry products from market sellers in spite of their unsafe practices. While Kwon et al. (2008) have highlighted the importance of education in food safety knowledge and practices, other studies have reported that individuals with a higher level of education were less concerned about food risks and food safety (Fischer et al., 2008). Indeed, Bruhn and Schutz (1999) reported that many interviewees claimed they knew how to handle food safely, but their self-reported food-handling behaviors did not support this confidence. We also noted that consumers aged greater than 49 years had a greater disposition and inclination towards food safety than younger consumers (20-49 years old). Other studies have similarly found a correlation between 'safe food practices' and 'knowledge in food safety' with 'age' and 'experience'. Taken together, it was observed that younger participants demonstrated the most pressing need for additional food safety education (Albretcht, 1995; Bruhn and Schutz, 1999 and Rimal et al., 2001).

Consumer awareness of food regulations

The result showed that a considerable proportion of respondents (68%) were aware of food regulations while 32% claimed to be unaware of food regulations. However, 100% of the respondents who claimed they knew the food regulations replied that they would not lodge complaints against illegal vendors. 30% of them were disinclined to report any illegal matters to the concerned authorities,

while 70% mentioned being reluctant to do so as this could jeopardize their personal security. In the long run, this could encourage poultry vendors to perpetuate their unsafe practices with ensuing normalization of deviance. Indeed, it was revealed that normalization of deviance is induced by fear of retaliation (Maxfield et al., 2005). Therefore, although a certain proportion of the respondents claimed that they were aware of the pertinent regulations, they were not prepared to take any risks to enforce them. This finding is in agreement with Bruhn (1997) who showed that in spite of having a sound knowledge in food safety practices, consumers would not necessarily enforce them. On the other hand, Wiss (2012) emphasized that food safety knowledge is the sine qua non to enforcing food safety measures effectively. Hence, it can be inferred that if consumers show unwillingness to buy poultry displayed, sold or handled in an unhygienic or unsafe manner, this will deter retailers from perpetuating their malpractices. Therefore education of poultry consumers is important as it impacts their purchasing considerations.

Hygiene assessment of the market

With respect to the prevailing level of hygiene in the market, 88% of the respondents thought that the level of hygiene prevailing at the market was satisfactory while 12% said that the hygienic state of the market was fair. In addition, 56% of the respondents thought that the market did not need any improvement as far as hygiene was concerned. In fact, an objective assessment of the market would be 'fair' because although the market/fair was equipped with facilities such as availability of water, electricity and regular cleaning by manual workers, there were no chilling cabinets in the poultry section. The consumers' assessment of the hygienic status of the market revealed that those who were mostly educated were not able to give a correct assessment in spite of the fact that education is important for understanding the basis of food safety. This observation is in agreement with that reported by Fischer et al. (2008), who pointed out that those who have a higher education were in fact less worried about food safety measures. It is also to be pointed out that the respondents who gave the correct rating of 'fair' were more than 50 years old.

Knowledge of cooking temperatures

Only 15 (12%) correctly replied that the safe cooking temperature for poultry should be $\geq 74^{\circ}\text{C}$. 70 of the respondents (56%) replied that they did not know the answer and 40 respondents (32%) incorrectly answered that the safe cooking temperature should be $\leq 65^{\circ}\text{C}$.

Snyder (1998) reported that 15% to 20% of consumers did not know what the temperature should be inside a piece of meat for it to be considered safe to eat. It was noted that a few respondents who correctly answered fell in the age group of >50 . However, a large majority of interviewed persons especially those who were less than 50 years of age were not able to give the right answer. Therefore older people are more knowledgeable about food safety practices. This inference aligns with observations of Brennan et al. (2007) and Sanlier (2009) who reported that younger consumers have less food safety knowledge.

Redmond and Griffith (2003) noted that adequate heating of food products by consumers tended to differ widely depending on the cooking method employed. In a study carried out by Redmond et al. (2001), the author noted that most consumers cooked poultry adequately and only 3% of consumers failed to fry chicken pieces for the recommended time. Similarly, Griffith et al. (1999) reported that all consumers cooked chicken curry to a sufficiently safe level. However, 83% failed to cook a roast chicken for the recommended time (Griffith et al., 1999). In fact, Anderson et al. (2000) noted that the majority of consumers (93%) had a tendency to rely on visual indicators to determine the doneness of roasted meat products, as opposed to using a meat thermometer (Snyder, 1998). Undercooking has thus been acknowledged as a significant risk factor associated with foodborne diseases (Mathias, 1999).

Knowledge of food storage temperatures

A large majority of survey respondents (81%) were aware that keeping poultry in the refrigerator will reduce the risks of food poisoning. This is very much in agreement with findings of Redmond (2001) who reported that 84% of consumers surveyed agreed that it is unacceptable to store meats at room temperature. Moreover, Mathias (1999) observed in their study that 72% of consumers were not inclined to store food at room temperature, hence showing an overall positive attitude. A minority of respondents (19%) replied that they were not aware that refrigeration slows down bacterial multiplication and hence enhances the safety and quality of the poultry products. With regard to consumers' knowledge of chilling temperatures, 40 respondents (32%) incorrectly answered that the refrigeration temperature should be above 5°C . Only 25 consumers (20%) rightly stated that the safety range should be between 0 and 5°C while 60 (48 %) respondents admitted not knowing the answer of this question (Figure 3). In fact, studies have demonstrated that large proportions of consumers (46 to 60%) lack knowledge of adequate refrigeration

temperatures (Redmond, 2002). Moreover, investigations of consumers' refrigerators have revealed that a large proportion (~ 70%) of consumers' refrigerators exceeded the recommended temperatures (Daniels, 2001; Johnson et al., 1998; Weinstein and Klein, 1996), giving rise to conditions that encourage the proliferation of bacterial cells to potentially dangerous levels and increasing the risk of illness.

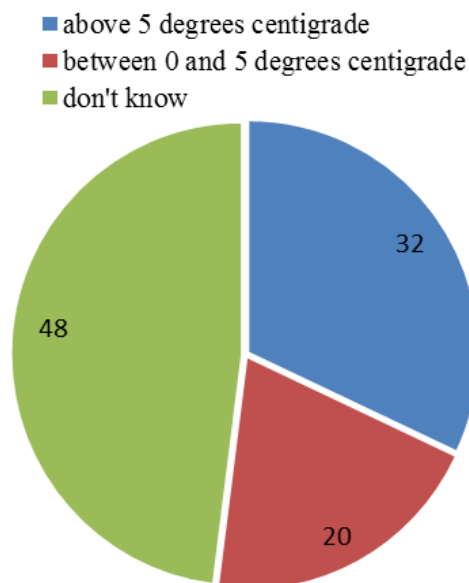


Figure 3. Perception of poultry consumers about correct chilling temperatures in Mauritius

Regarding the knowledge of freezing temperature, 15 respondents (12%) knew that the ideal freezing temperature should be at -18°C or lower. 65 poultry consumers (52%) replied that they did not know the correct answer while the rest (36%) wrongly thought that the best freezing temperature should be 0°C .

With regard to hot holding temperatures, 19 respondents (15%) correctly stated that the hot holding temperature for poultry should be $>63^{\circ}\text{C}$. 60 of the respondents (48%) did not know the answer while 46 (37%) yielded an incorrect answer. With regard to the statement that "hot food should be cooled as quickly as possible and then refrigerated", 50 (40%) respondents disagreed, 67 (54%) neither disagreed nor agreed and only 7 (6%) persons agreed. That is in sharp contrast with findings of Mathias (1999) and Redmond (2002) who reported that a greater percentage (~ 50%) of consumers, agreed that there is a need to cool hot food quickly after cooking. However, Redmond (2002) also demonstrated that 84% of consumers unknowingly thought that it is also acceptable to cool foods at room temperature. As Redmond and Griffith (2013) rightly said, there is

confusion among consumers as to what constitutes acceptable and safe cooling practices.

Knowledge of food hazards and safe food practices

Regarding the nature of hazards in poultry, the study showed that 18 respondents (14%) incorrectly assumed that food safety hazards were limited to physical hazards. Only 14 respondents (11%) knew that food safety hazards include physical, chemical and biological hazards while 93 respondents (75 %) were unaware of the food hazards and their different types. Survey participants who incorrectly answered this question spanned all age groups. Many surveys have identified a lack of notion of food hazards (Albrecht, 1995; Bloomfield and Neal, 1997; Sammarco and Ripabelli, 1997) among respondents. Redmond and Griffith (2013) showed that a lack of awareness of possible hazards generally leads to a failure in implementing safe food preparation behaviors.

We also noted that knowledge of food safety is not necessarily a guarantor for correct implementation of safe food behaviors and at the same time, a notion of food safety may not be the sole driver for implementing safe food practices. For instance, for several questions pertaining to safe food practices, respondents (56-78%) gave correct answers out of experiential learning rather than from theoretical knowledge. A comparatively large number of respondents (84%) correctly answered that poultry should be kept in a refrigerator to prevent food poisoning since a large majority of Mauritians customarily keep food in the refrigerator to increase its shelf life and to prevent quality deterioration. Redmond (2002) similarly found that a significant proportion of consumers surveyed in the United Kingdom reported mechanically practicing basic food hygiene precautions without knowing the underlying rationale (Redmond, 2002).

With regard to specific questions in food safety such as questions addressing the 'meaning and importance of HACCP', only 14 respondents (11%) gave the correct answer, implying that only a minority had a sound knowledge of food safety. Therefore the majority of consumers were not aware of the importance of HACCP, which is considered to be an effective tool for controlling pathogens in most food establishments. Consequently it will not be intuitive for most of the poultry consumers to choose poultry products from suppliers who are HACCP certified. In the absence of adequate knowledge of HACCP and its underlying rationale, most consumers will not be willing to pay a premium for HACCP-certified products, which are in fact safer.

Knowledge of good hygienic practices and good manufacturing practices

All respondents (100%) agreed that water used for cleaning the market should be clean and chlorinated. However, correct answers given for adherence to Good Manufacturing Practices (GMPs) were relatively low. For instance, few people (11-14%) who were interviewed were aware of safe thawing procedures, importance of display of poultry in chilling cabinets and the safe length of time for exposing cooked food. Hence the results mostly reveal that poultry consumers lack specific knowledge of GMPs and this finding is in agreement with the study of Bearth (2014).

Consumer awareness of bacterial cross-contamination prevention

Our observations pertaining to consumer practices to avoid cross-contamination are presented in Figure 4. Only 13 respondents (10%) knew that cross-contamination is the transfer of harmful bacteria from one food to another directly or indirectly via hands, chopping board, utensils and other means of contact. However, 99 respondents (79%) knew that plates and utensils that held raw chicken should be properly washed before using them again. Redmond and Griffith (2013) also mentioned that a large majority of consumers (75%) lacked familiarity with the term ‘cross-contamination’ and principles associated with cross-contamination although 72 (58%) respondents were aware that plates and utensils for cooked and raw meats should be separated. We further noted that 50 respondents (40%) knew that cutting boards used for animal and plant-derived foods should be separated and 28 (22%) respondents were aware that these commodities should be

separated even after washing. This percentage is relatively low compared to those reported by other authors. For instance, Griffith et al. (1999), Mathias (1999) and Redmond (2002) found that as high as 81% to 90% of consumers agreed that it is better to use separate chopping boards for cutting of raw and cooked meats. Similarly, 90% of consumers believed that the use of different utensils or washed utensils for the preparation of raw and Ready-to-eat (RTE) foods will help to prevent food poisoning (Griffith et al., 2001).

The home has been described in the literature as a common point of origin for poultry-borne infections. Since our study revealed that only a relatively small percentage of consumers had a sound knowledge of bacterial cross-contamination including cross-contamination events by poultry-borne pathogens *Salmonella* and *Campylobacter*, the risks of food contamination in the domestic environment remain alarming. Usha et al. (2010) indicated that bacterial cross-contamination occurs during food preparation and bacterial residues on food contact surfaces can eventually cause illnesses. The same author further demonstrated that utensils harbored a higher level of *Campylobacter* spp. (1.4-223.3 MPN/ml rinse) than hands (0.7-43.4 MPN/ml rinse) and transference rates of *Campylobacter* spp. from utensils to food varied from 0% to more than 100%. Rusin et al. (1998) observed kitchen environments to be heavily contaminated with coliforms, suggesting a high risk of spreading infections in the home. It is therefore recommended that food safety initiatives include explanation of terms such as cross-contamination to ensure that messages are effectively communicated and to circumvent microbiological risks associated with the contamination of RTE foods.

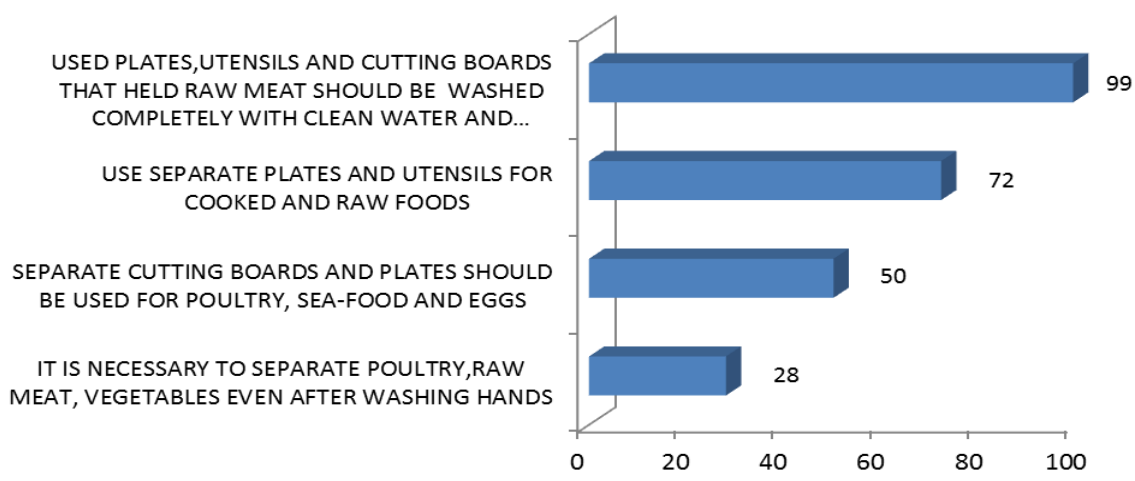


Figure 4. Practices of poultry consumers to prevent cross-contamination in Mauritius

Washing of poultry before cooking

Washing of poultry prior to cooking is a practice that is heavily discouraged as it leads to contamination in the kitchen (USDA, 2013 and USDA, 2014). The survey revealed that 89 persons (71%) thought that poultry should be washed before cooking. There was a prevailing misconception among a majority of respondents that washing poultry could physically remove the pathogens that may adversely affect their health. However, this is a misconception as rinsing is ineffective at destroying pathogens and only cooking is the ultimate killing step (USDA, 2014). Moreover, poultry washing can cause poultry juices to spread to other foods in the process. The relatively high number of Mauritian consumers who wash poultry before cooking as noted in our study tallies well with findings of Bruhn (2014) who reported that almost half of survey participants washed poultry before cooking. Henley et al. (2012) also reported that African-American, Asian-American and Hispanic consumers washed chicken prior to cooking. Hence, food safety educators should remind consumers not to wash poultry. An animated video illustrating cross-contamination could be an effective tool to dissuade consumers from washing raw poultry (Godoy, 2013). Those reportedly washing poultry in our survey mentioned doing it out of a habit or following a practice handed down to them by their elders. Indeed food preparation can be described as a habitual behavior because it is a frequently repetitive (Fisher and De Vries, 2008). In this particular situation habit did induce the respondents to potentially unsafe practices.

In the light of this study, we noted that Mauritian customers purchasing poultry were generally aware of several safe food-handling practices although they were found to lack knowledge of others. It was also observed that those who fell in the age group of 20-49 years old were less knowledgeable about poultry safety and that is probably caused by the lack of experience. The fact that not all the survey participants falling in the age group of >49 years old provided satisfactory answers in relation to safe storage and cooking may be because older persons may not necessarily put their food safety knowledge into application.

Taken together, older people were relatively more concerned about food hazards and safe practices. The generally high confidence of respondents of their knowledge in food safety and their adherence to safe food practices suggest an optimistic bias and 'illusion of control'. Effective ways to prevent poultry-borne illnesses rely on early consumer education as well as proper sensitization.

It is worth acknowledging one limitation of the survey design: the demographics might have been skewed due to the location of the market as well as possible selection-bias due to volunteering to participate. Due to restricted location and small size, the results of this study are not intended to generalize, rather to serve as a reference point for future studies.

Competing interests

The authors have declared that no competing interest exists.

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