An Examination of the Food Safety Information Sources and Channels Utilized and Trusted by Residents of Lubbock, Texas

Kamy Williams
David L. Doerfert
Mark Kistler
Leslie Thompson
Texas Tech University

Abstract

The United States food supply is among the safest in the world (Food Safety Research Information Office, 1997). Yet, the Centers for Disease Control (CDC) estimates that each year 76 million Americans get sick as a result of a foodborne illness. Of these 76 million, 325,000 are hospitalized and 5,000 die (Mead, et al., 1999). Consumers must realize that they are the last line of defense for ensuring the safety and quality of the food they consume (Taylor & Curtis, 1999). In order to prevent, or reduce the number of foodborne illnesses, consumers need to be informed and educated about potentially hazardous foods, cross-contamination prevention, and proper cooking procedures. Finding the media outlet or combination of outlets that reaches the most consumers is very important to the success of food safety education campaigns. The purpose of this study was to determine the preferred food safety information sources and delivery channels of Lubbock, Texas residents. The objectives of this study were to (a) determine which information sources and delivery channels are most frequently utilized by Lubbock, Texas residents to access food safety information, and (b) determine which food safety information sources are most trusted by Lubbock, Texas residents. A random sample of Lubbock’s residents received a mailed survey instrument with 203 (52.9%) responding to the study. Results revealed that print information (including cookbooks), friends & family members and Internet web sites were the most likely sources that respondents would use to gain food safety information. None of the information sources studied were completed trusted by the respondents with significant differences being found on the demographic variables of age, level of education, presence of children in the home, and ethnicity. The following conclusions are made based on the results of this study: (1) the most likely resources respondents reported they would use to obtain additional information were family and friends, print materials, and electronic information; and (2) respondents did not indicate a complete level of trust in any of the potential food safety information sources studied but differences were found within the demographic variables of age, level of education, presence of children in the home and ethnicity. Recommendations were included to further examine trust as a factor in food safety information and education.
Introduction/Theoretical Framework

The United States food supply is among the safest in the world (Food Safety Research Information Office, 1997). Yet, the Centers for Disease Control (CDC) estimates that each year 76 million Americans get sick as a result of a foodborne illness of which 325,000 are hospitalized and 5,000 die (Mead, et al., 1999). The Economic Research Service (ERS) of the United States Department of Agriculture (USDA) estimates that the economic cost associated with five major foodborne illness pathogens amounts to $6.9 billion per year (ERS, 1999). Salmonella alone accounts for $1 billion annually in direct and indirect medical costs (National Institute for Allergy and Infectious Diseases, 2002). These costs include the value of premature deaths, and lost wages from work (National Institute for Allergy and Infectious Diseases [NIAID], 2002).

It is not a secret that consumers are troubled about the safety of their food supply. Consumers are becoming more and more concerned about the quality and safety of their food supply (Gilmore, Meehan-Strub, & Mormann, 1992). A 1993 consumer study that surveyed 1,135 consumers indicated that over 65% of consumers were “very” or “extremely” concerned about the safety of food, while only 11% claimed that they were “not at all” or “somewhat” concerned (Gilmore, Meehan-Strub & Mormann, 1994).

Today, consumers make their supermarket selections based on convenience, ease of preparation, limited cooking time and taste. These convenience foods create additional steps in delivering food from the farm gate to the consumer. In addition, more Americans are eating out in restaurants than ever before (National Restaurant Association (NRA), 1999). As the number of steps between the producer and the final consumption increase, the greater the potential food safety risk to the consumer.

Additionally, with less than two percent of the United States population involved in production agriculture, few Americans understand terms related to the production, processing and handling of food products. This lack of consumer knowledge may transfer into fear of agricultural practices such as irradiation, hormones, antibiotics, and pasteurization. Unsurprisingly, many food safety issues concern consumers. As the public becomes more aware of the benefits and risks associated with food production, distribution, preservation, and preparation, more attention has been given to food safety related issues in the media.

Food Safety Information Sources

Food safety information is currently supplied by both the private sector and governmental agencies. The available literature identifies five primary sources of food safety information: (a) experiential or family, (b) government agencies, (c) professional associations, (d) formal education, and (e) media.

Food handling practices are often handed down in families from generation to generation much as family traditions are. Children learn a great deal about daily life from their parents, and food handling and preparation is no exception. Families “are a child’s first teachers in life,” (Page, 2003, p29). Adolescents reported parents/guardians were a common source of food safety information (McCullum, & Achterberg, 1997). Additionally, families may unknowingly pass
down potentially harmful food handling practices. A survey of 3rd through 10th graders revealed that when asked why they would complete an unsafe food handling practice, such as eating non-refrigerated leftovers, children responded with answers which included, “My family/friends do it,” “No one told me I shouldn’t” (Barclay et al., 2003).

Within the United States government there are six main agencies which regulate food production/processing and are responsible for a large portion of the food safety standards as well as the information available. These agencies are United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), the United States Public Health Service (USPHS), United States Centers for Disease Control and Prevention (CDC), the United States Environmental Protection Agency (EPA), and the United States National Marine Fisheries Service (NMFS) (NRA, 1999).

The USDA is responsible for the grading and inspection of meat, meat products, poultry, dairy products, eggs, egg products, and fruits and vegetables shipped across state boundaries (USDA, 2001b). In addition, the USDA and the Food Safety Inspection Service (FSIS) research, compile, and provide data for the public. Many brochures, pamphlets, and fact sheets are prepared by the USDA for consumers. The USDA also sponsors a number of educational websites offering consumers information on topics ranging from baby food safety to information on areas of concern, such as food additives.

The Food and Drug Administration (FDA) also plays a large role in food safety education. The Model Food Code is written by the FDA and details the government’s recommendations for foodservice regulations (FDA, 2001). The FDA is also involved with the interpretation of food safety standards and random food safety inspections to foodservice operations (NRA, 1999). The U.S. Centers for Disease Control are a multi-functional federal agency whose primary goal is to detect and assess threats to public health (CDC, 2001). The CDC investigates foodborne illness outbreaks, studies the causes and control of diseases, publishes statistical data in the Morbidity and Mortality Weekly Report (MMWR), and provides education regarding proper food sanitation practices (CDC, 2001). Water quality regulation, including the use of pesticides and sanitizers, and handling of wastes is the responsibility of the Environmental Protection Agency. Fish processing facilities are regulated via the U.S. National Marine Fisheries Service (National Oceanic and Atmospheric Administration, n.d.).

Many professional associations conduct and report food safety research. The International Association for Food Protection (IAFP) is a group of industry professionals that provides its members with food safety information via two of its journal publications (Journal of Food Protection and Dairy, Food and Environmental Sanitation). The Institute of Food Technologists (IFT) is an organization of food science and technology professionals whose primary goal is to be a resource of scientific and professional-based food science and technology information including two journals, the Journal of Food Science and Food Technology.

Food companies and other related organizations in the private sector also provide safety-related information. Teisl (1999) argued that information provided by the private sector is vital in that it educates consumers in groups of the population that are not reachable by “more general approaches, such as public education campaigns” (p 207). McCullum and Achterberg (1997)
found that food labels on food packages and television were common sources of food safety information.

In addition to industry and professional associations, many universities extensively research and publish food safety information, often disseminated through the Cooperative Extension Service. According to Barton and Barbeau (1992), the Cooperative Extension Service has “identified food safety and quality as a priority issue to be addressed by educational programming” (p. 1). Adult and children targeted food safety workshops, demonstrations and clinics are offered all over the United States by the Cooperative Extension Service. A study conducted by the Texas Agricultural Extension Service in 1995 interviewed Texas adult residents who had completed some type of a food safety education program. Participants were interviewed before and after participation in the program. In all areas of food safety covered in the program, participants increased their knowledge from as little as 12%, to as high as 35% (Van Laanen & Nies, 1995). In addition to adult programming, local 4-H clubs offer children an assortment of educational food safety activities. Activities such as food preparation demonstrations and food show contests are offered to educate kids about good food hygiene practices, and illnesses associated with improperly handled foods. High schools may also be a potential source of food safety information for consumers through programs such as home economics/family & consumer science courses.

**Food Safety Information Channels**

The usage of mass media in food safety education can have both positive and negative effects. According to Griffith et al., (1994), the mass media “are keen to report on food safety scares, but their use as vehicles for food safety education seem to be ignored” (p 20). Nonetheless, industry websites, hotlines, government regulated websites, pamphlets, product labels, newspaper articles, magazine articles and radio broadcasts are trying to make food safety information accessible to consumers. Finding the media outlet or combination of outlets that reaches the most consumers is very important to the success of food safety education campaigns.

Gilmore et al., (1992) found that 60% of the population they surveyed indicated newspapers as their preferred media outlet to obtain food safety information. Reina (1995), in a general media usage study, reported that college graduates (72%), higher-income Americans ($50,000 or more) and age 50 or over read newspapers the most. Moreover, retired, “old-fashioned” people are heavy users of print media. People under the age of thirty were found to rely more heavily on radio and TV compared to print media (Reina, 1995). Similarly, Sheperdson and Holliday (2000) surveyed 8,000 consumers regarding their media use preferences. Respondents indicated that print publications were the medium of choice they were most likely to use.

In 1996, the Hamburger Preparation Quiz conducted by the USDA asked consumers where they heard or read about how to properly cook ground beef patties so a person will not get sick. Seventy-two percent of the respondents indicated that they heard this information primarily on television or radio, followed by newspapers at (69%), family, relatives, colleagues and friends (59%), magazines (55%), label or instructions on a package (48%), and 35% of the population sampled found this information in a cookbook. Additionally, 32% of those sampled had heard/read information regarding ground beef cooking temperatures via brochures at grocery stores, and 32% received information from government sources such as hotlines and extension
offices (ERS, n.d.). These data are somewhat contrasting to data collected in the 1998 FDA/FSIS Consumer Food Safety Survey. Here, 43% of respondents cited food labels as their primary source of “a lot of information about food safety,” 37% utilized broadcast media, followed by print media with 29%, while cookbooks provided food safety information for 26% of the respondents (ERS, n.d.).

Internet and web media offers consumers the unique ability to obtain information 24 hours a day, 365 days a year, in almost any location around the globe. However, the Internet does have a few drawbacks. The Internet is not as accessible as print media is to many Americans. An Internet study funded by MSNBC found that 20.1 million U.S. Internet users (more than half of U.S. internet users) regularly log online and obtain news similar to what they used to read in newspapers or watch on television (Levins, 1998). This survey also found that 22% of those who do use the Internet as a news source use it daily. Of the 20.1 million Internet users, 82% regularly read newspapers, 74% regularly watch broadcast television news, 71% watch cable TV news, and 57% read news magazines (Levins, 1998). This indicates that even though many Americans are using electronic media, they are not using it as their sole source of information.

**Trust of Information Sources**

Little information has been collected on the perceived trust of food safety information sources. A 1998 Gallup Poll revealed that Americans continue to rely and report faith in traditional hard news sources, while the use of “new” media as sources for news and information are quite lower with respect to trust and accuracy (Newport & Saad, 1998). Broadcast media were found to have a higher credibility than print by the respondents. Additionally, the highest levels of trust were given to electronic news sources, CNN, public and local television news, and prime time newsmagazines. More traditional news sources such as local and national newspapers ranked significantly lower in terms of “perceived credibility” (Newport & Saad, 1998). Forty-five percent of those surveyed indicated that they could trust information provided on the Internet (Newport & Saad, 1998). On the local level, local television was more frequently used and more trusted by those surveyed when compared to local newspapers. Furthermore, the Gallup Poll revealed that 64% of those surveyed trust information obtained from conversations with friends and family.

Consumers have been found to place a low level of trust in information supplied by industry experts (Byrne, Gempesaw, & Toensmeyer, 1991). Trust in the Internet based information however, seems to be more debatable. A test to determine the accuracy of information provided by the Internet was conducted in 1999 by Connell and Tipple. The accuracy of the Web was tested using the AltaVista search engine and 60 reference questions. Only 27% of the pages were found to have correct or mostly correct answers, while 9% provided wrong answers and the remaining 64% provided no answers at all (Connell & Tipple, 1999). These findings do not coincide with how students using the Internet feel about its reliability. Of the students surveyed at the State University of New York at Albany, 34% believed that the Internet was their most important resource (He & Jacobson, 1996). Moreover, a study conducted at three southeastern U.S. colleges found that 85% of the students surveyed rated the accuracy of Web resources as moderate to excellent (Lubans, 1998).
Families were found to be reliable sources of food safety information sources. A group of adolescents in England were surveyed to determine whom they trusted the most as a source of food safety information. The participants revealed that family was, by far, their most reliable source of food safety information (Coulson, 2002).

Summary of Theoretical Framework

Consumers must realize that they are the last line of defense for ensuring the safety and quality of the food they consume (Taylor & Curtis, 1999). Moreover, data on food handling practices show that consumer handling practices pose a greater risk for foodborne illness than to food service and further processing facilities (Taylor & Curtis, 1999). The media has increasingly brought food safety into the spotlight, and as a result consumers are demanding that their food supply be safe (Anderson, 2000). In order to prevent, or reduce the number of foodborne illnesses, consumers need to be informed and educated about potentially hazardous foods, cross-contamination prevention, and proper cooking procedures. Understanding what information sources and delivery channels consumers trust and utilize is the first step in educating the consumer.

Purpose and Objectives

The purpose of this study was to determine the preferred food safety information sources and delivery channels of Lubbock, Texas, residents. The objectives of this study were to:

1. Determine which information sources and delivery channels are most frequently utilized by Lubbock, Texas residents to access food safety information.
2. Determine which food safety information sources are most trusted by Lubbock, Texas residents.

Methods

This study was a non-experimental, descriptive study and part of a larger study conducted by the lead researcher. The instrument for this study was designed by the researcher. A Likert-type scale of 1 through 4 was used to determine the consumer’s perceived degree of trust or distrust associated with each source of information. Additional sections of the instrument sought to provide information on what information sources consumers were using to obtain food safety information and the channels they used to access the information. Demographic information was also collected. The instrument was pilot tested on faculty, staff and graduate students within the Department of Agricultural Education and Communications at Texas Tech University to assess content validity. Changes to the instrument were made according to the group discussion and reliability data analysis results. The final Cronbach’s alpha reliability score for the instrument was 0.78. The survey was printed booklet-style on 11 x 17 paper and saddle stitched.

A random sample of 400 Lubbock, Texas (n=199,564, U.S. Census Bureau, 2000) residents was purchased through the Earl Survey Research Laboratory at Texas Tech University. Krejcie and Morgan (1970) was used to determine that a sample of 384 should be used for a population the size of Lubbock, TX. This amount was randomly drawn from the 400 names that were
purchased. Questionnaires returned as a result of bad addresses were removed from the initial sample and replaced by addresses which were also randomly drawn from the 400 names purchased. Subjects younger than 18 years old were not allowed to participate in the study.

Survey packets mailed to subjects included: one instrument, a stamped return envelope, a cover letter, and an entry card for a response incentive. The cover letter contained information which addressed project research goals and the usefulness for this data. Each cover letter was printed on university departmental letterhead and signed by both the researcher and thesis committee chairman. Surveys were coded using a three digit number in order to determine which subjects had completed the survey. Once a subject’s completed survey was received, their name was deleted from the mailing list to ensure that they received no additional mailings. Following the initial mailing, two reminder post cards, and an additional survey packet were mailed to the population at one week intervals if no response was received (Dillman, 2000). The total number of respondents was 203 (52.9%).

An incentive was used during data collection in order to encourage survey recipients to complete the questionnaire. The incentive was a gift card worth $200 to be used at a grocery store chain of their choice within Lubbock, TX. Each subject received an entry card with their survey. They were asked to mail the card back with their completed survey. All entry cards were separated from surveys as soon as they were received to maintain anonymity. Cards were pooled, a drawing was held on October 15, 2003, and a winner was selected to receive the gift card.

Returned survey instrument instruments were coded and entered into a Microsoft Excel spreadsheet. Statistical analysis of the data files was completed using the SPSS for Windows. Descriptive statistics were used to summarize the data collected from this study. Data were analyzed to determine if any differences occurred between early and late respondents. No significant differences were found between the two groups (Lindner, Murphy, & Briers, 2001).

### Results

Respondents of this survey were evenly divided in terms of gender with 101 females, 101 males and one non-respondent. The age of respondents ranged from 20 to 81 years old with a mean age of 48.25 years, \(SD = 16.25\). Most respondents (30.5%) indicated their highest education level was “some college,” followed by 24.1% reporting having earned a bachelor’s degree, 19.7% had a graduate degree, 17.7% had a high school education or less, and 7.4% earned a vocational or technical degree. Fifty-nine percent (59.1%) of the respondent reported not having children. Eighty percent (80.1%) of the population was White, non-Hispanic with and addition 12.4% indicating that they were Hispanic. Most respondents reported having a combined household income of <$50,000 with 19.6% indicated earnings under $20,000. Most respondents reported they were married (55.3%) with 20.1% indicated being single, 15.2% were divorced, and 9.5% were widowed.

**Information Sources Respondents Would Likely Utilize**

Two questions on the data collection instrument were dedicated to determining what source respondents would use to obtain additional food safety information. One question posed a scenario of preparing a new meat dish (leg of lamb roast) and all the respondents had was a very
basic recipe that lacked cooking time and temperatures for lamb. Respondents were asked to list two sources they would use to learn more information to safely prepare the lamb. For the scenario question (Table 1), the respondents main preference of a food safety information source was cookbooks and other print recipes (e.g. recipes from newspaper) with 29.5% of respondents (n=120) stating this as one of their two preferred information sources. The “friends and family” category was reported to be the second most preferred source of additional food safety information by 25.1% (n=114) of the respondents. Internet resources were found to be the third most likely source of food safety information.

Table 1

<table>
<thead>
<tr>
<th>Information Source</th>
<th>1st Choice</th>
<th>2nd Choice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cookbooks &amp; print recipes</td>
<td>80 41.0%</td>
<td>40 20.7%</td>
<td>120 29.5%</td>
</tr>
<tr>
<td>Friends and family</td>
<td>47 25.1%</td>
<td>58 31.6%</td>
<td>105 25.8%</td>
</tr>
<tr>
<td>Internet web sites</td>
<td>38 19.4%</td>
<td>53 20.9%</td>
<td>91 22.4%</td>
</tr>
<tr>
<td>Someone experienced with meat or meat preparation/cooking</td>
<td>13 6.7%</td>
<td>16 8.6%</td>
<td>29 7.1%</td>
</tr>
<tr>
<td>Extension Service</td>
<td>12 6.2%</td>
<td>5 2.6%</td>
<td>17 4.1%</td>
</tr>
<tr>
<td>Other</td>
<td>5 2.6%</td>
<td>14 7.5%</td>
<td>19 5.0%</td>
</tr>
</tbody>
</table>

The second question respondents were asked was to rank the top three resources (from a list of 12 provided) they would use to learn more about food safety issues. The number of respondents indicating each source, as their first, second, or third choice, were added together to obtain the total number of respondents who would use each source. The food safety information sources were ranked based on the total number (Table 2). The results were similar to those received through the scenario question. The most likely information source respondents indicated they would use to learn more about food safety areas was family and friends (n=89). Print materials was the second most likely resource respondents indicated they would use to learn more about food safety (n=87) followed by Internet web sites (n=76).

Trust of Food Safety Information Sources

Information sources were analyzed to determine level of trust for each source. Table 3 indicates the level of trust respondents perceived about each source. Educational workshops or conferences was reported to be the information source most trusted by respondents ($M=3.20$, $SD=0.56$). It is interesting to note that none of the sources were completely trusted by respondents in this study.
Table 2

Food Safety Information Sources and Channels Preferred by Lubbock, TX Residents

<table>
<thead>
<tr>
<th>Information Source</th>
<th>1st Choice</th>
<th></th>
<th>2nd Choice</th>
<th></th>
<th>3rd Choice</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Family &amp; Friends</td>
<td>32</td>
<td>15.8%</td>
<td>24</td>
<td>11.8%</td>
<td>33</td>
<td>16.3%</td>
<td>89</td>
</tr>
<tr>
<td>Print Material</td>
<td>33</td>
<td>16.3%</td>
<td>31</td>
<td>15.3%</td>
<td>23</td>
<td>11.3%</td>
<td>87</td>
</tr>
<tr>
<td>Internet web sites</td>
<td>33</td>
<td>16.3%</td>
<td>31</td>
<td>15.3%</td>
<td>12</td>
<td>5.9%</td>
<td>76</td>
</tr>
<tr>
<td>University Sources</td>
<td>10</td>
<td>4.9%</td>
<td>20</td>
<td>9.9%</td>
<td>27</td>
<td>13.3%</td>
<td>57</td>
</tr>
<tr>
<td>Cooperative Extension</td>
<td>21</td>
<td>10.3%</td>
<td>14</td>
<td>6.9%</td>
<td>15</td>
<td>7.4%</td>
<td>50</td>
</tr>
<tr>
<td>Educational workshops or conference</td>
<td>14</td>
<td>6.9%</td>
<td>6</td>
<td>3.0%</td>
<td>19</td>
<td>9.4%</td>
<td>39</td>
</tr>
<tr>
<td>Government sources</td>
<td>5</td>
<td>2.5%</td>
<td>18</td>
<td>8.9%</td>
<td>14</td>
<td>6.9%</td>
<td>37</td>
</tr>
<tr>
<td>Self Study</td>
<td>9</td>
<td>4.4%</td>
<td>13</td>
<td>6.4%</td>
<td>11</td>
<td>5.4%</td>
<td>33</td>
</tr>
<tr>
<td>Radio/TV</td>
<td>12</td>
<td>5.9%</td>
<td>6</td>
<td>3.0%</td>
<td>9</td>
<td>4.4%</td>
<td>27</td>
</tr>
<tr>
<td>Newspaper</td>
<td>5</td>
<td>2.5%</td>
<td>12</td>
<td>5.9%</td>
<td>8</td>
<td>3.9%</td>
<td>25</td>
</tr>
<tr>
<td>Newsletter</td>
<td>4</td>
<td>2.0%</td>
<td>2</td>
<td>1.0%</td>
<td>5</td>
<td>2.5%</td>
<td>11</td>
</tr>
<tr>
<td>Telephone Dial Access</td>
<td>1</td>
<td>0.5%</td>
<td>2</td>
<td>1.0%</td>
<td>3</td>
<td>1.5%</td>
<td>6</td>
</tr>
</tbody>
</table>

Impact of Demographics

The demographic information collected was found to be statistically significant to levels of trust of information sources. No significant effects were found with respect to gender, combined household income level, and marital status for trust of information sources. Differences were found for age, level of education, number of children, and ethnicity.

Age

Age was found to significantly affect trust of information sources. The information sources in which age had a significant effect were: newsletters, government sources, and food labels. The oneway ANOVA was significant between age and trust of newsletters as an information source ($F = 2.87, p = 0.016$). A Tukey post hoc analysis found that respondents who were 40-49 were found to trust newsletters significantly less compared to respondents who were 60-69 years old. Significant differences were also found between age and trust of government sources for food safety information ($F = 3.63, p = 0.004$). Respondents who were younger than 30 were found to have a significantly lower trust for government sources compared to respondents 70 or older, and
respondents who were 70 or older were found to have a much higher level of trust for government sources than 30-39 year olds. Respondents who were 40-49 years old were found to be significantly less trusting of information provided by the government than respondents 70 or older. Significant differences were also found for age and trust of food labels as a food safety information source ($F = 3.14, p = 0.009$). Respondents who were 40-49 years old were found to have a significantly lower trust for food labels compared to 50-59 year olds. Additionally, respondents who were 40-49 years old were found to have significantly less trust of food labels as a source of food safety information compared to respondents 70 or older.

**Table 3**

*T*rust of Various Food Safety Information Sources by Lubbock, TX Residents

<table>
<thead>
<tr>
<th>Information Source</th>
<th>n</th>
<th>$M^a$</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Workshops or Conference</td>
<td>192</td>
<td>3.20</td>
<td>0.56</td>
</tr>
<tr>
<td>University Sources</td>
<td>201</td>
<td>3.14</td>
<td>0.54</td>
</tr>
<tr>
<td>Self Study</td>
<td>198</td>
<td>3.06</td>
<td>0.74</td>
</tr>
<tr>
<td>Family and Friends</td>
<td>201</td>
<td>3.04</td>
<td>0.63</td>
</tr>
<tr>
<td>Cooperative Extension Service</td>
<td>198</td>
<td>3.01</td>
<td>0.65</td>
</tr>
<tr>
<td>Food Labels</td>
<td>202</td>
<td>2.96</td>
<td>0.81</td>
</tr>
<tr>
<td>Print Material</td>
<td>198</td>
<td>2.88</td>
<td>0.68</td>
</tr>
<tr>
<td>Newspaper</td>
<td>201</td>
<td>2.88</td>
<td>0.64</td>
</tr>
<tr>
<td>Government Sources</td>
<td>202</td>
<td>2.87</td>
<td>0.62</td>
</tr>
<tr>
<td>Newsletter</td>
<td>199</td>
<td>2.78</td>
<td>0.63</td>
</tr>
<tr>
<td>Radio</td>
<td>202</td>
<td>2.72</td>
<td>0.64</td>
</tr>
<tr>
<td>Computer Accessed Information</td>
<td>197</td>
<td>2.70</td>
<td>0.67</td>
</tr>
<tr>
<td>Telephone Dial Access</td>
<td>197</td>
<td>2.30</td>
<td>0.82</td>
</tr>
</tbody>
</table>

* Scale: 1=Do Not Trust At All, 2= Mostly Do Not Trust, 3= Somewhat Trust, 4= Completely Trust

**Level of Education**

Again, using oneway ANOVAs with a Tukey post hoc analysis, significant differences were also found for the level of education and trust of information sources (Extension Service, food labels, and the radio). Significant differences between highest level of education completed and trust of the Cooperative Extension Service as an information source was found ($F = 3.21, p = 0.014$). Respondents who had a high school education were found to trust the Cooperative Extension Service significantly more than the respondents with a graduate degree. Furthermore, respondents who had some college also trusted the Cooperative Extension Service more than the
respondents with a graduate degree. Respondents who had a high school education were found to trust food safety information provided by food labels significantly more than respondents with a bachelor’s degree ($F = 2.86, p = 0.024$). In addition, respondents with some college were found to trust food safety information on food labels significantly more than respondents with a bachelor’s degree. Respondents with some amount of a college education were found to trust radio significantly more than respondents with a bachelor’s degree ($F = 3.05, p = 0.018$).

**Presence of Children in the Home**

Trust of information sources was found to be significantly affected by presence of children in the home. The information sources which were significantly affected were: government sources and food labels. An independent-samples $t$ test was conducted to evaluate the relationship between presence of children in the home and trust of information sources. Respondents without children in their home trusted government sources significantly more than respondents with children ($t(190) = -3.286, p = 0.001$) and trusted food labels significantly more ($t(190) = -2.241, p = 0.026$).

**Ethnicity**

Prior to analysis, ethnicity was collapsed into two categories: white and non-white. Trust of information sources was found to be significantly affected by ethnicity with White respondents trusting several information sources significantly more than non-whites. An independent-samples $t$ test was used to determine the relationship between ethnicity and trust of newsletters. The test was significant, indicating white respondents trusted newsletters significantly more than non-white respondents ($t(196) = -2.32, p = 0.021$). Self study was also trusted more significantly more by white respondents than non-white respondents ($t(195) = -2.52, p = 0.013$). White respondents trusted computer accessed information significantly more than non-white respondents ($t(194) = -3.40, p = 0.001$), and government sources significantly more than non-white respondents ($t(199) = -2.29, p = 0.023$). Compared to white respondents, non-white respondents trusted the Extension Service significantly more ($t(195) = 2.07, p = 0.040$).

**Conclusions and Recommendations**

The following conclusions are made based on the results of this study:

1. The most likely resources respondents reported they would use to obtain additional information were family and friends, print materials, and electronic information.

2. Respondents did not indicate a complete level of trust in any of the potential food safety information sources studied. Differences were found within the demographic variables of age, level of education, presence of children in the home and ethnicity.

Food safety information can only be provided to those who are receptive and actively seeking it. Residents of Lubbock, Texas were found to rely on a variety of sources and channels for their food safety information supporting previous studies conducted. Further information needs to be obtained to determine who is currently looking for food safety information with respect to age, gender, socio-economic status, marital status, etc. In addition, this study grouped information channels into broad categories such as print media and computer accessed information. More
detailed information with respect to information sources should be collected to further clarify what channels consumers are utilizing. These results would allow for more effective, efficient utilization of resources in public education and information efforts.

One of the most puzzling findings in this study was the lack of trust for any of the information sources. In all previous literature, family and friends and hard media were indicated as trustworthy sources for information. Additional studies should be conducted with respect to trust of information sources. In addition, trust of information sources should be studied further to determine more specific information sources being utilized by consumers.

For effective and efficient food safety education and communication, sources of information must be identified which are both trusted and utilized. As indicated by the results of this study, respondents were likely to use information sources regardless of level of trust. If the factors that determine trust in safety information were known, communication and education resources may be more effective in decreasing the number of deaths and illness attributed to foodborne illness.

References


