

Article

Identifying Topics and Dissemination Methods for Agricultural Safety and Health Messages

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Abstract: As farm demographics change, it is important to create relatable, research-based safety and health materials, and deliver information via preferable methods. Three data collection methods (focus groups, surveys via National Agricultural Statistics Service, and face-to-face interviews) were administered to farmers in seven Midwestern states. Farmers were coded as retired, organic, residential/lifestyle, limited resource (<\$249 K gross annual income), or large resource (>\$250 K gross annual income). Issues addressed hazard perceptions, injury prevention measures, resource preferences and delivery, and preferred communication channels. Findings indicated that gender, age, and farming operation influence Personal Protective Equipment (PPE) use and communication preferences. Retired farmers and those with a higher percentage of income from farming are more likely to use radio as a communication medium. Research results will inform the creation of web-based, customizable educational materials for use by safety and health professionals and the public. Audio Public Service Announcements (PSAs) were recorded to reach farmers who indicated a preference for radio.

Keywords: farm demographics; hazard perception; resource preference; communication

1. Introduction

Dynamic changes in farm demographics and practices are taking place across the U.S. [1]. Farming populations are getting older with an average age of 58.3 years in 2012 up from 57.1 in 2007 [2]. In 2012, the number of farmers who have been on their current farm operations less than ten years was down 20% from 2007 and those farming less than five years was down 23% in the same period. Most U.S. farms are still family owned with 75% selling less than \$50,000 in agricultural sales and 57% with sales of less than \$10,000 per year. Female-operated farms declined from 2007 to 2012 by 5.9% among principal farm operators with 91% of their farm sales in the <\$50,000 category [1]. Minority farms increased from 2007 to 2012 with Hispanic-operated farms increasing by 21% [3]. Technology is changing farming practices with access to the internet increasing by 17.8% from 2007 to 2012 [4]. Consumer demand has driven the increase in organic operations with double-digit growth during most years since the 1990s [5]. These changes influence how farmers obtain and utilize resources and information. Professionals working with farmers need to understand the rural population.

Despite the evolution of farm populations and practices, agriculture continues to have one of the highest fatal injury rates of any U.S. industry sector with 22.2 fatal injuries per 100,000 workers in 2013 [6]. Several surveillance studies show differences among farmers. A survey completed in 2010 indicated a higher injury rate among full-time farmers than part-time farmers [7]. Age influences farm injuries. Farmers aged 16 to 20 years are at the highest risk of tractor overturns. More male farmers

(98%) are involved in tractor overturns than females (2%) [8]. A study completed in Virginia indicated livestock handling was the primary cause of farm injury [9].

Education, leading to increased awareness of agricultural safety and health hazards is a vital component of farm injury prevention. Research has shown: farmers' perceptions and practices need to be taken into account when developing, designing, packaging, and delivering farm safety educational programs [10]. Farmers' characteristics correlate with their perceptions of the information source [11], and using tailored communication strategies can motivate people to take action [12]. The effectiveness of farm safety and health education resources and delivery with various farm demographic groups warrant further investigation. To use resources efficiently means understanding all farm groups as they change. Looking at undeveloped countries use of communication modes such as radio messaging as a perceived and effective method of transferring agricultural knowledge to farmers [13,14], helps more advanced societies develop more progressive electronic communication channels. Countries across the globe seek ways to meet the educational needs of their farmers [13–18]. Although this project investigates U.S. farmers, the data collected is pertinent to other countries safety and health education.

A five-year study was conducted by Farm Safety For Just Kids and funded by the Central States Center for Agricultural Safety and Health (CS-CASH). The goals of this study were to: (1) better understand the educational needs of five demographic groups of farmers who identify as organic, retired (aging), residential/lifestyle, limited resource, and larger resource farmers; and (2) create effective, tailored materials to address the needs of these demographic groups. Although numerous demographic differences (gender, ethnicity, crop production, livestock, etc.) could have been used to determine farmer demographic groups, it was determined to use farming practices and lifestyle as demographic group differences. Additional questions within the data collection instruments were used as variables for analysis. CS-CASH located in Omaha, NE is in a highly agricultural region where many of the U.S. agricultural deaths and injuries take place each year [19,20].

This report describes the synthesis of data from three survey methods to create innovative, customizable, educational resources designed for use by safety and health professionals. Public Service Announcements (PSAs) were produced addressing priority issues surfaced in the study.

Research Aims

The CS-CASH Ag Center funded a five-year project entitled “Addressing Safety and Health Educational Needs of Non-traditional Family Farms” which is exploratory research. The long-term aim of CS-CASH is to reduce injuries and illnesses in agriculture. Our objectives within this project toward this goal include identifying educational needs, creating targeted materials and messages, and determining effective approaches for dissemination to diverse groups of farm operations and operators. The approach based on social marketing principles defines population segments, identifies their needs, develops intervention approaches responding to the needs, and delivers information using the most effective communication channels for each population segment. Data were collected by various methods to identify barriers and motivators leading toward healthier and safer farmers [21–24].

The expected outcomes of this project are a better understanding of health and safety concerns among diverse groups of farmers and an enhanced ability to access farm audiences. As farm demographics change, this project utilized the findings to translate and adapt injury prevention material and resources to better connect with changing rural populations.

2. Methods

2.1. Protection of Human Subjects

The ethics committee of Institutional Review Board at University of Nebraska Medical Center and Pearl IRB, (Indianapolis, IN, USA) reviewed and approved this research [25].

2.2. Research Participants

Five farm groups: organic (farming methods that preserve the environment and avoid most pesticides and antibiotics); retired (age ≥ 56 -year-old); residential/lifestyle (major occupation not farming); limited resource ($< \$250,000$, small family); and larger resource farmers ($\geq \$250,000$, large family) were the focus of this research project. Subject groups were based on typology determined by the USDA Economic Research Service (ERS). It should be noted that the project maintained the original USDA definition of small family farms as having gross farm sales of less than \$250,000 when in 2013, this category changed to less than \$350,000 [26]. While there is no age when the typical farmer retires such as with the U.S. social security system, the age of 56 was used for this project to represent the older farmer population who may or may not be retired. Many farmers farm much beyond the age of 56 shown by the increase in the average age of farmers [1,2].

2.3. Data Collection

Data were collected using three distinct methods focusing on the CS-CASH seven state region (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota). Table 1 provides a summary of the three data collection methods. See Appendixs A–C for corresponding data collection content and questions.

Table 1. Project Data Collection Overview.

| Collection Method and Instrument | Group Determination | Content/Issues Addressed | Number of Respondents (Response Rate) |
|---|---|--|---|
| National Agriculture Survey Service (NASS) Survey Appendix A | Census of Agriculture Classifications NASS | Perceived hazards Desire for information Prevention strategies used Communication channels Child safety practices | 224 (21.6%) |
| Focus Groups Appendix B | Census of Agriculture Classifications Farm Market iD | Perceived hazards Injury prevention methods used Communication channels Preferred educational resources | 5 groups, 39 participants (Response rate not applicable) |
| Face-to-Face Interviews Appendix C | Self-Identified by questions asked by interviewers | Resource delivery and format Communication channels Preferred educational resources Where information is obtained Trusted and used information sources Child safety practices | 511 (Response rate not applicable) |

The NASS surveys were sent out and collected in 2012. The interviews and focus groups took place during 2012 and 2013. Since these data collection methods required research staff traveling to local sites they were often done in the same location. Each data collection method sought information from different farmers.

The five focus groups were composed of between 5 and 10 individuals. Discussions were led each time by the same researcher and were recorded digitally and manually by the same transcriber. Face-to-face surveys were conducted on a one to one basis at farm shows and agricultural events and were administered by the same two researchers who conducted the focus groups

While all three data collection methods addressed all three project objectives of identifying educational needs, creating targeted materials and messages, and determining effective approaches for dissemination, each method focused on specific objectives. Educational needs were obtained primarily through the NASS surveys and the focus groups. Targeting material and message information were obtained through all three data collection methods. Resource dissemination insight was chiefly obtained through the interviews.

As shown in Table 1, response rates varied with each data collection method. The NASS survey response rate of 22% was lower than previously experienced on prior surveys. The face-to-face

interviews were collected via convenience sampling therefore no response rate was calculated. Farmers for the focus groups were contacted until 5 to 10 participants were located within each demographic group.

2.4. Data Analysis

NASS provided CS-CASH with a database containing survey responses. Survey data from NASS and face-to-face interviews were analyzed using SPSS (IBM, Chicago, IL, USA) and SAS (SAS Institute Inc., Cary, NC, USA) analytical software. Descriptive statistics were used to summarize the characteristics of respondents and to examine the distribution of responses. Variables compared included farm demographics (five farm groups), age of farmers, number and age of children on farm, part or full-time farming status, and % of income from farming. Group data were analyzed by analysis of variance (ANOVA). When statistically significant differences were found between the groups, post hoc tests were performed to determine specific group differences. Focus group discussions, a qualitative analysis method, were used to explore how concepts and categories were related. Focus group responses were transcribed, and an open coding protocol was used to determine distinct themes, concepts, and categories from the narrative. Dedoose software (Dedoose, Los Angeles, CA, USA) was used for data management, excerpting, coding, and analysis.

3. Results

Significant findings discussed in the following sections were used in the creation of tailored educational resources and messages. Results from an additional data collection method, postal/email survey, were also considered in the production of resources and messaging. Results from the postal/email survey are reported in the Journal of Extension which has been accepted for publication [27].

3.1. Hazard Perception

Machinery hazards were indicated as the greatest perceived safety concern on farms in the NASS survey and focus groups. Large resource farmers discussed machine hazards significantly more often than did other demographic groups. Retired farmers were more likely to discuss hearing loss and rural roadway safety. Environmental issues, livestock safety, and recreational vehicle safety were discussed most often among limited resource farmers. Ergonomic concerns were only brought up in the organic farmer focus group, and this group discussed chemical issues on the farm more than other groups.

In the NASS survey, the number of hazards perceived was greater than the perceived need for information corresponding to each hazard, especially among residential and retired farmers. Perceived farm hazards were significantly higher among male farmers than female farmers. Perceiving concerns regarding health were 3.4 times higher for males on organic farms as compared to males on non-organic farms. The number of perceived farm hazards was greater among farmers with farm income of <\$20,000 compared to those >\$20,000. Retired, residential, and organic farmers were 4.5 times less likely to report a need for safety information than both limited and larger resource farmers. The perceived hazard of farm machinery and equipment was greatest among farm families who had children under the age of 6 (69%) as compared to families with only adults aged 25–64 (26%), and adults ≥65 (36%) on the farm. These findings conflict with a recent Italian study that showed an increased interest in the adoption of innovative safety features on machinery safety features as years of work in agriculture increased [28]. The desire for information about farm machinery and equipment safety declined with increasing family members' age from 37% for those with family members age <6 to 7% for those with family members ≥65.

3.2. Screenings and Training

Retired farmers indicated more interest in health screenings and hearing tests than non-retired farmers. Male farmers preferred formally structured courses more than females. Farm families with

no retired person in the household preferred classroom-type education as compared to farms with at least one retiree present. Farmers with <25% of their income from farming are most interested in obtaining training in non-structured, self-paced learning atmospheres. Farmers aged ≤ 35 are most accepting of on-farm evaluation programs.

3.3. Injury Prevention Strategies

Education as a prevention strategy was discussed most in all focus groups, while the use of personal protective equipment was mentioned least. The NASS data indicated the most used personal protective equipment were dust masks at 67.4% and hearing protection at 60.3% while helmet use while operating an all-terrain vehicle (ATV) was listed least at 12.9%. Organic farmers were significantly more likely (72.7%) to use hearing protection, compared to farmers on residential/lifestyle farms (45.6%). Male farmers were significantly more likely (63.8%) to indicate that they wore hearing protection than were female farmers (30%). Male farmers were significantly more likely (70.9%) to indicate they wore dust masks than were female farmers (45%). Organic farmers in focus groups were most likely to discuss the use of personal protective equipment (PPE). Small traditional farmers were most likely to discuss regulation as a method to prevent injury while retired farmers were most likely to discuss engineering issues.

3.4. Child Safety

The safety of children and youth on the farm was frequently discussed as an influencing factor by all demographic focus groups. When coding focus group excerpts, three categories of people were noted, family members, visitors, and workers/employees. Family members were referred to more than were visitors and workers when discussing safety in focus groups. Many remarks referred to children. The face-to-face interviews asked participants what methods were used on their farms to protect children. The highest listed method was age appropriate supervision of children and youth (85.2%) while fenced in play areas was listed least (20.4%).

3.5. Hired Workers

Within the focus group discussions and the resulting coding, people who influence farmers in regards to safety and health issues surfaced as a theme. Larger resource farmers spoke more often about hired workers than other farmers probably because they are the ones who are more likely to have hired workers. Other farmer groups mentioned working situations, but referred to themselves, not hired workers.

3.6. Distribution and Delivery of Farm Safety and Health Education

In focus groups, electronic resource distribution was most often addressed by higher resource farmers. Retired farmers most often referred to mass media when discussing communication. Retired farmers favored TV and local newspapers over non-retired farmers, while non-retired farmers preferred the Internet and e-mail messages over retired farmers. Full-time farmers prefer to get their safety and health information via email communication as compared part-time farmers. Organic farmers were more likely to prefer to receive agricultural safety and health information via mobile messages as compared to non-organic farmers. Farmers aged ≤ 35 prefer the Internet, social media, and e-mail messaging more than older farmers. Farmers aged ≥ 56 prefer local papers as a source of farm safety and health information. Farmers aged ≤ 35 attend kids' safety events, and school programs more than older farmers.

Table 2 summarizes the in-face interview responses with farmers demonstrating how age impacts the preferred learning about farm safety and health. Multiple choice questions were used with farmer respondents using *one choice* to *all that apply* accepted responses. Younger and middle aged farmers prefer using informational websites significantly more than older farmers ($p < 0.002$). While computer games are a preferred learning format for younger farmers compared to middle-aged and older farmers

($p < 0.0001$). Younger farmers are significantly more likely to want free product samples as part of the educational process ($p < 0.02$). Non-organic and non-retired farmers were more likely to use the Extension Service to acquire agricultural safety and health information than were organic farmers. Full-time farmers trust and use agriculture businesses and radio for educational information more than part-time farmers. Non-retired farmers preferred attending Farm Bureau sponsored events to obtain farm safety and health information compared to retired farmers.

Table 2. Farmer Ages' Influence on Preference for Learning about Farm Safety and Health.

| | | Age of Farmer | | | <i>p</i> Value (*) |
|------------------|-------------------------|---------------------|-------------|---------------|--------------------|
| | | Young (≤ 35) | Mid (36–55) | Older (56–85) | |
| Learning formats | Short fact sheets | 26 (41%) | 121 (53%) | 91 (53%) | 0.27 |
| | Informational websites | 22 (35%) * | 100 (44%) * | 41 (24%) ** | 0.002 |
| | Brochures | 24 (38%) | 81 (35%) | 64 (37%) | 0.94 |
| | Computer games | 16 (25%) * | 23 (10%) ** | 8 (5%) ** | <0.0001 |
| | Booklets | 16 (25%) | 34 (15%) | 39 (23%) | 0.53 |
| | Hands-on demonstrations | 26 (41%) | 96 (42%) | 58 (34%) | 0.12 |
| | Videos | 10 (16%) | 61 (27%) | 38 (22%) | 0.86 |
| | Free product samples | 27 (43%) * | 65 (28%) ** | 42 (24%) ** | 0.02 |

Asterisks denote significant differences. For each learning format, values with one asterisk (*) are significantly different from those with two asterisks (**).

Table 3 denotes the discussion about farm hazards within the five farm demographic focus groups. Of interest: Machinery were most often discussed within all demographic groups; ergonomics was only discussed amongst the organic farmers; recreational activity was only discussed amongst limited resource farmers; hearing loss was only discussed among retired and organic farmers; and environmental issues were most discussed by limited resource farmers. Discussing a topic excessively may indicate that the group sees the issue as a major concern. By not addressing or having limited discussion on a topic may indicate a lack of knowledge.

Table 3. Discussed Farm Hazards within Focus Groups (N = comments).

| | | Limited Resource | Residential/Lifestyle | Retired | Organic | Larger Resource | Totals |
|--------------|-----------------------|------------------|-----------------------|---------|---------|-----------------|--------|
| Farm Hazards | Environmental | 15 | 2 | 1 | 6 | 1 | 25 |
| | Animals | 27 | 11 | 3 | 9 | 6 | 56 |
| | Ergonomics | | | | 2 | | 2 |
| | Chemicals | 4 | 7 | 4 | 9 | 2 | 26 |
| | Farmstead | 11 | 5 | 3 | 3 | | 22 |
| | Machinery | 32 | 26 | 24 | 26 | 28 | 136 |
| | Hearing Loss | | | 11 | 5 | | 16 |
| | Recreational Activity | 5 | | | | | 5 |
| | Respiratory | 6 | 3 | 2 | 3 | 2 | 16 |
| | Roadway | 14 | 4 | 13 | 2 | 6 | 39 |

Figure 1 demonstrates differences in trusted and used information sources comparing retired farmers versus non-retired farmers. Extension service was selected as the most trusted and used information source by non-retired farmers ($p = 0.016$) and among all farmers as the most trusted and used source. Farm families with a retired person in the household indicated that they trust and use safety and health information delivered via radio ($p = 0.04$) and TV ($p < 0.0001$) more than families with no retired farmers. Farm families with retired individuals indicated less trust in materials supplied by public health departments ($p = 0.02$). Comparing age as a variable, farmers aged ≤ 35 trust and use information from USDA and the public health department more than older farmers.

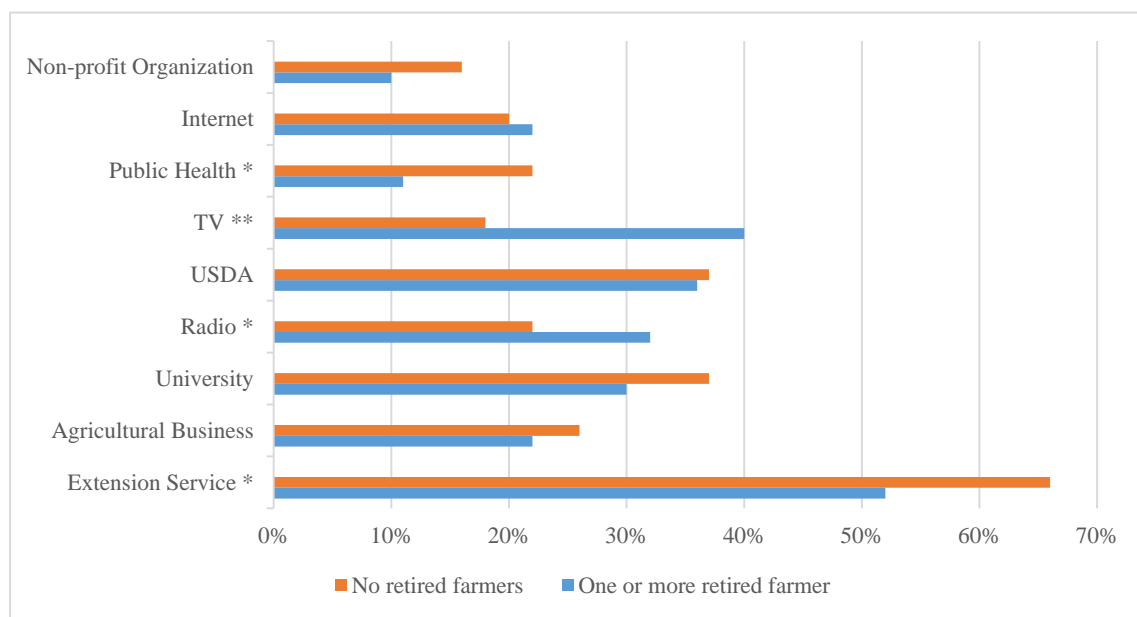


Figure 1. Trusted and Used Information Sources (Data from face-to face interviews, See Appendix C, question 6). Asterisks denote significant differences between farms that have no retired farmers and those that have one or more retired farmer in residence. One asterisk (*) indicates significant differences $p < 0.05$, two asterisks (**) indicate significant differences $p < 0.01$.

4. Discussion

Three unique data collection methods were used to obtain information about how to address changing farm populations with safety and health educational resources. Findings were both complementary and conflicting. By comparing the results from each data collection method, it gives a broader scope of how to proceed with developing and disseminating resources and programs. Since each data collection method used unique questions, with a unique set of farmers, methods were analyzed separately using appropriate analysis methods and were compared. The authors acknowledge that there is possible response bias depending on the type of technique used to collect the data. For example, responses from participants in the focus groups may have been influenced by others in the group. This is an inherent bias in focus groups [29]. Continuing research is needed as agricultural demographic groups evolve.

Significant differences were found in the need and desire for safety and health information between farm demographic groups in the Midwestern States. Subcategory associations within the retired, organic, residential/lifestyle, limited resource, and larger resource categories were found. Examples include gender which surfaced within more than one data collection mode. The NASS survey indicated male farmers perceived more farm hazards and were more likely to wear PPE, indicating females may have less knowledge regarding the environmental hazards of farming. In-person interviews indicated male farmers prefer classroom courses more than female farmers. Another example is income, both total income, and % of income from farming. The NASS survey indicated the number of perceived hazards were higher among those with income $< \$20,000$ as compared to those $> \$20,000$. The use of newer safeguarded equipment by those in higher income brackets may explain the difference in hazard perception. The focus groups revealed that farmers with higher income were more likely to talk about electronic resource distribution, perhaps indicating that farmers with greater financial assets are more likely to own and use computers and have access to the internet. The 2012 Census of Agriculture [4] showed an increase in the use of technology by farmers, so although all farmers may not currently use electronic resources, they may become increasingly relevant in the future.

Data from this project will help inform safety and health professionals as they develop materials for diverse groups of farmers.

4.1. Creation of Customizable Educational Fact Sheets

Working with graphic artists, professional photographers, and agricultural safety and health content experts CS-CASH, is developing an electronic resource for the creation of customized educational fact sheets. This free online resource, to be housed on the CS-CASH website, will provide ten educational fact sheets that can be custom designed using photos from the CS-CASH photo-sharing site. Results from the postal/email survey [27] demonstrated that farmers are more likely to use simple, 1–2 page resources containing images that reflect their farming practices lead to the creation of short fact sheets. Results clearly indicated respondents' preference for non-technical farm safety and health resources. Several other studies have shown similar results indicating many resources on agricultural safety are cluttered and overwritten, so the information is not read [16,17,30,31], a salient point for safety and health professionals to consider as they produce educational materials. Literacy levels and educationally appropriate communication schemes should be considered when creating materials for a range of recipients. A 5th to 6th-grade level reading comprehension is recommended for healthcare patient education materials [32].

The topics chosen for the fact sheets are tractor safety, hearing conservation, part-time farming, child safety, ATV safety, ergonomics, chemical safety, farm machinery safety, safe livestock handling, and rural roadway safety. These correspond with the information received from farmers regarding perceived hazards, use of PPE, desired information, prevention strategies used, and concerns for the safety of children on the farm. Information contained on the fact sheets will be acquired from trusted sources and were reviewed by at least two agricultural safety professionals. While the images will be customizable, the text material will not be able to be modified. The photo sharing site will provide a range of options for portraying farm type, farmer demographic (gender, age, ethnicity), machinery, livestock, and farm activity. Safety and health professionals can address unique topics with a specific audience using tailored visual images. Pictures can markedly increase attention to health education information and the emotional response to the photos affects whether targeted health behavior is increased or decreased [33]. An area on each fact sheet will be left open for organizations to brand the fact sheets with their logo. Customized agricultural safety and health materials will provide users the opportunity to create and disseminate validated educational materials that will be relatable to farm demographic groups.

4.2. Creation of Radio Messages

While the electronic distribution of farm safety and health education is useful to many farmers, there are farmers preferring other modes of communication. In-person interviews demonstrated that, retired farmers and those with the largest percentage of their income from farming preferred to receive safety and health information in radio messaging. Other studies have also shown radio messaging to be an effective communication medium to transfer agricultural information to farmers [13,14,18]. This finding prompted Farm Safety For Just Kids and CS-CASH to develop audio public service announcement messages that address topics specific to farmer health and safety. Topics currently include: tractor safety, hearing protection, and ATVs and will be expanded to address other topics in the future. Within all data collections methods, there was a strong message about the influence of children on adult safety behaviors. For this reason, both a child and an adult voice are included in the PSAs. The radio scripts, developed by content experts, will be an enduring resource maintained on the CS-CASH website for use by safety and health professionals. Rural Midwestern radio stations will be identified for this distribution.

Limitations to the validity and generalization of these research findings include: the small number of subjects within the focus groups, and that there were no controls used to prevent non-response error [34]. In addition, farmer participants in each specific data collection method may be representing

similar opinions, i.e., focus group participants may tend to be more community oriented and have unique learning styles while those surveyed at farm shows may have been more likely to indicate that they prefer to gather health and safety information at farm shows.

5. Conclusions

As farm demographics change it is vital to understand how these changes impact the type of hazards on each farm, the need for farm safety and health educational resources, and how these materials and messages can best be delivered. This project, researching the agricultural safety and health needs of Midwestern farmers, culminated in tested, research-based, literacy appropriate educational materials that can be customized for use with diverse groups of farmers. The finding that farmers prefer to see graphics that looked like their own operation prompted creation of customizable templates that will be available on the web and a photo library of agricultural images can be used to create these unique resources. The educational text of the materials cannot be customized, assuring that the message remains tested and approved. This resource will provide safety and health professionals and the community with trusted educational materials on a range of life-saving topics.

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Abbreviations

| | |
|---------|--|
| ATV | All-terrain vehicle |
| CS-CASH | Central States Center for Agricultural Safety and Health |
| CDC | Centers for Disease Control |
| ERS | Economic Research Service |
| IRB | Institutional Review Board |
| NIOSH | National Institute for Occupational Safety and Health |
| USDA | United States of Department of Agriculture |

Appendix A. Condensed NASS Survey

1. **Principle farm operator age, gender, and majority occupation**
2. **Children, youth, and family members** (number and ages)
3. **Hired worker numbers** (less than 150 days, more than 150 days)
4. **Hazard concerns and desire information** (machinery, buildings, exposures, health outcomes)
5. **Prevention** (event participation, preventive practices, education preferences, information sources, safety services use)
6. **Communication** (modes used daily, media outlets used, internet services)
7. **Children and youth (fencing, keep kids away, train kids, appropriate tasks, enforce rules, child care)**

Appendix B. Focus Group Questions

1. Living and working on a farm can be hazardous. Farm operations are changing. What do you see as major safety and health concerns on your farm now and in the near future?
2. Farm families may have children living, working on, or visiting the farm. This is a concern as many children and youth have been injured on the farm. How are your children and grandchildren involved in your farming operation? What do you do to keep them safe?
3. What do you see as being most effective in preventing injuries and making your farm a safer place to work and live on? Where might your time and resources be best spent—upgrading machinery, buildings, or living and environments, or obtaining safety and health training for people on the farm?

4. It might be helpful to learn what other farmers are doing, or what research is showing about injuries, illnesses, and ways to prevent them. What kind of learning opportunities and resources would be most useful to you in your efforts to prevent farm injuries and keep everyone on the farm safe?
5. Many kinds of educational resources have been created to encourage safe practices. Farmers seek information differently today than in the past. What kind of safety and health resources are useful to you now and in the future? Examples of the resources include:

- | | |
|--------------------|-----------------------------|
| ●Brochures | ●Demonstrations |
| ●Fact sheets | ●Books |
| ●Video/CD/DVD | ●Web Pages |
| ●Posters | ●Blog/Facebook |
| ●Magazine articles | ●Internet interactive games |
| ●TV/Radio | ●In-person call in numbers |
| ●Puzzles/games | |

Appendix C. Condensed In-Person Interview Questions

State _____

1. **Ages** of those living on your farm operation.
2. Of the people listed above, how many have an **off-farm job** (4 or more hours a day) in addition to working on the farm?
3. How many of the people listed above are **retired** from farming?
4. About what percent of your total household **income** was from farming in the past year?
5. Did your operation produce **organic** products (according to the National Organic Standards) for sale this past year? (yes, no)
1. **What safety and health hazards** would you want more information on? (chronic exposure, acute hazards, behavior, wellness)
2. **What type of safety and health training** would your family members be most likely to participate in? (classroom, distance ed, self-paced, certification courses)
3. **What kind of services** would you be interested in using to make your farm safer? (health screening, hearing test, lung function, on-farm evaluation, consultation)
4. **What communication channels** do you prefer to get safety and health information? (newsletter, mailed, radio, television, local paper, farm paper, websites, social media, e-mail, mobile phone)
5. **What kind of events** do you or your family members participate in where farm safety and health information may be discussed? (day camp, school program, field trip, farm show, fair, Farm Bureau event, agribusiness event)
6. **What sources of information** do you trust and use the most? (Extension, university, government, public health, non-profit, agribusiness, radio, TV, internet)
7. **What kind of material** would you prefer for learning about safety and health? (fact sheet, brochure, booklet, video, website, computer game, demonstrations, sample)
8. **Do you have kids living or visiting your farm?** (no, yes)
9. **What methods do you use to protect children and youth from farm hazards?** (fencing, keep kids aware, teach age-appropriate tasks, shielding, supervise, child care)

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