**Determining the Needs of Florida 4-H Extension Agents for Managing Shooting Sports Risks**

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**Abstract**

The Florida 4-H youth development program is part of a network of 48 states within the United States that offers shooting sports as part of their 4-H program. While young people participating in 4-H shooting sports gain valuable life skills what has remained unclear are the skills needed by county 4-H agents to manage the risks associated with offering the program. A survey was sent to county 4-H agents and the responses analyzed to determine those needs and to identify the county 4-H agents’ perceived level of competency in program procedural standards and program leadership accountability. The results of the study demonstrated that county 4-H agents recognized the value of having program procedural standards and program leadership accountability but lacked the knowledge and skills to implement them as part of managing the risks associated with providing a shooting sports program. Therefore, the researchers concluded there was a need for in-service trainings and program resources emphasizing program standards and accountability principles related to managing a shooting sports program.

Keywords:

Competencies, Risk management, Shooting sports

**Introduction**

The passage of the Smith-Lever Act in 1914 established the Cooperative Extension System and nationalized the 4-H Youth Development Program (National 4-H Council, 2018). Prior to the Smith-Lever Act, 4-H clubs were localized with limited resources and emphasized projects within agriculture and home economics. The 4-H organization’s birth was part of the establishment of land-grant institutions and its mission to bring research-based education to the public through Cooperative Extension (Florida 4-H, 2017). Fast-forward to today’s 4-H program and the reach is expansive with 4-H programs all around the globe. For the lay person, 4-H can be described as a youth development organization which “empowers young people with the skills to lead for a lifetime” through hands-on, learn-by-doing opportunities delivered through a network of over 100 public universities (National 4-H Council, 2018, para. 2). 4-H reaches nearly six million youth annually through science, healthy living, and citizenship programs delivered by caring adults serving Cooperative Extension.

The Florida 4-H youth development program was first established in 1909. Similar to its counterparts in other states the first project areas related to agriculture for the boys and home economics for the girls. Since then the scope of project areas has expanded and presently encompasses science, healthy living and citizenship. In 2017, over 200,000 young Floridians, ages 5 to 18, participated in 276,790 4-H projects with 141,835 science, engineering and technology projects (Florida 4-H, 2018). The number of completed environmental education projects in 2017 were 20,712 with 2,500 of the projects reported to be part of shooting sports (Knowles, B, personal communication, 2018) which is the project of interest for this study.

*4-H Shooting Sports Program.* Shooting sports has been part of 4-H since nearly its inception, but it was not formally introduced as a 4-H project until the 4-H Shooting Sports program was established in Texas in 1975 (Howard, 2004). Since then, the program has expanded its reach and is presently offered in 48 states, with only Massachusetts and Rhode Island not offering a shooting sports program (National 4-H Shooting Sports, 2018). Since its formal establishment in 1975, the national shooting sports committee has focused on programmatic uniformity for volunteer instructor trainings and establishing standards and expectations for competitive matches leading up to and including the 4-H shooting sports national championships held in Grand Island, Nebraska (Culen, personal communication, 2018).

Shooting sports is a competitive and recreational activity that involve proficiency exams for accuracy, precision and time. The overall focus of the program within the context of 4-H has emphasized marksmanship and firearm safety among adult volunteers and youth participants. Furthermore, previous research indicated youth participants gain life skills that reach beyond the shooting range such as responsibility and decision-making (Culen & Mitchell, 2017; Sabo & Hamilton, 1997).

While young people participating in 4-H shooting sports gain life skills that benefit themselves and their communities what has remained unclear are the skills needed by county 4-H extension agents to manage the risks associated with offering the program. Some inherent risks exist when handling shooting sports equipment and addressing safety is paramount. The author views the inherent risks associated with shooting sports to include the loss of life and limb, damage to property and, subsequently, legal and financial liability for loss due to accidental or intentional misuse of firearms. The four risk management concepts generally implemented are (a) assume, (b) reduce, (c) transfer and (d) avoid. Each concept describes a separate function of the overall approach to mitigating risk, especially for recreational activities which seem to carry a higher level of inherent risk.

To assume risk means to acknowledge the presence of risk despite taking steps to prevent the risk from happening. A good example would be horseback riding. No matter how much care has been taken, some risk still exists. Likewise, risk is reduced through preventative measures by providing a barrier between the participant and the risk. For horseback riding, helmets reduce the risk of head injuries. Developing and implementing public policies or through securing insurance coverage describes how risk may be transferred from one entity to another. Recreational activities involving horses are given special provisions through state statutes that limit the property owner’s liability. Lastly, risk is avoided through limiting or eliminating participation. In the example of horseback riding, perhaps a rider may simply decline to ride a certain horse because the risk of injury is determined to be too great. In summary, each of the four concepts work collectively to mitigate risks and provides a holistic approach to offering a safe, fun shooting sports program.

In a study conducted by the Pew Research Center (2017), 95% of gun owners and 89% of non-gun owners agreed that talking to their children about gun safety was an essential responsibility of gun owners. Likewise, 59% of gun owners and 79% non-gun owners agreed that taking gun safety courses was another essential responsibility of gun owners. (Pew Research Center, 2017). The 4-H shooting sports program has a unique opportunity to provide young people and their families educational experiences that support safe, responsible handling of shooting sports equipment. In order to support youth development professionals in this endeavor, this study’s researchers conducted a needs assessment to determine the necessary resources and essential skills for youth development professionals to provide a safe, fun shooting sports program.

To ensure firearm safety and positive youth development are integrated into the shooting sports program, shooting sports instructors must complete a minimum of 20 hours of training with a minimum of 10 hours in-person (Culen, personal communication, 2018). According to Culen (personal communication, 2018), no other 4-H project area has the same requirements of volunteers in order to be equipped to supervise the project area. The National 4-H Shooting Sports Committee utilizes an approach referred to as the train-the-trainer with four levels associated with its structure: (a) national instructor, level 3; (b) national apprentice instructor; (c) state instructor, level 2; (d) local instructor, level 1 (National 4-H Shooting Sports, 2018). Each level is an advancement from the previous level of training and requires an approval process for a candidate to proceed to the next level of instructor training. Additionally, the only level of instructor to require a re-certification is the local instructor, level 1, which must be renewed every three years (Culen, personal communication, 2018). Each state is expected to oversee the instructor certification and renewal process and provide enrollment and instructor data to the National 4-H Shooting Sports Committee annually.

Nationally, the shooting sports program has a vetting process in place to ensure specific criteria are met by adult volunteer to become instructors. The criteria for instructor certification are the same for all participating state programs. How the criteria are met may vary from state to state. According to Culen (personal communication, 2018), the state requirement in Florida for certification of volunteers at the lowest level possible for all disciplines involves completion of a minimum of 20 hours of training in each discipline area. Young people ages 14 to 21 are eligible to complete a training that certifies them to assist while a level 1 instructor is managing the shooting line and are considered a junior leader. For the purposes of this study, the role of a junior leader is not discussed since it does pertain to the focus of the study.

Each year since 1997, Florida 4-H Shooting Sports has followed the national guidelines for instructor certification through hosting one statewide level 1 instructor certification training. County 4-H Extension faculty were able to request additional instructor certification trainings with the agreement that the county sponsor be responsible for covering the instructor’s travel expenses and facilitating the event. Upon successful completion of the training, participants were issued a card and provided an instructional manual for each of the discipline area(s) certified. Within the past two years, completed instructor certifications for each discipline have also been recorded in 4HOnline, a web-based database used by the state 4-H headquarters for youth membership and adult volunteer enrollment records (Culen, personal communication, 2018).

The adult volunteers who completed the training primarily conduct club or county shooting sports programs within their respective counties and/or serve as coach for their county’s shooting sports teams. Archery has five state competitive matches; all other disciplines have one state competition. The qualifying state matches for each discipline for youth ages 14 and older to advance to the National Championships are held in March. Localized matches between clubs or counties are not advertised statewide and the state shooting sports coordinator was unaware of any ongoing events besides the state matches (Culen, personal communication, 2018).

According to the National 4-H Council (2011), “the mission of 4-H is to provide meaningful opportunities for youth and adults to work together to create sustainable community change”. The mission of 4-H is achieved through implementing four essential elements: (a) belonging, (b) mastery, (c) independence, and (d) generosity. Building a sense of belonging begins by providing a child with educational experiences devoid of certain risks. The Florida 4-H Shooting Sports program addresses this need through program standards and accountability directed towards screened, certified level 1 shooting sports instructors. The focus of this study is to determine the program standards and accountability needs of county 4-H Extension faculty to provide a safe, fun shooting sports program that supports the 4-H mission mandates set by the National 4-H Council.

**Definition of Terms**

### A brief description of key elements referenced in the study:

### Competency describes the ability to comprehend and apply knowledge, attitudes, skills and abilities related to a given subject matter.

### Firearms – interchangeable with the term shooting sports; defined as equipment and supplies used for participating in the following shooting sports disciplines: (a) archery, (b) air rifle, (c) small bore rifle, (d) shotgun and (e) muzzleloader.

### Program Leadership Accountability – describes the decision-making functions of the program for determining program policies and procedures.

### Program Procedural Standards – describes the operational functions of the program for carrying out the program policies and procedures.

### Shooting sports –interchangeable with the term firearms; emphasis on activities involved in using equipment and supplies for participating in the following shooting sports disciplines: (a) archery, (b) air and small bore rifle, (c) hunting and wildlife, (d) shotgun and (e) muzzleloader.

### UF/IFAS Extension - University of Florida’s Institute of Food and Agricultural Sciences, Extension Services.

**Limitations and Assumptions**

### Limitations to the study include: (a) receptiveness of the targeted audience to be surveyed, (b) researcher bias of presumed outcomes, (c) the influence of bias in the development of the research instrument and (d) the timing of the survey distribution. For the purposes of this study, the assumption will remain to include only county 4-H agents associated with UF/IFAS Extension and, therefore, will assume limitations associated with small participant populations.

**Conceptual Framework**

Positive youth development programs focus on developing life skills “that assist people in functioning well in the environments in which they live” (Norman & Jordan, 2006, para. 1). The emphasis in 4-H is on developing life skills that are conducive to growing healthy, productive young adults that make a difference in their communities. The context for which life skills are developed within positive youth development programs is based on six features: (a) physical and psychological safety, (b) appropriate structure, (c) supportive relationships, (d) opportunities to belong, (e) positive social norms, and (f) support for efficacy and mattering (Eccles & Gootman, 2002). Specifically, 4-H utilizes four essential elements derived from the six features of positive youth development: (a) belonging, (b) mastery, (c) independence and (d) generosity (Norman & Jordan, 2006). In Maslow’s theory of hierarchy of needs, a child’s basic needs and psychological needs must be met before the child can achieve their full potential (Maslow, 1943). Kress (2003) reported “that 4-H experiences become transformational when youth are provided opportunities to belong, master skills, lead, and learn the meaning of service” (para 5). By aligning program focus with positive youth development indicators such as Maslow’s hierarchy of needs and the 4-H essential elements, 4-H youth development professionals are able to make a difference in the lives of young people who participate in 4-H programs (Eccles & Gootman, 2002; Fox, Hebert, Tassin, & Hebert, 2008; Kress, 2003; Maslow, 1943; Norman & Jordan, 2006).

Landrigan (1999) describes children not as small adults, but rather a “unique subgroup within the population who require special consideration in risk assessment” (p. 1). Youth develop in ages and stages with certain characteristics present during each of the following stages: (a) early childhood, (b) middle childhood, (c) early adolescence, and (d) middle adolescence (Levings, 2006). According to Levings & Query (2006), ‘age appropriateness refers to how well a youth development program matches its educational offerings within the universal, predictable sequence of growth and change that occur in children” (p. 1). Local and state 4-H programs assess risk and develop program standards, policies and procedures based on age appropriateness and the four 4-H essential elements, (a) belonging, (b) mastery, (c) independence and (d) generosity.

Within the context of offering a shooting sports program, there is a heightened awareness of risk since firearms have the potential to cause permanent and catastrophic harm. The types of risks associated with shooting sports include physical and emotional wellbeing, physical property, legal liability, financial liability and volunteer management. The physical and emotional wellbeing of all participants regardless of whether or not they are the active shooter is an inherent risk to shooting sports. Likewise, damage to property and the subsequent financial and legal restitution is also an inherent risk. The competencies of volunteers who conduct shooting sports programs is also another risk to manage by county 4-H agents. Volunteers are entrusted by the county 4-H agent places to carry out the program protocols and procedures to the utmost degree of care with limited supervision. Ultimately though, the county 4-H agent shoulders the responsibility of managing risks to provide a safe and educationally sound shooting sports program.

Assessing program standards, policies and procedures under the auspice of program procedural standards and program leadership accountability reveals the appropriate requirements for mitigating these potential risks and for providing a shooting sports program that matches the developmental needs of its youth participants (Fultz, 1997; Landrigan, 1999; Sandman, 2003). Program procedural standards covers the what and how for operational functions of the program while program leadership accountability principles provide the why in context to implementing pertinent risk management policies and best practices. The development and implementation of program standards, policies and procedures for properly recording inventory, safety inspections, and usage of shooting sports equipment ensures safety is at the forefront at all points of managing the program. By establishing a strong base through program procedural standards and program leadership accountability, a more comprehensive, safer and engaging shooting sports program can be provided to young people in our communities.

At the forefront of offering a safe and engaging shooting sports is building a sense of belonging, the first of four 4-H essential elements. This begins by providing a child with educational experiences devoid of certain risks. Risk implies a chance of loss and references a physical loss, financial loss, and/or loss of social capital depending on many factors including the level of personal responsibility (Fultz, 1997; Sandman, 2003). According to Fox, Hebert, Tassin, and Hebert (2008), “by acknowledging and addressing the risks involved within youth development programs, youth development organizations can play a critical role in society in…facilitating the positive development of youth…” (para. 24). The contextual framework for determining strategic responses to risk included: (a) assumption, (b) reduction, (c) aversion, and (d) transfer of risk (Fultz, 1997). In order to manage risk at the national level, several initiatives were established by the national 4-H shooting sports committee and include each of these strategies. For instance, participatory and competitive age requirements were implemented to reduce risk; whereas, the acquisition of additional liability insurance for shooting sports activities was recommended to ensure at least some risk was transferred from 4-H. Likewise, a structured levels of shooting sports instructor certifications were implanted to avert risk through building capacity among the program’s volunteer base.

The adoption of the train-the-trainer approach for certification of qualified instructors “is an effective method to increase program capacity and outreach efforts” and minimizes risk through capacity building (Fields, Brown, Piechocinski, & Wells, 2012, para 5). In addition to the train-the-trainer approach, a series of minimum standards and best management practices were established and periodically reviewed by the national 4-H shooting sports committee which was comprised of 10-15 individuals with at least two representatives from each region of the United States (National 4-H Shooting Sports, 2017). According to the national 4-H shooting sports committee, all active state 4-H shooting sports programs were “advised to adopt and adhere to these standards at the state and county level” (National 4-H Shooting Sports, 2016, para 1). All of these measures were implemented to manage the risks associated with offering a shooting sports program and to promote the 4-H essential elements.

A great deal of emphasis by the National 4-H Shooting Sports committee has been placed on establishing and maintaining a quality train-the-trainer approach to manage risk at the level of the shooting sports instructors; however, little attention has been placed on managing risks by County 4-H Agents through adopting national program procedural standards and program leadership accountability principles at the local level. Furthermore, the focus of research pertaining to positive youth development and risk management emphasized strategies directed towards youth and volunteers to engage in sound, emotionally and physically safe, educational programs (Fultz, 1997; Miller & Schmiesing, 2008). No research has been published that provides a needs assessment to determine the needs of County 4-H Agents to manage the risks associated with planning and conducting educational programs for youth interested in shooting sports.

**Purpose and Objectives**

The purpose of this study was to determine the needs of County 4-H Agents for managing the localized responsibilities and risks associated with providing a shooting sports program. The needs assessment instrument consisted of two main constructs: (a) program procedural standards and (b) program leadership accountability. The following objectives were developed to guide the study:

### Describe the current scope of the Florida 4-H Shooting Sports program.

### Identify the County 4-H Agents’ level of competency of program procedural standards and accountability for managing a county shooting sports program.

### Determine the needs of County 4-H Agents for specific in-service and program resources pertaining to safely managing a shooting sports program.

**Methods**

The researchers used a web-based questionnaire to measure the knowledge gap of program procedural standards and program leadership accountability for managing a county shooting sports program. The Tailored Design Method by Dillman, Smyth, and Christian (2009) for Internet questionnaires was used to collect the data. Recommended best practices were used for web-based data collection such as using multiple short, concise messages for conducting each contact (Dillman, Smyth, & Christian, 2009; Israel, 2010). Based on best practices of the tailored designed method, three weeks were needed for data collection.

The study population included all County 4-H Agents employed by UF/IFAS Extension. A list of current County 4-H Agents (*n = 71*) was obtained from the UF/IFAS Extension Business Services office. Due to the small population size of County 4-H Agents for this study, a census was conducted in leu of a random sample. A census is suitable when a complete count of the population can be conducted, which eliminates sampling error (Dillman, Smyth, & Christina, 2009).

No instrument existed that measured the competencies needed to manage the risks associated with providing a shooting sports program. The instrument included 22 questions or statements, six of which refer to demographic and program data and three open-ended questions to solicit more detailed descriptions from respondents. Ten statements were included to measure the respondents’ percieved level of competency of program procedural standards and program leadership accountability principles. Program procedural standards were measured to identify needs pertaining to the operational functions of the shooting sports program within a county whereas the program leadership accountability construct was measured to determine the needs pertaining to program leadership and accountability principles. The items were based on best practices and program standards established by the National 4-H shooting sports committee and resources provided during the state level 1 instructor certification workshop.

To ensure reliability and validity were maximized the instrument was reviewed by a panel of five experts, four University of Florida faculty and one Florida 4-H staff, with a strong familiarity of the state shooting sports program (Shadish, Cook, & Campbell, 2002). Following the expert panel review, some statements were modified, and additional statements were added to increase the likelihood of obtaining valid and reliable results. The contributions from the expert panel indicated both constructs were appropriate and encompassed the overarching concept of managing risks associated with a shooting sports program.

Data was collected through Qualtrics, a web-based research software used to collect and analyze data. The Tailored Design Method (Dillman, Smyth, & Christian, 2009) was used to increase response rates. A pre-notice, an invitation notice, and three follow-up notices were sent by e-mail to increase response rates. A total of 71 online questionnaires were e-mailed to the population via a Web link. Three e-mails bounced back due to incorrect e-mail addresses. The incorrect e-mail addresses were corrected and included in subsequent correspondences. Thirty-seven questionnaires were completed for an overall response rate of 52%.

Once the collection of data was complete, descriptive statistics were analyzed for 18 statements. Three questions were open-ended were also included for which researchers used a simple thematic analysis to reduce data from open-ended questions into identifiable, recurrent themes (Lincoln & Guba, 1985; Merriam, 1998). Direct quotes from respondents were used to contribute to the descriptive findings of the study (Merriam, 2009). Bias from the researchers can affect the way qualitative data is analyzed and interpreted (Merriam, 2009). For this study, one of the researchers is a county faculty with prior experience in 4-H and Extension. She also conducts programming in shooting sports. The other researchers are state specialists with an expertise in 4-H and Extension.

**Findings**

**Objective One Results**

Objective one was to describe the scope of the Florida 4-H Shooting Sports program. Based on the information provided by UF/IFAS Extension Business Services, there were 51 county 4-H agents employed with UF/IFAS Extension for ten years or less, 11 employed for 11-15 years, and 16 employed for 16 years or more. According to the responses (*n = 37*), most respondents were employed in Extension for ten years or less (*n* = 25). Nine respondents had 16 years or more of employment with UF/IFAS Extension. The remaining respondents were employed in Extension for 11-15 years (*n = 3*).

All districts were represented in the survey (*n = 37*) with the Northeast district having the highest total number of respondents (*n = 11*) representing 10 counties out of 17 counties in the district. Central and Southwest districts had a response rate each of 22% each (*n = 8*). Central district had eight respondents representing eight out of 11 counties in the district whereas the Southwest district had eight respondents representing seven out of 11 counties in the district. The Northwest district had a response rate of 16% (*n = 6*), representing six out of 16 counties in the district, and the Southeast district had a response rate of 11% (*n = 4*), representing four counties out of 12 counties and the Seminole tribe in the district.

Thirty-two respondents indicated their county offered a shooting sports program. Five respondents indicated a shooting sports program was not currently offered but had interest in offering it in the future. Table 1 provides a brief description of the demographic characteristics of survey respondents versus non-respondents.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Table 1. Demographic* *Characteristics of Respondents versus Non-respondents.* | | | | | |
|  | | *Respondents* | | *Non-respondents* | |
|  | | *f* | *%* | *f* | *%* |
| Years Working in Extension | |  |  |  |  |
|  | 0-5 years | 15 | 42% | 19 | 55% |
|  | 6-10 years | 10 | 28% | 4 | 11% |
|  | 11-15 years | 3 | 8% | 5 | 14% |
|  | 16 years or more | 9 | 22% | 7 | 20% |
|  |  |  |  |  |  |
| Extension District | |  |  |  |  |
|  | Northwest | 6 | 16% | 10 | 32% |
|  | Northeast | 11 | 31% | 6 | 19% |
|  | Central | 8 | 22% | 3 | 10% |
|  | Southwest | 8 | 22% | 3 | 10% |
|  | Southeast | 4 | 11% | 9 | 29% |
|  |  |  |  |  |  |
| Offer a Shooting Sports Program | |  |  |  |  |
|  | Yes | 32 | 86% |  |  |
|  | No | 5 | 14% |  |  |
| *Note.* At the time of data collection county 4-H extension agent vacancies were present in each district (Northwest, 1; Northeast, 2; Central, 3; Southwest, 1; Southeast, 5). | | | | | |

For respondents that did not offer a shooting sports program (*n = 5*), all responded that they would consider offering the program in the future. The most common theme among respondents for reasons why the program presently does not exist in their county is access to training for volunteers. As one respondent indicated, “lost clubs due to lack of responsiveness to training needs”. When respondents (*n = 36*) were asked what resources were needed to support a county shooting sports program, one of the recurring themes indicated a need for more frequent level 1 shooting sports instructor certification trainings.

For respondents that did offer a shooting sports program (*n = 32*), archery (*n = 30*) was the most common discipline offered followed by rifle (*n = 19*), then shotgun (*n = 17*). Four respondents indicated the muzzle loading and hunting & wildlife disciplines were offered in their county. Additionally, the most common program delivery mode for shooting sports were community clubs (*n = 29*) followed by camps (*n = 12*) and school-based clubs (*n = 6*). Twenty respondents indicated the shooting sports program was managed by the county 4-H agent while twelve indicated the program was managed by volunteers. Five indicated the program was managed by a 4-H staff member. Table 2 provides a description of shooting sports programs offered at the county level among respondents.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 2. *Description of county shooting sports programs\** | | | |
|  |  | *f* | *%* |
| Shooting sports disciplines | |  |  |
|  | Archery | 30 | 94% |
|  | Rifle | 19 | 59% |
|  | Shotgun | 17 | 53% |
|  | Muzzleloading | 4 | 13% |
|  | Hunting & wildlife | 4 | 13% |
|  |  |  |  |
| Program delivery mode (all shooting sports disciplines) | |  |  |
|  | Community clubs | 29 | 91% |
|  | After-school and in-school clubs | 6 | 19% |
|  | Residential and day camp | 12 | 38% |
|  | School enrichment | 1 | 3% |
|  |  |  |  |
| Management of county shooting sports program | |  |  |
|  | 4-H Agent | 20 | 63% |
|  | 4-H Staff | 5 | 16% |
|  | Volunteers | 13 | 41% |
| \*Calculations were determined by total number of respondents (*n = 32*) for each of the descriptions listed in the table. | | | |

A Likert-type scale was used by respondents to rate the degree to which they agreed or disagreed to the statement “Florida 4-H Shooting sports promotes…” for a series of competencies associated with three main constructs: (a) firearm safety, (b) marksmanship, and (c) outdoor education. The construct with the highest degrees of agreement was firearm safety. Specifically, range safety (*M* = *4.67, SD* = 0.54) had the highest degree of agreement. Following range safety, learning sportsmanship (*M* = 4.64, *SD* = 0.49), range etiquette (*M* = 4.58, *SD* = 0.56), and responsible practices for handling shooting sports equipment (*M* = 4.58, *SD* = 0.61) were the other competencies with a mean above 4.50. Three out of the four competencies with a mean above 4.50 pertained to the construct of firearm safety. Respondents indicated the lowest level agreement for outdoor education with means below 4.00 for three of the four competencies associated with the construct. Table 3 lists the respondents’ level of agreement for each competency ranked in the questionnaire regarding the Florida 4-H shooting sports program and its promotion of firearm safety, marksmanship and outdoor education.

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| --- | --- | --- |
| Table 3. *Respondents’ rating of shooting sports life skills development* | | |
| Competencies related to firearm safety | *M* | *SD* |
| Range safety | 4.67 | 0.54 |
| Range etiquette | 4.58 | 0.56 |
| Responsible practices for handling shooting sports equipment | 4.58 | 0.61 |
| Responsible practices for storing shooting sports equipment | 4.39 | 0.83 |
|  |  |  |
| Competencies related to marksmanship | *M* | *SD* |
| Learning sportsmanship | 4.64 | 0.49 |
| Ethical behavior beyond shooting sports | 4.39 | 0.61 |
| Participation in competitive events | 4.31 | 0.64 |
| Skill in precision shooting | 4.21 | 0.60 |
| Enhance knowledge in the civilian marksmanship program | 3.45 | 0.87 |
|  |  |  |
| Competencies related to outdoor education | *M* | *SD* |
| Promotes lifelong outdoor recreational activities | 4.39 | 0.66 |
| Responsible hunting practices | 3.76 | 0.94 |
| Ethical hunting practices | 3.70 | 0.92 |
| Knowledge of wildlife ecology and management regulations | 3.39 | 0.86 |
|  |  |  |
| *Note.* Respondents were asked to rate their rate of agreement about the competencies on a Likert-type scale (*1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree*). | | |

The respondents were also asked in an open-ended question to list the top three life skills youth develop through participating in the shooting sports program. According to the respondents, responsibility (*f = 14*) was the most frequently listed life skill followed by communication (*f = 8*), personal safety (*f = 8*) and self-discipline (*f = 8*). Specific frequencies for the life skills reported by respondents was listed in table 4.

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| --- | --- | --- |
| Table 4. *Responses indicating the top three life skills learned by youth involved in the Florida 4-H shooting sports program* | | |
| Life Skill\* | *f* | *%* |
| Responsibility | 14 | 52% |
| Communication | 8 | 30% |
| Personal safety | 8 | 30% |
| Self-discipline | 8 | 30% |
| Goal setting | 6 | 22% |
| Critical thinking | 4 | 15% |
| Teamwork | 4 | 15% |
| Decision making | 3 | 11% |
| Problem solving | 3 | 11% |
| Belonging | 2 | 7% |
| Confidence | 2 | 7% |
| Leadership | 2 | 7% |
| Self-esteem | 2 | 7% |
| Independence | 1 | 4% |
| Mastery | 1 | 4% |
| *\*Note*. There were 10 responses not included since they were not considered a life skill. | | |

**Objective Two Results**

Objective two was to identify county 4-H agents’ level of competency of program standards and program leadership accountability for managing a county shooting sports program. Five questions measured competencies on program standards and five questions measured competencies on program leadership accountability. The responses for each construct were described separately.

Most respondents were able to identify the correct response for two out of five questions on program procedural standards. Twenty-seven respondents were able to identify how often shooting sports equipment should be inspected. Twenty-two respondents correctly indicated how often range rosters are to be used during shooting sports activities. Fewer respondents (*n = 8)* were able to identify the proper adult to youth ratio for shooting sports activities or knew what information should be included on the firearm equipment inventory form provided by the Florida 4-H Shooting Sports program. The percentage of respondents who could correctly identify the minimum age requirement for participating in the shotgun was 31% (*n = 10).* Table 5 identifies the respondents’ correct and incorrect responses to questions about program procedural standards for the shooting sports program.

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| --- | --- | --- | --- | --- |
| Table 5. Responses indicating the quantity and rate a correct answer was selected for questions about program procedural standards of the shooting sports program. | | | | |
|  |  |  |  |  |
|  |  |  | Rate of Correct Responses (%) | Total Number of Responses |
| Program Procedural Standards | Correct | Incorrect |
| How often should shooting sports equipment be inspected? | 27 | 5 | 84% | 31 |
| How often should range rosters be used during shooting sports activities? | 22 | 11 | 67% | 33 |
| What is the minimum age for a 4-H youth to participate in the shotgun discipline? | 10 | 22 | 31% | 32 |
| Please select which items are included on the firearm equipment inventory form provided by the Florida 4-H Shooting Sports. | 8 | 21 | 28% | 29 |
| Which shooting sports discipline has an adult to youth ratio of 1:5? | 8 | 24 | 25% | 32 |

Table 6 identifies the respondents’ correct and incorrect responses to questions pertaining to program leadership accountability of the shooting sports program.

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| --- | --- | --- | --- | --- |
| Table 6. Responses indicating the quantity and rate a correct answer was selected for questions about program accountability of the shooting sports program. | | | | |
|  |  |  | Rate of Correct Responses (%) | Total Number of Responses |
| Shooting Sports Accountability | Correct | Incorrect |
| The county 4-H Shooting Sports program does not need to maintain an accurate and up-to-date inventory of shooting sports equipment. | 32 | 0 | 100% | 32 |
| Shooting sports equipment should only be checked out to youth members during shooting sports practices or meetings. | 32 | 1 | 97% | 33 |
| The Florida 4-H Shooting Sports policies on storage and transportation of ammunition are based on which entity? | 16 | 16 | 50% | 32 |
| Liability insurance coverage requirements for shooting sports activities is treated similarly to liability insurance coverage requirements for equestrian activities. | 13 | 20 | 39% | 33 |
| Each county’s shooting sports risk management plan (RMP) should be reviewed and submitted to the State 4-H Shooting Sports Coordinator. | 12 | 19 | 39% | 31 |

**Objective Three Results**

The third objective of this study was to determine the needs of County 4-H Agents for specific in-service and program resources pertaining to Florida 4-H shooting sports program standards and accountability. An open-ended question was included for respondents to indicate what resources were needed to support the 4-H agent’s role in managing the county 4-H shooting sports program. The most common themes included improved communication between the state 4-H shooting sports coordinator and county 4-H agents, online program standards resources and access to online training modules or ISTs. The topics most commonly referenced in the open-ended question covered (a) best management practices, (b) protocols for volunteer training and re-certification, (c) risk management and emergency planning, (d) discipline-specific training, and (e) shooting sports curriculum.

**Conclusions & Implications**

The purpose of this study was to determine the needs of county 4-H agents through measuring their level of competency for program procedural standards and program leadership accountability for shooting sports. Thirty-seven county 4-H agents from 35 counties shared their perspectives and insights which indicated a strong need for future in-service training and development of program resources for safely managing a shooting sports program. County 4-H agents recognized the life skills young people gain through participating in shooting sports but lacked the knowledge and skills to safely manage the risks associated with providing a shooting sports program. When asked to list the top three life skills youth gain from participating in a 4-H shooting sports program, county 4-H agents most frequently listed responsibility, [personal] safety, and communication. Other life skills listed by county 4-H agents were: (a) 4-H essential elements - belonging, mastery, independence; (b) higher order thinking skills such as critical thinking, decision making, goal setting, problem solving; and (c) interpersonal and self-regulatory skills such as confidence or self-esteem, [self] discipline, leadership, sportsmanship, teamwork. Offering a shooting sports program so youth can gain these life skills is merited yet not without providing county 4-H agents the necessary skills for them to safely manage the program.

At the time of this study, nearly half of all county 4-H agents have been in Extension less than five years. To illustrate this even further, one in three county 4-H agents started their employment with Extension after January 2015. County 4-H agents have not been employed long enough to develop the skills necessary to safely manage a shooting sports program. Furthermore, respondents of this study had a correct response rate above 80% for three of ten questions which indicates the competencies needed to safely manage a county shooting sports program were lacking in county 4-H agents regardless of how many years worked in Extension. As one county 4-H agent responded in one of the open-ended questions, “some..inherit programs, others start them with the idea of [positive youth development] and not the in’s and out’s of a [shooting sports] program”. This indicates the need for in-service training and program resources that address procedural standards and accountability for the shooting sports program.

The responses from an open-ended question reiterate the conclusion that county 4-H agents need in-service trainings and resources that provide guidance for operational strategies involving shooting sports. Regarding the resources needed to support the 4-H agent’s role one agent replied, “…As a newcomer, I do not fully understand all that is required to maintain the program. I do not know the rules on proper storage, inventory of equipment, range requirements…” Another suggested, “Revised inventory management system, training on management of shooting sports program, and more communication and support from the state shooting sports coordinator”. Beyond offering written resources and in-service trainings, greater support from the state 4-H office through more concise, timely correspondence would ensure county 4-H agents have the most current information related to upcoming certification trainings and state shooting sports programs.

**Recommendations**

This study was the first to address the needs applicable to the everyday responsibilities of county Extension agents while also investigating risk management in the 4-H shooting sports program. Based on the results of this study, the recommendations made by the researchers were separated into two sections: (a) application and (b) future research.

*Application*. Based on these findings, the following are recommendations for program administrators. Extension administrators of the Florida Cooperative Extension, in partnership with the Florida 4-H Shooting Sports, should develop a new 4-H agent training module that focuses on the development and management of a shooting sports program with an emphasis on program standards and accountability. A repository of relevant and up-to-date resources on the shooting sports program standards and accountability should be developed and made accessible to current county 4-H agents. Specifically, the instructional programs and resources should build the skills and competencies in the areas of shooting sports program best management practices, protocols for volunteer training and re-certification, risk management and emergency planning, and discipline-specific training. Additionally, access to shooting sports curriculum that compliment these needs would aid agents full circle.

*Future research.* Fewer than five studies could be found relating to risk management during the literature review for this study. None of the studies measured competencies related to risk management or shooting sports. Future research should be conducted to determine the efficacy of in-service trainings to help county 4-H agents increase their ability to manage a safe shooting sports program. Texas 4-H Shooting Sports has an in-service training for newly hired agents specifically for addressing this topic (Perez, L., personal communication, 2018). Further recommendations are to conduct multi-state studies to further evaluate the needs of county 4-H agents involved in shooting sports and to determine if the current training approaches are sufficient for managing risk.

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Appendix A. Florida 4-H Shooting Sports Survey Instrument

Block: Default Question Block (22 Questions)

Start of Block: Default Question Block

Q1 **Consent:** Please read this request for consent carefully before you decide to participate in this study.   **Purpose:** The purpose of this study is to determine the needs of County 4-H Agents for managing the localized responsibilities and risks associated with providing a shooting sports program.   **Time required:** 10 – 20 minutes   **Risks and Benefits:** There are no perceived risks associated with your participation in this study. There are no direct benefits to you for participating in the study, but your participation may improve the integrity and accountability of the program in the future.   **Confidentiality:** Your name will not be connected with the survey responses, which will be anonymous, and only the researchers will have access to the information collected online. There is a minimal risk to a security breach for any online data since the online host (Qualtrics) uses several forms of encryption and other protections and no identifying information will be collected. For this reason, it is unlikely that a security breach of the online data will result in any adverse consequence for you.   **Voluntary participation:** Your participation in this study is completely voluntary. There is no penalty for not participating and have the right to withdraw from the study at any time without consequence.   If you have questions about this study, please contact either Genevieve Mendoza, Levy County 4-H, by email at mendozag@ufl.edu, or Dr. Matt Benge, Assistant Professor in the Department of Agricultural Education & Communication, by email at mattbenge@ufl.edu. If you have questions about your rights as a research participant in the study, please contact IRB02 Office | PO Box 112250 | University of Florida | Gainesville, FL 32611-2250 | Phone (352) 392-0433.   I voluntarily agree to participate in the study.

* Yes (1)
* No (2)

Skip To: End of Survey If Consent: Please read this request for consent carefully before you decide to participate in this... = No

Q2 Please indicate how many years you have been employed with UF/IFAS Extension:

▼ 0-5 years (1) ... More than 20 years (5)

Q3 Please select the district that you represent:

▼ Northwest District (1) ... Southeast District (5)

Q4 Does your county offer a shooting sports program?

* Yes (1)
* No (2)

Skip To: Q7 If Does your county offer a shooting sports program? = Yes

Q5 If not, would you consider offering the Shooting Sports Program in your county in the future?

* Yes, I would consider offering the program (1)
* No, I would not consider offering the program (2)

\*Q6 Please describe the reason(s) for not offering the program in your county.

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Skip To: Q9 If Please describe the reason(s) for not offering the program in your county. Is Not Empty

Skip To: Q9 If Please describe the reason(s) for not offering the program in your county. Is Empty

Q7 Which category best describes who manages the Shooting Sports program in your county 4-H program?

* 4-H Agent (1)
* 4-H Staff (2)
* Other Extension Agents (3)
* Volunteers (4)

Q8 Please indicate which of the following disciplines are offered in your county and by which program areas (select all that apply)?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Discipline offered (yes/no): | Program Delivery Mode (select all that apply): | | | |
|  |  | Community Club (1) | After-school/In-school Club (2) | Camp (day and residential) (3) | School Enrichment (4) |
| Archery (1) | ▼ Yes (1 ... No (2) |  |  |  |  |
| Rifle (2) | ▼ Yes (1 ... No (2) |  |  |  |  |
| Shotgun (3) | ▼ Yes (1 ... No (2) |  |  |  |  |
| Muzzleloading (4) | ▼ Yes (1 ... No (2) |  |  |  |  |
| Hunting & Wildlife (5) | ▼ Yes (1 ... No (2) |  |  |  |  |

Q9 List the top three life skills you feel that youth develop through participation in a 4-H shooting sports program:

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Q10 What is the minimum age for a 4-H youth to participate in the shotgun discipline?

* 8 (1)
* 10 (2)
* 11 (3)
* 12 (4)
* Don't know (5)

Q11 Which shooting sports discipline has an adult to youth ratio of 1:5?

* Muzzleloading (1)
* Archery (2)
* Hunting & Wildlife (3)
* Shotgun (4)
* Don't know (5)

Q13   
How often should range rosters be used during shooting sports activities?

* Never (1)
* Only during competition practices (2)
* Use discretion for when to use them (3)
* Every time youth shoot on the range (4)
* Don't know (5)

Q14   
Please indicate  your level of agreement with the following items: "Florida 4-H Shooting Sports promotes...."

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
| Learning sportsmanship (1) |  |  |  |  |  |
| Skill in precision shooting (2) |  |  |  |  |  |
| Range safety (3) |  |  |  |  |  |
| Range etiquette (4) |  |  |  |  |  |
| Participation in competitive events (5) |  |  |  |  |  |
| Knowledge of wildlife ecology and management regulations (6) |  |  |  |  |  |
| Responsible practices for handling shooting sports equipment (7) |  |  |  |  |  |
| Promotes lifelong outdoor recreational activities (8) |  |  |  |  |  |
| Responsible practices for storing shooting sports equipment (9) |  |  |  |  |  |
| Ethical behavior beyond shooting sports (10) |  |  |  |  |  |
| Ethical hunting practices (11) |  |  |  |  |  |
| Responsible hunting practices (12) |  |  |  |  |  |
| Enhance knowledge in the Civilian Marksmanship Program (CMP) (13) |  |  |  |  |  |

Q25 For the following statements, please select either True or False.

Q20 Shooting sports equipment should only be checked out to youth members during shooting sports practices or meetings.

* True (1)
* False (2)

Q15   
The county 4-H Shooting Sports program does not need to maintain an accurate and up-to-date inventory of shooting sports equipment.

* True (1)
* False (2)

Q17   
Liability insurance coverage requirements for shooting sports activities is treated similarly to liability insurance coverage requirements for equestrian activities.

* True (1)
* False (2)

Q16 Each county's shooting sports risk management plan (RMP) should be reviewed and submitted to the State 4-H Shooting Sports Coordinator...

* Only when information changes (1)
* At least once every year (2)
* The RMP is for county agents only (3)
* At least once every five years (4)

Q19   
Please select which items are included on the firearm equipment inventory form provided by the Florida 4-H Shooting Sports.

* Type, manufacturer, serial #, and in case of emergency contacts (1)
* Manufacturer, model, serial #, and seller's contact information (2)
* Date acquired, methods of securing equipment, model, and caliber or gauge (3)
* Type, model, equipment acquired by grant, and storage location of equipment (4)

Q18 How often should shooting sports equipment be inspected?

* As needed (1)
* Once per year (2)
* Two to four times per year (3)
* Each time equipment is used (4)
* Don't know (5)

Q21 The Florida 4-H Shooting Sports policies on storage and transportation of ammunition are based on which entity?

* Florida Law (1)
* Florida 4-H Shooting Sports Best Practices (2)
* U.S.D.A., National 4-H Headquarters Policies (3)
* Don't know (4)

Q22 What resources are needed to support the 4-H agent's role in managing the County 4-H Shooting Sports Program?

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End of Block: Default Question Block

Appendix B. Florida 4-H Shooting Sports Survey Invitation to Agents E-mail.

Dear 4-H Extension Agents,

The Florida 4-H Shooting Sports program standards and accountability survey is now open! I urge you to complete the survey, as it will provide us with valuable information that will provide valuable information and contribute to the development of a more comprehensive plan to support 4-H Extension agents in offering a safe, fun shooting sports program.

The survey will close at 5:00 PM on Monday, May 21. As a 4-H Extension agent, I know you are extremely busy. This survey is short and should take you no more than 15 minutes to complete. Please click on the link below to access the survey and begin.

**Follow this link to the Survey:**

${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:

${l://SurveyURL}

Your participation in this study is greatly appreciated. If you have any questions about this program development effort or the survey, please contact myself at 352-486-5131 or Dr. Matt Benge at 352-294-1996. Again, thank you for your time and for contribution to making the best better!

Sincerely,

Genevieve A. Mendoza

4-H Youth Development Agent

UF/IFAS Extension - Levy County

Follow the link to opt out of future emails:

${l://OptOutLink?d=Click here to unsubscribe}

Appendix C. Florida 4-H Shooting Sports Survey First Reminder to Agents E-mail.

Dear 4-H Extension Agents,

The Florida 4-H Shooting Sports program standards and accountability survey will close soon! If you have already completed the survey, I really appreciate your participation. As of yesterday, 11 surveys were completed. I urge you to complete the survey, as it will provide us with valuable information that will provide valuable information and contribute to the development of a more comprehensive plan to support 4-H Extension agents in offering a safe, fun shooting sports program.

The survey will close at 5:00 PM on Monday, May 21. As a 4-H Extension agent, I know you are extremely busy. This survey is short and should be completed within no more than 15 minutes. Please click on the link below to access the survey and begin.

**Follow this link to the Survey:**

${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:

${l://SurveyURL}

Your participation in this study is greatly appreciated. If you have any questions about this program development effort or the survey, please contact myself at 352-486-5131 or Dr. Matt Benge at 352-294-1996. Again, thank you for your time and for contribution to making the best better!

Sincerely,

Genevieve A. Mendoza

4-H Youth Development Agent

UF/IFAS Extension - Levy County

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Appendix D. Florida 4-H Shooting Sports Survey Second Reminder to Agents E-mail.

Dear 4-H Extension Agents,

The Florida 4-H Shooting Sports program standards and accountability survey closes today! If you have already completed the survey, I really appreciate your participation. As of yesterday, 29 surveys were completed. I urge you to complete the survey, as it will provide us with valuable information that will provide valuable information and contribute to the development of a more comprehensive plan to support 4-H Extension agents in offering a safe, fun shooting sports program.

The survey **closes Today, May 21st at 5:00 PM**. As a 4-H Extension agent, I know you are extremely busy. This survey is short and should be completed within no more than 15 minutes. Please click on the link below to access the survey and begin.

**Follow this link to the Survey:**

${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:

${l://SurveyURL}

Your participation in this study is greatly appreciated. If you have any questions about this program development effort or the survey, please contact myself at 352-486-5131 or Dr. Matt Benge at 352-294-1996. Again, thank you for your time and for contribution to making the best better!

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