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Perceptions of Youth Risk and Safety Education: A Survey of Farm Safety Day Camp Participants and Their Parents

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Perceptions of Youth Risk and Safety Education: A Survey of Farm Safety Day Camp Participants and Their Parents

Abstract

Farm Safety Day Camps are popular educational formats for teaching safety awareness to rural youth audiences. Surveys were administered to 3rd graders and their parents following a safety day camp program to determine the amount of exposure the youth had to six identified rural hazards. Data showed that students are capable of self-reporting their exposure rate and risk of injury and that they are capable of following safety rules 91.8% of the time. Most parents (80%) revealed that the program was a beneficial experience for their children and reported a preference to general safety topics as opposed to farm-related topics.

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Background

In many agricultural communities across Ohio, the focus on youth safety and reducing farm related accidents continues to be a priority. As our society and technology change, the number of families that live on farms today is decreasing. According to the Ohio Department of Agriculture, Ohio had more than 98,000 family farms in 1976. Today, Ohio has less than 78,000 family farms in operation. However, this trend has not eliminated the incidence of farm-related injuries occurring to children. According to the National Agriculture Statistic Service (NASS, 2001), there were 22,648 agriculture-related injuries, which occurred to children or adolescents under the age of 20 who lived on, worked on, or visited a farm in 2001. Of all the children injured in farm related accidents, just over 48% of them lived in the Midwest. In Ohio alone, there were 35 farm-related fatalities involving children from 1993 to 2002 (The Ohio State University, 2002).

In response to these statistics and public concern, Ohio State University Extension has coordinated nearly 75 farm safety camps throughout Ohio. Reaching over 13,000 youth since 1997, these day camps attempt to bring farm safety issues to the forefront.

Even though many of today's children do not live on farms, most will have the opportunity to visit a friend's or relative's working farm sometime in their young life and are often times unaware of the safety precautions that need to be exercised while there. It is imperative that youth be made aware of the unique dangers present on the farm.

One successful strategy used to educate youth about these dangers is the Farm Safety Day Camp. These camps are designed to bring about awareness to children of the hazards found on a farm and help them learn how to avoid farm related injuries. Many farm safety camps employ teaching stations that are designed to actively involve youth and visually reinforce a safety behavior. Many

safety camps utilize local community resources for planning, teaching, and financial support.

The purpose of the study reported here was to gather input from children who had recently attended a Farm Safety Day Camp and also gather input from their parents to measure the effectiveness of the program. A survey was administered to participants and their parents several weeks after the day camp experience. The Putnam County, Ohio Farm Safety Day Camp program had been an annual countywide school field day for 3rd graders for the past 4 years. Participating school officials and teachers were familiar with the event. Both public and private schools participated in this half-day field trip to a working farm. Schools were scheduled to attend either a morning or an afternoon session. To accommodate all interested 3rd-grade classes in the county, the program was offered for 2 consecutive days. Group sizes ranged from 15 to 30 students, with a typical group consisting of 25 students.

Based on input gathered from a local Farm Safety Day Camp planning committee, six study objectives were identified. They were as follows.

1. Determine the amount of exposure 3rd-grade students had to six common rural hazards,
2. Quantify any injuries the students sustained from such hazards,
3. Determine students' self-efficacy for following safety rules,
4. Determine if parents can validate students' self-reported data in the areas of risk assessment, injury assessment, and self-efficacy of following safety rules,
5. Determine the importance of the safety day camp to the students' parents, and
6. Solicit input on which topics the parents felt should be taught at future safety day camps.

Methods

In March of 2003, all 3rd-grade classes of the 13 elementary schools in Putnam County, Ohio participated in the Farm Safety Day Camp. Over 600 students participated in the event.

Two survey instruments, one for students and one for parents, were developed by the researchers for the study. Permission was obtained from teachers and parents to administer the surveys on the school field trip release form. It was explained to youth and parents that the survey was voluntary and they did not have to participate. The student survey was administered in the 3rd-grade classrooms 8 weeks after their Farm Safety Day Camp experience. A written set of instructions accompanied the survey asking the teachers to administer the surveys during the same week.

The student survey was designed to answer the following research questions: 1) How much exposure do 3rd-grade students have with six common agricultural hazards? 2) How many injuries do 3rd-grade students report having from the six selected injury agents? and 3) How sure are 3rd-grade students that they can follow safety instructions? Face and content validity were established by having 9-year olds review the instrument and circle any words they didn't understand or questions that did not make sense to them. Accordingly, several minor revisions were made. A Cronbach's Alpha of the questionnaire was .76.

A survey was also developed for the parents of 3rd graders to complete. Students were asked to take the parent survey home and bring it back to school within 1 week. Teachers facilitated the distribution and collection of student and parent surveys.

The parental survey was developed to answer the following research questions: 1) Can parents validate students' self-reported data in the areas of risk assessment, injury assessment, and self-efficacy of following safety rules? 2) How important is the Farm Safety Day Camp experience from a parent's perspective? and 3) What topics do parents wish to see taught at future safety day camps? During instrument development, content validity was addressed by having a 3rd-grade teacher, who is also a parent of a 9-year old child, review the questions for clarity and appropriateness of the answers. A Cronbach's Alpha was performed on the two rating scales, eliciting a .70 and .83 reliability.

Results

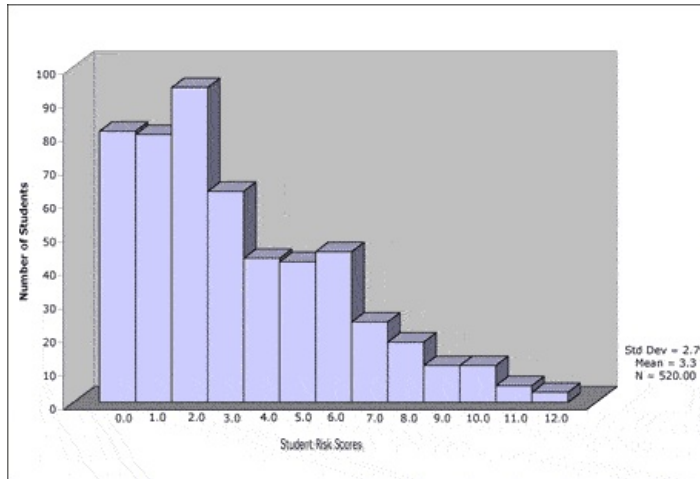
The day camp participants represented a census of all 3rd graders for Putnam County, Ohio. Of the 600 students attending the day camp, 536 completed the survey, yielding an 89% response rate. Of those 536 student surveys, 466 parent surveys were returned to the classroom teachers, representing 87% of the possible student-parent matched responses. Demographic descriptors indicate the population was 94% Caucasian and an equal split of boys and girls (n=268 respectively). Almost all campers reported they visited farms (94%). Approximately 53% of students indicated they lived in rural areas, 41.5% in the country and 11.4% on a farm. About 47% of the students lived near towns (14.6%) or in towns (32.5%).

Exposure to Hazards

Youth were asked to self-report their amount of risk related to certain hazards by quantifying the amount of contact they experienced with the hazards on a weekly basis. For each of the six agricultural hazards, students scored themselves on a 3-point scale, with 0 indicating no contact with the hazard, 1 indicating contact 1-2 days a week, and 3 indicating contact 3 or more days a week. Contact with the hazard included all possible places for exposure, including their homes and other places they spend time (e.g., grandparents, babysitter, or neighbors).

Student risk scores ranged between 0 (no contact with hazard) to 18 (high level of frequent exposure). Students had a mean of 3.3, and their scores were distributed between the range of 0 and 12 (Figure 1). Most of the population reported no-to-low exposure to the risks, with the lawn mower and yard/garden chemicals as the highest reported hazard they faced.

Figure 1.
Student Self-Assessment of Risks to Hazards



Comparing students who live on a farm to all other types of residents, farm children were more likely to report higher levels of risk. Boys were also more likely to report a higher level of risk than girls.

Parent data was used to validate student risk assessment. Parents were asked to report the amount of exposure their child had with the hazards identified on the student survey. Using the same 3-point scale as the children, parents' responses were paired with student responses (Table 1).

A comparison between students' and parents' opinion of exposure level was conducted using a paired t-Test analysis for each of the 3 groups relabeled: No Exposure, Minimal Exposure, and Maximum Exposure. Compared to the parent data, students had a tendency to under-report their exposure level when they felt they had no contact with the hazard, while the students in the Maximum Exposure group over-estimated their potential risk. No statistical significance (p-value = 0.4518) was found between the parent and student responses in the Minimal Exposure group.

Table 1.
Comparison of Students' and Parents' Opinion of Risk

	No Exposure*		Min Exposure ^d		Max Exposure ^f	
	Student	Parent	Student	Parent	Student	Parent
Lawn Mowers	31.1	28.7	51.6	66.7	17.3	4.5
Tractors	64.3	76.6	26.0	19.6	9.7	3.8
Grain Bins	76.7	92.4	17.0	5.2	6.3	2.4
Farm Machinery	69.8	79.4	21.0	16.8	9.2	3.8
Livestock	58.6	80.7	22.9	9.4	18.5	9.9

Yrd/Gardn Chems	48.5	64.7	31.9	32.0	19.7	3.3
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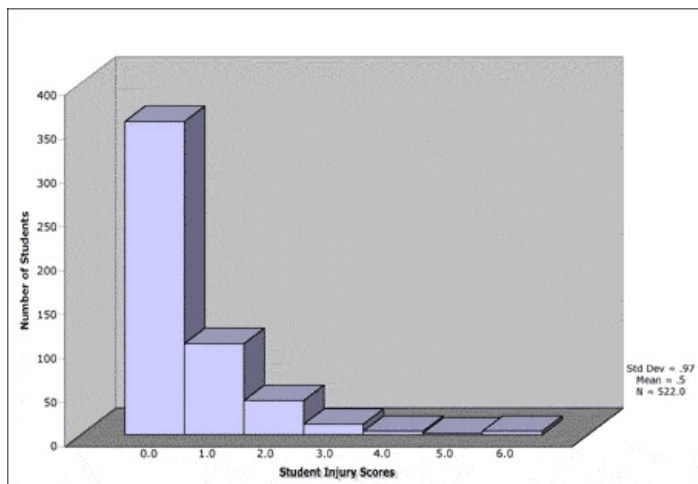
Scores represent valid percentages for each hazard.
 * p-value = 0.0154 d p-value = 0.4518 f p-value = 0.0067

Report of Rural-Related Injuries

Youth were asked to self-report if they had ever experienced an injury related to six pre-identified hazards. Injury scores were coded so that students' scores ranged from 0 (indicating no injuries) to 6 (injuries with all six identified hazards). Students' mean injury score was .51 (Figure 2). Boys tended to sustain more injury than girls, however there was no significant difference between farm children and non-farm children in the number of injuries reported. Most sustained injuries were related to livestock, with yard/garden chemicals and lawn mower injuries second and third respectively.

Parent data supported the ranking of how injuries occurred as reported by their child. However, parent data did not support the magnitude of injury reported. Using a paired t-Test analysis, students tended to over report the number of injuries they sustained from the six identified hazards (p-value = 0.0114).

Figure 2.
 Student Self-Assessment of Injuries From Hazards



Self-Efficacy for Following Safety Rules

Youth reported they could follow safety rules 91.8% of the time. Over 51% of the youth surveyed said they could follow safety rules "all of the time," and 40.3% agreed they could follow safety rules "most of the time." Twenty-nine students (5.5%) indicated they could "rarely-to-never" follow rules, and 14 (2.7%) admitted they would only be able to follow rules if an adult were present.

Parent surveys were congruent with student reports in that children could follow safety rules 97.0% of the time. However, parents were a bit more conservative in reporting 16.2% "all of the time" and 80.8% "most of the time." Only three parents (0.6%) believed their child could "rarely" follow safety rules, and 11 parents (2.4%) reported their child would follow the rules if an adult were present. All parents reported their children being capable of following the rules, which varied slightly from student reports, in which nine individuals reported they would "never" be able to follow safety rules.

Girls were more likely to report they could follow the rules. However, there was no statistical difference between youth who live on the farm versus youth not living on the farm in regards to their ability of following safety rules.

Importance of Day Camp to Parents

The majority of parents (80.0%) felt the program was a beneficial experience for their children, yet 59.9% would not have taken their child to the day camp if it were not a part of the school field trip. One hundred twenty-five parents (26.8%) reported their children are practicing better safety behaviors since their day camp experience. Of interest to local program coordinators, 86 parents (18.5%) indicated they have tried to replicate and re-enforce the topics discussed.

Safety Topics Important to Parents

Parents used a 4-point scale to rate 16 safety topics by order of importance for future day camp

program sessions. Overall, sessions involving agricultural equipment were less important than general safety topics (Table 2). Lawn mowers and electrical safety received the highest ratings; safety instructions for tractors, farm machinery, livestock, and grain bins received the lowest ratings. However, it should be noted that all topics received high relative importance rating scores, ranging between 87.5% and 99.8%.

Table 2.
Safety Topics of Interest to Parents

Topic	Rank	% Importance
Lawn Mowers	1	99.8
Electrical	1	99.8
Bicycles	2	99.3
Weather	3	99.1
Pond/Water	4	98.6
Sun/Skin Cancer	4	98.6
Chemical	4	98.6
Hand Tools	5	98.4
Poisonous Plants	6	98.2
Outdoor Insects	7	95.7
Wildlife	8	93.9
ATV	9	93.7
Tractor	10	93.2
Farm Machinery	11	91.2
Livestock	12	88.0
Grain Bins	13	87.5

Using the parent survey, a correlation was found between the variables "amount of exposure" and "amount of injuries" to the parents' perceived benefit of the program. As parents reported their children having higher levels of exposure to hazards and as their children experienced injuries with these hazards, then the parents had higher perception of benefit for their children to attend the camp.

Application to Practice

The research will be used to assist farm safety educators in Putnam County to plan and design future Farm Safety Day Camp programs to be positive educational events, as perceived by youth and parents. The basic methodology used in the evaluation has utility for other day camp coordinators evaluating their safety programs in relation to participating youth and parental interest. Future educational programs could incorporate topics identified where parents placed interest and also where youth had high levels of exposure and/or injury.

It is difficult for a Farm Safety Day Camp program-planning team to understand the amount of exposure a camp participant has to any of the rural hazards typically presented. A self-reported exposure survey is one possible method for attaining risk exposure rates. Using the parent survey is a validation technique to support the student's self-reporting survey. Understanding the fundamental agents of injury for these students allows a program coordinator to design a meaningful intervention program for local youth audiences. In the case with Putnam County, student and parent data supported the ranking of how injuries occurred; however, discrepancy existed on the magnitude of the injury reported.

Addressing self-efficacy for practicing safe behavior is an important consideration for this age group. Children ages 8 and 9 are developing their ability to critically think and beginning to grasp the deeper meaning of consequences and behaviors. Children begin to realize they should practice safety behaviors not only because they are told to, but also because those behaviors can keep them from being hurt. If day camp participants believe they have the ability to make good choices and follow safety rules, they are more likely to believe they can affect their personal safety behaviors and ultimately lower their injury rate. Interestingly, parents reported a higher confidence level (97.0%) than their corresponding children's responses (91.8%), that their child was able to follow safety rules "all" or "most" of the time.

Knowing how parents judge their children in making safety decisions can also affect intervention programs. Take-home information from the Farm Safety Day Camp, written for parents, can increase the likelihood that safety messages will be reinforced once the campers return home. Additional safety information, on topics not covered at the camp but found to be important to parents, could also be sent home with participants for them to discuss with their parents. This information could also be made available to teachers as an optional classroom activity.

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