

A Qualitative Assessment of Children's Farm Safety Day Camp Programs

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Abstract

In order to increase farm safety awareness and teach children good safety habits, farm safety day camp programs have been initiated in many communities. For the most part, the effectiveness of the programs is unknown because few evaluations have been performed. The purpose of this project was to qualitatively assess the overall strengths and weaknesses of farm safety day camp programs and to generate recommendations for future programs. Interviews, a literature search, and observations were used to identify strengths and weaknesses of the farm safety day camp programs. Major strengths of the programs are that: 1) positive attention is given to agriculture and agricultural safety; 2) programs are hands-on, interactive, and fun; 3) children gain knowledge about farm safety; 4) programs bring a community together to work toward a common goal; and 5) children talk to parents about safety. Key weaknesses of farm safety day camp programs are that: 1) there is a lack of parental involvement in many of the programs; 2) it is hard to change patterns of behavior in one day; 3) programs are expensive and time consuming; 4) curricula may include content that is inaccurate or inappropriate for the age of participants; and 5) evaluation is difficult. When done well, farm safety day camp programs can teach children about safety and influence safety practices affecting children on the farm. Recommendations for future farm safety day camp programs are: 1) ensure that child-development principles are applied to all aspects of program activities and curricula; 2) provide session leaders with accurate and relevant content; 3) increase parental involvement; and 4) address safety issues throughout the year.

Keywords. Day camp, Assessment, Children, Farm safety.

Farm safety day camp programs have been initiated in response to the high number of childhood injuries associated with production agriculture. The goal of most programs is to develop awareness for the importance of safety on a

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farm and to teach children good safety habits and hazard recognition. Steffen and Niedbalski (1998) conducted a study attempting to define the elements associated with youth farm safety day camp programs. The elements generated in their study determined that these programs for youth are typically a one-day event and cover a variety of safety topics. They are fun, hands-on, and interactive, allowing the children to experience safety first hand. Most farm safety day camp programs involve 20-minute sessions instructed by local volunteers, with children rotating from one station to the next. The programs are commonly designed for children ages 7–13, but some include children of all ages. Lesson topics vary depending on the concerns of the community and availability of volunteers. Examples of lesson topics include all-terrain vehicle (ATV) safety, tractor safety, electrical hazards, and animal safety. The safety programs provide a wide variety of information for children who may not recognize the dangers associated with agricultural work and the farm environment.

There are hundreds of farm safety day camp programs held throughout the United States annually. The *Progressive Farmer* Foundation sponsored 233 safety day camp programs in 1999, compared to 175 safety day camp programs in 1998, and 128 safety day camp programs in 1997 (*Progressive Farmer*, 1999). Many other programs, not financially supported through the *Progressive Farmer* Foundation, are also conducted each year. Even though there is little empirical evidence at this time about the effectiveness of farm safety day camp programs, more are started each year. A beneficial program that will effectively change children's behaviors on the farm is important. Recognizing the strengths and weaknesses of these popular safety programs may help to improve future farm safety day camp programs.

Methods

The purpose of this project was to assess the overall strengths and weaknesses of farm safety day camp programs, potentially yielding questions for future evaluation research. This study was not a comprehensive evaluation of youth farm safety day camp programs and was not exclusive to the *Progressive Farmer* farm safety day camp program. The project was assigned to a summer intern, supported by the Summer Student Fellowship Program of the Marshfield Medical Research Foundation, which is home of the National Children's Center for Rural and Agricultural Health and Safety in Marshfield, Wisconsin. The project was designed with expectations that an individual previously unfamiliar with farm safety day camp programs could gain an unbiased perspective. Information was collected by means of a literature search, interviews, and observations of planning committees and safety program events. Results gathered were reviewed and discussed with the National Children's Center for Rural and Agricultural Health and Safety staff experienced in farm safety interventions.

A full literature search of existing materials on farm safety day camp programs for children was conducted. The George E. Magnin Medical Library at Marshfield Clinic, the Rural Resource Center of the National Farm Medicine Center, technical papers from the National Institute for Farm Safety (NIFS) from 1988 through 1999, and the databases Medline, Agricola, ERIC, and the Internet were searched for any articles relating to farm safety day camp programs.

Interviews were conducted by telephone, e-mail, or in-person with 26 individuals who had been directly or indirectly involved with farm safety day camp programs (table 1). In-person interviews were completed with five rural youth injury

prevention professionals well versed with farm safety day camp programs. Telephone interviews were performed with a total of nine individuals, including four experienced safety day camp program coordinators and five agricultural safety professionals, who were chosen for their knowledge and experience with youth farm safety day camp programs. The *Progressive Farmer* farm safety day camp director provided a list of 180 *Progressive Farmer* farm safety day camp coordinators. From this list, 25 coordinators were randomly chosen for inclusion in the study. A questionnaire was sent to the coordinators by e-mail. A total of 12 (48%) individuals responded. Interviewees resided in the following states: Alabama, Colorado, Delaware, Georgia, Iowa, Illinois, Indiana, Kentucky, Minnesota, Mississippi, Nebraska, New York, Pennsylvania, Texas, and Wisconsin.

All interviewees were asked the following questions:

1. "Describe why you feel farm safety day camp programs for children are important."
2. "From your perspective, what are the strengths of children's farm safety day camp programs?"
3. "From your perspective, what are the weaknesses of children's farm safety day camp programs?"

Table 1. Study participants.

Telephone interviews:	
Agricultural safety professionals	5
Safety day camp program coordinators	4
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E-mail interviews:	
<i>Progressive Farmer</i> farm safety day camp coordinators	12
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In-person interviews:	
Rural youth injury prevention professionals	5
Total	26

Review of Literature

Only nine journal publications and one NIFS technical paper were found that specifically addressed farm safety day camp programs. Some materials may have been missed due to the limitations of the search. An explanation of what a farm safety day camp program is, and methods of becoming involved, were discussed in four of the ten articles (Burgus, 1997; Gullickson, 2000; McNab, 1998; Shutske, 1993). The need for good evaluations of current programs was mentioned in three papers (Shutske, 1994; DeRoo and Rautiainen, 2000; Murphy et al., 1996). Another article provided a definition of the safety program to be used in future research (Steffen and Niedbalski, 1998). One publication described the creation and implementation of a certified training program for volunteers to teach rural and farm safety programs to children in Indiana (Whitman et al., 1997). There was only one published evaluation study (Hughes and Hartley, 1999). This study reported the Georgia Healthy Farmers Farm Safety Camp to be beneficial by increasing children's knowledge and decreasing farm injuries among safety program participants. The Georgia investigators acknowledged that the number of childhood farm injuries was not necessarily reduced as a result of participation in their program.

Among the non-journal materials reviewed were two grant applications proposing systematic evaluations of farm safety day camp programs (McCallum, 2000; Marlenga, 1997). Four binders describing how to conduct a farm safety program were reviewed (Farm Safety 4 Just Kids, 2000; Reynolds and Sheridan, 1998; Sheridan,

1996; Sheldon et al., 1995). Evaluation techniques were referred to in all four binders. Probably the most relevant non-journal information reviewed was a report released in September 2000 by a University of Alabama evaluation research team (McCallum et al., 2000). The investigators described their evaluation methods and results involving youth and parent participants in 20 different farm safety day camp programs sponsored by *Progressive Farmer*. This "pilot" evaluation project was the most comprehensive effort to date to assess outcomes of farm safety day camp programs.

Observation

In order to appreciate the preparation required to implement a farm safety day camp program, the authors have actively participated on five separate event-planning committees. In addition, information was gathered regarding the formal training sessions provided by *Progressive Farmer* for their designated camp coordinators. One author attended a *Progressive Farmer* training session.

Observations by the authors were made at a total of 15 safety day camp programs through attendance, assistance, and/or instruction. These experiences provided an opportunity to observe adults and youth in their active participation as instructors and students.

Results

A total of 26 individuals knowledgeable about farm safety day camp programs provided qualitative data. Comments were recorded and condensed to form a list of the five most commonly mentioned strengths and weaknesses of the programs. The reviewed literature and other observations provided additional support for qualitative data. Preliminary findings were presented to the staff of the National Children's Center for Rural and Agricultural Health and Safety and discussion led to a consensus on key findings.

Strengths of the farm safety day camp programs (in order of most-often to least-often mentioned):

1. Positive attention is given to agriculture and agricultural safety.
2. Farm safety day camp programs are hands-on, interactive, and fun.
3. Indications are that children are gaining knowledge about farm safety.
4. Farm safety day camp programs bring a community together to work, and they work toward a common goal.
5. Children talk to parents about farm safety.

Weaknesses of the farm safety day camp programs (in order of most-often to least-often mentioned):

1. There is a lack of parental involvement at many programs.
2. It is hard to change patterns of behavior in one day.
3. Farm safety day camp programs are expensive and time consuming.
4. Curricula may be inappropriate for the age of participants or inaccurate in content.
5. Evaluation is difficult.

Strengths of the Farm Safety Day Camp Programs

Farm safety day camp programs draw attention to agricultural safety, making aspects of safety visible to parents, youth, and community members. Media coverage and local sponsors of the programs remind the community why farm safety is important and what is being done to prevent farm injuries to children. Members of local FFAs and 4-H are often involved in the organization and planning of the safety programs. Being involved may spark the youth's interest in safety and initiate safer actions. Volunteers and parents who participate also learn new information that may challenge current practices.

Farm safety day camp programs are hands-on, interactive, and fun. For example, a learning session may allow a child to approach and touch a dog appropriately. A learning station on noise-induced hearing loss may distribute earplugs and allow youth to practice inserting them. Children learn better and will remember more when the information is presented in an interactive format (Collins, 1993). The farm safety day camp programs make the information real by allowing children to experience safety practices when on a farm. The sessions are kept short, and many instructors use humor to keep the children's attention (Parke, 1992; Cox et al., 1985; Daniel and Cox, 1988; Isaksen and DeSchryver, 2000).

There are indications that children are learning about farm safety. Many safety program coordinators indicated that they received comments from parents and/or children that suggested the children gained safety information at the farm safety day camp program. In cases where evaluations are conducted, pre- and post-test results are used as a research technique to determine an increase in knowledge. Georgia evaluation data revealed an increase in safety behaviors of children on the farm following participation in the farm day camp safety program (Hughes and Hartley, 1999). According to the Georgia study, children seem to be learning valuable safety information that can be used in real-life situations. Most recently, the *Progressive Farmer* farm safety day camp program evaluation study team reported approximately one-third of parents cited positive changes in their child's safety-related behavior, while 9% also noted positive changes that the family had made as a result of topics addressed at the program (McCallum et al., 2000).

Farm safety day camp programs often bring a community together to work toward a common goal. People who had not previously worked together convene to organize a safety program. Local businesses sponsor and sometimes present safety information at the program, and volunteers from different disciplines organize and help during the day.

Children often talk to their parents about safety after the program. Safety information for parents is frequently provided in "goodie bags." Through the children, the parents are reminded that safety on the farm is important. Several coordinators shared anecdotal reports that some children questioned their parent's unsafe farming practices, thus prompting behavior change in adults.

Weaknesses of the Farm Safety Day Camp Programs

The lack of parental involvement was the most often mentioned weakness of the farm safety day camp programs. For those programs that included a parent track, an average of only 20% of parents participated, according to interviewees. Parents may not know what is taught at farm safety day camp programs and thus cannot enforce safety practices based upon what their children learned. In order to remember to behave safely, children need to be supervised and have rules reinforced by adults

(Green, 1994). Children will also copy adults' behavior, even if they were taught that the actions are dangerous. Parents, therefore, need to acknowledge their responsibility as good role models. Ideally, parents would initiate and maintain safe practices on the farm, but this is not always the case.

Farm safety day camp programs address a variety of safety issues (Reynolds and Sheridan, 1998; Steffen and Niedbalski, 1998). It is difficult to change patterns of behavior in one day (Sullivan, 1998). The safety behaviors learned at programs are short-lived unless children are continually reminded and reinforced (Sullivan, 1998). For farm safety day camp programs to increase their effectiveness, safety messages must be taught and frequently reinforced throughout the year. In fact, a recent *Progressive Farmer* farm safety day camp program evaluation pilot study found that up to 60% of camp participants reported no improvement in safe behaviors on a 4-month post-test (McCallum et al., 2000).

The programs require varying levels of human and financial resources. A great number of volunteer hours are put into the safety programs before, during, and after the event. Some local and national sponsors make financial contributions to the farm safety day camp programs. According to the 1999 *Progressive Farmer* Foundation annual report, a total of \$566,000 was spent supporting the 233 farm safety day camp programs that year, an average of \$15 per child. Only a small fee is charged to the participants, which does not cover all expenses. By comparison, a central Wisconsin 1999 farm safety day camp program attended by 60 youth was funded by a \$1,600 community grant to cover costs of educational materials, promotions and advertising, and meals. An argument was made by three interviewees that money might be better spent providing safety equipment for children, rather than on questionable educational approaches.

There is a concern that farm safety day camp program curricula may be inappropriate for the age group of participants or that the content presented may be inaccurate. Not all lesson topics are developmentally appropriate, such as teaching ATV safety to an 8-year-old when a child of that age is not physically or cognitively developed to safely operate an ATV. Some topics, such as power take-off (PTO) safety, are often taught, but the method of teaching safety and the message of safety given to children, in some cases is questionable. In order to demonstrate the devastating results of an entanglement, risky actions may take place, such as dangling a pair of newspaper-stuffed blue jeans over an unguarded PTO operating at full speed. The message that should be given to children is simply, "stay away from a running PTO." An action-packed demonstration replicating an entanglement is sometimes dangerous in itself and may incite a child's curiosity. Pointing out dangers that a child was previously unaware of may unknowingly encourage children to experiment with unsafe behaviors at his/her own home. Some volunteer instructors, who are not very familiar with their lesson topic or familiar with safety aspects of the topic, may also be giving misleading or inaccurate information. In addition, some volunteer instructors, who are not familiar with child development, might not distribute the instructional information in a developmentally appropriate format. Finding good and knowledgeable instructors is important. The messages taught and those who teach them vary from program to program; hence, the extent of "mixed" or inaccurate messages will vary.

Evaluating the effect of farm safety day camp programs is difficult. The evaluation technique currently used most often is pre- and post-tests given to children to determine knowledge gained during the safety programs. The pre- and post-test results record only short-term knowledge gained by the children, which does not predict their behavioral changes. Although several efforts have been attempted to

pilot test and refine methods to assess long-term knowledge gain, there are no standard methods available for doing this. In an effort to evaluate behavioral changes, some farm safety day camp program coordinators have asked parents to fill out a questionnaire and speculate on their child's behavioral change.

Controversial Questions Regarding the Effectiveness of the Farm Safety Day Camp Programs

After reviewing all the information, several questions remained unanswered:

1. Do children understand and apply the information they are given?
2. Do farm safety day camp programs encourage children to experiment with unsafe behaviors?
3. Are children really safer after attending a farm safety program?
4. Are parents given a false sense of security by having children complete a farm safety day camp program?

Discussion

There are many different views on the value of farm safety day camp programs. Some individuals question the effectiveness of the programs, while others see no shortcomings. The strengths and weaknesses posed here are based on the opinions of experienced individuals. The people interviewed were selected with the intention of soliciting many different perspectives on the possible strengths and weaknesses of farm safety day camp programs.

Based on this review, we believe that in most cases farm safety day camp programs are worthwhile. Most coordinators mentioned comments from parents that suggest the programs are influencing children to modify their behaviors. The Georgia study suggests that the children are learning about farm safety and improving their safety behaviors on the farm (Hughes and Hartley, 1999). Although a conclusion should not be based on only one study, the results are promising. Targeting children is probably the best way to teach safety because children are more adaptable than adults. Children, therefore, are more likely to change their behaviors with adult intervention and support.

The community often benefits from the program. Community members demonstrate commitment and dedication when planning and implementing a farm safety day camp program, and they also learn as they come together to teach safety. Volunteers and youth involved in planning the program may especially benefit because they experience the planning process and information presented. As with other public health campaigns such as anti-smoking, seat belt usage, and fire safety, reaching adults through children may be an effective way to modify adults' behaviors (Widome, 1997; Schneider and Freeman, 2000; Christoffel and Gallagher, 1999).

Farm safety day camp programs have definite weaknesses. The lack of parental involvement is the most important concern. Parents are setting rules and assigning tasks to children. Parents should be aware of the hazards children can be exposed to on a farm, and to prevent injuries to children, they should understand what their children are developmentally capable of doing. Many adults are aware of agricultural dangers, but due to time constraints, money, traditional views, lack of initiative, or other factors, they do not adopt safe behaviors (Lee et al., 1997). When adults are poor role models, children are less likely to adopt safe practices (Green, 1999; Schwartz,

1999). Ideally, parents would attend the farm safety day camp program and either participate in sessions with their children or have a separate track available to them that coincides with the information from the youth sessions.

The notion that program curricula may be inappropriate for the age of participants or inaccurate in content may be a valid concern. This may place children at greater risk. The extent to which this is true would vary from program to program. The quality of the instructors and the curriculum content affects the amount of valuable information provided to each camper. Most farm safety day camp programs rely on local volunteers, so screening the instructors would be difficult. Other challenges may exist when children of varying ages are grouped together in sessions. For example, including 8-year-olds and 12-year-olds in the same group could compromise the teaching style. Some concerns were expressed over developmentally inappropriate instruction. This issue needs to be addressed at the planning committee level. Ensuring that session topics and session content are developmentally appropriate, and that instructors are knowledgeable about the application of safety to their topic, should eliminate concern and potentially improve the overall quality of the safety program education.

Evaluation Issues

There are many barriers to successful evaluation of farm safety day camp programs. Most evaluation studies have been formative, with a focus on temporary knowledge gained, not on behavioral changes. The post-test is usually given at the end of the program. Consequently, only short-term memory is tested. Despite repeated attempts, long-term effects of the farm safety day camp programs are hard to measure because only a low percentage of follow-up surveys are returned after the program is over (Reynolds, 2000).

In order to measure the behavioral changes of the children, an external evaluator for the *Progressive Farmer* Foundation contacted parents of campers by telephone and asked them to recall their child's previous behaviors and compare them to new behaviors. This evaluation strategy has its limitations. When asking parents to comment on their child's safety behaviors, there is always a risk of the parent indicating what he/she thinks the evaluator wants to hear, or of seeking to create a positive image of their child (Brink and Wood, 1989). These parent-reported behavioral data lack the rigorous validity and reliability measures desired for comprehensive evaluation (Rossi et al., 1999). Other evaluation challenges include interpretation of terminology and multiple confounding issues.

Farm safety day camp programs vary between communities and should, therefore, be evaluated separately. Each program has different topics, instructors, and coordinators, all having an effect on the success of the program. By examining each farm safety day camp program separately, the strengths and weaknesses of a specific program can be used to improve that program, in addition to sharing results and recommendations with others. In this way, each community can learn what does and does not work in their area.

Recommendations for Future Farm Safety Programs

Based on the strengths and weaknesses expressed, a few recommendations for the improvement of farm safety day camp programs can be made (table 2).

As a result of this qualitative study, an additional issue was raised regarding terminology. Farm safety day events are commonly referred to as "camps." This use

of the term “camp” may, in fact, be misleading. Parents are accustomed to dropping their children off at “camps” for music, acting, basketball, and 4-H, where the desired outcome is enhancement of the child’s skills or talents. Parents’ roles at music or sports camps are largely observational or require minimal involvement. In contrast, the desired outcome of a farm safety day camp program is enhancement of the child’s protection from occupational risks and hazards. These are outcomes for which adults bear primary responsibility. While the term “camp” should possibly be replaced with “training” or “course” to describe the event, it probably serves a useful marketing purpose in stimulating participation with the target audience. If we continue to use the “camp” term for farm safety, we have an obligation to emphasize the important role that parents/adults must assume in role modeling and enforcing safety standards their “campers” have learned.

Table 2. Recommendations for improvement.

Recommendation	Comments
Farm safety day camp program coordinators should ensure that child development principles are applied to all aspects of program activities and curricula.	Program coordinators and planning committees must integrate child development throughout the program. This includes session topics, lunchtime activities, materials distributed, and layout of the safety program activities.
Farm safety day camp program coordinators should provide session instructors with accurate and relevant content for the session they will teach.	Distractions such as pets and noises from other sessions, roadway hazards, safe access from one session to another, intermingling age groups, qualified chaperones or session leaders, and session topics (if they are the same for all groups of children) must be reviewed for each group. A one-size-fits-all approach to farm safety cannot be used.
Farm safety day camp program coordinators should enhance parental involvement.	Instructors may need assistance in locating and integrating: Current and relevant safety content Training materials in various audiovisual formats Child development principles pertaining to age-appropriate content and delivery.
Farm safety day camp coordinators and parents should address safety issues throughout the year.	The program planning committee should identify methods to increase parents’ participation, e.g. by providing incentives, such as door prizes or valuable coupons, and offering the safety event during a time more conducive to parental participation, such as during the evening.
	If only one camp program can be funded, use of other educational media should be incorporated. Educational posters, classroom activities and skits, and videos are some examples that can be useful in reinforcing farm safety messages in the home, at school, and during youth and civic organizational events.

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