SUMMARY REPORT

SCHOOL-BASED AGRICULTURAL INJURY AND ILLNESS PREVENTION PROJECT

1R01 CCR414389-09

ALCORN STATE UNIVERSITY

Frances C. Henderson, Ed.D., Principal Investigator
Alpha Morris, Ph.D., Co-Principal Investigator

Funded by: Centers for Disease Control and Prevention - National Institute of Occupational Safety and Health

ABSTRACT

The purpose of this study was to determine the impact of geographically and culturally relevant community-based educational programs on agricultural injury and illness prevention knowledge and behaviors of school-age children living in agricultural based communities. The four objectives of this study were:

1. The identification of the school-based agricultural injury and illness prevention programs commonly available and used in schools in five rural counties in Mississippi with predominate populations of African Americans.
2. A description of how, when, where and by whom school and community-based agricultural injury and illness prevention programs are presented to children in grades kindergarten (K) through12.
3. A determination of the level of knowledge of school-age children in grades K-12 on how to prevent childhood agricultural injuries and illnesses.
4. A description of the childhood agricultural injury and illness prevention behaviors engaged in by children in grades K-12.

The reality of children of all ages working on family farms is perceived by generations of families in production agriculture as an economic necessity. Children are expected to perform specific tasks as selected and assigned by the head of the household. Increasingly data are reported on the number of children and adolescents who reside on farms in the United States. Additionally, the status of fatal and non-fatal unintentional injuries experienced by children in production agriculture is receiving increasing attention. In April 1996 the National Committee for Childhood Agricultural Injury Prevention published a national action plan which presented a picture of children at risk on United States farms and ranches including those who live and work there and those who visit farms. The National Action Plan on Children and Agriculture includes 13 objectives and 43 recommended action steps based on input from 42 members representing the public and private sectors. Citations of funded research on childhood agricultural safety and health included "tomato harvesting in California, dairy farming in Wisconsin and blueberry picking in Maine." A list of current NIOSH activities addressing children exposed to agricultural hazards included projects in California, Colorado, Iowa, Ohio, Kentucky, New York, Washington, Texas and Wisconsin. There were no citations of projects in rural southern states such as Mississippi.

There are few data on childhood agricultural injuries and illnesses in Mississippi. There are no known studies on the impact of school-based education programs on the safety awareness behaviors of school-age children in rural Mississippi. According to NIOSH's National Occupational Research Agenda (NORA), many high-risk populations have been underserved by the occupational safety and health research community, with the result that important unanswered questions remain about the profile of hazards they face, the incidence of work-related injuries and illnesses, the mechanisms of these injuries and illnesses, and the optimal approach to prevention. Intervention effectiveness research is among the 21 priority research areas identified by NORA.

Three sample populations in the five-county study setting were surveyed: School administrators, leaders of 4-H Clubs and other community-based organizations that provide safety programs for children and school-age children in grades K-12. The schools that participated in this project included

19 public schools with a cumulative African American student population of 91 percent. The number of students in grades K-12 in the participating schools was 13,000, of whom 1,050 were interviewed. Demographically the sample was 79 percent African American, 19.3 percent Caucasian and 1.7 percent other races. The sample was 59.1 percent female and 40.9 percent male.

A 38-item School-Age Child Survey was developed, tested and used as an interview guide. A multidisciplinary team of university students was trained as interviewers. School-age children were interviewed to determine their level of knowledge of how to prevent childhood agricultural injuries and illnesses and the behaviors in which they engage to prevent such injuries and illnesses.

Study findings revealed that less than one third of the 1,050 students surveyed were taught farm safety practices. Findings also revealed that 14 percent of the school-age children interviewed lived on farms while 36 percent had relatives who lived on farms. Of the 160 children who lived on farms, 124 indicated that they had ridden on a tractor shaft, 71 were injured while engaged in chores which involved farm animals, and 120 indicated that they had applied pesticides.

According to focus group interviews of school administrators, 4-H Club leaders and others, some school-age children are involved in occasional special activities such as farm safety day camps. The school administrators indicated that there are teachers available whom they could assign to teach safety activities. Focus group members expressed concern that there are safety measures which need to be addressed for all school-age children such as water and fire safety and safety on all terrain vehicles which are used on farms in work-related activities and on and off farms in recreational activities.

It can be concluded from these findings that:

- school-age children in Mississippi receive little farm safety education in schools,
- children who live in rural southwest Mississippi on and off farms are at risk for injury and illness, and
- school administrators, 4-H Club leaders and others are supportive of school-based farm safety and overall safety education programs for children.

SIGNIFICANT FINDINGS

The most significant findings of the survey of school-age children revealed that, when combined with children who have relatives who live on farms, the total number of children who are exposed to farm life is 51 percent of the sample. Data also revealed that there is not a formal mechanism wherein children are taught agricultural injury and illness prevention information. Children were engaged most often in feeding animals when they were injured - 16.9 percent. Other farm related injuries were associated with the use of farm equipment - 13 (8%), bailing hay - 4 (2%), cutting wood - 11 (6%), and swimming/fishing - 36 (22%). One hundred twenty respondents indicated that they have applied pesticides. Use of protective clothing was noted as the most frequent (n=75) safety measure of respondents applying pesticide. The age group exhibiting the highest injuries for broken bones and puncture wounds was the 12 to 15 year olds. Regarding water, 476 (45%) of the total population lived near a pond or some other form of water. The most frequent response to safety rules to apply near water was noted as not to take chances (n=246). Regarding injuries or potential for injuries of children who lived on farms (n=160), 124 (77%) indicated that they had ridden on a tractor shaft and 71 (44%) were injured while engaged in chores which involved farm animals.

USEFULNESS OF FINDINGS

The findings of this study are useful in planning intervention strategies such as farm safety education for school-age children and farm safety day camps. They are also useful in planning overall safety education such as water and fire safety and safety in operating all terrain vehicles (ATVs) for school-age children who live in rural areas who may not live on a farm.

These findings also provide essential background information for pilot testing the North American Guidelines for Children's Agricultural Tasks in a predominately African American population in the rural South. The guidelines cover 61 of the most common agricultural jobs that children take part in. Those 62 jobs are then further broken down into seven categories:

- animal care
- tractor fundamentals
- implement operation
- manual labor
- haying operations
- general activities
- specialty production

They were developed by the National Children's Center for Rural Agricultural Health and Safety.

Additionally, the findings of this study provided essential background data for a Centers for Disease Control (CDC) and Prevention conference grant. With funds provided by the Centers for Disease Control and Prevention, selected sponsors and Alcorn State University, a two-day conference entitled "Promoting Agriculture-Related Safety and Awareness Among Youth in Rural Mississippi: A Community Partnership Conference" will be held at Alcorn State University School of Nursing on January 27-28, 2000.

The findings from this study will also be useful in a variety of efforts to support continued funding of childhood agricultural injury prevention initiatives. They can also be used as background data to support replication and/or expansion of this study. Additionally, these data could comprise phase one of a three phase study; intervention and post-intervention phases would follow this as the pre-intervention phase of a study of three or more years in length.

LIST OF PUBLICATIONS/EXPLANATION

The process findings and recommendations related to this study have been accepted as poster presentations at one international conference, two statewide conferences and one regional conference. Only one of these presentations resulted in a published abstract. (See Citations.)

Following the CDC conference on January 27-28, 2000, the researchers will develop a comprehensive manuscript for publication in selected periodicals or as a monograph. It will address the multidisciplinary process for designing an interview tool, training interviewers, collecting the data, analyzing data, and determining findings and interpretation of the School-Based Agricultural Injury and Illness Prevention Project. It will also include the effectiveness of approaches to teaching school-age children such as grade-specific farm safety day camps, student classroom projects and 4-H Club projects. Additionally, county-based partnerships for assessing, planning and implementing school-based agricultural injury and illness prevention activities will be the primary outcome of the CDC conference.

CITATIONS

Henderson FC, Morris AL, Davis, SP: School-Based Agricultural Injury and Illness Prevention. Proc of the Centre for Agricultural Medicine, University of Saskatchewan, Fourth International Symposium "Rural Health and Safety in a Changing World" Book of Abstracts, Saskatoon, Canada, October 18-22, 1998

Memorandum

Date: March 26, 2001

From: Roy M. Fleming, Sc.D., Director, Research Grants Program RMF
Office of Extramural Programs, NIOSH, D30

Subject: Final Report Submitted for Entry into NTIS for Grant 1 R01 CC414389-01.

To: William D. Bennett
Data Systems Team, Information Resources Branch, EID, NIOSH, P03/C18

The attached final report has been received from the principal investigator on the subject NIOSH grant. If this document is forwarded to the National Technical Information Service, please let us know when a document number is known so that we can inform anyone who inquires about this final report.

Any publications that are included with this report are highlighted on the list below.

Attachment
cc: Sherri Diana, EID, P03/C13

List of Publications - None

Title: School-Based Agricultural Injury and Illness Prevention
Investigator: Frances C. Henderson, Ed.D.
Affiliation: Alcorn State University
City & State: Natchez, MS
Telephone: (601) 442-3901
Award Number: 1 R01 CC414389-01
Start & End Date: 9/30/1997–9/29/1999
Total Project Cost: $100,000
Program Area: Special Populations
Key Words:

Abstract:
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Publications
No publications to date.