Education of Young Children Concerning Poison Prevention

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The authors were students at the University of Kentucky College of Pharmacy, Lexington, when they submitted this paper, which won first prize in the 1985 Secretary's Award for Innovation in Health Promotion and Disease Prevention. The contest is sponsored by the Department of Health and Human services.

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Synopsis

Every year about 5,000 fatal accidental poisonings occur in the United States. About 50 percent of

ACCIDENTAL POISONING IS THE CAUSE of nearly 5,000 deaths in the United States each year (1). Children under 5 years are the subjects in more than 50 percent of the 2.5 million poisoning episodes reported annually (2), and 1 in every 750 poisoning episodes is fatal (3). By the time a child reaches age 5, there is a 40 percent probability that he or she will have ingested a potentially toxic substance, given the magnitude of the under 5 population—17.5 million children.

Considerable resources and efforts are devoted to the management of poisonings, but there is much less emphasis on the prevention of these episodes. In view of the level of understanding and the short attention span of young children, teaching them about poison prevention is a formidable challenge.

To accomplish this prevention goal, a group of pharmacy students adopted the tactic of educating the older brothers and sisters of the under fives. These children in the first, second, and third grades are in the age group most likely to have preschool brothers and sisters whom they can influence and whom they sometimes supervise.

School classrooms are excellent settings for reaching large numbers of children, but classroom teachers often do not have time to research special those who die are children under the age of 5 years. Medications, house plants, and household cleaning agents are the three leading causes of accidental poisonings in this age range. Since there is an always changing population of children under the age of 5 years, there is a continuing need for education.

A committee of the Student American Kentucky Pharmaceutical Association decided to become actively involved in filling the need for education by writing and performing a poison prevention puppet play. The 10-minute play is suitable for small volunteer organizations. It requires only a small financial outlay, and two persons with minimal training can present the play.

The play has been shown to more than 6,000 youngsters in the past 2 years. Responses to followup surveys of both the teachers and the students have shown a positive effect on the children's attitudes toward poison prevention.

health topics. Pharmacy students and pharmacists can share some of the knowledge that they have acquired by teaching poison prevention concepts in the classroom, thus educating both students and teachers. Members of the Student American Kentucky Pharmaceutical Association decided to become involved in this task. The vehicle that they chose for teaching was a puppet play which they developed, presented, and evaluated.

Program Description and Evaluation Methods

A committee of the Student American Kentucky Pharmaceutical Association wrote the script of the puppet play to teach the following five concepts:

1. Plants and berries should not be eaten unless one knows that they are safe to eat.

2. If one finds a young child eating a plant, immediately take the plant and the child to an adult.

3. Children should recognize and know the meaning of the word POISON.

4. Medicine that makes one person well could make another one sick.

5. Only take medicine that is given by an adult.

The 10-minute play is performed by two pharmacy students. One is the narrator and the other one manipulates the two muppet-like hand puppets. The older of the two child puppets is Heathcliffe, who is bold, aggressive, self-important, and proud of what he has learned. He is in grade 1, 2, or 3, depending on the age of the audience. The younger puppet is Ferdinand. He is somewhat intimidated by his older brother. Puppets were selected as visual education aids to secure and hold the attention of the school children. Puppets also allow exaggeration and emphasis.

Following the play, the narrator engages the children in a discussion to reinforce the major points and answer questions. Specific questions are directed to the puppets, who help to maintain the children's interest.

The play required a minimal financial investment.

Two puppets were purchased from the Gospel Advocate Co., Nashville, TN 37203 for \$8.95 each. The props were household items (plastic plants with berries, empty bleach bottles, an empty aspirin bottle, and a cookie) and a cardboard sign POISON. A portable lightweight plastic pipe frame with curtains served as a stage. The pipe frame stage with curtains cost approximately \$100 3 years ago. The stage is about 4 feet high (see photo). It allows adults to sit in chairs beneath it without showing the tops of their heads. The front of the stage is about 5 feet wide, and on each side is a 3-foot wide extension at a 45 degree angle to the front. This helps to enclose the puppeteers.

The local board of education of Fayette County was initially contacted to inform public school teachers about the pharmacy students' play. Teachers were asked to contact the Student American



Figure 1. Teachers' evaluation of the puppet play presentation



Kentucky Pharmaceutical Association to schedule a presentation. Private schools were individually contacted and, as word-of-mouth publicity increased, so did requests for presentations. In 1985 we had more requests to present the puppet play than we could fill.

The play was presented at 17 elementary schools in the greater Lexington (KY) metropolitan area during one semester. Forty-two performances were given, reaching more than 2,300 first, second, and third graders. Special education students (educable, mentally retarded, orthopedically handicapped, and emotionally disturbed students) and students at a school for the mentally retarded also saw the presentation.

Two surveys were conducted to evaluate the program. A questionnaire (fig. 1) was sent to 68 teachers whose classes had seen the puppet show. The second survey group was 20 first graders and 25 third graders who answered questions immediately after viewing the play. The statements, shown in figure 2, were read by one of the pharmacy students. Each child responded by crossing out the appropriate one of three faces on an answer sheet for each statement. The three faces represent agreement, neutral reaction, and disagreement; they are shown at the top of figure 2.

Evaluation Results

Teachers response, based on 56 survey forms returned, is shown in figure 1. Sixty-four percent rated the quality of the presentation as excellent or very good. Teachers' responses as well as students' responses (fig. 2) indicated that the program was not too long, was well-received, and was appropriate for first through third graders. Responses of the teachers to specific questions indicated that the play was well-produced and that the children learned the major concepts presented. The students also believed that they had learned something about poison prevention. This achievement is substantiated by their ability to write correctly the word POISON on their answer sheets after the presentation. More than 50 percent of the teachers discussed poison prevention with their students before or after the presentation of the program. These discussions led to teachers' suggesting that the program be lengthened with a discussion of a greater variety of poisons. Finally, responses from the children indicated that they would be willing to assume an active role in poison prevention in their families. The response mechanism used in the children's survey allowed the same questions to be used with children of differing reading abilities and, presumably, nonreaders as well.

Discussion

This educational approach to poison prevention seems to be suitable for and well-received by young children and their teachers. It appears to teach young children effectively some basic principles of



poison prevention. The format of the presentation is highly suitable for small volunteer organizations because it requires only a small initial investment, and it is appropriate or easily modified to suit a wide variety of audiences of various attention spans (for example, different age groups and intellectual abilities). The discussion after the play can be used to answer questions or reinforce points raised during the play. For older children, the discussion may emphasize what to do if a poisoning occurs.

An additional advantage of the format is that it requires only a short time to train an inexperienced person to present the play. In fact, some pharmacy students were able to present the play after seeing it only a few times. A videotape of the production has been used for this purpose. The videotape has also been used to show children in grades 6–8 what we are trying to accomplish with the younger children.

The children in a particular age group are a continually changing population; therefore, a need exists for continuing education of that particular age group. The committee of pharmacy students has shown the puppet play to more than 6,000 students ages 4 to 8 in the past 2 years, and we hope to increase the number of students seeing the play every year, for many years.

References

- 1. Accident facts. 1980 edition, National Safety Council, Chicago, 1980, p. 14.
- Dreisbach, R. H.: Handbook of poisoning. Ed. 11. Lange Medical Publications, Los Altos, CA, 1983, p. 3.
- 3. Thienes, C. H., and Haley, T. J.: Clinical toxicology. Lea and Febiger, Philadelphia, 1971, p. 1.