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Jeanne Fenn, Cecilia Rosales and Claire Logue

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Sir Insulin Monk Versus the Evil Diana Betes

A Program Addressing Type 2 Diabetes Education and Prevention in Youth

Abstract

The purpose of this article is to share an innovative method of integrating community resources into a program designed to deliver age-appropriate and culturally appropriate diabetes education to youth. The educational program involves an interactive dialogue that engages school-aged children in an active process of learning about diabetes. School or community-based settings provide the best venue for presenting information to youth on diabetes. In addition, peer education is an excellent method of creating interest among youth. Many adults have received diabetes education simply by observing the program. This program has become an appealing and interactive method of delivering type 2 diabetes prevention information to children of all ages.

Diabetes is a family affair. Not only is diabetes an epidemic in the adult population, it is also rapidly becoming a significant problem in youth.¹ Once considered a disease among adults, type 2 diabetes is now being diagnosed in patients as young as 9 years of age. The rise in type 2 diabetes in youth has been shown to correlate with the rise in obesity in children.² The time has come to address prevention of type 2 diabetes in youth. This article discusses an innovative method of integrating community resources into a program designed to deliver age- and culturally appropriate diabetes education to youth. This educational program involves an interactive dialogue that engages school-aged children in an active process of

Jeanne Fenn, MEd, RN, BC, CDE

Cecilia Rosales, MD, MS

Claire Logue

From University Medical Center, Tucson, Arizona (Ms Fenn); Mel and Enid Zuckerman College of Public Health, Division of Community, Environment, and Policy, University of Arizona, Tucson (Dr Rosales); and the Sahuaro Girl Scout Council, Inc, Tucson, Arizona (Ms Logue).

Correspondence to Jeanne Fenn, MEd, RN, BC, CDE, University Medical Center, PO Box 245116, Tucson, AZ 85724 (jfenn@umcaz.edu).

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learning about diabetes. During the development and implementation of the educational program, a number of questions were raised. What approach best addresses the topic of diabetes in a school-aged population? What approach to delivering content associated with diabetes would have the greatest impact? How effective is youth theater in modeling healthful behavior? Implementation of the program has introduced a new model for engaging youth, families, and the community in prevention of type 2 diabetes.

According to the American Diabetes Association, 85% of children with type 2 diabetes are overweight or obese at diagnosis and present with glycosuria, absent or mild polyuria, and polydipsia with little or no weight loss. About 15% of children aged 6 to 19 years of age are seriously overweight, representing nearly 9 million American children.³ Obesity and type 2 diabetes have become significant health care issues for children of all ages.

Use of Community Resources

The Tucson-based Girl Scout program is a local grassroots organization that was approached in developing awareness of type 2 diabetes in youth. A group of middle school-aged Girl Scouts wanted to provide a community service as part of obtaining their Silver Award.⁴ The Silver Award is the highest award an 11- to 14-year-old Cadette Girl Scout can achieve and requires a leadership and community service project that helps improve the lives of others. Selecting diabetes as the topic for their community service project was not a difficult choice for these young girls. Upon reflecting on their own lives, each member realized that a parent, grandparent, sibling, or friend was affected by diabetes. Through guidance from their troop leaders and mentor, the group reviewed the local, national, and global data on diabetes. The following questions were asked: Who is providing educational services to this age group? What is the best approach to address the issue of diabetes? and How can we best engage the age group of 11- to 14-year-olds to increase their awareness and knowledge of diabetes? Moreover, as residents of a border state, it was likewise important to consider the unique needs of Mexican Americans. The United States–Mexico border region is a rich, multicultural, multilingual area with many isolated rural communities including several sovereign tribal nations. Three of the 5 members of the troop are Mexican American and have an understanding of how diabetes affects the Hispanic population.

While many accept the importance of a culture match between learner and educator, an in-depth look at the literature on prevention education programs targeting youth indicated that there is a dearth of peer-led or youth-driven education and awareness programs related to type 2 diabetes and its risk factors. In fact, most diabetes prevention literature is aimed at the adult population. It is important to note that there are very few prevention programs that cater to the special needs of children in promoting healthy lifestyles and behaviors, especially along the border region.

There are several programs identified in the literature when using keywords and phrases such as *peer-led*, *youth prevention programs*, *youth-driven diabetes programs*, and *diabetes education using theater*. Youth Zone from the American Diabetes Association focuses on topics in diabetes as they relate to children and teens.^{5,6} Get Kids in Action and VERB are examples of programs accessible via the Internet that focus on obesity prevention in youth.^{7,8} There are peer-led educational programs that focus on teen issues such as sexually transmitted diseases, unwanted pregnancy, weight reduction, and healthy lifestyles.⁹⁻¹¹ The authors attempted to identify whether the diabetes prevention program developed by the Tucson Sahuaro Girl Scout Council Troop 509 was being used by other Girl Scout troops in other parts of the country. None of the programs identified in the literature had a strong peer or cultural component, and none available used peer educators for developing type 2 diabetes messages.

Methods

The Tucson Sahuaro Girl Scout Council Troop 509 decided on the best approach for teaching young children not yet affected but at risk for developing diabetes. Their overarching goal was to educate children not yet affected with type 2 diabetes who in turn would take these messages home to engage their families with discussions on type 2 diabetes. This young troop set out to create an interactive program that would reach out to the children residing in the areas along the United States–Mexico border and also within the Native American nations of the Tohono O'odham, Pascua Yaqui, San Carlos Apache, and Pima Indians. Their mission was to develop awareness and increase the knowledge base of all school-aged children about the chronic and disabling effects of type 2 diabetes.

Teaching Through Theater

A play was created by 2 members of the troop that incorporated diabetes facts, risk factors, and prevention tips in a lively, creative, and humorous fashion. The play features Diana Betes, an evil, arrogant villain cloaked in a black robe draped with empty potato chip bags and pizza boxes representing the disease of type 2 diabetes. Her disheveled hair is adorned with old candy wrappers and a long chain of soda pop cans strung around her neck. The Town of Glucose, where the play takes place, has just recently lost their king, King Beta Cell, to diabetes. Diana Betes sluggishly withers away onstage as Sir Insulin Monk from the Town of Glucose defeats her and stops her villainous activities using exercise and healthy eating. The Town of Glucose cheers their hero, Sir Insulin Monk.

This 30-minute program includes a lecture to introduce the content. Each peer health educator presents 1 of the 5 mini topics including definition, prevalence, risk factors, signs and symptoms, and prevention tips of type 2 diabetes. This is presented prior to the play in an informal didactic style. To engage this age group in the learning process and reinforce learning, the interactive play is presented after the mini lecture. After the play, presenters ask the audience questions about each of the content areas: What is diabetes? Name 2 risk factors for diabetes. How many people have diabetes? and How do you prevent diabetes? The method of evaluation is provided in a supportive and humorous manner. Prizes are awarded for those who have participated in this program. Group preparation involves approximately 5 to 6 weekly meetings. The number of individuals who participate in the program varies from 5 to 15. Groups are encouraged to change the script to match the cultural issues surrounding obesity and diabetes. An example is changing names to reflect their community and culture (Valley of Glucose, Lady Insulin Warrior) and to reference common snack foods. The groups who have used this program have presented several times to groups or classes within their school or community. The program encourages exchange of knowledge and creative presentation skills without the expectations of expert acting skills.

In addition, educational brochures were developed and are provided in a creative format with age-appropriate language, for example, "Don't Monkey Around With Diabetes" and "Ask Me About the Big D." The content includes signs and symptoms of diabetes and prevention tips. Brochures have been translated into local languages

including Spanish and Tohono O'odham. A coloring and activity workbook have also been developed and translated into Spanish. To encourage educators to include this presentation in their curriculum, the teaching objectives, content, and method are outlined and provided to the schools.

Evaluation

How do you evaluate and ensure that you are having an impact? Evaluating effectiveness is based on goals and objectives of the program: to increase awareness and knowledge of type 2 diabetes. The audience is questioned at the onset and at the end of the program with the same set of questions regarding the 5 mini topics: definition, prevalence, risk factors, signs and symptoms, and prevention tips of type 2 diabetes. After the play, the Girls Scouts randomly select students and ask questions about the content of the lecture and play. Small gifts are awarded to those students who participate in this portion of the program. Their response and a show of hands have been successful and informal methods of evaluation. This interactive evaluation method is integrated into the overall entertaining interaction with the children. The age/attention span of the audience and the brief time with this group make the question-answer format the most effective form of evaluation.

For individuals, families, and societies to make behavioral change, there must be an awareness of the need to change behavior. Steps for behavioral change are reflected in the transtheoretical model.¹² Prior to making any preparation or action for change, a person needs to be aware of the reasons for change. Approaching a person or population based on their readiness for change is the first step in behavioral modification.

Outcomes

The group has delivered its message of awareness to numerous schools along the United States–Mexico border and various health organizations throughout the United States in the past 4 years. These organizations include elementary schools on or near tribal reservations, binational and national conferences, and local and border health fairs.

To reach the thousands of children in the schools, the troop designed a "Train-the-Trainer" tool kit aptly named "Don't Monkey Around With Diabetes." This tool kit demonstrates what they have created and trains other

peer groups to take this education and outreach program to their community schools. This involved developing a curriculum, a DVD recording of the lecture and play, and an evaluation format. This DVD is formatted to show how to present this program and play and is included in the tool kit. The tool kit contains a script of the play and a diabetes prevention activity book both in English and Spanish. A diabetes prevention poster, Frisbee, portion plate, and exercise guidelines are included to provide ideas and maintain interest in younger children. A PowerPoint presentation, diabetes facts, school objectives, and methods of interfacing with the community are included to help guide production of the program. All information is presented in a colorful, portable box. Through the use of this tool kit, several regional community health programs and school districts have performed this play and incorporated it in their teaching programs.

Schools, youth groups, and diabetes prevention programs are now using this prevention program/play as a different model of education. One other Girl Scout Troop is using the tool kit developed by Troop 509. The Oregon State Department of Health in Salem is working collaboratively with a local troop. Locally in Tucson, the University of Arizona Center for Health Equality, Project EXPORT, is also using the tool kit and working in a collaborative fashion with children and youth living in an urban community. Students in Nogales, Arizona, located near the United States–Mexico border, and Tuba City, Arizona, located in the Navajo Nation, are in their second year of presenting the play to peers via telemedicine. The Arizona Diabetes Virtual Center of Excellence program associated with the Arizona Telemedicine Program has supported this ongoing activity. This program elicits a greater response of viewers not only because of its entertainment value but also because it provides a personal reason for attending: to view grandchildren, family members, and friends performing in a play. Creating an awareness of the issues of diabetes through use of theater provides a successful teaching method.

Implications/Relevance for Diabetes Educators

Peer education is a powerful tool in educating youth. Involving youth in planning, presenting, and evaluating teaching programs can be very effective. Not only does this project recognize and empower the individual presenters, it also educates members at the community level. When a collaborative approach is used with a youth organization dedicated to community service, it can be an effective method for promoting healthy behaviors.

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