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Sharing MedlinePlus®/MEDLINE for Information Literacy Education (SMILE): A Dental Public Health Information Project

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Abstract

The SMILE project represented a partnership among the University of Texas Health Science Center at San Antonio Libraries, the Gateway Clinic in Laredo, and the San Antonio Metropolitan Health District. The project focused on improving dental practitioners' access to reliable information resources and integrating the best evidence into public health dental practice. Through its training program, SMILE cultivated a set of “power information users” among the dentists, dental hygienists, and community health workers (*promotores*) who provide public health preventive care and oral health education. The dental public health practitioners gained information literacy skills and increased their knowledge about reliable sites such as blogs, PubMed®, and MedlinePlus®. This project fostered opportunities for expanded partnerships with public health personnel.

Keywords

consumer health information; dental health education; dental hygienists; dentists; librarians; outreach programs; public health dentistry

Introduction

The SMILE (Sharing MedlinePlus®/MEDLINE for Information Literacy Education) project <<http://www.library.uthscsa.edu/community/smile.cfm>> from the Libraries of the University of Texas Health Science Center at San Antonio focused on improving public health dental practitioners' access to information resources, heightening their awareness of resources available from the National Library of Medicine (NLM), and integrating the best evidence from these resources as part of public health dental practice. Practitioners, who included dentists, dental hygienists, and community health workers (*promotores*), gained knowledge of information tools to benefit their clinical practice and to share with their patients.

Oral health has a direct relationship with overall health and well-being. The Executive Summary of a 2000 report from the Surgeon General's office stated that dental care and oral health "must be included in the provision of health care and the design of community programs."¹ Public health programs have great potential to make a difference in the oral health of the nation, especially for vulnerable populations such as the elderly, disabled, under-insured, low-income children, and minority groups. Low oral health literacy contributes to poor oral health, especially when combined with other factors.² Despite the important role of the dental health practitioners in oral health care and the transfer of oral health information to patients, the project team found that dental public health practitioners are infrequent target populations for library information projects. Prior to this project, a review of public health information outreach projects sponsored by the National Network of Libraries of Medicine (NN/LM) did not identify any with a major focus on oral health.³

The SMILE project, active from December 2007 to February 2009, represented a partnership among the University of Texas Health Science Center at San Antonio Libraries, the San Antonio Metropolitan Health District (Metro Health) in Bexar County, and the Gateway Community Health Center in Laredo, Texas (Webb County). The populations of both Bexar County and Webb County are predominantly of Hispanic origin (Bexar County, 58.3%; Webb County, 94%)^{4, 5} with many people who speak only Spanish or prefer Spanish. It is important for dental health practitioners in these communities to be aware of Spanish-language information resources for their patients.

Metro Health is among several public health agencies that meet the medical and dental needs of the low-income population of Bexar County through a network of health care clinics. Four Metro Health public health clinics offer dental services provided by eight dentists and three registered dental hygienists who rotate among the four clinics. Metro Health staff members estimate that more than 10,000 residents – primarily children – are reached by dental programs in additional non-traditional settings, including Head Start centers, elementary school sealant programs, and health fairs and other community events.

The UT Health Science Center has a regional campus with a library in Laredo, which makes it possible to focus a number of outreach services to Laredo and Webb County and to develop outreach partnerships. Gateway Community Health Center (Gateway) has a pediatric dental clinic and a dental education program. The Gateway dental staff includes three staff dentists, a registered hygienist, and several *promotores* who offer health education. The care provided at Gateway helps to fill a gap in dental services in Webb County, which is designated by the federal government as a dental health professional shortage area. With only 32 dentists for a population of nearly a quarter of a million people at the time of this project,⁶ Webb County was also included in the area targeted by the Healthy Border 2010 initiatives to improve access to oral health care on both sides of the US-Mexico border. While several clinics and programs across South Texas have collaborated with *promotores* to address a range of health issues, the project team believes that the *promotores* at Gateway are unique in that they provide dental health education for parents and children. Through these partnerships, the SMILE project addressed information-access components of Healthy People 2010 as well as oral health objectives specified in Healthy Border 2010. The project focused on improving both awareness of, and access to, reliable health information resources for dental health practitioners in South Texas and on integrating the best evidence from these resources into their public health dental practice.

Methods

Early in the course of the project, librarians met with the professional dental coordinators from the two community dental clinics (in San Antonio and in Laredo) targeted by the

projects. During these meetings, project staff members offered an overview of the project, gathered information about dental clinic staff members (numbers of staff members, roles), and scheduled the large group meetings at each clinic. The SMILE project included three separate large-group training sessions, lasting 1.5 hours each, for dental public health professionals at each clinic location in order to develop a core group of “power information users.”⁷ In addition to hearing about the services provided through SMILE, practitioners learned how to use PubMed®, MedlinePlus, MedlinePlus en español, and Loansome Doc; how to stay informed through blogs and RSS feeds; and how to utilize the document delivery services of the UT Health Science Center Libraries to obtain journal articles. Due to the busy schedules of the dental professionals, the librarians found that it was best to plan these sessions during regularly scheduled staff meetings at the clinics, with additional small group meetings planned as opportunities to follow up with participants. Having the large-group training sessions during previously arranged staff meetings worked well, as it prevented the librarians from taking the dental teams away from their patient time.

In a separate class conducted in Spanish, the *promotores* from the Gateway Clinic were also trained to use MedlinePlus® en español. Information about MedlinePlus and MedlinePlus en español also was added to an existing training module for *promotores*. Since *promotores* work directly with patients, this training was intended to improve the oral health literacy of dental health care consumers.

An important goal of this project was to improve information skills and increase the use of technology by dental public health practitioners. Through the classes, they were introduced to the use of blogs and RSS feeds and to PHPartners.org. The University of Texas Health Science Center at San Antonio Libraries maintain an outreach blog called “Staying Well Connected” <<http://www.library.uthscsa.edu/connected/>>, which was used during the training sessions to show an example of a resource for staying up-to-date and gathering public health information. As a service to dental public health professionals, the SMILE project included the development of a new topic page dedicated to dental public health resources for PHPartners.org, a public health information site that was developed for the NLM-led Partners in Information Access for the Public Health Workforce project. Complementing the development of this page, the plan for the SMILE project also included the creation of an online tutorial for dental health professionals.

Informal focus groups and a survey were used to assess the information needs and baseline skill levels of the dental health teams from the target clinics. Data from the focus groups and survey provided the basis of training for the dental staff. Project staff were especially interested in the resources that the dental professionals already used for their information needs and the information needs of their patients.

Results

During the needs assessment, the project staff found that Google was used most often as an information resource by the dental staff in Laredo and in San Antonio. Clinic staff members had low levels of familiarity with the topics listed on the needs assessment (e.g., blogs, PubMed, and MedlinePlus). Evaluations were used after the large sessions to obtain feedback on the material presented in each large-group training session. Overall, the feedback from the dental professionals was positive for the presentations by the librarians; however, one common theme throughout the feedback was that attendees would have preferred more time to practice the searching or to use the websites and tools that were presented in the large groups. After the three large-group trainings (towards the end of the project), a survey was used to evaluate the increase in the dental staff's knowledge of the online resources or topics the project staff had demonstrated or taught them during the

project period. The results of the survey indicated that the dental staff's knowledge increased for blogs, PubMed, and MedlinePlus.

The large-group training sessions were successful at both project sites, with 35 people trained in San Antonio and 51 trained in Laredo. Although planned and advertised, the small-group trainings were a challenge to organize, because of the limited time available to the dentists and dental hygienists during the workday. However, the library staff did meet with some of the dental professionals one-on-one to discuss specific training and information needs during six informal “drop-in” visits at the clinics.

During the project period, the library staff created a dental public health topic page for PHPartners.org <<http://phpartners.org/dentalhealth.html>>. The page was launched in October 2009 and had 5,466 site views through November 2010.

In another part of the SMILE project, the library staff developed The Oral Health Information Tutorial <<http://www.library.uthscsa.edu/community/oralhealth.cfm>> for dental health professionals. The tutorial focused on improving access to, and awareness of, reliable information resources for dental health professionals, as well as integrating the best evidence from these resources into public health dental practice and educational activities. The design of the tutorial was inspired by the PHPartners.org tutorial for Public Health Information and Data Tutorial. Project staff members chose to develop the tutorial using PowerPoint, which was chosen for two main reasons:

1. PowerPoint is widely available and the professionals can download the content for viewing on their own computers;
2. It is easy to use and new software did not have to be learned to create the tutorial.

The tutorial is hosted on SlideShare <<http://www.slideshare.net>>, and SlideShare widgets are used to embed the tutorial on the library's website. Between May 2009 and December 2010, there were 6,574 total views of the tutorial.

Before the tutorial went live, a small group of dental professionals (three dentists and three dental hygienists) were asked for their input and evaluation of the tutorial for their professional needs. Responses to the open-ended questions about the tutorial were generally positive. Some examples of the comments included: “This is very user-friendly.” “The links that you provided are some of the most reliable sources of information available. I think that this tutorial will be a fabulous tool for the dental health community.”

Project staff members also regularly posted dental-specific content to the library's existing outreach blog, “Staying Well Connected.” Each dental health professional signed up to receive the blog posts as an e-mail update. A total of 193 posts were added to the blog during the project period (December 2007 - February 2009), with 21 of the posts assigned the “oral health” tag.

Discussion

This project represented the UT Health Science Center Libraries' first initiative that was focused specifically on dental public health providers, and several useful lessons were learned.

- **Dental hygienists have opportunities to educate dental patients about general health needs, not only oral health needs.** The dental hygienists at Gateway Clinic and Metro Health educate different age groups in a variety of settings, such as schools, public health centers, and primary care clinics. They have opportunities to educate parents on children's oral health care and provide information about how

oral health contributes to general health. MedlinePlus and MedlinePlus en español are helpful resources to which dental hygienists may refer their patients for information on a wide range of health topics.

- **When working with health professionals, librarians need to emphasize utilities for timesaving and clinical decision making, including empowering the health professionals to search the literature independently.** Like many health professionals, the dentists and dental hygienists participating in this project were extremely busy with limited time available to conduct extensive searches for information. When they have opportunities to provide training for health professionals, it may be helpful for librarians to emphasize resources and techniques for efficient searches for the best available evidence.
- **The number of requests for document delivery was lower than anticipated.** Given their focus on clinical practice, the dentists and dental hygienists participating in this project did not make as many requests as anticipated for articles related to research or evidence-based practice. It may be helpful in future training sessions to describe how some clinicians are able to find time to obtain and review research findings to inform their patient care.
- **MedlinePlus is a valuable tool for dental patient information and for the *promotores*' education and foundation of knowledge.** A previous study done in South Texas emphasized the importance of bilingual health education resources.⁸ MedlinePlus was a valuable tool for this project, because it offers information in English and in Spanish. Both dental teams in San Antonio and Laredo have team members who are bilingual and can work with the Spanish-speaking population. MedlinePlus provides the dental team and, more specifically, the *promotores* with information for families in the community. *Promotores* can also use MedlinePlus to inform themselves about topics that may be unfamiliar to them in order to help the families in the communities or the patients who come to the clinic. They can also print educational materials to share with families.
- **The dental professionals in the SMILE project continue to use MedlinePlus and PubMed for their professional literature and patient information needs.** The project staff evaluated the dental staff's knowledge increase about MedlinePlus and PubMed and found that it had increased. Many staff members have told the project team that they are using MedlinePlus for patient information and PubMed for professional literature.
- **This project fostered opportunities for expanded partnerships.** Since the conclusion of this project, the library has expanded its partnerships with both the San Antonio Metropolitan Health District (Metro Health) and Gateway by teaching classes in evidence-based public health, exhibiting at health fairs, and by promoting library services for staff members.

Conclusion

Fundamentally, this project highlighted dental public health information needs and the role librarians can play in integrating reliable information in the decision-making processes of dental health professionals and their patients. Project librarians emphasized the role of freely available National Library of Medicine resources, PubMed, and MedlinePlus, for identifying evidence-based information for dental professionals, *promotores*, and their patients. The project fostered partnerships between librarians, dentists, dental hygienists, and public health personnel leading to anticipated outreach efforts by librarians to these groups in the future.

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