School and Public Youth Librarians as Health Information Gatekeepers: Research from the Lower Rio Grande Valley of Texas

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This study investigated how school and public librarians can become better disseminators of health information and improve health information literacy in small and rural communities in a selected research area. We used the Lower Rio Grande Valley of Texas as our study area, composed of the economically depressed Cameron, Hidalgo, Starr, and Willacy counties, populated largely by people of Mexican descent. We used a Delphi method in which an expert panel of school and public librarians (N = 19) responded to three rounds of questions regarding how school and public librarians might become active as disseminators of health information in their communities for K–12 youth and their caregivers. Generally the panel held that (1) health information is lacking in their communities; (2) school and public librarians can play important roles in making health information available; (3) school and public librarians can network with other agencies in promoting and disseminating health information for K–12 youth; (4) resource availability will limit how much librarians can become involved in the dissemination of health information; (5) participants are not willing to assume a health-information "gatekeeper" role; and (6) library staffs needed training in health information resources. We included recommendations for future research in health literacy.

Introduction

Reliable health information resources are among the most valuable assets available in all communities (CDC 2007). Over the years, governments have devoted vast amounts of time and money to efforts to improve health (Allensworth et al. 1997; UNESCO 2000; U.S. Department of Health and Human Services 2000). As government agencies, public libraries and public schools have often played roles in their communities by offering health informatio. According to AASL and AECT, community resources are necessary

for supporting information-based learning. By extension, that can easily include health information for communities (AASL AECT 1998, 124). The AASL AECT *Information Power* standards, but in other major professional documents, including *Standards for the 21st-Century Learner in Action* (AASL 2009) and the *National Health Education Standards* (Joint Committee on Health Education Standards 2007). These documents all insist on the need to help youth develop critical thinking skills so that they can lead healthy and productive lives. The school-based health center concept is another means of uniting learning, good health care information, and community (Brown and Bolen 2008; Geierstanger et al. 2004; Oros, Perry, and Heller 2000; Terwilliger 1994).

Evidence suggests that areas that have traditionally been underserved with health services and health information are often those rural areas that include large minority populations (Health Resources and Services Administration n.d.; Agency for Healthcare Research and Quality n.d.). Although rural and small-town communities are diverse, they have much in common. Factors faced by most rural and small-town communities include poverty and its effect on children and youth, social and geographical isolation, minimal mental health care and support, and a lack of hospitals, emergency facilities, and other types of health care facilities. Substance abuse, child neglect and abuse, and environment-caused diseases also have increased in rural and small town communities in recent decades (Cox and Mungall 1999; Hudnall 2003; Sana and Quill 2001; U.S. Congress 2003).

Small towns and rural areas with large Hispanic populations often do not have services that promote and encourage better health conditions and access to health care and information. This includes the Lower Rio Grande Valley of Texas (National Alliance for Hispanic Health Care 2001a and 2004).

Our study considers the health care information needs of youth in the Lower Rio Grande Valley of Texas. It looks particularly at how school and public libraries and librarians can better meet health care information needs in the region. The Texas Rio Grande Valley includes an eleven-county area; however, this study is focused on the four counties called the “Lower Rio Grande Valley”—Cameron, Hidalgo, Starr, and Willacy.

Health Issues in the Rio Grande Valley of Texas

The Rio Grande Valley of Texas lies just across the border from Mexico. In Texas the area is often referred to simply as “the Valley.” This region includes areas with large Hispanic populations. It is one of the poorest, and by many accounts the most underserved, areas in the United States. Like all of Texas, and much of the western United States, it was once a part of Mexico, and much of that heritage is a defining cultural characteristic of the Valley. Although most overviews of health situations in the Valley encompass all eleven counties, much of it can be applied directly to the four counties in this study.

Included among the major health problems facing the Valley are a lack of health insurance coverage, a lack of public supported hospital facilities, a lack of English language skills, and low educational levels. Poverty levels are among the highest in the

United States. In fact, Hidalgo County has one of the highest levels of poverty in the country. Heavy international border crossings are problems that the Valley has faced historically, and such crossings often bring with them health issues and diseases (Texas Board of Medical Examiners 1995; Warner 1992; Warner and Jahnke 2003).

Purpose of the Study

This research tested the assumption that public and school librarians can play a role as health information "gatekeepers" in small towns and rural areas in the Valley. As stated, this study used the Lower Rio Grande Valley of Texas to test this assumption. Although research does exist about rural health issues, it needs to be expanded, especially as it relates to the health information "gatekeeper" role that school and public libraries might play.

The study is limited to studying the delivery of consumer health information needed by youth, ranging in age from elementary through high school, and their parents and caregivers acting in their roles as protectors of youth. The study does not consider the health information needs of medical practitioners.

Literature Review

Background, Theory, and Practice

This study's design and execution relies heavily on theories, policies, and practices concerning rural communities, minorities in rural communities, and small-town life and as well as Hispanic culture. For example, Duncan (1996) discussed poverty and social classes in rural environments. Millsteins, Petersen, and Nightingale (1993) provided a holistic view of medical information delivery, drawing upon a variety of disciplines including anthropology, health policy, medicine, and nutrition, and made suggestions for improving adolescent health. Hechinger (1992) projected general twenty-first-century health needs. Dervin et al. (1980) wrote about the emotional context in which users search for and obtain health information. De Pietro and Clark (1984) investigated how "sense making" strategies influence how adolescents select health information. Flores (1996) edited materials dealing with bi-national efforts that address the needs of Mexican migrant and immigrant students. Gesler and Ricketts (1992) collected information on the geography of health care services in rural areas of North America. O'Brien, Raedeke, and Hassinger (1998) discussed the importance of social networks and leadership in forming workable communities. Nutbeam (2008) outlined the relationships that exist between health literacy, educational research, adult learning, and health promotion. He emphasized these as emerging concepts in clinical practice that can influence how people acquire skills that will give them better control over their health. Rochin (1995) discussed various issues related to Latinos in rural communities. Rew (2005), in her discussion of adolescent health, covered a wide variety of topics including morbidities and mortalities, injuries, suicide, smoking, drug and alcohol use, high-risk sexual activity, eating disorders, mental health problems, runaway behaviors, and violence. Summers (1991)

reviewed the role of minorities in rural societies, suggesting that they are often outside the mainstream of community life. Swanson, Cohen, and Swanson (1979) analyzed the small towns and the people who lived there. The Texas Board of Medical Examiners (1995) reported on health services available in rural Texas. The U.S. Congress (2003) heard testimony in a 2002 hearing concerning various aspects of Hispanic health conditions in the United States. Valdez (1992) discussed health policies and their effects on Latinos. Warner (1992) looked at policies regarding health care along the U.S.–Mexico border. Weissberg, Walberg, and O'Brien (2003) also offered a wealth of information, both practical and theoretical, concerning the welfare of children and youth, including drug use, sexuality, health, family life, child care, communities, media influences, and government policies. Yom (1996) considered the effects of the Internet on minority health. The theoretical and practical literature of health care and health care information as reflected in this overview provides background for this study.

Government and Professional Associations Literature

Among the more influential literature dealing with health concerns including youth is that coming from government agencies and professional and advocacy groups. In 2000, the U.S. Department of Health and Human Services issued *Healthy People 2010*. This series of documents established a set of "health objectives for the Nation to achieve over the first decade of the new century." It is designed to be used by organizations, individuals, and governments to "develop programs to improve health." The Center for Disease Control (CDC) has developed a number of documents relating to youth health in its series Healthy Schools, Healthy Youth! (2007). Publications in this series address a number of important health issues affecting youth and are available online from the CDC.

Associations such as the American Medical Association have active publication programs that cover a wide variety of health issues, including those affecting children and adolescents. This includes Fleming's assessment of *Healthy People 2010*, titled *Healthy Youth 2000: A Mid-Decade Review* (1996). The National Alliance for Hispanic Health used the report's objectives to survey the health of the Hispanic population in the United States. Their report documented a wide variety of health issues, including access to quality health services, education and community-based programs, environmental health, health communication, violence prevention, and a host of disease conditions (National Alliance for Hispanic Health Care 2001a and b). The alliance also has published a guide for improved health care delivery for Hispanics (2004).

The Texas Department of State Health Services and other state-based agencies also have issued a number of studies that center on health needs and services in the Rio Grande Valley (Texas A&M 2007; Texas Health Department 2007).

As mentioned, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), in its role as health protector, continually issues reports, guidelines, and directives about health involving youth and schools. Many of these are posted periodically on its website. Included among these are "Education for All" (n.d.) and " Focusing Resources on Effective School Health" (2007). *Education for All* is now

available in book form (2007). One of its directives, “Health across the Curriculum” (2004) is insightful in the ways that it suggests how health issues can be integrated into most subject areas taught in schools today. The World Health Organization, through the European Commission and Council of Europe, European Network of Health, also has surveyed health conditions and made suggestions for improvement in European countries in its “Promoting Schools” report (n.d.).

The Carnegie Corporation of New York also has issued a number of publications addressing the health issues of youth over the years. These include books, reports, and working papers (Carnegie Council on Adolescent Development 2007).

Recent professional standards that address health literacy in significant ways include those issued by the Joint Committee on National Health Education Standards (2007), the National Association for Sports and Physical Education (2004), the U.S. Office of Public Health Practice (2008), and the U.S. Office of Minority Health (2001). Closely related to these national health standards in terms of information literacy are *Standards for the 21st Century Learner* issued by the American Association of School Librarians (2007), the *Standards for the 21st-Century Learner in Action* (2009), and the *National Health Education Standards* (Joint Committee on Health Education Standards 2007). Clearly governments, foundations, and professional groups have been and will continue to be concerned that citizens are provided with health care and health care information.

Consumer Health Information and Health Information Literacy

How people find the health information they need has been a concern for librarians for decades. We note an increase in interest in consumer health information supported by the concept that consumers have the right to make informed decisions about their health. In 2002 the Public Library Association published *The Public Librarian’s Guide to Providing Consumer Health Information*, which outlined how public libraries might better provide health information (Kenyon and Casini 2002).

Not only do people need information to make good decisions, they also must know how to understand it and apply it in their lives. Ensuring that health information is understandable and usable is a fundamental component of effective health information programs and services. Guidance on how libraries and health agency can provide consumer information service includes articles and books by Baker (1995); Baker and Manbeck (2002); Baker and Wilson (1996); Connell and Crawford (1988); Daigle, Hebert, and Humphries (2007); Feldman (1996); Herman (n.d.); Kernaghan and Giloth (1991); Lenz (1984); Lenox (2005); Plimpton and Root (1994); Porr, Drummond, and Richter (2006); Rakowski et al. (1990); Rees (1982); Sanders et al. (2009); Sandstrom (2004); and a UCLA report dated 2007. These writings suggest the continuing need for and influence of consumer health information and intervention programs endorsed and delivered by professional groups within diverse information professional communities.

Libraries and Access to Health Information

In addition to promoting information literacy, the National Library of Medicine (NLM) promotes access to consumer information. In 2006, the National Network of Libraries of Medicine, a division of NLM, produced a revised edition of its *Consumer Health: An Online Manual*. This manual is designed to provide instructions to public librarians in various aspects of consumer information delivery. Mackert, Love, and Whitten (2009) studied how best to provide health information to low-health-literate audiences through e-health interventions on mobile devices, one providing diabetes information and the other offering child care information. Trettin, May, and McKeehan (2008) discussed a three-year research program conducted by the Library of the Medical University of South Carolina to teach high school students to critically evaluate health information found on websites. Wood, Lyon, and Schell (2000) reported on the evaluation process involved in NLM's consumer information pilot project initiated to help public libraries and other types of libraries meet consumer health information needs.

Issues ranging from health information promotion, reference services, information inquiry and terminology, access to electronic databases, collaboration and cooperation, training and education, and information needs and responses of professional client groups are discussed by Brisco (2007); Borman and McKenzie (2005); Calvano and Needham (1996); MacRae (2005); Ruffin, Cogdill, and Kutty (2005); Delgado (1995); Ettema, Brown, and Luepker (1983); Gillaspy (2005); Huber and Snyder (2002); Kouame, Harris, and Murray (2005); Lee, Guide, and Sathe (2003); Weldon (2005); and the 2004 article "Teenagers Struggle to Find Useful Health Data Online" published in *Advanced Technology Libraries*. The staff of the Northumberland County Library in England (2008) conducted a campaign that focused on providing basic nutrition and food preparation information for parents.

Of interest to this study is an investigation by Ortego (2001) concerning health information seeking behavior of residents in the Big Bend Region of West Texas. She studied sources of information and how the sources were used based on ethnicity and gender, age, marital status, those in poor health, and visits made to health centers and professionals, such as physicians. Although not directly connected to health information, Agosto and Hughes-Hassell (2005) provided a unique understanding of how adolescents use libraries for a variety of information needs, including school assignments and personal information needs. Collectively, these studies indicate that social and administration structures are essential for the holistic delivery of health care information. In terms of Hispanic populations, this research shows that problems associated with access are longstanding and continuous.

Outreach, Collaboration, Rural Communities

Activities of various health information providers indicate a growing trend of cooperation with community groups, including public libraries and schools. For social and cultural reasons, this often means that libraries that wish to offer such services must take their health information service out into the community. Community outreach can extend to all types of communities, including urban areas. Because our study addresses in part consumer information in small towns or rural communities, most of the studies reviewed

in this section focus on outreach in rural or smaller communities. Blanchard et al. (2008) reported on the need for professionals to provide better information technology access to youth in the areas of mental health. They also suggested that improved training is needed for professional staffs. Bowden et al. (2006) discussed the results of a research project supported with NLM funds in which she and her colleagues cooperated with local school librarians and community groups to bring health information to various groups in the Valley of Texas. Part of their study used high school students as peer tutors to help instruct users in how to use MedlinePlus. Duesing and Near (2004) reported on an outreach program designed to bring Internet-based health information to people living in central, western, and southwestern Virginia. Guard, Haag, and Kaya (1996) wrote about a program constructed to bring electronic health information to rural residents of southern Ohio and urban and suburban communities in the Cincinnati tri-state area. Later Guard, Fredericka, and Kroll (2000) analyzed a project that expanded NetWellness to rural citizens of Ohio, including schools. Mitchell, Sullivan and Pung (2002) described a project of collaboration between public libraries and academic libraries to provide a health education center for rural residents of southeast Georgia.

Nwagwu (2008) compared the effectiveness of fourteen sources of information about AIDS and HIV to women and girls living in a rural community in Imo State, Nigeria. The study involved both in-school and out-of-school adolescents and women. Pifalo et al. (1997) gave a historical overview of health sciences libraries offering rural outreach services between 1924 and 1992. These services were important because they laid foundations for later outreach programs. Spatz (2000) described the Planetree Health Resource Center in Dalles, Oregon, and its programs focusing on rural citizens of the area. The service worked in cooperation with area organizations, including schools. Ren, Cogdill, and Potemkin (2009) discussed the collaborative role of the Laredo (Tex.) Public Library and the University of Texas Science Center at San Antonio in providing health information for children through outreach programs. Scherrer (2002) described the efforts of a National Network of Libraries of Medicine project to provide health information in cooporation with local community groups, including schools. Halsted et al. (2007) described the introduction of MedlinePlus through the Lone Star Go Local project into various areas of Texas including counties in the Lower Rio Grande Valley and counties in eastern Texas. This study described additional initiatives planned to introduce the service into public libraries in central Texas. Of importance to this study is that these outreach projects operate in cooperation with various health centers, public libraries, and colleges and universities located in the various Texas counties. Literature on health care information suggests that the initiatives for consumer health information dissemination are results of collaboration and/or government-funding. Such support often encourages public libraries to offer consumer information as a part of their regular information services.

Schools and Health Information

Our study builds much of its framework on health information provided by school libraries. Liu and Zhang (2008) investigated how school libraries in China support health education. They found that school library involvement in health education has been

limited. Lukenbill and Immroth (2007) surveyed the role of public and school libraries in providing health information to children and adolescents. They made recommendations for collection development, programming, and curriculum uses. Reibman, Hansen, and Vickman (2006) discussed the role of *Biblioteca Las Américas*—a high school library serving a school dedicated to educating students interested in careers in the health professions—in providing health information outreach services to various groups in the community. Warner, Olney, and Wood (2005) wrote about the use of high school peer tutors trained in how to offer instructions on the use of MedlinePlus to various community and medical centers, including Hispanic groups, in the Lower Rio Grande Valley of Texas. Wesson and Keefe (1995) edited a collection of articles by professional school library media specialists addressing how school library media centers can serve the needs of special needs students. This section of reviews suggests that research in how the school library media center can better address health care information and offer supportive health care instruction is growing but still needs serious research attention.

Method and Research Questions

We used a Delphi method in our research. The Delphi approach relies on a panel of experts operating "on the principle that several heads are better than one in making subjective conjectures about the future . . . and that experts will make conjectures based upon rational judgments rather than merely guessing" (Ludwig, 1997). We selected the Delphi survey technique because it is widely used in health and social care to enhance decision making. It is uniquely designed to help transform opinion into group consensus (Hasson, Kenney, and McKenna 2000).

For our panel of experts, we selected three groups of professional leaders who work in the four counties making up the Lower Rio Grande Valley of Texas (Cameron, Hidalgo, Starr, and Willacy). Group 1 consisted of district-level school library supervisors, group 2 of selected building-level librarians from schools in the Valley, and group 3 of selected public library directors who served libraries that are members of the Texas Library System. All participants were selected on the basis of their recognized leadership roles and knowledge of the areas they serve. Participants also were selected on the basis of interviews and discussions with state-level authorities and their memberships in leading, state-level professional associations. The finalized expert panel consisted of nineteen members.

All members of the expert panel answered the same questionnaires. All three questionnaires were pretested by knowledgeable experts before they were sent to the expert panel. Questionnaire 1 was an open-ended questionnaire asking the panel to provide brief discussion about their concerns regarding health care information available in the Valley. Questionnaire 2 incorporated these concerns into an already prepared questionnaire and asked that they respond to these issues on a numbered scale. Questionnaire 3 consisted of responses from questionnaire 2 that indicated a lack of support for issues. The panel was asked to confirm their lack of acceptance of these items.

All three questionnaires were used to indicate a consensus of expert opinion regarding the types of health care information that libraries in the Valley might offer in terms of improving health care information, and the responses provide the basis for the findings and discussion in this study.

Research Questions

The researchers posed six questions:

1. Based on current practices and literature, what are the major health delivery models that might prove useful to south Texas public and school librarians in their roles as health information gatekeepers?
2. What is the level of awareness that these librarians have regarding general health information needs in their communities?
3. How do they see their role as a community gatekeeper of health information for their communities? How do they perceive benefits to their primary client group as a community health gatekeeper?
4. How did they see their networking role in developing and maintaining contact with other health providers in their communities?
5. What conflicts do they perceive to either hinder or advance their role as community health gatekeepers?
6. Questions as suggested by the panel of experts not specifically identified in the above were included in the questionnaire for round 2.

Limitations

The study does not consider the information needs of medical practitioners or staff. The study does not extend beyond the four counties making up the Lower Rio Grande Valley of Texas. Nevertheless, the study assumes that many of its findings are applicable across geographic boundaries.

Major definitions

The following definitions apply in this study:

- **Consumer health information**: Consumer health information is health information that is not technical. It is written or created to be readily understood by the lay public, and does not rely on technical interpretation by authorities before the lay person can use it for his or her own needs.
- **Information gatekeeper**: An information gatekeeper is generally considered someone in a position of authority who controls access to or has some manner of influence on how resources and information are dispersed to others.
- **Health Information Services**: How a librarian would provide access to health information resources (e.g., cataloging and reference services, programs).
- **School Library**: Refers to the personnel and activities of libraries serving schools.

- **Public Library**: Refers to the personnel and activities of public libraries in general, not a particular library.
- **Delphi Method**: See definition provided in the method discussion.
- **Lower Rio Grande Valley of Texas**: For the purpose of this study, we use the definition of the Lower Rio Grande Valley of Texas as suggested by the Center for South Texas Programs, University of Texas Health Science Center, and San Antonio to include the counties Cameron, Hidalgo, Starr, and Willacy (UTHSCSA 2007).

We provided the terms and definitions as given above as reference points in the questionnaires.

Findings

The Open-Ended Responses (Round 1)

In round 1, we asked respondents to write their responses to a series of broad questions regarding health information in their service areas. Included with the questions were the definitions and instructions on how to apply the definitions.

The following open-ended questions were asked in round 1:

- What role do you see school libraries and public libraries in the Lower Rio Grande Valley playing in the distribution of consumer health information to the community? The community may be either the school or the community that the school or public library serves. Please consider "library" to mean libraries in general and not your own individual library.
- What would you consider to be the positive aspects of libraries in the Lower Rio Grande Valley providing consumer health information?
- What would you consider to be the negative aspects of libraries in the Lower Rio Grande Valley providing consumer health information?
- Do you feel that the library has a role to play as an important health information gatekeeper in communities in the Lower Rio Grande Valley?
- What would you consider to be positive characteristics that can advance this concept?
- What would you consider to be negative characteristics that can hinder this concept?
- How might the gatekeeper role influence other leaders and decision-makers in communities in the Lower Rio Grande Valley?
- Please feel free to provide any additional comments that you feel would help us in our research.

One of the investigators read coded into categories the open-ended responses from round 1 (N = 13; 68%). The five categories were (1) librarians as players in the distribution of consumer health information to the community; (2) librarians and staffs and their ability to provide consumer information; (3) positive aspects of libraries in the Lower Rio

Grande Valley providing consumer health information; (4) negative aspects of libraries in the Lower Rio Grande Valley providing consumer health information; and (5) the gatekeeper role of librarians in providing consumer health information.

A panel of three persons with experience in school and public libraries independently read the narrative transcripts of responses (with minor editorial revisions made for consistence within context) developed by the investigator. Following guidelines, the three coders indicated whether they agreed or disagreed with the investigator's analysis. An inter-coder reliability test based on four coders (this included the investigator as a coder) was calculated using a kappa-type procedure developed by King (2004). This calculation showed a general kappa of 0.61, indicating a substantial agreement between all coders, including the investigator. This substantial agreement score is based on a chart presented by Landis and Koch (1977). Kappa is a measurement of how much agreement exists between observers beyond what is expected by chance alone. For example, if the agreement is complete, kappa = 1; if agreement is only by chance, kappa = 0 (Linear Search Algorithm in Gene Name Batch Viewer 2005).

The major disagreement between the investigator coder and the three other coders centered on the gatekeeper role of librarians in providing health information. This is important because the ambiguity of this concept is reflected elsewhere in the data and will be discussed in more detail later. Table 1 gives the open-ended responses from round 1.

Based on responses to round 1 questions, we incorporated some of the major concepts into the round 2 questionnaire using the Likert scale (5 = completely agree, 4 = somewhat agree, 3 = neutral, 2 = somewhat disagree, 1 = completely disagree) and e-mailed it to the panel of experts.

Return Rate and Tests of Validity and Significant Differences (Rounds 2 and 3)

Sixteen returns were received from round 2 (84 percent) and seventeen (89 percent) from round 3. Cromback coefficient alphas at 0.86 and 0.80 for rounds 2 and 3, respectively, indicated that the questionnaires were theoretically valid. Chi-square tests run on both rounds 2 and 3 responses indicated no significant differences in responses from the three expert groups, indicating that all three groups were in agreement on the issues raised.

Throughout this discussion M indicates the mathematic mean and DS is standard deviation). Community Assessment Respondents (N = 15) agreed that people in the Valley were less healthy than in the United States generally (M 4.40, DS.32), and they indicated that people in the Valley did not have adequate access to consumer health information (M 2.50, SD 1.41). They also felt that communities in the Valley did not have the capacity to support school libraries as sources of consumer health information. They were neutral concerning the capacity of communities in the Valley to support public libraries as sources of consumer health information (M 3.00, SD 1.23). See table 2.

Librarians as Health Information Gatekeepers

Respondents (N = 15) were asked to indicate their support for both school and public librarians acting as gatekeepers of health information. Responses showed a low level of agreement that public librarians would be comfortable in this type of role (M 3.90, DS 1.31) and that the local community would be supportive of librarians in this role (M 3.70, DS 1.1). Respondents (N = 13) were neutral (probably uncertain) in their feelings that school librarians would be comfortable in this role (M 3.31, SD 1.03) or that school communities would willingly accept school librarians in this health information gatekeeper role (M 3.00, DS 1.06). The panel rejected the idea that public librarians and their staffs are well trained to provide consumer health information (M 2.40, SD 091). This held true for school librarians and their staffs (M 2.00, DS 1.13). See table 3.

Support for Health Information Programs

Respondents indicated wide support for health information programs in school and public libraries. These ranged from support for school librarians increasing efforts to reach their service communities to improve accessibility to consumer information (N = 15, M 4.60, SD .051) and public librarians increasing their efforts in promoting comprehensive health information programs in their communities (N = 15, M 4.60, SD 0.63) to concerns about increasing health information resources in both school and public libraries (e.g., public libraries N = 15, M 4.06, SD 0.96; school libraries M 3.50, SD 1.06). Responses for each question ranged from 15 to 13, with 15 being the most frequent response number. See table 4.

Collaboration and Networking

Respondents (N =15) indicated that both public and school librarians are in excellent positions to network with existing communities in promoting health care information (school libraries M 4.38, SD .87; public libraries M 4.27, SD 0.83). Respondents also indicated that public libraries are well positioned to network with existing community-based health care providers in making health care information available in their communities (M 4.00, DS 1.18). There was less support for school librarians being in a similar position (M 3.50, SD 1.45). See table 5.

Models and Approaches to Services and Programs

Respondents (N = 15) responded to a number of suggested models presented to them for the delivery of consumer health information. For the most part, they agreed that all of these models were viable for school and public libraries. Among the highest ranked models for both school and public libraries were reference service, acquisition, and organizing of materials (public libraries M 4.80, SD 0.41; school libraries M 4.67, SD 0.62). Another highly supported model for both school and public libraries was advocacy for improved resources (public libraries M 4.73, SD 0.45; school libraries M 4.40, SD 0.63). Respondents indicated less support for public libraries developing and teaching health information literacy programs (M 3.93, SD 1.28) and for school librarians assisting

in the preparation of curriculum to be used by classroom teachers (M 4.27, SD 0.88). See table 6 and table 7. Table 7 shows a comparison of responses regarding some of these models and approaches.

Allocation of Health Resources by Types of Libraries

The expert panel ranked resources according to 6 medically related topics. They were asked to rank these on a scale of 6–1, with 6 indicating the most desired. The categories included environment, mental health, social services, physical education, and medical conditions. The panel indicated that social services and environment resources allocations should be high priorities for school libraries (environment M 4.46, SD 1.56; social services M 5.46, SD 0.88) and physical education resources should be the top priority for public libraries (M 4.86, SD 0.95). Topics less supported included information about nutrition (public libraries M 2.74, SD 1.38; school libraries M 2.46, SD 1.27) and information concerning medical conditions (public libraries M 1.86, SD 1.41; school libraries M 2.23, SD 1.64). See table 8.

Reconsideration of Responses (Round 3)

Nine health issues were retested in round 3. These were responses that received neutral or negative responses in round 2 (means below 3.50). To further verify these neutral or rejections responses, round 3 asked that participants respond to these issues again using the same Likert scale as used in round 2 (5 = completely agree, 4 = somewhat agree, 3 = neutral, 2 = somewhat disagree, 1 = completely disagree). The wording of the questions was changed to represent the assessments given by respondents in round 2. That is, if an issue had been rejected in round 2, the new wording for round 3 was rewritten to include the negative response. For example, if the round 2 wording was “Persons in my service area of Texas have adequate access to consumer health information” (M 2.47, SD 1.41), then the round 3 question was “Persons in my service area of Texas do not have adequate access to consumer health information” (M1.76. SD 0.90).

In round 3 responses often differed from round 2 responses. Respondents disagreed with the suggestion that residents did not have adequate access to health information (M 1.76, SD 0.90). In round 2 they were more neutral (M 2.50, SD 1.41). They disagreed that communities in the region do not have the capacity to support school libraries as sources for consumer health information (M 1.47, SD 0.87). In round 2 they were somewhat more neutral (M 2.40, SD 1.12). A similar response was given for public libraries. In round 2 responses regarding the public library were neutral (M 3.00, SD 1.23), while in round 3 they rejected this proposition (M 1.88, SD 0.78). In round 2 respondents were neutral to the idea that school librarians would not be comfortable in the role of health information gatekeepers (M 3.31, SD 1.03), but in round 3 they tended to reject this idea (M 2.18, SD 1.24).

In round 2 respondents accepted the idea that school library and public library staffs are not well trained to provide health information services (school libraries M 2.00, SD 1.13; public libraries 2.40, SD 0.91) This concept was rejected in round 3 (school libraries M

1.88, SD 1.05; public libraries M 2.12, SD 1.11) with respondents indicating that staffs are well trained. In round 2 respondents were neutral regarding the concept that the local community would willingly accept the school librarians as a gatekeeper of health information within the local community (M 3.00, SD 1,06), but in round 3 they disagreed, indicating that the school community would accept the school librarian as a gatekeeper (M 2.44, SD 1.09). As they had in round 2, respondents in round 3 continued to indicate that information about medical conditions (M 4.53, SD 1.07) and nutrition (M 4.47, SD 1.23) were not needed.

Obviously some attitude shifts occurred between rounds 2 and 3 regarding some issues that had been received neutrally or had been rejected in round 2. This might have occurred because respondents had time to think more deeply about the issues, or, because the wording to the questions changed slightly to reflect prevailing responses in round 2, the questions were perceived in different ways or misread in round 3. At face value, these changes showed a more positive view about some difficult concepts. See table 9.

Discussion

This study provides evidence that selected school and public library experts in the Lower Rio Grande Valley of Texas are very much concerned that people in their services area should have access to good health care facilities and good health information. They support standard models of health information delivery, and they feel that libraries should become more active in the delivery of health information. Table 6 and table 7 show how libraries can become players in providing health information in their various communities.

This is tempered by resources available and how both communities and librarians themselves can accept changes that will lead many of them into uncharted service areas. Nonetheless, the panel sees an expanding role for public librarians and school librarians in networking with school and community health providers.

A lack of staff training and knowledge of health information is a major problem in providing health information as is a lack financial resources available in communities to support libraries as health information centers. The roles that the librarian might need to assume also raise problems. The idea that the librarian might become a gatekeeper of health information was not widely accepted by this expert panel. The panel indicated that both librarians and the populations that they serve would have difficulty accepting this role.

According to a dictionary definition, gatekeeper means “someone who controls access to something.” Gatekeeper is widely used in several occupations including communication, education, business, and medical care. In medicine it often refers to case management, referrals, access to procedures, monitoring, and coordination (Ellsbury 1986). In recent years, with the advent of consumers assuming more responsibility for their health, the term has taken on a more participatory meaning, moving the consumer into a collegial role with the medical care provider (Herrick 2005).

Responses from participants in this study seemed to indicate that a gatekeeper role for librarians in providing health information was too controlling and prescriptive in terms of their understanding of the social and professional expectations of librarians. Are they afraid that their clients will not accept the librarian assuming this type of prescriptive role with health information? Are librarians not trained and professionally socialized enough to assume such a perceived authoritative role in health information? In round 1, which was open-ended, participants seemed more willing to be actively involved in providing health care, but in round 2 participants in their reluctance may have considered more deeply the social, political, and professional problems associated with this type of role.

The demand for health care information is increasing along with political and economic pressures to improve health care and reduce cost (Forman 2009). Librarians, along with other professional groups, will likely be required to assume a more active or gatekeeper role in the future. More study is needed to fully understand the implications of this role. In further research, it would be interesting to discover what role the participatory characteristics embedded in the newer concepts of the health care model might play in resolving the apparent conflict displayed by this group of librarians in assuming the more traditional medical gatekeeper role.

Conclusion and Recommendations

Social exchange and role theories can help explain some of these findings. Social exchange theory maintains that all social and entrepreneurial interactions are based on cost and perceived benefits in cooperative arrangements (Blau 1964; Gergen, 1980). It seems clear that many responses from the panel were based on the perceived costs and benefits to offering consumer health information. Costs were reflected in availability of resources and staff time, while benefits were often expressed in terms of service to various community and client groups.

Role theory asserts that individuals as well as professional groups maintain certain concepts of their personal and corporative behaviors that are influenced by various circumstances at play in their environments (Biddle 1979). Role conflicts appear to be a factor in the ambivalence toward accepting a gatekeeper role and also to some degree toward moving into providing health information within the context of legal requirements and established professional boundaries.

Society and professional education play influential roles in determining how exchange and role behaviors are determined. Education and role concept change is of primary consideration in bringing about better access to health care information through libraries. Both public and school librarians need to be better educated in K–12 health information and resources. The information dissemination roles and responsibilities of both school and public librarians need to be encouraged and fostered along with an increase in knowledge about health issues ranging from domestic abuse to weight management. A prime question to ask is how to better identify collaborative opportunities with community agencies and school colleagues. School nurses, counselors, and health educators are good candidates for collaboration in school settings. In the larger

community, health care providers, government agencies, and volunteer health services groups are available for collaboration.

Financial resources will always be limited, but many existing health information resources already exist in the community, and the identification and use of these resources are fundamental to good health care information delivery. What are the best and most available means of tapping into these resources?

Role change is not easy. Librarians will need help in reassessing their professional responsibilities. They will need help in learning how to be more forceful in advocating for better health information resources and in negotiating within the political structures of their various communities. In summary, librarians must not only change, but they themselves must also become change agents in creating better health information resources and services for their communities. Research into how school and public libraries can become more effective and visible as health information centers must continue. Likewise, formal education and increased continuing education opportunities for school and public librarians are needed to bring about these changes in significant ways. Good health and good health care information for all are driving social and political forces today in all societies. School and public librarians serving youth have a role to play in this important aspect of modern life.

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Table 1. Open-Ended Responses from Panel of Experts by Categories (Round 1)

Category 1. Librarians: • have responsibility to provide health information • provide assistance in finding information • help to refine information requests • need to know resources that are available • are authority figure, able to direct patrons to needed information • school librarians can be gatekeepers, providing quality health information with peer and librarian assistance • school librarians have a captive audience
Category 2. Libraries and library staffs: • make health information accessible to public in print, online • (libraries) are known for distributing information • (library staffs) are qualified to offer guidance • (libraries) make information available and accessible anonymously, safely in language of patron • (libraries) provide good information coming from reliable sources • (patrons) need to have good information to counter bad information, fads in the market place • highlight information • (patrons) can see what information is available • offer access to unlimited health resources • (libraries) have trained personnel available • (libraries) are warehouses of health information
Category 3. Negative themes: • librarians are in no position to offer health information,

especially as related to symptoms, cures
- librarians must be able to direct users to health professionals with more in-depth needs
- no negative aspects
- lack of funds for resources
- not too much of the general population visit the library
- lack of funds for resources, space
- school librarians must consider the appropriate nature of the information
- not everyone goes to library
- lack of funds
- understaffed and under funded
- added stress to take on another project
- school libraries have limited hours
- outreach requires resources that public libraries may not have
- technology often limited in some libraries
- Internet not consistently available

Category 4. Positive themes:

- libraries must and can provide outreach to reach population
- librarians are involved in the community, understand acquisition needs
- librarians have a role to play in health information in the Valley
- libraries provide resources not available at home
- libraries provide health and public service information
- health information is available, print, online, health fares
- library is hub in community, friendly, free to community
- libraries provide good, reliable information, e.g., MedlinePlus, school librarians can promote MedlinePlus
- libraries can host health activities
- librarians can be centers in the community
- most communities have public libraries
- trained staffs are available
- Spanish speakers are available
- libraries offer convenient hours
- librarians just need training in quality information
- volunteers can be trained to help

Category 5. Gatekeeper role:

- might encourage added support in space and funding
- might inf1uence the hierarchy of decision makers, leaders
- promotes working together
- helps library to become visible in community

- showcases library as health information resources, encourage better funding for health information
- can convince leaders through demonstrations and offering evidence of help in community
- can help enlist support of administrators to influence community leaders
- can promote need to make community decision makers aware of health information available in libraries
- to enhance this concept schools would need to network with health professions and instructors
- librarians as gatekeepers need to be aware of resources and be able to distribute them
- can show communities that health information is already available in some libraries
- references made to Med High and his successes in helping students acquire information and understand research methods

Table 2. Community Assessment (Round 2)

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = completely disagree

Community Assessment (N = 15)	**M**	**SD**
Somewhat agree that people are less healthy in region than in United States	4.40	0.32
Are neutral that communities in region have capacity to support public libraries as sources of consumer information	3.00	1.23
Somewhat disagree that people in region have adequate access to consumer health information	2.50	1.41
Somewhat disagree that communities in region have capacity to support school libraries as sources of consumer information	2.40	1.12

Table 3. Gatekeeper Health Information Role (Round 2)

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree;1 = completely disagree

Concept scale: Agreement positions 3.5–5.0; Neutral position 3.4–2.5; Disagreement positions 2.4–1.0

Concept Perceptions (N = 15)	**M**	**SD**
Support for concepts:		
Public librarians would be comfortable in the role of gatekeeper of health information in their communities	3.90	1.31
Local community would willingly accept the public librarian as the gatekeeper of health information	3.70	1.11
Neutral on concepts:		
School librarians would be comfortable in the role of gatekeeper of health information for their school communities (N = 13)	3.31	1.03
School community would willingly accept the school librarian as the gatekeeper of health information in the school community	3.00	1.06
Rejections of concepts:		
Public librarians and their staffs are well trained to provide consumer health information	2.40	0.91
School librarians and their staffs are well trained to provide consumer health information	2.00	1.13

Table 4. Support for Health Information Programs (Round 2)

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = completely disagree

Support for Concepts:	**M**	**SD**
Public libraries must significantly increase efforts to reach their service communities to improve health through providing consumer health information (N = 15)	4.60	0.51
Public libraries must significantly increase their involvement in promoting comprehensive health information education programs in their communities (N = 15)	4.60	0.63
Public libraries must significantly increase their role in prevention of disease through educational programs and mission (N = 15)	4.50	0.64
School libraries must increase their involvement in promoting comprehensive health education programs in schools (N = 15)	4.47	0.63
School libraries must significantly increase their role in prevention of	4.40	0.74

disease through educational programs and mission (N = 15)		
School libraries must significantly increase their role in promoting health information literacy in their communities (N = 15)	4.40	0.91
School libraries are in an excellent position network with public libraries (N = 13)	4.38	0.87
Public libraries must significantly increase their efforts as an advocate for better community health by becoming involved in activities to bring about change based on accepted and broad-based health objectives and goals (N = 14)	4.35	1.08
Public libraries must significantly increase their efforts to respond to the culture of their communities in terms of programs and service planning and implementation (N = 14)	4.28	1.26
School libraries must significantly increase their role in promoting health information literacy with students, staff, and administrators (N = 15)	4.20	0.86
Public libraries must significantly increase their efforts to involve members of their communities in understanding health issues involving their communities (N = 13)	4.15	1.28
School libraries must significantly increase their efforts to respond to the culture of their communities (e.g., understanding attitudes, values, beliefs, mores) in terms of resource acquisition (N = 13)	4.15	1.34
School libraries must significantly increase their efforts as an advocate for better community health by becoming involved in activities to bring about change based on accepted and broad-based health objectives and goals (N = 14)	4.14	1.09
School libraries must significantly increase their efforts to involve parents in understanding health issues involving their families (N = 14)	4.07	0.99
Public libraries must devote significantly more of their resources and technology to the support of a health information curriculum in their communities (N = 15)	4.06	0.96
School libraries must significantly increase their effort to reach beyond the school community (N = 15)	3.93	0.80
School libraries must devote more resources and technologies to support health education curriculum in their schools (N = 15)	3.50	1.06

Table 5. Collaboration and Network (Round 2)

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = completely disagree.

Support for Concepts (N = 15)	M	SD
School libraries are in an excellent position to network with public libraries in promoting health information in their communities	4.38	0.87
Public libraries are in an excellent position to network with school libraries in their communities in promoting health information in their communities	4.27	0.83
Public libraries are well positioned to network with existing community-based health care providers to make health information available and accessible	4.00	1.18
School libraries are well positioned to network with existing community-based health care providers to make health information available and accessible	3.50	1.45

Table 6. Models and Approaches to Services and Programs

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree;1 = completely disagree

Accepted Models and Approaches (N = 15)	M	SD
Public libraries provide reference services, acquisition, and organization of materials	4.80	0.41
Public librarians advocate for improved resources for library-based health information services	4.73	0.45
Public librarians advocate to significantly increase support for consumer health [information] technology	4.73	0.45
School librarians provide references services and acquisition and organization of materials	4.67	0.62
Public librarians coordinate with community health providers in the offering of health information programs and services	4.53	0.64
School librarians cooperate with school health personnel in developing health information programs	4.45	0.64
School librarians advocate for improved resources for library-based information services in schools	4.40	0.63
School librarians advocate for significantly increased support for consumer health technology	4.33	0.62
School librarians coordinate with school administration in developing programs and services for parents and other caregivers in the community	4.33	0.72
School librarians assist in preparing curriculum to be used by classroom	4.27	0.88

teachers		
Public librarians coordinate with school administration in developing programs and services for parents and other caregivers in the community	4.06	0.64
Public librarians coordinate with school health personnel in developing health information programs	4.06	0.70
Public librarians assist in curriculum development to be used by health providers in the community	4.00	0.75
Public librarians develop health information literacy programs to be taught directly by librarians to groups in community	3.93	1.28

Table 7. Comparisons between School and Public Librarians' Perceptions of Models and Approaches to Services and Programs (Round 2)

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = completely disagree

Models and Approaches, Ranked by Highest Mean Score (N = 15)	**M**	**SD**
1. Library Service: School and public librarians provide reference services and acquisition and organization of materials.		
Public librarians	4.80	0.41
School librarians	4.67	0.62
2. Advocacy for Resources: School and public librarians advocate for improved resources for library-based health information services in the school.		
Public librarians	4.73	0.46
School librarians	4.00	0.63
2. **Advocacy for Health**: Information Technology School and public librarians advocate for significant increase in support for consumer health technologies.		
Public librarians	4.73	0.46
School librarians	4.33	0.62
3. Community-Based Health Programs: School and public librarians coordinate with health providers in the offering of health information programs and services within the community.		
Public librarians	4.53	0.64
School librarians	4.06	0.80

4. School-Based Health Programs: School librarians cooperate with school health personnel in developing health information programs. Public librarians cooperate with school health officials in developing health information programs.		
School librarians	4.45	0.64
Public librarians	4.06	0.70
5. Instructional Services: School librarians assist in preparing curriculum to be used by classroom teachers. Public librarians assist in curriculum development to be used by health providers in the community.		
School librarians	4.27	0.88
Public librarians	4.00	0.75
6. Parents and Caregiver Programs: School librarians coordinate with school administration in developing programs and services for parents and other caregivers in the community. Coordinate with school administration in developing programs and services for parents and other caregivers in the community.		
School librarians	4.33	0.72
Public librarians	4.06	0.64
7. Health Information Literacy: School librarians develop health information literacy programs to be taught directly by librarians to groups and classes in the school community. Public librarians develop health information literacy programs to be taught directly by librarians to groups in the community.		
School librarians	3.93	1.28
Public librarians	3.73	1.09

Table 8. Allocation of Health Resources by Types of Libraries (Round 2)

	M	SD
Public Libraries		
Environmental	4.13	1.75
Mental health	3.93	1.44
Social services	4.28	1.59
Physical education	4.86	0.95
Nutrition	2.74	1.38
Medical condition	1.86	1.41
School Libraries		
Environmental	4.46	1.56
Mental health	3.54	1.51

Social services	5.46	0.88
Physical education	3.62	1.12
Nutrition	2.46	1.27
Medical Condition	2.23	1.64

Rankings by types of libraries and allocation areas (M scores)
Scale: Ranking, 1–6, with 6 being the most desired

Public libraries		School libraries	
1. Physical education	4.86	1. Social services	5.46
2. Social services	4.28	2. Environmental issues	4.46
3. Environmental issues	4.13	3. Physical education	3.62
4. Mental health issues	3.93	4. Mental health issues	3.54
5. Nutrition	2.74	5. Nutrition	2.46
6. Medical conditions	1.86	6. Medical conditions	2.23

Table 9. Reassessment of Negative or Neutral Responses, Ms[Ed/Au: Ms?] Below 3.50 (Round 3)

Responses N = 17

Scale: 5 = completely agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = completely disagree

Underlines indicate changes in wording from the same question in round 2.

Questions	M	SD
Q1. Persons in my service area of Texas do not have adequate access to health information.	1.76	0.90
Q2. Communities in my service area of Texas do not have the capacity (commitment, resources, skills, and experiences in making decision) to support school libraries as sources for consumer health information.	1.47	0.87
Q3. Communities in my service area of Texas do not have the capacity (commitment, resources, skills, and experiences in making decision) to support public libraries as sources for consumer health information.	1.88	0.78
Q4. School librarians would not be comfortable in the role of gatekeeper for health information for their school communities.	2.18	1.24
Q5. School librarians and their staff are not well trained in providing	1.88	1.05

consumer health information.		
Q6. Public librarians and their staff are not well trained in providing consumer health information.	2.12	1.11
Q7. The school community would not willingly accept the school librarian as the gatekeeper of health information in the school community.	2.44	1.09
Resources		
Q8. Information about nutrition is not necessary in my service area at this time.	4.47	1.23
Q9. Information about various medical conditions such as asthma and obesity is not necessary in my service area.	4.53	1.07