Health information disparities? determining the relationship between age, poverty, and rate of calls to a consumer and patient health information service*†

Sandy Oelschlegel, MLIS, AHIP; Martha Earl, MSLS, AHIP; Melanie Taylor, MSIS; Robert A. Muenchen

See end of article for authors’ affiliations.

DOI: 10.3163/1536-5050.97.3.013

INTRODUCTION

Growth and demand for consumer health information services has been well documented [1–4]. In the past twenty years, medical librarians have transitioned from cautious providers of consumer and patient health information to leaders of outreach programs in which they coordinate with medical professionals and public librarians to serve their communities’ health information needs. So prevalent are these services that the Medical Library Association provides guidance on its Consumer and Patient Health Information Section (CAPHIS) website [5], and the American Library Association has issued a policy to guide the growing number of services in providing consumer health information [6].

Beginning with a grant from the Tennessee State Library and Archives, Preston Medical Library, located in Knoxville, Tennessee, has provided a free telephone-based consumer health information service for area citizens and University of Tennessee Medical Center patients and their families since 1989. Despite the wide availability of the Internet, a recent survey of consumers in Tennessee funded by the National Network of Libraries of Medicine (NN/LM), South-eastern/Atlantic Region, to which 233 individuals responded, showed that the inability to identify reliable sources was the single most important stumbling block to finding health information. In the same survey, 37% of respondents ranked libraries as one of their top 3 sources of health information along with doctor’s office (61%); Internet and magazines (54%); and newspapers, magazines, and books (25%) [6]. A recent Pew report on the demographics of Internet users shows that while 71% of all adult Americans go online, only 32% of those over 65 and just 55% of those living in households with less than $30,000 in annual income have Internet access [8].

Because population varied in size between zip codes, direct comparison of number of calls could be misleading. To correct for the variation, the rate of calls was determined by dividing the number of calls from each of the zip codes. Because age was not included in the database, rather than restricting to certain age groups, the total population of each zip code was used. The database was queried to determine the number of calls from each of the zip codes.

A retrospective analysis of the database was undertaken for calls from consumers in Tennessee zip codes who contacted Preston Medical Library between January 1, 1999, and June 1, 2007. The database included 1,938 complete records for calls received during the 8 years studied, representing 107 Tennessee zip codes. Out-of-state zip codes were not included. The database was queried to determine the number of calls from each of the zip codes.

Because population varied in size between zip codes, direct comparison of number of calls could be misleading. To correct for the variation, the rate of calls was determined by dividing the number of calls by the population of the zip code (number of calls/population=rate of calls). US Census Bureau data from 2000 were used to establish the population for each zip code. Because age was not included in the database, rather than restricting to certain age groups, the total population of each zip code was used.

Once determined, the rate of calls by zip code was compiled into tabular format and compared to US Census data from those same zip codes for the following socioeconomic elements: percent of population below poverty level and percent of population above sixty-five years (Table 1 online). US census data is available online through Census 2000 U.S. Gazetteer

* This project was supported in part with funding from a Southern Chapter of the Medical Library Association Research Grant.
† Based on a presentation at the 57th Annual Meeting of the Southern Chapter/Medical Library Association; Charleston, SC; November 12–16, 2007.
Results

Poverty was significantly related to call rate (Pearson chi-square(1)=12.803, \(P=0.0003\)), with only 32.1% of calls originating from zip codes where the percentage of individuals living below the poverty level was greater than 10.2%, while 66.7% of the calls came from zip codes where the percentage living in poverty was lower than 10.2%. There was no significant relationship between the proportion of population over 65 and call rate.

Discussion

According to the State of Tennessee’s Comptroller’s Office, Tennesseans rank below the national average in literacy based on the National Adult Literacy Survey standards [10]. In fact, 53% of Tennesseans are classified in the bottom 2 of the 5 levels of adult literacy [11]. Because health literacy involves the “degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions,” lower literacy populations have challenges reading medical terminology, prescription instructions, and other patient education material [12]. Tennesseans are higher than the national average in terms of the prevalence of high-risk health behaviors and chronic diseases [13]. Librarians at the Preston Medical Library Consumer and Patient Health Information Service are aware of both the literacy problems and high prevalence of chronic diseases in their community and could provide health information at an appropriate literacy level to callers.

Although all demographic groups contain some individuals with low literacy, demographic groups likely to have low literacy rates are those who are greater than 65 years of age and those who live on limited incomes [14–16]. In addition, as people age, increasing health problems may increase their need for health information. In fact, the Centers for Disease Control and Prevention reported in 2008 that over the past 36 years, the percent of hospital inpatients who were 65 years of age and older grew from 20% to 38%, demonstrating an increase in health problems and probable subsequent need for information [17]. Although the authors expected calls from those who were over age 65 and those who live in poverty would occur at a higher rate, this was not the case. Several factors are considered below and offer further research opportunities.

A previous survey of health information needs of Tennesseans funded by the NN/LM, Southeastern/Atlantic Region, in which 78% of the respondents were women, found that most women (82.4%) frequently sought information to address the health concerns of friends or family. Women requesting information for friends or family members may live in different zip codes than those they are assisting [7]. More adult children of aging parents are becoming caregivers [18], and this factor may have contributed to the absence of a relationship between the rate of calls to the service and the percentage of population of over 65 years of age. Calls may have come instead from younger caregivers in other zip codes. Declining mobility also may have limited the elderly population’s exposure to the library’s outreach efforts. In addition, some low health literacy patients use surrogate readers, such as family members, to request and understand health information, and these surrogates and family members may live in other zip codes [19]. Further research must be undertaken to explore the impact of these factors on the results.

Changes in the library’s outreach practices have already been implemented with the specific aim of increasing calls from these target populations. Examples of current targeted outreach include exhibiting at health fairs during “senior days,” publishing related stories in community newspapers, and working with the rural public library systems to implement train-the-trainer programs for frontline personnel. Additional planned changes in practice include distributing newly designed, easy-to-read brochures at locations more likely to reach those who are living in poverty and are above the age of sixty-five.

Limitations

This study looked at 1,938 complete records from 107 zip codes in the Knoxville area collected over a period of 8 years, and the small sample size might limit the validity of the results. Additionally, although calls could be identified as coming from zip codes with high or low percentages of the population below poverty level or above 65 years, there was no way to know if individual callers were actually impoverished or elderly.

Conclusion

Results show that zip codes with populations below the median poverty level had a call rate below the median. Several factors might contribute to this low call rate, including lack of knowledge of the consumer health service and a reluctance to request written material that would prove challenging to read for low acidity and electrolytes levels.
literacy populations such as those living in poverty. There was no relationship between rate of calls and the percentage of population over sixty-five years old. This might be due to others requesting information on the behalf of the elderly and/or the inability to reach them through current promotion methods due to cognitive and mobility declines.

Because quality health information has been shown to contribute to all aspects of disease prevention and to better health care outcomes [20–22], outreach and promotion of the Preston Medical Library’s Consumer and Patient Health Information Service will be altered to increase awareness of the service to assist in decreasing the identified health information disparity.

REFERENCES

1. Hollander SM. Providing health information to the general public: a survey of current practices in academic health sciences libraries. Bull Med Libr Assoc. 2000 Jan;88(1):62–9.
2. Pifalo V, Hollander S, Henderson CL, DeSalvo P, Gill GP. The impact of consumer health information provided by libraries: the Delaware experience. Bull Med Libr Assoc. 1997 Jan;85(1):16–22.
3. Earl M. Caring for consumers: empowering the individual. Am Libr. 1998 Nov;29(10):44–6.
4. Volk RM. Expert searching in consumer health: an important role for librarians in the age of the Internet and the web. J Med Libr Assoc. 2007 Apr;95(2):203–7, e66. DOI: 10.3163/1536-5050.95.2.203.
5. Medical Library Association. Consumer and Patient Health Information Section [Internet]. Chicago, IL: The Section; 2008 [cited 25 Feb 2009]. <http://www.caphis.mlanet.org/organization/membership.html>.
6. American Library Association. Reference sources for consumer health education [Internet] The Association; 2008 [cited 25 Feb 2009]. <http://www.al.org/al/mgrps/divs/rusa/resources/initiatives/bewellinformed/resourcesabc/cheresource.cfm>.
7. Oelschlegel S, Ponnappa BP, Due K. Report: Tennessee outreach state planning & evaluation team. Knoxville, TN: Preston Medical Library. Unpublished report; 2006. (copies available from author.)
8. Pew Internet & American Life Project. Trend data [Internet] The Project; 2009 [cited 25 Feb 2009]. <http://www.pewinternet.org/trends/User_Demo_Jan_2009.htm>.
9. US Census Bureau. Census 2000 U.S. gazetteer files [Internet]. The Bureau [cited 25 Feb 2009]. <http://www.census.gov/geo/www/gazetteer/places2k.html>.
10. National Center for Education Statistics. Adult literacy in America: a first look at the findings of the National Adult Literacy Survey [Internet]. The Center [cited 25 Feb 2009]. <http://www.nces.ed.gov/pubssearch/pubsinfo.asp?pubid=93275>.
11. Comptroller of the Treasury, State of Tennessee. More than half of adult Tennesseans perform at low literacy level [Internet]. Nashville, TN: The State; 2004 [cited 25 Feb 2009].

AUTHORS’ AFFILIATIONS

Sandy Oelschlegel, MLIS, AHIP, soelschl@mc.utmc.edu, Director; Martha Earl, MLS, AHIP, mearl@utk.edu, Reference Coordinator; Melanie Taylor, MSIS, mtaylor43@utk.edu, Library Assistant; Preston Medical Library, University of Tennessee Graduate School of Medicine, 1924 Alcoa Highway, Box U-111, Knoxville, TN 37920-6999; Robert A. Muenchen, muenchen@utk.edu, Manager, Research Computing Support, University of Tennessee Office of Information Technology, Stokely Management Center, Suite 200, 916 Volunteer Boulevard, Knoxville, TN 37996-0520

Received November 2008; accepted March 2009