PROGRAM DESCRIPTION / DESCRIPTION DU PROGRAMME

Health Literacy Training for Family Medicine Residents

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Abstract: Program objective: The purpose of the health literacy training program was to educate family medicine residents on health literacy principles and practices through the use of effective communication strategies and appropriate consumer health information delivery. **Participants and setting:** The training program was delivered to first-year University of Manitoba family medicine residents. Residents were from the urban and northern family medicine streams and were completing placements at one of three teaching clinics located at Seven Oaks General Hospital, St. Boniface Hospital, and the Northern Medical Centre. **Program:** The program consisted of two education sessions created by University of Manitoba librarians in consultation with faculty members in the Department of Family Medicine. Librarians delivered the sessions. Session one focused on definitions, low heath literacy prevalence, health literacy screening tools, and communication techniques. Session two was a hands-on iPad workshop exploring online consumer health resources with the goal of collecting and sharing via tools such as Dropbox, Diigo, and Mendeley. **Outcomes**: A pre- and post-education session survey was delivered to assess impact. The training program improved awareness and knowledge but not necessarily the willingness to incorporate health literacy strategies in practice. **Conclusions**: Health librarians are considered important inter-sectoral partners in supporting health literacy. In addition to improving awareness, education initiatives should focus on practical information and skills that support health literacy principles and are relevant in practice. Further research is required that examines the relationship of health literacy education together with librarian-delivered services reinforcing its application in practice.

Introduction

Health promotion and prevention through person-centred care is one of the core principles of primary care. Underlying these principles is the concept of health literacy (HL), which is "the ability to access, comprehend, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course" [1]. Unfortunately, 60% of adult Canadians lack the skills necessary to understand health information and health services and to use that information to make independent decisions about their health [2]. Although low HL affects all segments of the Canadian population, it is most prevalent among the elderly, recent immigrants, the poor, and members of minority groups [1]. Low HL is a direct and significant contributor to poor health outcomes and many researchers, health professionals, and administrators argue that increasing health self-management through improved HL levels will be crucial to health care reform [3].

The onus of HL does not rest on the patient alone. A collective effort from the patient, health practitioner, and health system is necessary to address the complex, intersecting issues of HL. This requires a shift in focus to consider the activities of health practitioners and systems as they relate to HL [4], and it demands an "augmented and prepared workforce" [5]. Within a Canadian context, a 2008 survey of various health professionals showed that physicians receive the least amount of training [6] and are the least aware of the problem of low HL [7]. Continuing education opportunities in HL have since appeared such as the Canadian Medical Association's online self-directed learning course. Although it is not always clear to what extent these HL education offerings have involved medical librarians in their development, it is well within the role and skill set of medical librarians to develop and provide HL education to health practitioners [8–11]. A review of the literature reveals ample research on education initiatives or interventions for improving HL in patients and health information consumers, including programs offered through public and health libraries. Proportionally, however, there is less research reporting HL education programs or curricula for medical students, residents, and physicians [12–21]. Publications that describe librarian-driven HL education programs to medical students,

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residents, or physicians are sparse or discussed in general terms [10, 22–24]. This lack of documentation of HL program content and librarian involvement presents challenges for justifying its inclusion in the resident curriculum and for demonstrating the librarian's role in its development and delivery. The lack of literature and research also inhibits the practice of evidence-based librarianship and the creation of new HL library education initiatives and programs. We seek to address this gap by describing a University of Manitoba librarian-driven collaboration with family medicine faculty members to provide a HL education intervention to post-graduate first-year family medicine residents.

Description

In 2010, librarians (AS, KM) at the University of Manitoba Health Sciences Libraries partnered with Department of Family Medicine faculty members to develop a HL education program. HL encompasses several large, intersecting topics including cultural awareness, health equity, information access, literacy, communication (including patient-practitioner relationships), and patient education and safety. The librarians consulted a multitude of resources but used AHRQ's Health Literacy Toolkit [25] and Weiss' manual for the American Medical Association [26] as the principle sources for the curriculum. The authors chose to focus on communication and patient education skills due to time limitations and because other HL principles, such as cultural awareness, were already addressed in the curriculum. Three goals of the program were established: (*i*) to raise awareness of how incorporating HL principles into practice can positively impact health outcomes, (*ii*) to identify and use HL communication strategies with patients, and (*iii*) to recognize the importance of effective information management to deliver patient education effectively. This last goal arose from the observation that information literacy and information management is not identified in the literature as a competency for HL adoption in practice.

The program was conceived as a pilot program, and it was limited by time constraints due to the structure and content demands of the existing resident curriculum. It consisted of two sessions delivered by librarians (AS, KM) over a total of three hours to post-graduate year-one family medicine residents (FMRs). The residents were from one of three academic teaching clinics located in Winnipeg, Manitoba: the Northern Connections Medical Centre, the Family Medical Centre (St. Boniface Hospital), and the Kildonan Medical Centre (Seven Oaks General Hospital). The sessions were given twice a year to the urban stream because of the resident schedule and the turnover of residents in the clinics. The northern stream received the sessions once per year but the time between sessions was greater because of the residents' schedule. The pilot program continued over a two-year period, reaching a total of 47 residents.

Table 1 outlines the content of each session in detail. Session one was two hours long and introduced HL, discussed the role of the practitioner, and emphasized the importance of effective physician–patient communication. Session two was a one-hour hands-on workshop that focused on patient education resources. Education session materials can be viewed online at http://tinyurl.com/HL-documents.

Outcomes

The education program was formally evaluated using an online survey, through verbal feedback from the residents and faculty, and by librarian observation during the sessions.

Survey results

A 21-question SurveyMonkey pre-test survey was sent out to all first-year FMRs ($n = 93$) soon after intake. Following the education intervention, FMRs who participated in the training sessions ($n = 47$) were asked to voluntarily complete a post-test survey, which was identical to the pre-test survey. The pre-test/post-test cycle occurred over two academic years (2010–2012). All survey responses were confidential. The University of Manitoba Research Ethics Board approved the survey and study. The survey can be viewed online at http://tinyurl.com/HL-documents.

The response rate was 12% for the pre-test FMRs ($n = 11/93$) and 17% for the post-test FMRs ($n = 8/47$). The survey was comprised of two sections: knowledge of HL principles and questions inviting self-reporting of current and (or) future practices using HL. In the knowledge section, some differences were observed between pre- and post-test FMRs. For example, when questioned about prevalence rates, a majority of pre-test FMRs underestimated the prevalence of low HL in their patient population, whereas post-test responses were higher with regards to knowing and understanding strategies to recognizing low HL in patients.

In the self-reporting questions of current and (or) future HL practices, there was variability between the groups. For example, although the majority of both groups reported "some" knowledge in high-quality consumer health sites, the confidence in recommending these resources improved in the post-test group: 11% of pre-test FMRs reported feeling "not at all" confident in recommending high-quality consumer health websites compared with 0% post-test for the same confidence level. As to whether such strategies are used in their clinic, the majority of pre-test FMRs stated that these strategies were in use, whereas the post-test group stated "no". In questions regarding the presence of a recording device in a visit, a recommended HL strategy to assist in patient recall and self-care post visit, both groups reported feeling "fairly" comfortable with a patient's use of a recording device during a visit. In the estimation of utility of a recording device, both groups reported with they were either unsure or believed that $<25\%$ of patients would benefit from its use.

Observational and verbal feedback

The librarians debriefed after each session to share what worked and what did not. The librarians also independently received informal feedback from the residents about the content of the sessions. Residents reported that the tools taught during the session were practical and valuable for clinical use. Residents appreciated the style of the workshop session as it incorporated active learning

Table 1. Health literacy (HL) education intervention pilot: objectives and content.

Objectives	Educational session content
Session 1 – "Health literacy: why it matters and what you can do about it"	
1: To recognize the key indicators and risk factors for low HL	• Present definitions of HL • Discuss the prevalence and health outcomes of low HL in Canada
2: To assess patients and patient education materials for levels of HL	• Introduce HL screening tools for clinic use e.g. REALM-SF, Newest Vital Sign (NVS) • Activity: residents self-administer NVS • Activity: use of SMOG to assess print/online patient literature/materials
3: To discern those elements that contribute to a HL-friendly environment	• Activity: complete part of Health Literacy Assessment audit tool www.nchealthliteracy.org/toolkit/tool2A.doc
4: To incorporate at least two communication techniques when speaking with patients	• Present communication techniques to use during patient visit • Discuss number of question management tools (Manitoba Patient Safety Safe to Ask Campaign, AHRQ's Questions are the Answer) • Demonstrate communication strategies such as the Teach-Back method
Session 2 – "Health literacy: finding and using patient information & resources"	
1: To identify major categories of authoritative patient education resources	• Recognize various sources of patient information available, including health associations, libraries, patient forums, government, alternative media (You Tube), and aggregated information sources (MedlinePlus)
2: To integrate community and local resources into patient education delivery	• Show print and online community and local resources to provide to patients
3: To use technology to share and store gathered information sources	• Activity: as group, using a case scenario, to find applicable quality, HL "friendly" patient materials online • Demonstrating the use of social media as patient education management tool by presenting a Diigo HL bookmarking account with websites and resources to support the patient cases • Explore options for managing newly found information and for creating group networks to share resources (Evernote, Dropbox, Mendeley, GoogleDocs)

elements (group exercises, individual exercises, group discussions), and they found the tips and tricks on dealing with patient concerns and managing patients' question lists useful. They valued the opportunity to discuss their feelings around physician–patient communication and to learn about strategies used by their peers. This same appreciation was shown in the topic of providing patient education material at point-of-care. Group discussions regarding the use of audio recorders during their clinic visit and the Newest Vital Sign (a HL screening tool) in practice revealed uncertainty and mixed feelings.

Based on both the survey results and the observational and verbal feedback, together with the opportunity to deliver the entire program in a single session, the curriculum was altered. Although the content in the first session remained largely the same, there were significant changes made to the second session. The revised sessions can be viewed online at http://tinyurl.com/HL-documents.

Discussion

This HL educational initiative integrates the principles of HL with the skills and competencies of health information literacy, making the practice of HL real and practical. The multimodal content of this curriculum, combining didactic, small-group discussion, task-oriented exercises, and role-play, places it in the minority of HL curricula Ali surveyed in 2012 [12]. The increase in HL knowledge reflected in the post-test survey response and the informal feedback reflects Coleman's findings [14]. Post-intervention residents frequently comment that the HL education sessions challenge the way they think of patient information-seeking behaviour and, hence, their view of not only patients' health information needs but also of the dynamics of the patient–physician clinic encounter. This reported heightened awareness may account for the majority of post-test residents responding in the negative compared to pre-test residents regarding the employment of HL strategies in a clinic: such over-estimation in the pre-test groups is common, and HL curricula has shown effective in improving HL knowledge and awareness [13].

An additional outcome of the HL training program is the opportunity to become embedded in the education schedule of the FMRs. During the pilot program, librarians were asked to deliver the sessions during free-time educational days in which students were allowed to partake in any educational event that furthered their studies or research interests. By year three, the education program directors of the three sites invited the librarians to deliver the sessions during Academic Half Days, days specifically set aside for classroom instruction delivered by faculty

members. This demonstrated further acceptance of librarian involvement in the FMRs' education and recognition of the nontraditional and diverse skills that health sciences librarians have to offer.

Lessons learned

Offering the training session as two separate sessions was originally done to accommodate residents' schedules as well as to allow residents the time to process the information learned in the first session before moving onto the second session. One of the major difficulties was ensuring attendance at both sessions. In 2013 the librarians were offered an Academic half-day time slot, which provided the opportunity to expand the content and restructure the sessions based on the survey results and verbal feedback. Combining the two educational sessions into one longer session improved attendance and learning continuity. Originally, the information presented in the first education session was heavily didactic with an emphasis on the evidence of HL and its impact. Adjusting the content for one longer session allowed the librarians to focus on more practical aspects, such as physician–patient communication and HL tools for clinic use, which was more useful to residents and kept them engaged throughout the session. The revised session included most features of the original two sessions but also emphasized the role of health practitioners as educators in an Internet age, focused on using plain language for written and verbal communication, outlined the elements of reliable websites, and discussed the importance of tailoring teaching techniques to suit various learning styles.

In designing the sessions, it was assumed that residents had a high level of technological skill and familiarity with social media tools. However, this was not the case. Many residents were unfamiliar with these resources and had not used them in a professional capacity, which greatly inhibited them from understanding and grasping the usefulness of these tools for information management and patient education delivery. In terms of evaluation, the use of an electronic survey was expedient for data gathering and analysis, but offering a paper survey immediately before and (or) after the sessions may have resulted in a higher response rate. The survey included a blend of HL application and knowledge questions making the results difficult to interpret. One possible solution to this could be to offer a baseline survey to assess knowledge followed by a post-session test to determine intervention impact.

Future directions

The HL sessions are highly adaptable and can be modified for delivery to other groups, including pharmacists, health librarians, nurses, dentists and dental assistants, and allied health professionals. At the University of Manitoba, the program has created awareness of the need to incorporate HL principles and strategies into the Consumer Health Service delivered by health science librarians. Similarly, there could be opportunities for librarian-directed consumer health information delivery through the office of the Student Affairs University Health Service. In addition, there is the possibility of offering a library-driven self-directed learning module, which could be a welcomed option for busy health professionals. A blended learning approach, including a self-directed online module and in-classroom session, could offer additional time for developing and practicing learned skills. The design and content of the education sessions was based on librarian research and knowledge of HL, but analyzing and adjusting the content to follow pre-established guidelines, curricula, or a competency framework would strengthen the education sessions. For example, HL knowledge and skills span several CanMEDS objectives, including communicator, health advocate, and scholar; its inclusion in the resident curriculum would holistically address these competencies within a practical, patient-centered pedagogy [27]. Coleman outlined knowledge, skill, attitude-based HL competencies, as well as a number of practices that were agreed upon by 23 health education experts [28]. The Calgary Charter on Health Literacy also lists rationale and core principles of health literacy curriculum development that could be used to ensure that HL education sessions are teaching the necessary skills [29].

Conclusion

Although aspects of HL (including patient-centred care, patient safety, and quality assurance) are taught in the Canadian family medicine curriculum, HL is the bridge that connects these concepts in a tangible, concrete way. HL training programs should be incorporated into the Canadian family medicine curriculum and health science librarians have the skills, knowledge, and ability to be drivers and deliverers of such education initiatives.

References

1. Canadian Public Health Association (CPHA). *Health literacy interventions. Canadian Public Health Association*; 2006 Available from: http://www.cpha.ca/en/portals/h-l/resources.aspx.
2. Canadian Council on Learning (CCL). *Health Literacy in Canada: a healthy understanding.* Ottawa: Canadian Council on Learning (CCL-CCA); 2008 February. p. 38. Available from: http://www.ccl-cca.ca/NR/rdonlyres/266E0889-8B9B-45DB-B615-33E146E31B06/0/HealthLiteracyReportFeb2008E.pdf.
3. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med*. 2011;155(2):97–107. doi: 10.7326/0003-4819-155-2-201107190-00005.
4. Rudd RE. Improving Americans' health literacy. *N Engl J Med. 2010*. 2014;363(24):2283–5. doi: 10.1056/NEJMp1008755.
5. Schillinger D, Kellar D. *Attributes of a health literate health care organization In: IOM (Institute of Medicine), editor. How can health care organizations become more health literate? Workshop summary.* Washington, DC: National Academies Press; 2012; p. 5–20.
6. P.E.I. Literacy Alliance. *Communicating health information: a needs assessment of health professionals in PEI.* Charlottetown, P.E.I.: Prince Edward Island (P.E.I.) Literacy Alliance;

2008. p. 18. Available from: http://www.pei.literacy.ca/admin/Editor/assets/pdf/hlthprof2008.pdf; http://www.pei.literacy.ca/projects_main?page=projects_hp.

7. Rootman I. Health literacy: where are the Canadian doctors? *CMAJ*. 2006 Sep 12;175(6):606. doi: 10.1503/cmaj.060791.
8. Dalmer N. Health literacy promotion: contemporary conceptualizations and current implementations in Canadian health librarianship. *Journal of the Canadian Health Libraries Association (JCHLA)*. 2013;34(1):12–6. doi: 10.5596/c13-004.
9. Beales DL. Health literacy the medical librarian's role. *J Hosp Librariansh*. 2005;5(3):17–27. doi: 10.1300/J186v05n03_02.
10. Kloda LA. Health information literacy in Canadian medical curricula: an opportunity for librarians? *J Hosp Librariansh*. 2008;8(3):314–22. doi: 10.1080/15323260802209450.
11. Holst R, Funk CJ, Adams HS, Bandy M, Boss CM, Hill B, Joseph CB, Lett RK. Vital pathways for hospital librarians: present and future roles. *J Med Libr Assoc*. 2009 Oct; 97(4):285–92. doi: 10.3163/1536-5050.97.4.013.
12. Ali NK. Are we training residents to communicate with low health literacy patients? *J Community Hosp Intern Med Perspect*. 2012;2(4):19238. doi: 10.3402/jchimp.v2i4.19238.
13. Ali NK, Ferguson RP, Mitha S, Hanlon A. Do medical trainees feel confident communicating with low health literacy patients? *J Community Hosp Intern Med Perspect*. 2014 Apr;4(2):22893. doi: 10.3402/jchimp.v4.22893.
14. Coleman C. Teaching health care professionals about health literacy: a review of the literature. *Nurs Outlook*. 2011 Mar–Apr;59(2):70–8. doi: 10.1016/j.outlook.2010.12.004.
15. Coleman CA, Appy S. Health literacy teaching in US medical schools, 2010. *Fam Med*. 2012 Jul–Aug;44(7):504–7.
16. Evans KH, Bereknyei S, Yeo G, Hikoyeda N, Tzuang M, Braddock CH, 3rd. The impact of a faculty development program in health literacy and ethnogeriatrics. *Acad Med*. 2014 Jul 8.
17. Hess J, Whelan JS. Making health literacy real: adult literacy and medical students teach each other. *J Med Libr Assoc*. 2009 Jul;97(3):221–4. doi: 10.3163/1536-5050.97.3.012.
18. Kripalani S, Weiss BD. Teaching about health literacy and clear communication. *J Gen Intern Med*. 2006;21(8):888–90. doi: 10.1111/j.1525-1497.2006.00543.x.
19. Mackert M, Ball J, Lopez N. Health literacy awareness training for healthcare workers: improving knowledge and intentions to use clear communication techniques. *Patient Educ Couns*. 2011 Apr;85(3): e225–8. doi: 10.1016/j.pec.2011.02.022.
20. Roberts DM, Reid JR, Conner AL, Barrer S, Miller KH, Ziegler C. A replicable model of a health literacy curriculum for a third-year clerkship. *Teach Learn Med*. 2012 July;24(3):200–10. doi: 10.1080/10401334.2012.692261.
21. Rosenthal MS, Werner MJ, Dubin NH. The effect of a literacy training program on family medicine residents. *Fam Med*. 2004;36(8):582–7.
22. Pomerantz KL, Muhammad A, Downey S, Kind T. Connecting for health literacy: health information partners. *Health Promot Pract*. 2010;11(1):79–88. doi: 10.1177/1524839908318166.
23. Hopkins ML. Advancing health literacy: a framework for understanding and action. *Choice: Current Reviews for Academic Libraries*. 2007;44(6):1016.
24. Hess J, Whelan JS. Making health literacy real: adult literacy and medical students teach each other. *J Med Libr Assoc*. 2009 Jul;97(3):221–4. doi: 10.3163/1536-5050.97.3.012.
25. Agency for Healthcare Research, and Quality. *Health Literacy Universal Precautions Toolkit*. Rockville, MD: Agency for Healthcare Research and Quality (AHRQ); 2010. Report No. 10-0046-EF. Available from: http://www.ahrq.gov/qual/literacy/; http://www.ahrq.gov/qual/literacy/healthliteracytoolkit.pdf; http://www.nchealthliteracy.org/toolkit/.
26. Weiss, BD. *Health literacy and patient safety: help patients understand - manual for clinicians*. Chicago, IL: American Medical Association (AMA) Foundation and AMA; 2007.
27. Frank J, Snell L. *The draft CanMEDS 2015 physician competency framework - series 1*. Ottawa, ON: Royal College of Physicians and Surgeons of Canada; 2014. Available from: http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/framework/framework_series_1_e.pdf.
28. Coleman CA, Hudson S, Maine LL. Health literacy practices and educational competencies for health professionals: a consensus study. *J Health Commun*. 2013;18(1):82–102. doi: 10.1080/10810730.2013.829538.
29. Coleman C, Kurtz-Rossi S, McKinney J, Pleasant A, Rootman I, Shohet L. *The Calgary charter on health literacy: rationale and core principles for the development of health literacy curricula. [Internet]*. Montreal, QC: Centre for Literacy; 2008 [cited August 5, 2014].