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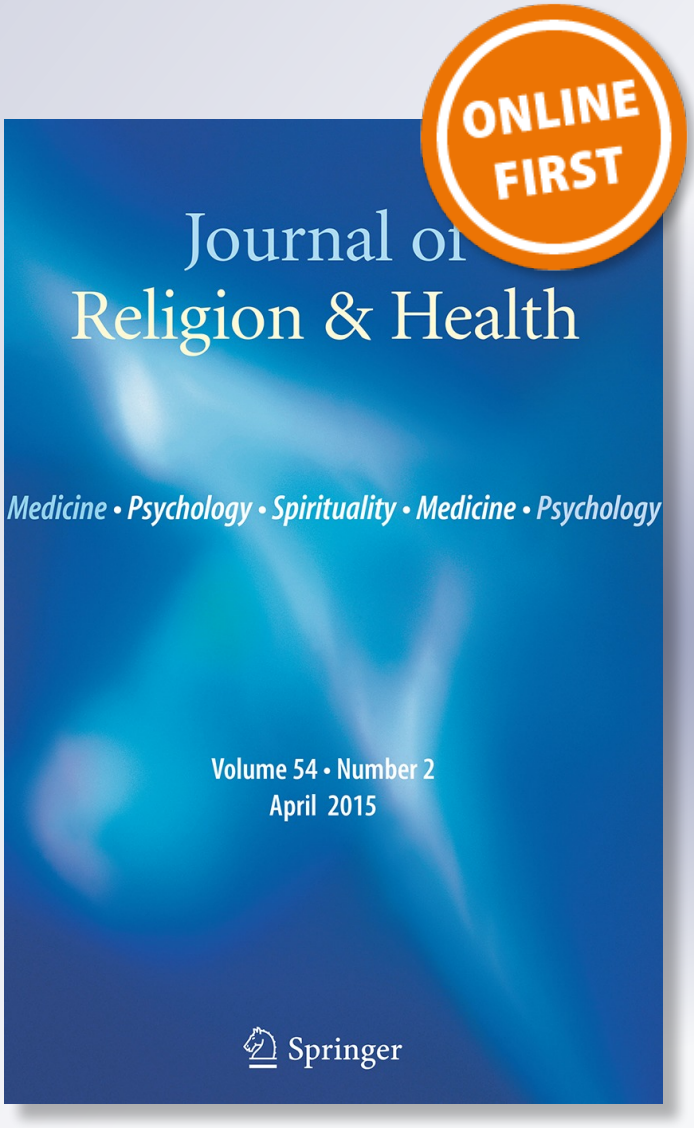

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ORIGINAL PAPER

The Lay Health Educator Program: Evaluating the Impact of this Community Health Initiative on the Medical Education of Resident Physicians

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Abstract Resident physicians receive little training designed to help them develop an understanding of the health literacy and health concerns of laypersons. The purpose of this study was to assess whether residents improve their understanding of health concerns of community members after participating in the Lay Health Educator Program, a health education program provided through a medical–religious community partnership. The impact was evaluated via pre-post surveys and open-ended responses. There was a statistically significant change in the residents' ($n = 15$) understanding of what the public values as important with respect to specific healthcare topics. Findings suggest participation in a brief, formal community engagement activity improved medical residents' confidence with community health education.

Keywords Health literacy · Medical education · Medical–religious partnerships

Introduction

Patient activation emphasizes patients' willingness and ability to take independent actions to manage their health and care (Hibbard et al. 2004). Patient engagement denotes a broader concept that includes activation and interventions designed to increase activation and influence the resulting patient behavior (Hibbard and Greene 2013). Considerable evidence links patient activation with positive health outcomes (Hibbard and Greene 2013; Wagner et al. 2001; Hibbard et al. 2005; Maindal et al. 2009; Rademakers et al. 2012;

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Mosen et al. 2007; Greene and Hibbard 2012). The concepts of patient activation and engagement acknowledge the important role that patients have in managing their health through actively participating in their health care, and making decisions that affect their health from day to day.

While patient engagement has been called "the block-buster drug of the century" (Dentzer 2013), physicians may face significant barriers to promoting engagement among their patients. One such challenge is low health literacy. Many patients struggle to understand basic health information, and it is estimated that approximately 80 million US adults have limited health literacy, referring to the set of skills people need to function effectively in the healthcare environment (Berkman et al. 2011, Baker 2006). Physicians often have a poor understanding of their patients' level of health literacy (Street and Haidet 2011) and patients' health-related beliefs and values (Cooper et al. 2006). Understanding patients' perspectives is key to patient-centered care, and lack of patient-centered communication contributes to poorer satisfaction and outcomes, and may contribute to inequalities in health care among racial minority patients (Koh et al. 2013).

The Accreditation Council for Graduate Medical Education (ACGME) requires internal medicine residency programs to address "development of core professional attributes, such as altruism and social accountability, needed to provide care in a multi-dimensionally diverse society" (Accreditation Council for Graduate Medical Education 2013). However, physicians in training receive inadequate instruction to help them find ways to communicate effectively with people of various levels of health literacy, and to elicit health beliefs and values. Community–academic partnerships offer opportunities to practice these skills, while fostering a sense of social accountability (Dharamsi et al. 2011) and providing a valuable service to the community (Hufford et al. 2009; Meyer et al. 2005).

Through a medical–religious partnership, an initiative called the Lay Health Educator Program (LHEP) invited congregation members to attend seminars on common diseases and health concerns. The purpose was to improve community members' health literacy, in order to develop a cadre of engaged congregation members who then facilitate further engagement in their religious communities. Our internal medicine residents served as educators of community members in the LHEP, and in turn, representatives from those congregations served as key teachers of the residents.

The objective of this study is to assess whether resident participation in the LHEP led to an increase in residents' sense of preparedness to understand and communicate with community members of varying levels of health literacy, greater confidence in presenting to a lay audience, and better awareness and appreciation for the health beliefs and concerns of community members.

Methods

Educational Program

The LHEP was introduced in the fall of 2011 to the internal medicine residents at Johns Hopkins Bayview Medical Center, an urban academic medical center. During the first 2 years of the LHEP, 24 residents participated and informal surveys suggested high impact through participation in this program. In the third year of the LHEP, IRB approval was obtained in order to more rigorously assess the impact of the LHEP on the residents.

The LHEP was conducted over 12-weeks between September and November 2013. Congregations were recruited from the Healthy Community Partnership (HCP), a medical–religious partnership between a large urban academic medical center and local faith communities. Geographically, the congregations were located in the Baltimore-Washington D.C. metropolitan area.

The mission of the LHEP is to improve community participants' awareness and understanding of specific common medical conditions (e.g., diabetes mellitus) and healthcare concerns (e.g., advanced directives). Community members were given basic information on these topics and taught how to access additional up-to-date health information from reliable, vetted sources for navigating medical conditions and concerns. Upon completion of the training program, participants received certificates identifying them as Lay Health Educators and coordinated health-related events for their congregations (e.g., health fairs, "Ask a Doctor" sessions, vaccination drives) in accordance with the health needs and interests of their respective religious communities. Leaders of each congregation were in full support of their congregation members' participation in the LHEP and agreed to support subsequent efforts by the LHEP participant to promote health in the congregation.

Residents were recruited from the internal medicine residency program at Johns Hopkins Bayview Medical Center. During a brief announcement at morning report, interested residents were invited to attend a 1-h evening orientation lecture. Residents volunteered to participate and could participate regardless of their year of residency. Up to 15 residents could be accommodated. Upon volunteering to be a LHEP instructor, residents chose from 15 pre-selected (based on community member interests) health topics (Table 1). The residents researched the selected topic and created PowerPoint style presentations with handouts. The LHEP faculty provided feedback related to tailoring the information to an appropriate level of health literacy at least 2 days before the resident was scheduled to present.

Each seminar included an interactive 30–45-min talk followed by a question-and-answer session. All PowerPoint presentations and handouts were distributed to the community participants in a binder.

There were four faculty members in charge of overseeing the program. Recruitment responsibilities of community members and residents were divided between two of the faculty members. Recruitment occurred from June to July. Another faculty member over

Table 1 Health topics presented during the 2013 Lay Health Educator Program

Depression
Medication Management
Addiction
Chronic Kidney Disease
Women's Health
HIV and Sexually Transmitted Diseases
Chronic Obstructive Pulmonary Disease
Dementia
Stroke
Heart Disease
Oral Health
Diabetes
Nutrition
Talking to Your Doctor
Advance Directives

saw resident recruitment that included orientation and scheduling resident speakers. Finally, all four members assisted with coaching and preparing the residents as well as providing feedback for the residents after the completion of the respective teaching session.

Resident Survey Instrument

The impact on the resident physicians was measured by comparing survey results before and after participation in the LHEP. Residents completed baseline surveys 1–2 weeks prior to their teaching session; post-presentation surveys were completed 1–2 weeks after their session. Each question was rated on a 5-point Likert scale. Table 2 describes the questions and range of possible responses.

Statistical Analysis

The results of the survey questions are reported as mean scores (±standard deviation). We compared pre- and post-training scores using paired *t* tests where appropriate. Analyses were conducted with SigmaPlot 11.0 (San Jose, CA).

Results

A total of 15 internal medicine residents participated in the LHEP in the 2013 academic year (Table 3). The majority (9) of residents had never participated in prior LHEP events and 6 of the 15 had given a public presentation about a medical or health topic. Residents'

Table 2 Survey questions asked of resident participants in the LHEP

Pre-program items	"Why did you select the topic to teach?"
	"What inspires you to want to participate in promoting health towards the community?"
Pre-post survey questions	"How comfortable and confident are you in preparing and giving a talk on a health topic to members of the general public (i.e., a group of individuals with no background in medicine or health care)?"[a]
	"Do you feel you understand what the general public values as important with respect to the health care topic you are covering?"[b]
	"How well do you feel you can gauge the level of understanding most members of our local community have of the topic you are covering?"[c]
	"How much impact do you believe training a group of interested members of the general public on health matters can have on the health of the community?"[d]
Pre-program open-ended item	"What inspires you to want to participate in promoting health towards the community?"
Post-program open-ended items	"Has participation in this program altered your career goals in any way?"
	"In what ways has participation in the LHEP impacted your professional development and affected how you now work with or plan to work with patients in the future (either in positive or negative ways)"

[a] Range of choices: 1–5; 1 (no comfort), 3 (comfortable), 5 (very comfortable)

[b] Range of choices: 1–5; 1 (I do not feel I have a great understanding), 3 (I feel I have a general understanding), 5 (I feel I have a great understanding)

[c] Range of choices: 1–5; 1 (not well), 3 (well), 5 (very well)

[d] Range of choices: 1–5; 1 (almost no impact), 2 (mild impact), 3 (moderate impact), 4 (strong impact), 5 (very strong impact)

Table 3 Demographics of the 15 internal medicine residents

Year of training	
Interns	9
Junior	3
Senior	3
Prior health promotion speaking events on a medical or health topic to the general public	
Never	6
1–2 times	3
3 times or more	6
Professional goals at the end of residency	
Private practice–Primary care	4
Private practice–Specialty care	0
Academic institution	9
Fellowship	9
Research	4
Public health/public policy	6
Working in the media	0
Global health	7
Medical education	6
Uncertain	2
Selected topic of discussion was chosen by the resident due to the following reason(s)	
Passionate about topic	10
Well-informed about the topic	4
Not well-informed and seen as opportunity to learn	2
Believe this topic is significant for general public to be informed on	11
All other topics were taken	1

descriptions of reasons they chose a particular presentation topic included feeling passionate about the topic, believing the topic is an important one for public awareness, choosing the topic because they were well-informed and familiar with it, desiring to learn more about a topic about which they are not well-informed, and choosing a theme because it was the only one left. Representative responses to the open-ended question, "What inspires you to want to participate in promoting health of the community?" are shown in Table 4.

Pre and Post Survey Responses

Residents reported more comfort with their ability to prepare and give a talk on a health topic to members of the general public with no background in medicine or health care after participation in the LHEP than before (3.81 ± 1.38 after vs 3.06 ± 1.18 before, $p = 0.008$). Similarly, the residents reported a low level of understanding (2.88 ± 1.02) of the community members' baseline knowledge on the topic they presented before participating in the LHEP, which improved significantly to after participating in the LHEP (3.19 ± 1.22, $p = 0.03$ for the change). Finally, there also was a statistically significant change in the residents' reported understanding of what the local community values as

Table 4 Selected responses to the question, "What inspires you to want to participate in promoting health towards the community?"

"Lifestyle diseases are preventable with education"
"Physicians knowledge can be shared with more people if done in a group setting"
"My patients and personal experiences with family"
"Very satisfying hearing that the people we serve feel that we are meeting their needs"
"Because there is a lack of it"
"It seems like a basic part of being a doctor"
"Providing the public with better tools to manage their own health"

important with respect to the healthcare topic they covered (3.13 ± 1.00 before vs 3.65 ± 1.20 after, $p = 0.04$). The one question that did not elicit significantly different ratings asked whether the residents felt that training a group of interested members of the community on health matters could have an impact on the health of the community. Both prior to and after completion of the LHEP, the residents highly agreed that training members of the community could have a moderate to strong impact on the health of the community (3.47 ± 1.46 before vs 3.59 ± 1.54 after, $p = 0.29$).

Impact on Career Goals

After the residents completed the LHEP, they were asked if participating in such an initiative impacted their career goals. Five of the 15 residents answered "yes." Two of the five did not report how LHEP has changed their career goals. One resident reported he would be more involved with the community. One resident will consider a specialty in medicine ("putting together the presentation on diabetes has made me more interested in endocrinology"). Finally, the third resident expressed interest in pursuing public health and policy ("clearly, more needs to be done to meet the health demands of our patients, and this cannot be achieved by current standards and practices; I may consider a master's in public health").

Further, the residents were asked, "In what ways has participation in the LHEP impacted your professional development and affected how you now work with or plan to work with patients in the future (either in positive or negative ways)?" There were no negative responses. Residents attributed a desire for more public and community health involvement and described changes in the way they will communicate with future patients after having participated in the LHEP. Table 5 lists illustrative quotes in response to this item.

Table 5 Selected responses to the question, "In what ways has participation in the LHEP impacted your professional development and affected how you now work with or plan to work with patients in the future (either in positive or negative ways)?"

"Reinforced my commitment to working in community health"
"Definitely all positive! I plan to utilize the resources in the community more to engage my patients and would love to participate in educational programs the rest of my career"
"Reaffirms my desire to work in patient education and on the community level to some extent"
"Researching my topic ("Talking to Your Doctor") was helpful in creating a framework for me as a doctor to improve my communication skills with patients and the lay public"

Discussion

Residents who participated in the LHEP demonstrated improved preparedness to understand and communicate with community members of varying levels of health literacy, greater confidence in providing health education to a lay audience, and better awareness and appreciation for the health beliefs and concerns of community members. Further, while more than half of the LHEP participating residents had never given a talk to the general public regarding health information, through the preparation offered by the LHEP, residents felt more comfortable in their skills to perform such an intervention. Residents endorsed attitudes that education through community engagement holds potential to impact the health of a community. Finally, it must be recognized that this intervention was brief and not time-consuming (typically a total of no more than 3 h spread over the weeks between orientation to execution of the talk), but had a meaningful impact on our residents.

To achieve the promise that patient activation and engagement hold, creative educational venues that not only activate community members but also develop the skills of physicians while imbuing in them a sense of professional obligation to better engage and activate patients are needed. A prior study demonstrated that after a group of health providers who were made aware of the health literacy status of their patients and underwent subsequent training in communication with patients who had limited health literacy skills (intervention group), the patients of those providers had higher colon cancer screening rates (41.3 %) than patients whose providers did not receive such information and training (control group) (32.4 %) ($p = 0.003$) (Ferreira et al. 2005). Even more striking, among patients for whom literacy skills were measured at less than a ninth-grade education, 55.7 % of patients in the intervention group completed screening tests, versus 30.0 % of patients in the control group ($p = 0.002$). Therefore, an understanding of health literacy and how to tailor communication to specific health literacy levels can have a significant positive impact on health promotion (Koh et al. 2012). Our study was not designed to look at clinical end points, but we are hopeful that our trained residents will now be better equipped to communicate effectively and recognize salient health concerns when caring for individuals at all health literacy levels.

There are two main limitations of the present program. First, the survey we created has not been validated outside of our program. Second, we have not yet reported the impact this initiative had on the community graduates. This research is currently underway. Similarly, our outcomes report only short-term impacts on the resident; we plan to study longer term outcomes including engagement in community outreach in their future careers.

For physicians in training, we have demonstrated that participation in the LHEP introduces them to the concept of health literacy and effective communication for patient engagement. Further, our study suggests that participation in the LHEP may impact subsequent communication with patients, continued community engagement opportunities, and even career interests. Subsequent studies will examine the impact of the LHEP on the community volunteers themselves, and also seek to understand how LHEP training may or may not be utilized in local congregations for health promotion and further community member engagement.

Conclusion

The Lay Health Educator Program is an initiative to foster patient engagement and activation through training lay health educators by internal medicine residents. The LHEP is a program that could be readily adapted and further expanded to meet the needs of other

residency programs that wish to create community–academic partnerships for service learning.

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Conflict of interest None.

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