Cancer Risk Communication with Low Health Literacy Patients: A Continuing Medical Education Program

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BACKGROUND: Low health literacy (HL) is an important risk factor for cancer health disparities.

OBJECTIVE: Describe a continuing medical education (CME) program to teach primary care physicians (PCP) cancer risk communication and shared decision-making (SDM) with low HL patients and baseline skills assessment.

DESIGN: Cluster randomized controlled trial in five primary care clinics in New Orleans, LA.

PARTICIPANTS: Eighteen PCPs and 73 low HL patients overdue for cancer screening.

INTERVENTION: Primary care physicians completed unannounced standardized patient (SP) encounters at baseline. Intervention physicians received SP verbal feedback; academic detailing to review cancer screening guidelines, red flags for identifying low HL, and strategies for effective counseling; and web-based tutorial of SP comments and checklist items hyperlinked to reference articles/websites.

MAIN MEASURES: Baseline PCP self-rated proficiency, SP ratings of physician general cancer risk communication and SDM skills, patient perceived involvement in care.

RESULTS: Baseline assessments show physicians rated their proficiency in discussing cancer risks and eliciting patient preference for treatment/decision-making as "very good". SPs rated physician exploration of perceived cancer susceptibility, screening barriers/motivators, checking understanding, explaining screening options and associated risks/benefits, and eliciting preferences for screening as "satisfactory". Clinic patients rated their doctor's facilitation of involvement in care and information exchange as "good". However, they rated their participation in decision-making as "poor".

DISCUSSION: The baseline skills assessment suggests a need for physician training in cancer risk communication and shared decision making for patients with low HL. We are determining the effectiveness of teaching methods, required resources and long-term feasibility for a CME program.

KEY WORDS: health literacy; continuing medical education; communication skills; cancer screening.

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INTRODUCTION

Health literacy is defined as "the degree to which individuals have the capacity to *obtain, process, and understand* basic health information and services needed to make appropriate health decisions."¹ Low health literacy (HL) is an important risk factor for cancer health disparities because patients with low HL are less likely than patients with adequate HL to adhere to preventive health measures.² Patients with low HL also have poor knowledge about cancer control concepts; more misunderstandings about cancer susceptibility and benefits of early cancer detection; lack numeracy skills to understand risk reduction;³ and want information clarified, but tend to ask fewer questions.⁴

Physicians trained to effectively counsel patients with low HL on benefits and risks of cancer screening may facilitate patient understanding of the importance of prevention. To effectively counsel these patients, health providers must first recognize them and adjust their communication. Information exchange via exploring patient perceptions of susceptibility to cancer, barriers and facilitators to screening as well as motivation and self-efficacy to adhere to screening are major components of cancer risk communication. Finally, shared decision making (SDM) about final plans of action is imperative.⁵ The primary objective of this report is to describe a baseline skills assessment for primary care physicians (PCP) and the implementation of a continuing medical education (CME) program to teach PCPs how to engage in cancer risk communication and SDM with patients with low HL.

METHODS

Study Setting and Participants

This 4-year study (2008-2012) targets clinics in New Orleans, Louisiana that serve patients with major risk factors for low HL—ethnic minorities, middle-aged or older, publicly insured and uninsured.⁶ Physicians who practice at these clinics at least one half day per week are eligible. Providers planning to

leave before one year are excluded. Patients whose PCPs consent to participate are recruited. Eligible patients include men (age 50–75) and women (age 40–75) who have been enrolled in the clinic for ≥ 6 months, have low or inadequate HL via the Rapid Estimate of Adult Literacy in Medicine (REALM score ≤ 60 equivalent to 8th grade or lower),⁷ and are due for breast/cervical/colon cancer screening based on American Cancer Society's (ACS) 2008 guidelines.⁸ Patients are excluded if they plan to change PCP or do not speak English. Tulane University's Institutional Review Board approved this study.

Study Design

Physicians are randomized in clusters based on practice site to one of two groups (intervention vs. control). Physicians in both groups have unannounced SP appointments at baseline, 6 and 12 months. Unannounced visits minimize the chance of physicians conscientiously altering their communication behaviors. All SPs undergo 3-hour training sessions with the principal investigator (EP) and program manager for Tulane's SP program (KS) to standardize case portrayal and ratings of communication skills. SPs schedule appointments and portray a new patient who presents for a physical, has a family history of colon and breast cancer, and is overdue for cancer screening, thus prompting physicians to discuss screening. After each visit, SPs use a checklist to rate physician communication about cancer screening at baseline, 6- and 12-month follow-up. This report describes the baseline skills assessment.

Physician Performance Feedback

Intervention physicians receive training in cancer risk communication and SDM. At the end of each visit with intervention physicians, SPs reveal themselves as actors and give structured verbal feedback. After baseline SP visits, each intervention physician undergoes one-on-one 30-minute academic detailing with a physician/communication expert (EP) at the physician's clinic or office to review ACS guidelines, clinical red flags for identifying patients with low HL, and strategies for effective counseling about cancer screening (present information in small "chunks"; use simple language, pictures, "teach back" to discuss complex concepts; use concepts from the Health Belief Model (HBM)⁹ to explore reasons for non-adherence to cancer screening, and SDM). Intervention physicians are directed to WebSP¹⁰ (web-based service for SP event management) to review SP ratings of their communication skills. The behavior checklist incorporates principles of the HBM that are critical to cancer risk communication (explore perceived susceptibility to cancer, perceived benefits/efficacy of cancer screening, and perceived barriers/motivations to undergo screening) as well as Charles¹¹ and Braddock's¹² SDM models (discuss cancer risks, check understanding of risks, discuss potential benefits/risks of screening options, explore preferences for screening, and negotiate plans). SP checklist items are hyperlinked to key reference articles and websites for supplemental reading on health literacy, cancer screening guidelines, and patient-centered communication.^{3,13–16} Intervention physicians have access to their SP ratings on WebSP allowing them to compare changes in their scores over time and compare their performance to all participants. Both study groups will receive annual reports

detailing their patients' individual cancer screening status and aggregate patient ratings of their communication style via Perceived Involvement in Care Scale (PICS; Cronbach alpha 0.73)¹⁷ at baseline, 12 and 24 months. Control physicians do not receive SP feedback or communication training. Physicians can earn up to 20 CME credits.

Study Variables

This study assesses the need for physician training in cancer risk communication, whether training improves physician communication, and whether changes in physician behavior are associated with patient receipt of cancer screening. Communication skills are assessed via physician self-rated proficiency at baseline, SP ratings of communication skills at baseline, 6 and 12 months; and study patient PICS ratings at baseline and annually for 2 years. Physicians self-rate their ability to explain cancer risk and elicit patient preferences for treatment and active roles in decision making (1 = poor; 5 = excellent). SPs complete behavior checklists (1 = poor; 5 = excellent) that assess general cancer risk communication (7 items) and SDM on colon (6 items), cervical (4 items) and breast cancer screening (4 items). WebSP tracks physician use of the tutorial via number of user log-ins. All study participants complete baseline demographic questionnaires. Since all patients recruited at baseline are not up-to-date on screening and patients recruited thus far have been enrolled less than one year, cancer screening status is not reported.

Data Analysis

We compared baseline characteristics of study groups using Student's t-test for continuous variables and chi square analysis for dichotomous/categorical variables. For baseline communication behavior ratings, we performed Student's t-test for individual scale items as well as the SP checklist and PICS subscales. We determined SP subscale reliability using Cronbach alpha. All data analysis was performed with STATA 10.

RESULTS

Table 1 describes baseline characteristics of study participants recruited to date. Currently, 18 physicians from 5 clinics (3 intervention, 2 control) have been recruited. Physician demographics are similar except a higher proportion of controls report academic affiliations compared to intervention physicians. Between March and October 2009, we screened 399 patients of whom 326 were excluded because their REALM score was too high ($n=174$), they were new patients ($n=55$), up-to-date on cancer screening ($n=44$), age <40 ($n=22$), refused to participate/withdrew or were recruited incorrectly ($n=32$) – leaving 73 eligible patients. Patient demographics are similar except a higher proportion of controls report having insurance. Average REALM scores for both groups are 4–6th grade equivalent.

Table 2 illustrates physician self-rated proficiency and SP and patient ratings of the physicians' communication skills at baseline. Physicians rated highly their proficiency in discussing cancer risks and SDM. With the exception of avoiding medical jargon, where SPs rated physicians as very good to

Table 1. Characteristics of Study Participants

Physicians	Intervention (N=11)	Control (N=7)
Age (mean, SD)	45.4 (13.8)	42.2 (8.5)
Gender – Female	6 (54.5 %)	4 (57.1%)
Race		
Asian	0 (0%)	1 (14.8%)
Black, not Hispanic	5 (54.5 %)	3 (42.9%)
White, not Hispanic	6 (45.5 %)	3 (42.9%)
Medical training in US	7 (63.6%)	7 (100%)
Specialty		
General internal medicine (GIM)	3 (27.3 %)	5 (71.4%)
Family practice (FP)	4 (36.4%)	2 (28.6%)
Combined GIM/FP + other specialty	4 (36.4 %)	0 (0%)
Academic faculty appointment*	6 (54.5%)	7 (100%)
Total years in practice ≥5	6 (54.5%)	5 (71.4%)
Patients	Intervention (N=39)	Control (N=34)
REALM (mean, SD) ^a	40.0 (19.6)	42.9 (19.5)
Age (mean, SD)	56.7 (6.7)	60.3 (8.5)
Gender-Female	31 (79.5 %)	27 (79.4%)
Race/Ethnicity - Black, not Hispanic	35 (89.7 %)	32 (94.1%)
Provider relationship ≥1 year	29 (74.4 %)	26 (76.5%)
Education: High school graduate or higher	23 (59.0 %)	20 (58.8%)
Insurance (Medicaid/Medicare/Private) *	19 (48.7%)	32 (94.1%)

**p*<0.05^aREALM score & grade equivalent: 61–66 High school; 45–60 7th–8th grade; 19–44 4th–6th grade; 0–18 3rd grade and below

excellent, SPs rated general cancer risk communication skills as satisfactory to good. Ratings of SDM about colorectal cancer screening were satisfactory to good. Some physicians did not interview female SPs during baseline visits; therefore, ratings of counseling on cervical/breast cancer screening are not presented. Study patients rated doctor facilitation and information exchange as good or better but rated poorly their own participation in decision-making. There were no between group differences in baseline ratings.

DISCUSSION

Among interventions described in health literacy research, measures to improve physician-patient communication are surprisingly under-explored. Although there are studies examining communication with patients who have low HL and diabetes,¹⁸ to our knowledge, this is the first study to examine whether physician training in cancer risk communication and SDM improves communication with patients who have low HL. Our baseline performance assessment confirms the need for PCP training.

More specifically, patients and SPs rated physician communication behaviors lower than physicians rated themselves. Prior studies show that physicians have limited abilities to accurately self-assess performance.¹⁹ While patient ratings are often subject to bias related to selection of physicians and length of relationship,²⁰ SPs are regarded by some to be the reference standard for assessing performance²¹ and have been used to reliably measure provider skills.²²

Our study has several strengths. Our program emphasizes important links between physician communication behavior and health outcomes and promotes communication strategies to

Table 2. Physician Self-Rating, Standardized Patient & Study Patient Ratings of Communication Skills

	Intervention	Control
Physician self-rated proficiency^a (1 = poor; 5 = excellent) (Mean [SD])	N=11	N=7
Explaining to patients their risk for developing cancer	4.1 (0.9)	4.0 (0)
Eliciting patient preferences for medical treatment	3.9 (0.3)	4.0 (0)
Eliciting patient preferences for their role in medical decision making	4.0 (1.2)	4.0 (0.6)
Standardized patient ratings of physicians at baseline (Mean [SD])	N=11	N=7
General cancer risk communication (1 = poor; 5 = excellent)		
Used language I could easily understand or explained terminology when medical jargon used	4.5 (0.7)	4.9 (0.4)
Explored my beliefs or understanding about my risk for cancer	3.1 (1.3)	2.3 (1.5)
Encouraged me to discuss concerns that would keep me from undergoing cancer screening	3.2 (1.3)	2.4 (1.1)
Encouraged me to discuss concerns that would motivate me to undergoing cancer screening	2.9 (1.2)	2.4 (1.1)
Checked to see if I understood the benefits and risks of screening	3.0 (1.3)	2.4 (1.5)
Encouraged me to ask questions	3.5 (1.1)	3.0 (1.4)
Reached agreement with me on final plans to order cancer screening tests	3.8 (1.2)	3.5 (1.0)
Composite general cancer risk communication score ^b	3.1 (1.3)	2.7 (1.1)
Shared decision making about colorectal cancer screening (1 = poor; 5 = excellent)		
Explored my understanding of my risk for colon cancer	3.0 (1.1)	2.7 (1.4)
Explained all of the different options for colon cancer screening	2.5 (1.0)	2.3 (1.6)
Explained the risks and benefits of different options	3.1 (1.4)	2.1 (1.2)
Asked me if I had any questions	2.6 (1.6)	2.4 (1.5)
Asked me which test was most preferable to me	2.6 (1.6)	2.0 (1.7)
Reached agreement with me on final plans for colon cancer screening	3.9 (1.3)	3.1 (1.2)
Composite colon cancer screening shared decision making score ^c	2.7 (1.3)	2.5 (1.2)
Study patients perceived involvement in care at baseline (Mean [SD])	N=39	N=34
Perceived involvement in care subscales (0 = disagree; 1 = agree)		
Doctor facilitation of patient involvement ^d	4.2 (1.2)	4.2 (1.2)
Level of information exchange ^e	3.4 (1.2)	3.5 (0.8)
Patient participation in decision making ^f	1.4 (1.3)	1.2 (1.3)

^a3-item scale (alpha 0.81);^b6-item scale excludes medical jargon (alpha 0.95);^c6-item scale (alpha 0.91);^d5-item scale (alpha 0.74);^e4-item scale (alpha 0.74);^f4-item scale (alpha 0.70)

reduce disparities in cancer screening practices. We use teaching methods (verbal/written feedback; academic detailing, self-directed learning) that promote self-reflection. Participants actively engage in practice-based performance improvement regarding cancer screening and cancer risk communication with low HL patients. Finally, we use a randomized controlled trial

design to examine whether CME programming is effective in altering physician behaviors over time.

Our study also has limitations. SP ratings may be biased since they are not blind to physician intervention assignment. Nonetheless, baseline SP ratings are similar for both groups. Moreover, by the end of the study, each physician will have completed three encounters with three different SPs. None of the SPs can access WebSP data entered by a different SP. Because SP encounters are not recorded, we cannot assess inter-rater reliability for all encounters. Since intervention physicians undergo training, we expect low inter-reliability of SP ratings for this group; however, we will be able to calculate inter-rater reliability of SP ratings for the control group at 6-and 12-month follow up. Lack of SP encounter recordings also limits feedback on specific behaviors. Nonetheless, intervention physicians can access via WebSP the communication behavior checklist in which each item contains anchors explaining score options. The anchors describe the extent to which select behaviors are observed.

Despite these limitations, our study offers innovations that will enhance health disparities education. The design includes repeated SP encounters to determine whether training changes provider behavior from baseline to 6-months and whether any changes are sustained at 12 months. When the targeted physician sample is attained, the study will be powered to determine inter-group differences in ratings by SPs and patients. Similarly, when the target patient sample is reached, the study will examine whether change in physician behavior is associated with patient receipt of cancer screening. Finally, we are determining the required resources and long-term feasibility of our CME program. If our program proves effective, then further studies using similar methods targeted at low HL patients in other settings may elucidate the generalizability and utility of our program.

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