Health Literacy Practices and Educational Competencies for Health Professionals: A Consensus Study

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Health care professionals often lack adequate knowledge about health literacy and the skills needed to address low health literacy among patients and their caregivers. Many promising practices for mitigating the effects of low health literacy are not used consistently. Improving health literacy training for health care professionals has received increasing emphasis in recent years. The development and evaluation of curricula for health professionals has been limited by the lack of agreed-upon educational competencies in this area. This study aimed to identify a set of health literacy educational competencies and target behaviors, or practices, relevant to the training of all health care professionals. The authors conducted a thorough literature review to identify a comprehensive list of potential health literacy competencies and practices, which they categorized into 1 or more educational domains (i.e., knowledge, skills, attitudes) or a practice domain. The authors stated each item in operationalized language following Bloom's Taxonomy. The authors then used a modified Delphi method to identify consensus among a group of 23 health professions education experts representing 11 fields in the health professions. Participants rated their level of agreement as to whether a competency or practice was both appropriate and important for all health professions students. A predetermined threshold of 70% agreement was used to define consensus. After 4 rounds of ratings and modifications, consensus agreement was reached on 62 out of 64 potential educational competencies (24 knowledge items, 27 skill items, and 11 attitude items), and 32 out of 33 potential practices. This study is the first known attempt to develop consensus on a list of health literacy practices and to translate recommended health literacy practices into an agreed-upon

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set of measurable educational competencies for health professionals. Further work is needed to prioritize the competencies and practices in terms of relative importance.

Health literacy, defined as the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services in order to make appropriate health decisions (Somers & Mahadevan, 2010), is a critical element of effective health communication, with major implications for individuals' health (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). More than one third of U.S. adults have low health literacy (Kutner, Greenberg, Jin, & Paulsen, 2006). It is unfortunate that health professionals often lack adequate awareness and understanding of health literacy issues (Kelly & Haidet, 2007; Macabasco-O'Connell & Fry-Bowers, 2011), as well as the skills needed to address low health literacy effectively (Bass, Wilson, Griffith, & Barnett, 2002; Bourhis, Roth, & MacQueen, 1989; Rogers, Wallace, & Weiss, 2006; Seligman et al., 2005). *Health literacy practices*, defined as patient-centered protocols and strategies to minimize the negative consequences of low or limited health literacy (Barrett, Puryear, & Westpheling, 2008), are a promising approach to improving health-related outcomes. However, experience and available data suggest that many promising health literacy practices are not routinely used by health care professionals (Castro, Wilson, Wang, & Schillinger, 2007; Schwartzberg, Cowett, VanGeest, & Wolf, 2007; Turner et al., 2009). Very little empiric data have been published examining general health literacy practices among health professionals, and their effectiveness in improving patient outcomes (Sheridan et al., 2011). Few studies have attempted to document the broad range of health literacy strategies being practiced by health professionals across disciplines. For example, Barrett and colleagues (2008) used interviews—compiled from health professionals/staff and site visits in primary care clinics—across the United States to identify five promising health literacy practices: (a) involving front office staff, (b) using standardized health communication tools, (c) using plain language and drawings, (d) partnering with patients to improve communication, and (e) establishing an organizational commitment to health literacy universal precautions for clear communication. Schwartzberg and colleagues (2007) surveyed physicians, pharmacists, and nurses to identify communication techniques currently in use and their perceived effectiveness with patients. They found that a wide variety of techniques were used and that the extent of use often varied significantly by discipline. For example, nearly all professionals (92–98%) reported the routine use of plain language; however, nurses were nearly twice as likely to use teach-back (60.5%) in comparison with physicians (35.4%) and pharmacists (27.7%). Physicians were more likely to chunk information down into two or three concepts and check for understanding (55.1%) in comparison with nurses (42.5%) and pharmacists (36.4%). Also, pharmacists were more likely to read written information aloud to patients (70%) versus nurses (57.6%) and physicians (46.9%).

Increasing and improving education for health professionals on the topic of health literacy has been identified as a priority area in the United States (U.S. Department of Health and Human Services, 2011), and is a central feature of the U.S. National Action Plan to Improve Health Literacy (U.S. Department of Health and Human Services, 2010). Identifying key *health literacy educational competencies*, defined here as the knowledge, skills, and attitudes that health professionals need in order to effectively address low health literacy among consumers of health care services and health information, will be an important step toward promoting training in the use of effective health literacy practices among health professionals. The U.S. Institute of

Medicine recommends that "professional schools and professional continuing education programs in health and related fields, including medicine, dentistry, pharmacy, social work, anthropology, nursing, public health, and journalism, should incorporate health literacy into their curricula and areas of competence" (Nielsen-Bohlman, Panzer, & Kindig, 2004). Still, a recent study suggests that health literacy is not yet being taught to the majority of U.S. medical students (Coleman & Appy, 2012). The extent of health literacy training for other health professions students has not been reported. Although the Calgary Charter on Health Literacy outlines general principles for the development of health literacy curricula (Coleman et al., 2010), and suggested approaches to teaching about health literacy are available (Coleman, 2011), there are still no widely accepted guidelines for the content or structure of health literacy curricula for health professionals. A recent review of the literature identified the lack of published educational competencies in health literacy as an important barrier to the development and evaluation of effective curricula for health professionals (Coleman, 2011). The specific aims of the present study were to (a) develop a more comprehensive list of health literacy practices than is currently found in the published literature, (b) identify a set of health literacy educational competencies on the basis of recommendations in the literature, (c) write these practices and competencies as measureable objectives for individual health professionals, and (d) develop consensus on which recommended health literacy competencies and practices are appropriate and important for individuals across the health professions.

Method

Consensus Study Design

We used a modified Delphi method (De Villiers, De Villiers, & Kent, 2005) to achieve consensus among a group of health professions education experts. The Delphi method has been described in detail elsewhere (DeVilliers et al., 2005). The Delphi method is an iterative facilitator-led process, commonly used to generate quantitative estimates of consensus using qualitative means (Jones & Hunter, 1995), which has been used in a wide variety of health-related research, including achieving consensus on educational competencies for health care professionals (DeVilliers et al., 2005), and is particularly useful when empiric evidence is limited. The Delphi process begins with a list of proposed items to be debated. Next, an appropriately sized and selected expert panel is established. Individuals anonymously rate their agreement with items on the list. Predetermined levels of agreement are chosen. Through the group rating process, items on the list are either accepted, rejected, or carried forward for an additional round of rating. Participants are provided with facilitator-led feedback on the group's ratings for each item, which is carried forward to the next round. The process continues iteratively until there is a convergence of opinions or until there is a diminishing of returns (Fink, Kosecoff, Chassin, & Brook, 1984). This method allows for the collection of "pooled intelligence" from a group of experts who may not be in physical proximity to one another; a modified Delphi technique is used in situations in which a group of experts is meeting in person (DeVilliers et al., 2005).

We chose this method for two main reasons. First, the literature describing recommended clinical best practices for mitigating the effects of limited health literacy is very diverse, and individual recommendations are, for the most part, on the basis of expert opinion, generally lacking adequate empirical evidence to allow for a meta-analysis approach. Second, health literacy is a "cross-cutting" issue, which affects all

disciplines within the health professions (Adams & Corrigan, 2003). Thus, input from a broad array of stakeholders was felt to be important.

Literature Review: Identification of Potential Health Literacy Competencies

Before convening the expert panel, one of the authors (C.C.) conducted an extensive review of the literature on recommendations for health professionals related to health literacy in order to identify a list of potential health literacy practices and competencies. The search strategy used combinations of English language terms (i.e., *health*, *literacy*, *education*, *communication*, *training*, *curriculum*, *students*, *competencies*, *practices*) to search MEDLINE and the Cumulative Index to Nursing and Allied Health Literature through January 2010. Because the Cumulative Index to Nursing and Allied Health Literature search yielded a relatively small number of items, a medical librarian independently conducted a second search in June 2010, which did not identify any new articles. The search was supplemented with internet searches, review of materials in the author's files, and review of citation lists in identified resources. Health literacy experts were also queried for suggestions through a national health literacy Listserv. A post hoc search of the PsycINFO, Health and Psychosocial Instruments, and ERIC databases did not yield any new potential practices or competencies. Because the overwhelming majority of recommendations for health professionals were based on expert opinion only, we felt that limiting search results to strictly defined inclusion criteria, such as would be done in a systematic review, would have resulted in potentially important omissions. As such, we included all identified recommendations. However, items which more closely belonged to another aspect of health communication (e.g., general interviewing skills, cultural competency, and motivational interviewing) were generally not included.

Each of the recommended health literacy items identified through this process was then categorized into one or more educational competency domains (i.e., knowledge, skills, attitudes), or a practices domain. In many cases a recommendation from the literature included elements which fit into more than one of these domains. For example, the recommendation to use a "universal precautions" approach to health communication (DeWalt et al., 2010) can be broken down into a knowledge component regarding how and why to use this approach; an attitudinal component related to one's valuing the approach; and a practice component related to its use in real-world settings. Last, each recommendation was written in operationalized language, to conform broadly to Bloom's Taxonomy of Educational Objectives (Turner, Palazzi, & Ward, 2008).

Expert Panel

The Federation of Associations of Schools of the Health Professions (FASHP) is an umbrella organization that represents 15 health education professional organizations in the United States. Educational leaders from the 15 FASHP member organizations were identified as key informants by one of the investigators (L.M.) and were themselves invited to identify up to four expert representatives from within their organization to attend a joint meeting of FASHP members on the topic of health literacy competencies and teaching resources. Four additional education experts from the St. Louis College of Pharmacy (SLCP) were also invited because of their role in helping to organize the meeting. Participants were invited on the basis of their expertise and leadership in health professions education in their respective fields and on

their specific knowledge or interest in health literacy or related content areas. They therefore met the recommendations regarding selection of an expert panel (Fink et al., 1984). Selecting the size of the expert panel for a Delphi study depends on a number of factors, including the content under consideration, the degree of uncertainty or controversy in the literature, and the availability of resources. With these factors in mind, we aimed to convene an expert panel of at least 20 individuals. A total of 19 FASHP key informants, four educators from SLCP, and 12 other health literacy experts from around the country, attended the 2-day meeting in St Louis, Missouri, in October, 2010, sponsored by Health Literacy Missouri, FASHP, and SLCP. The 23-member expert panel then comprised the 19 FASHP representatives and the 4 educators from SLCP. The remaining 12 health literacy experts served in support and advisory roles at the meeting, but did not participate in the consensus ratings.

Procedure

Three rounds of group ratings were conducted between October 2010 and June 2011, with a brief fourth round in April 2012. The first round included a face-to-face meeting of the expert panel, thus making ours a modified Delphi process (DeVilliers et al., 2005). In each round, participants were asked to rate each proposed competency or practice in terms of its appropriateness for all health professions graduates, using a 4-point Likert-type scale ranging from 1 (*very appropriate*) to 4 (*not appropriate*).

Participants were asked also to rate its importance, using a 4-point Likert-type scale ranging from 1 (*very important*) to 4 (*not important*).

Decision Rule

Appropriateness ratings of "very appropriate" or "appropriate," and importance ratings of "very important" or "important" were considered affirmative ratings. The a priori cutoff points for determining group consensus were set such that items receiving affirmative ratings from 70% or more of participants on both the appropriateness and importance scales would be considered to have achieved group consensus; items receiving affirmative ratings on both scales from 30% or fewer of participants would be rejected; and items receiving affirmative ratings from between 31–69% of participants on either scale would be considered "intermediate" and would be carried forward to the next round. Although there are no agreed-upon cutoff points for determining consensus, the cutoff points we used are in keeping with other Delphi consensus studies and published recommendations, and participants in our study agreed on these a priori cutoff points before starting.

Round 1 of the consensus process was conducted during a face-to-face meeting in St. Louis, Missouri, in October 2010. For Round 1, participants completed a confidential electronic survey, asking them to rate a total of 63 potential competency items and 32 potential practice items. The ratings results were tallied using the a priori decision rule. Participants were then divided into small groups to discuss the remaining intermediately rated items. Within these small groups, participants received a hard copy list of the remaining items for their assigned domains. A nonvoting group facilitator was responsible for timekeeping, and discussion was limited to 1 hr. The facilitator asked the group to list the three most important arguments for and against each of the remaining items, as well as any suggestions for rewording the items. A nonvoting recorder for each group captured the narrative discussion. The recorder's notes were then used by one of the authors (C.C.) to frame the facilitated discussion in Round 2.

Rounds 2–4 were subsequently conducted by e-mail and web-based surveys using the SurveyMonkey platform (http://www.surveymonkey.com). For each remaining potential competency and practice, participants received (a) the original wording for the item; (b) the percentage of participants who had rated the item affirmatively in the preceding rounds; (c) arguments for and against the item as it was originally worded, on the basis of participant feedback from the previous rounds, in some cases edited for clarity, and/or with synthesis provided by one of the authors (C.C.); and (d) a proposed rewording of the item, if such rewording had been suggested by the group's commentaries. Participants were then asked to rerate the item, using the same appropriateness and importance scales as in the previous rounds.

After the third round, we felt that additional rounds were unlikely to significantly change the results. However, it was subsequently discovered that three skill items from Round 1, had not met consensus criteria in Round 1, but had been inadvertently forwarded to subsequent rounds with incorrect wordings. A final make-up Round 4 was conducted to rate these missed items.

The study protocol was approved by the institutional review board at Oregon Health & Science University.

Results

Of the 15 health profession educational organizations belonging to FASHP, 11 sent one or more representatives to the meeting, totaling 23 individuals, all of whom completed Round 1; 4 organizations did not send a representative (Table 1). One female participant was lost after Round 1, and the remaining 22 individuals each participated in all subsequent rounds. Table 2 shows the demographics for the expert panel. The majority of participants were female, White, had a doctoral-level education, and a background in direct patient care. The group had a mean of 19.1 years professional experience in health professions education (range = 7–40 years), and nearly three quarters of participants reported having expertise in the field of health literacy.

Table 3 shows the number of potential items discussed and the number accepted in each round. A total of 63 potential competency items and 32 practice items were initially identified. On the basis of group feedback, one skill item was divided into two separate items and one practice item was added, both in Round 3. Out of 95 items, 78 (82.1%) were accepted in Round 1. After four rounds of discussion, modifications, and voting, 62 out of 64 potential competencies (24 knowledge items, 27 skill items, and 11 attitude items; denoted as "K", "S", and "A," respectively, in Table 4) and 32 out of 33 potential practices (denoted as "P" in Table 5) were ultimately accepted. In Tables 4 and 5, each item is listed along with the percentage of affirmative ratings, and the round in which it was accepted. Items which were not accepted are listed at the end of each table. To provide some organization to the large amount of data in Tables 4 and 5, we grouped items into related clusters (e.g., items relating to written communication), where this seemed appropriate. The Appendix provides a glossary of key terms found in the items listed in Tables 4 and 5.

Discussion

Study Strengths

We used the well-established Delphi method for group consensus among a professionally diverse group with expertise in both health professions education and health

Table 1 Health profession education organizations represented by the expert panel

FASHP member organization	Number of representatives on panel	Percentage of sample ($N = 23$)
American Association of Colleges of Nursing	1	4.3
American Association of Colleges of Osteopathic Medicine	3	13.0
American Association of Colleges of Pharmacy	4	17.4
American Association of Colleges of Podiatric Medicine	—	—
American Dental Education Association	2	8.7
Association of Academic Health Centers	—	—
Association of American Medical Colleges	2	8.7
Association of American Veterinary Medical Colleges	—	—
Association of Chiropractic Colleges	1	4.3
Association of Schools and Colleges of Optometry	1	4.3
Association of Schools of Allied Health Professions	2	8.7
Association of Schools of Public Health	—	—
Association of University Programs in Health Administration	1	4.3
National League for Nursing	1	4.3
Physician Assistant Education Association	1	4.3
St. Louis College of Pharmacy	4	17.4
Total	23	100

Note. FASHP = Federation of Associations of Schools of the Health Professions. Of the 15 organizations belonging to FASHP, 11 responded.

literacy. Most health literacy recommendations found in the literature are based on expert opinion, and, with a few exceptions, lack rigorously established supporting evidence (Sheridan et al., 2011). This made the use of a Delphi expert group consensus process an ideal approach. By using an expert panel of health professions educators with experience in health literacy training for a wide range of health professions

Table 2. Delphi expert panel demographics

Characteristic	N	n (%) or years
Age in years (M)	22	51.9
Sex	21	
Female		15 (71.4%)
Male		6 (28.6%)
Race(s), self-identified, multiple races possible	22	
American Indian or Alaska Native		—
Asian		2 (9.1%)
Black or African American		—
Native Hawaiian or Other Pacific Islander		—
White		21 (95.5%)
Ethnicity, self-identified	22	
Hispanic or Latino		1 (4.5%)
Not Hispanic or Latino		21 (95.5%)
Highest level of education attained	20	
Bachelor's		1 (5%)
Master's		1 (5%)
Doctorate		18 (90%)
Years in health professions education (M)	22	19.1
Background in direct patient care	21	
Yes		19 (90.5%)
No		2 (9.5%)
"Would your peers consider you to have expertise on the topic of health literacy?"	22	
Yes		16 (72.7%)
No		6 (27.3%)

students, the results of this study are likely to be generalizable to diverse educational and practice settings. Proposed competencies and practices needed to surpass the predetermined threshold of acceptance for both appropriateness and importance in order to be retained in the final consensus list, lending an additional degree of content validity to our findings, although it is not known to what extent these two variables are independent of one another.

Table 3. Competencies and practices accepted by Delphi round

Item type	Round 1	Round 2	Round 3	Round 4	Total
Knowledge	19/24	5/5	–/–	–/–	24/24
Skill	21/28	2/4*	2/3**	2/3	27/29
Attitude	11/11	–/–	–/–	–/–	11/11
Practice	27/32	4/5	1/2[†]	0/1	32/33
Total	78/95 (82.1%)	11/14 (78.6%)	3/5 (60.0%)	2/4 (60.0%)	94/97 (96.9%)

  *Three skill items were sent out with incorrect wording in Round 2 and were rated again in Round 4.
  **One skill item divided into two separate items for Round 3.
  †One practice item added in Round 3.

Table 4. Knowledge, skill, and attitude-based health literacy competencies for health professionals: Consensus group ratings ($N = 23$)

Item	Source example	Very appropriate or appropriate (%)	Very important or important (%)	Round accepted
Knowledge items				
The graduate …				
K1 … knows one or more definitions of *health literacy*.*	Nielsen-Bohlman et al., 2004	100	90.9	1
K2 … knows the basic literacy skill domains (reading, writing, speaking, listening, numeracy), and gives examples of health care related demands put on patients for each domain, including difficulties navigating health care systems.	Nielsen-Bohlman et al., 2004	100	95.5	1
K3 … knows the difference between the ability to read, and reading comprehension, and why general reading levels do no not ensure patient understanding.	Nielsen-Bohlman et al., 2004	86.4	81.8	1
K4 … knows that years of educational attainment is an inadequate marker for health literacy skills.	Nielsen-Bohlman et al., 2004	86.4	76.2	1
K5 … knows which kinds of words, phrases, or concepts may be *jargon* to patients.*	Weiss, 2007	95.5	100	1
K6 … estimates the prevalence of low literacy (or low health literacy) among U.S. adults, and knows that certain subgroups are at increased risk.	Kutner et al., 2005; Paasche-Orlow et al., 2005	90.9	76.2	2
K7 … knows that the average US adult reads at an 8th–9th-grade reading level, but that most patient education materials are written at a much higher reading level.	AMA Foundation, 2007	86.3	76.2	1
K8 … knows that cultural and linguistic differences between patients and health care professionals can magnify health literacy issues.	Andrulis & Brach, 2007	95.4	90.9	1
K9 … knows that adults with low literacy tend to experience shame, and hide their lack of skills from health care professionals.	Parikh et al., 1996	100	95.5	1
K10 … knows that "you can't tell who has low health literacy by looking"	AMA Foundation, 2007	84.2	73.7	1
K11 … recognizes "red flag" behaviors which may suggest a patient has low health literacy.	AMA Foundation, 2007	100	95.5	1
K12 … knows that tools are available for estimating individuals' health literacy skills, but that routine screening for low health literacy has not been proven safe or acceptable.	Paasche-Orlow & Wolf, 2008	90.5	90.9	2
K13 … knows that health literacy is context-specific; individuals with high general literacy may have low health literacy.	Nielsen-Bohlman et al., 2004	95.0	86.4	1
K14 … knows that health literacy may decrease during times of physical or emotional stress.	Nielsen-Bohlman et al., 2004	95.5	81.9	1
K15 … knows that everyone, regardless of literacy level, benefits from and prefers clear *plain language* communication.*	Doak et al., 1996	95.3	90.4	1
K16 … knows that transition points, or "hand-offs" in health care (e.g., moving from in-patient to out-patient settings) are especially vulnerable to patient communication errors.	AMA Foundation, 2007	90.4	77.2	1

ID	The graduate …	Source			
K17	… knows rationale for, and principles underpinning the need for a *universal precautions* approach to all health communication interactions.*	DeWalt et al., 2010	81.0	72.2	1
K18	… knows best practice principles of *plain language* and *clear health communication* for oral and written communication.*	AMA Foundation, 2007	85.0	85.7	1
K19	… knows that patients learn best when a limited number of new concepts are presented at any given time.	Sheridan et al., 2011	81.8	85.7	2
K20	… knows examples of the direct relationship between health literacy and • knowledge about one's chronic disease(s) and medications • adherence to medications and treatment plans • receipt of preventive health services • health outcomes or risk of harm	• Weiss, 2007 • AMA Foundation, 2007 • AMA Foundation, 2007 • Berkman et al., 2011	95.2	95.2	1
K21	… recognizes potential legal implications for inadequately conveying health information to patients with low literacy or health literacy.	AMA Foundation, 2007	85.7	81.8	1
K22	… knows that low health literacy has been associated with excess healthcare costs.	AMA Foundation, 2007	81.8	77.3	2
K23	… knows the rationale for and mechanics of using a *teach back* or "show me" technique to assess patient understanding.*	Schillinger et al., 2003	100	100	1
K24	… knows that community resources exist for helping adults improve their general literacy skills.	AMA Foundation, 2007	86.3	72.7	2
Skill items					
The graduate …					
S1	… demonstrates ability to use common familiar lay terms, phrases and concepts, and appropriately define unavoidable *jargon*, and avoid using acronyms in oral and written communication with patients.*	Weiss, 2007	94.7	94.4	1
S2	… demonstrates ability to recognize, avoid and/or constructively correct the use of medical *jargon*, as used by others in oral and written communication with patients.*	Weiss, 2007	100	94.7	1
S3	… demonstrates ability to follow best-practice principles of easy-to-read formatting and writing in written communication with patients.	CMS, 2013	85.7	86.4	2
S4	… demonstrates ability to recognize *plain language* principles in written materials produced by others.*	CMS, 2013	81.8	81.9	3
S5	… demonstrates the ability to put information into context by using subject headings in both written and oral communication with patients.	AMA Foundation, 2007	90.9	81.8	2
S6	… demonstrates ability to write in English at approximately the 5th-6th grade reading level.	AMA Foundation, 2007	84.2	78.9	1
S7	… demonstrates the ability to perform English-to-English translation of information from a non-*plain language* format into a scientifically accurate low-literacy *plain language* format.*	Osborne, 2005	88.9	84.2	1
S8	… demonstrates ability to speak slowly and clearly with patients.	Weiss, 2007	100	89.4	1

(Continued)

Table 4. Continued

Item	(description)	Source	Very appropriate or appropriate (%)	Very important or important (%)	Round accepted
S9	… demonstrates ability to use verbal and non-verbal active listening techniques when speaking with patients.	Osborne, 2005	94.7	100	1
S10	… demonstrates the ability to use action oriented statements to help patients know what they need to do.	Oates & Paasche-Orlow, 2009	90.9	86.4	2
S11	… demonstrates ability to select culturally and socially appropriate and relevant visual aids, including objects and models, to enhance and reinforce oral and written communication with patients.	Doak et al., 1996	100	94.8	1
S12	… demonstrates ability to make instructions interactive, such that patients engage the information, to facilitate retention and recall.	Doak et al., 1996	88.9	79.0	1
S13	… demonstrates ability to elicit the patient's full set of concerns at the outset of the encounter.	Osborne, 2005	89.5	89.5	1
S14	… demonstrates ability to negotiate a mutual agenda for the encounter at the outset of the encounter.	Osborne, 2005	90.9	77.3	3
S15	… demonstrates ability to elicit patients' prior understanding of their health issues in a non-shaming manner (e.g., asks "what do you already know about high blood pressure?").	Doak et al., 1996	100	84.2	1
S16	… demonstrates ability to non-judgmentally elicit root causes of non-adherent health behaviors.	AMA Foundation, 2007	84.2	89.5	1
S17	… demonstrates effective use of a *teach back* or "show me" technique for assessing patients' understanding.*	Schillinger et al., 2003	100	100	1
S18	… demonstrates ability to "Chunk and check" by giving patients small amounts of information and checking for understanding before moving to new information.	AMA Foundation, 2007	100	89.5	1
S19	… demonstrates ability to effectively elicit questions from patients through a "patient-centered" approach (e.g., asks "what questions do you have?" rather than "do you have any questions?").	Oates & Paasche-Orlow, 2009	94.4	89.5	1
S20	… demonstrates ability to orally communicate accurately and effectively in patients' preferred language, using medical interpreter services.	Andrulis & Brach, 2007	100	100	1
S21	… demonstrates ability to use written communication to reinforce important oral information.	Berkman et al., 2004	89.5	84.2	1
S22	… demonstrates ability to emphasize one to three "need-to-know" or "need-to-do" concepts during a given patient encounter.	Sheridan et al., 2011	88.9	77.8	1
S23	… demonstrates the ability to convey numeric information, such as risk, using low *numeracy* approaches, such as through examples, in oral and written communication.*	Osborne, 2005	88.8	88.8	1

ID	The graduate...	Reference			
S24	... demonstrates ability to write or re-write ("translate") unambiguous medication instructions (e.g., "take 1 tablet by mouth every morning and evening for high blood pressure," rather than "take one tablet by mouth twice daily."	Sheridan et al., 2011	89.5	100	1
S25	... demonstrates the ability to assess the *usability* of web-based patient resources.*	U.S. Department of Health and Human Services, 2012b	81.8	77.3	2
S26	... demonstrates ability to ask patients about their learning style preferences (e.g., ask patients, "what is the best way for you to learn new information?"	AMA Foundation, 2007	77.3	81.8	4
S27	... demonstrates ability to use examples or analogies to improve patients' comprehension.	Doak et al., 1996	100	100	4

Skill items that did not achieve consensus after four rounds
The graduate...

ID		Reference			
Sx	... demonstrates ability to avoid, when possible, using words with three or more syllables in oral and written communication with patients.	AMA Foundation, 2007	68.2	72.7	No consensus
Sy	... demonstrates the ability to recommend adult basic literacy education programs within the context of a therapeutic relationship.	AMA Foundation, 2007	68.2	54.5	No consensus

Attitude items
The graduate ...

ID		Reference			
A1	... expresses the attitude that effective communication is essential to the delivery of safe high quality health care.	AMA Foundation, 2007	89.5	94.7	1
A2	... exhibits the attitude that all patients are at risk for communication errors, and that one cannot tell who is at risk of communication errors simply by looking, or through typical health care interactions—a *universal precautions* approach is required with all patients.*	DeWalt et al., 2010	89.5	94.8	1
A3	... expresses the attitude that because the "culture" of healthcare includes special knowledge, language, logic, experiences and explanatory models of health and illness, every patient encounter can be considered a cross-cultural experience.	Carmona, 2006	84.2	78.9	1
A4	... expresses acceptance of an ethical responsibility to facilitate the two-way exchange of information in "shared decision making" to the degree and at the level desired by the patient and their family.	AMA Foundation, 2007	84.2	89.5	1
A5	... acknowledges patients' autonomous right to both informed consent, and "informed refusal" of recommended evaluations or treatments.	ACOG, 2004	84.2	89.5	1
A6	... expresses empathy with patients' potential sense of shame around low literacy (or health literacy) issues.	Parikh et al., 1996	79.0	79.0	1
A7	... expresses a non-judgmental non-shaming respectful attitude toward individuals with limited literacy (or health literacy) skills.	Weiss, 2007	94.4	94.7	1

(*Continued*)

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Table 4. Continued

Item	Source example	Very appropriate or appropriate (%)	Very important or important (%)	Round accepted
A8 … expresses empathy with the common experience of the health care system as a confusing, stressful, frustrating, intimidating, and frightening physical and virtual environment for many patients.	AMA Foundation, 2007	84.2	89.5	1
A9 … expresses the attitude that every patient has the right to understand their health care, and that it is the health care professional's duty to elicit and ensure patients' best possible understanding of their health care.	AMA Foundation, 2007	89.4	84.3	1
A10 … expresses the attitude that it is a responsibility of the health care sector to address the mismatch between patients' and health care providers' communication skills and tactics.	Nielsen-Bohlman et al., 2004	78.9	73.6	1
A11 … expresses the attitude that it is a responsibility of all members of the healthcare team to be trained and proactive in addressing the communication needs of patients.	The Joint Commission, 2007	94.8	89.5	1

Note. Twenty-three panelists participated in Round 1; 22 panelists participated in subsequent rounds. AMA = American Medical Association; CMS = Centers for Medicare & Medicaid Services.
*See Appendix.

Table 5. Health literacy practices for health professionals: Consensus group ratings ($N = 23$)

Item	The individual …	Source example	Very appropriate or appropriate (%)	Very important or important (%)	Round accepted
P1	… consistently elicits the full list of patient concerns at the outset of encounters.	Osborne, 2005	89.5	79.0	1
P2	… consistently negotiates a mutual agenda with patients at the outset of encounters.	Osborne, 2005	94.7	89.4	1
P3	… routinely recommends the use of professional medical interpreter services for patients whose preferred language is other than English.	Andrulis & Brach, 2007	94.7	94.8	1
P4	… consistently speaks slowly and clearly with patients.	Weiss, 2007	100	94.7	1
P5	… routinely uses verbal and non-verbal active listening techniques when speaking with patients.	Osborne, 2005	100	94.7	1
P6	When preparing to educate patients, routinely asks about patients' preferred learning style in a non-shaming manner (e.g., asks, "What is the best way for you to learn new information?").	The Joint Commission, 2007	72.7	71.4	2
P7	… routinely elicits patients' prior understanding of their health issues in a non-shaming manner (e.g., asks, "What do you already know about high blood pressure?").	Doak et al., 1996	89.5	79.0	1
P8	… routinely puts information into context by using subject headings in both written and oral communication with patients.	AMA Foundation, 2007	90.9	86.3	2
P9	… routinely uses short action-oriented statements, which focus on answering the patient's question, "what do I need to do" in oral and written communication with patients.	Oates & Paasche-Orlow, 2009	94.5	70.5	1
P10	… routinely emphasizes one to three "need-to-know" or "need-to-do" concepts during a given patient encounter.	Sheridan et al., 2011	88.3	82.4	1
P11	… routinely uses analogies and examples, avoiding idioms and metaphors, to help make oral and written information more meaningful to patients.	Doak et al., 1996	86.3	76.2	2
P12	… routinely selects culturally and socially appropriate and relevant visual aids, including objects and models, to enhance and reinforce oral and written communication with patients.	Doak et al., 1996	94.5	94.4	1
P13	… routinely makes instructions interactive, such that patients engage the information, to facilitate retention and recall.	Doak et al., 1996	88.8	88.9	1
P14	… consistently avoids using medical *jargon* in oral and written communication with patients, and defines unavoidable jargon in lay terms.*	Weiss, 2007	94.8	100	1
P15	… consistently follows principles of easy-to-read formatting when writing for patients, including the use of short sentences and paragraphs, and the use of bulleted lists rather than denser blocks of text, when appropriate.	CMS, 2013	89.5	84.3	1
P16	… routinely writes in English at approximately the 5th–6th-grade reading level.	AMA Foundation, 2007	88.9	78.9	1
P17	… consistently writes or re-writes ("translates") unambiguous medication instructions when called for during regular duties.	Sheridan et al., 2011	88.9	83.4	1
P18	… routinely conveys numeric information, such as risk, using low *numeracy* approaches, such as through examples, in oral and written communication.*	Osborne, 2005	89.4	78.9	1
P19	… consistently uses a *universal precautions* approach to oral and written communication with patients.*	DeWalt et al., 2010	83.3	83.3	1

(*Continued*)

Table 5. Continued

Item		Source example	Very appropriate or appropriate (%)	Very important or important (%)	Round accepted
P20	… routinely conducts medication reconciliation with patients, including use of "brown bag" medication reviews, when called for during regular duties.	AMA Foundation, 2007	84.2	73.7	1
P21	… routinely encourages and facilitates patients to carry an updated list of their medications with them.	The Joint Commission, 2007	100	94.5	1
P22	… routinely assesses adherence to treatment recommendations, and root causes for non-adherence, non-judgmentally, before recommending changes to treatment plans.	AMA Foundation, 2007	100	94.7	1
P23	… consistently elicits questions from patients through a "patient-centered" approach (e.g., "What questions do you have?" rather than "Do you have any questions?"	Oates & Paasche-Orlow, 2009	94.7	84.2	1
P24	… routinely anticipates and addresses navigational barriers within health care systems and shares responsibility with patients for understanding and navigating systems and processes; attempts to make systems and processes as transparent as possible.	Rudd & Anderson, 2006	83.3	84.2	1
P25	… routinely ensures that patients understand at minimum: 1) what their main problem is, 2) what is recommended that they do about it, and 3) why this is important.	National Patient Safety Foundation, 2010	100	89.5	1
P26	… consistently locates and uses literacy-appropriate patient education materials, when needed and available, to reinforce oral communication, and reviews such materials with patients, underlining or highlighting key information.	Berkman et al., 2004	88.9	94.5	1
P27	… routinely "chunks and checks" by giving patients small amounts of information and checking for understanding before moving to new information.	AMA Foundation, 2007	89.5	84.2	1
P28	… routinely uses a *teach back* or "show me" technique to check for understanding and correct misunderstandings in a variety of health care settings, including during the informed consent process.*	Schillinger et al., 2003; The Joint Commission, 2007	100	94.4	1
P29	… consistently treats the diagnosis of limited health literacy as "protected health information" requiring specific "release of information" for disclosure.	Consensus group participants	72.7	72.7	2
P30	… routinely arranges for timely follow-up when communication errors are anticipated.	Weiss, 2007	83.3	72.3	1
P31	… routinely refers patients to appropriate community resources for enhancing literacy and/or health literacy skills (e.g., Adult Basic Literacy Education) within the context of the therapeutic relationship.	AMA Foundation, 2007	77.8	72.2	1
P32	… routinely documents in the medical record that a *teach back*, or closed communication loop technique has been used to check the patient's level of understanding at the end of the encounter.*	Weiss, 2007	91.5	86.4	3
Practice item that did not achieve consensus after four rounds					
The graduate …					
Px	… consistently limits the use of words with three or more syllables in oral and written communication.	AMA Foundation, 2007	59.1	54.5	No consensus

Note. Twenty-three panelists participated in Round 1; 22 panelists participated in subsequent rounds.
*See Appendix.

Study Limitations

Although the Delphi method is generally recognized as an effective tool for determining expert consensus, it has also been criticized as being vulnerable to a variety of biases. First, although the list of potential competencies and practices identified by the nonsystematic literature review was extensive, it may not have been exhaustive and may reflect the unconscious biases of the compiling author (C.C.). The boundaries between health literacy and other health communication constructs (e.g., cross-cultural communication, general interviewing skills, motivational interviewing, and shared decision making) are not clear. This posed a challenge to selecting which recommendations to include or exclude in this study. For example, the skill *demonstrates ability to speak slowly and clearly with patients* (Table 4) is a general communication skill. However, because this recommendation is also found prominently in the health literacy literature, it was included. Thus, it is possible that the list of potential competencies and practices considered in this study may be incomplete, or not entirely specific to the field of health literacy. A different group consensus process, such as the Nominal Group method, wherein participants themselves generate the list of items for rating, might have yielded a different set of items. Furthermore, one area in which the list of items may have been especially vulnerable to investigator bias is in the area of health literacy knowledge. Our understanding of low health literacy and its effects on health and health care is rapidly expanding. As a result, it is difficult to know what items to include in a minimum basic knowledge base for all health professionals. For example, knowledge item K20 in Table 4 lists four outcomes associated with low health literacy. The literature, however, lists other empiric associations as well—some better established than others (Berkman et al., 2011)—and knowledge of these other associations could be as or more important for health professionals to understand.

Second, although the selection of the panel is felt to contribute to the study's strengths, it is also a potential source of bias. It may be that a panel selected specifically from leading experts in the field of health literacy would have come to a different consensus on the items considered. Still, the list of potential items used in this study did arise largely from the health literacy literature and thus from the voices of health literacy experts. Furthermore, participants in our study were selected for their interest in health literacy, and nearly three quarters self-identified as having expertise in the field of health literacy. Our panel, comprised largely of White women, and including an overrepresentation of pharmacist educators, may not be representative of health professions educators overall, however, it is unclear how such selection bias might have affected our results.

Third, although it has been suggested that larger panels may provide greater validity and/or reliability, there is no accepted standard for the ideal number of expert participants. The 23 participants selected for our study is similar in number to other studies reported in the literature. Nonetheless, it is possible that a larger panel would have produced different results.

Fourth, the fact that 62 out of 64 competencies and 32 out of 33 practices ultimately achieved consensus raises the possibility that the panel or the Delphi methodology was not discerning enough. Of note, however, we chose a relatively conservative cut point for acceptance of competency items, requiring affirmative ratings from 70% of participants (DeVilliers et al., 2005), and requiring that this criterion be met for not just one, but two separate (although potentially related) ratings (*appropriateness* and *importance*) for each item. Nonetheless, there is no agreed upon standard for defining consensus through the Delphi process. Expert panel consensus is still a measure of pooled opinion, and should be interpreted as such.

Last, and perhaps most important, although it may be tempting to rank-order the competencies on the basis of the strength of agreement from the panel, our study design did not allow us to draw statistically valid conclusions about the relative value of individual competencies or practices.

Conclusions

This consensus study is the first known attempt to establish a comprehensive set of health literacy practices and measurable educational competencies (i.e., knowledge, skills, attitudes) for students and health professionals. The health literacy educational competencies identified here are an important and necessary first step for the systematic design and evaluation of curricula needed to produce a health care workforce which is not only aware of the issues around low health literacy, but is also prepared to address them. As such, these competencies provide an important step toward achieving the workforce objectives of the U.S. National Action Plan to Improve Health Literacy (U.S. Department of Health and Human Services, 2010). However, additional work is now needed to help prioritize these competencies and practices, particularly in identifying those with the greatest potential effect on outcomes for patients. In their current state, the lists of competencies and practices identified in this study are too long and unprioritized to be of optimal value to health professions educators, health system administrators, quality managers, industry regulators, policymakers, and others. The process of prioritizing may first be aided by conducing similar consensus group work specifically among leading authorities in the field of health literacy. Beyond this, however, significantly more empirical work is needed in order to prove that teaching to theses competencies and/or promoting these practices can improve the health and health care of patients. We hope that with the publication of these competencies and practices, researchers and educators will more quickly develop and test curricular innovations, and conduct comparative outcome studies, which can help prioritize the lists. For example, although the use of one of the health literacy practices embodied in these competencies—the teach-back technique (Tables 4 and 5)—has been studied empirically (Schillinger et al., 2003) and has received high-level endorsement as a "top safety practice" (National Quality Forum, 2003), it is still not known whether teaching health professionals about it or other competencies results in clinically significant changes in behavior.

While we are waiting for prioritization studies to be done, educators and others may choose to view this list of competencies and practices as a menu of options, similar to published competencies for providing culturally appropriate care (Expert Panel on Cultural Competence Education for Students in Medicine and Public Health, 2012), which also have not been systematically prioritized, likely because of their complex nature, and inherent difficulties in studying the outcomes of such competencies. Unlike the components of culturally appropriate care, however, many health literacy principles may be considerably more amenable to empiric measurement. We hope that researchers and educators will quickly develop and validate tools in order to evaluate various health literacy competencies and practices. Such tools will be necessary for evaluating the relative value of the various health literacy competencies and practices. In addition, the widespread lack of awareness regarding health literacy (Macabasco-O'Connell & Fry-Bowers, 2011) suggests that faculty development will be an essential part of efforts to improve the health literacy competencies of students of the health professions.

The existing literature on health literacy principles for health professionals is heavily skewed toward the field of medicine (Coleman, 2011). More work is needed from

other disciplines in health care. Nonetheless, our study design suggests that the identified competencies and practices are relevant to all fields in health care. Future studies should examine whether some health literacy competencies and practices may be more important to particular disciplines. Furthermore, although more research is needed, it is likely that these competencies and practices can be adapted to postgraduate training (e.g., medical residencies) and continuing education formats across health care disciplines.

Our study focused on health literacy competencies and practices to the extent that health literacy can be separated from other health communication constructs. Despite some obvious areas of overlap, no specific attempt has been made to systematically integrate the health literacy competencies and practices identified here with other essential elements of communication competency, including those for general health communication or cross-cultural and linguistically appropriate care. Efforts to develop a common pedagogy for teaching health professionals about health literacy and cultural competence are currently underway (Lie, Carter-Pokras, Braun, & Coleman, 2012), and we hope that the practices and competencies identified here will help accelerate that process.

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Appendix

Glossary of select terms found in health literacy competencies (Table 4) and practices (Table 5)

Term	Definition
Clear health communication	*Clear health communication* is written or oral communication that helps patients to understand and act on health care information (Pfizer Inc., 2013).
Health literacy	*Health literacy* is the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services in order to make appropriate health decisions (Somers & Mahadevan, 2010). Health literacy involves reading, writing, speaking, listening, numeracy, and cultural and conceptual knowledge (Nielsen-Bohlman et al., 2004), including navigation of health care systems (Kutner et al., 2006). Health literacy allows the public and personnel working in all health-related contexts to find, understand, evaluate, communicate, and use information (Coleman et al., 2010). Health care professionals can be "health literate" by presenting information in ways that improve understanding and the ability of people to act on that information (Coleman et al., 2010).
Jargon	*Jargon* refers to words, phrases, or concepts, including numerical or mathematical information, which might not be fully understood, or may be misinterpreted by the recipient (Nielsen-Bohlman et al., 2004).
Numeracy	*Numeracy* is defined as a working knowledge of numbers (Osborne, 2005). Basic numeracy includes the knowledge and skills necessary to understand and act on numerical information and concepts encountered in routine oral and written communications. The related term, *quantitative literacy*, defined as "the knowledge and skills required to apply arithmetic operations, alone or sequentially, using numbers embedded in printed materials" (Kirsch et al., 1993) can be applied to oral communication as well.
Plain language	Sometimes called *everyday language* or *living room language* (AMA Foundation, 2007), *plain language* refers to written or oral communication that is clear, concise, organized, and jargon-free (U.S. Department of Health and Human Services, 2012a). A communication is considered to be in plain language if audience members can quickly and easily find what they need, understand what they find, and act appropriately on that understanding the first time they read or hear it (Center for Plain Language, 2012).
Teach-back	*Teach back*, also referred to as an *interactive communication loop*, is an iterative technique used to confirm understanding and correct misunderstanding of information by asking patients to explain back or demonstrate ("show back") in their own way what they have understood (Schillinger et al., 2003).
Universal precautions for safe communication	*Universal precautions for safe communication* is a communication strategy that assumes that all health care encounters are at risk for communication errors, and aims to minimize risk for everyone (DeWalt et al., 2010).
Usability	*Usability* refers to how well users can learn and use a product to achieve their goals and how satisfied they are with that process (U.S. Department of Health and Human Services, 2012b).

Note. AMA = American Medical Association.