

A Descriptive Study of Health Literacy and Social Determinants of Health as Curricula Topics in Medical School Education

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Abstract

The purpose of this investigation was to assess the extent to which health literacy and social determinants of health exist together in medical school curricula, and the attitudes and beliefs of medical school educators toward the relevance of these topics taught in the curriculum. The research used a descriptive cross-sectional survey design of institutions that comprised the Accelerating Change in Medical Education (ACE) Consortium of the American Medical Association. The study population was 36 ACE institutions, but only 11 ACE institutions made up the study sample. Results also showed that five health literacy items were taught as curricula topics in medical school education with 100% ($n = 10$) of the respondents teaching how to use plain language skills for oral communication. Respondents rated the level at which their institution prioritized instructional methods to explicitly teach social determinants of health as a topic in the medical curriculum with three (27.3%) ranking the priority level as extremely high, seven (63.6%) ranking it as high, and one (9.1%) ranking it as low. Medical educators rated five social determinants of health influencing a person's health status, with "economic stability" and "social and community context" having the first and second highest mean rankings, respectively. Nine (81.5%) medical educators agreed that health literacy is a social determinant of health ($M = 8.73$) and a predictor of health status ($M = 7.82$).

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Introduction

To date, limited studies have explored the relationship between health literacy and social determinants of health in medical school education (Ross et al., 2013; Felter, 2022). This study sought to assess the extent to which health literacy and social determinants of health currently exist together in medical school curricula, and the attitudes and beliefs of medical school faculty toward the relevance of these topics to teach in the curriculum. The merging of these two topics could be vital for advancing critical health literacy with its focus on access and equity (Ubbes & Ausherman, 2018) as a

model of personal and community empowerment (Nutbeam, 2000).

The National Action Plan to Improve Health Literacy in the United States advocated for improving health literacy training of health professionals (U.S. Department of Health and Human Services, 2010). Health literacy education for health professionals is lacking in medical schools (Coleman & Appy, 2012). A historical review of health literacy was summarized by Ubbes and Njoku (2022), who offered a framework for advancing health literacy education in medical and health professions schools. Thus, the current research

investigates the extent to which medical schools teach about health literacy.

Social determinants of health (SDH) are non-medical factors that influence health outcomes such as economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community contexts. The U.S. Department of Health and Human Services (2021) defines SDH as “the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks” (para. 1). Physicians are often in unique positions to help improve SDH that are negatively impacting patient health (Magnan, 2017). The current study extends research conducted by Lewis and colleagues (2020) by investigating the extent to which SDH are taught in medical education. To assess the current state of health literacy in medical education curricula, the following research questions were proposed: 1) To what extent do medical schools in the Accelerating Change in Medical Education (ACE) Consortium of the American Medical Association (AMA) include health literacy within their curricula? 2) To what extent do medical schools in the ACE Consortium include social determinants of health within their curricula? 3) What beliefs and attitudes do medical educators possess towards the relationship between health literacy and social determinants of health?

Methods

Participants were medical school faculty who were part of the ACE initiative. The purpose of the ACE initiative was to provide an opportunity for the sharing and dissemination of groundbreaking ideas and projects among 37 member institutions. The American Medical Association awarded initial grants to 11 U.S. medical schools in 2013, and by 2019 a total of 26 additional

institutions had received grants to join the consortium. The 37 medical institutions represented one-fifth of all U.S. allopathic and osteopathic medical schools. To date, collaborations from the Consortium produced 168 academic publications fostering a community of innovation for medical education across the country and internationally (Lomis et al., 2021). We sampled the ACE research-focused medical schools because they represented top-ranked public and private programs in primary care and were previously surveyed as a cohort for social determinants of health (Lewis et al., 2020). One of the 37 ACE institutions only offered graduate medical education (residency programs) and was excluded. A total of six online surveys and five hard-copy surveys were completed and returned, which yielded a 31% response rate. Of the 36 medical school faculty that were sent the survey, 30 of them held the title of dean. Six of the study population, who did not hold the title of dean, held the following positions: chair of public health, vice chair of education, assistant professor of neurology, director of clinical clerkship, assistant clinical professor in internal medicine, and associate professor.

After obtaining IRB approval, participants either completed an online survey via Qualtrics or responded to a mailed survey. The research instruments included a demographic survey, a health literacy in medical education survey (Coleman & Appy, 2012), a social determinants of health survey (Lewis et al., 2020), and an attitudes and beliefs toward health literacy education survey (Felter, 2022). The health literacy in medical education survey addressed Research Question 1 (Table 1), the social determinants of health survey addressed Research Question 2 (Table 2), and the attitudes and beliefs toward health literacy education survey addressed Research Question 3.

Results

To answer the first research question, medical educators ($n = 11$, 30.5% response rate) were asked to what extent they include health literacy within their curricula using measures established by Coleman and Appy (2012). Among schools with a required health literacy (HL) curriculum, 70.0% ($n = 7$) of faculty taught the prevalence of low health literacy and the association between literacy and patient outcomes. Table 1 shows the HL items taught in medical schools that reported a required health literacy curriculum. Medical schools ($n = 10$; 100%) taught plain language skills for oral communication as a requirement in the HL curriculum. And the use of plain language skills for written communication and the use of “teach back” or “show me” techniques to check patients’ understanding were taught by 90.0% ($n = 9$) of schools. No respondents selected “Other.” One respondent did not complete the HL survey.

To answer the second research question, respondents were asked to rate the level at which their institution prioritized instructional methods to explicitly teach social determinants of health (SDH) as a topic in the medical school curriculum. Seven (63.6%) respondents rated the priority level as “high” (i.e., SDH receives attention at multiple levels), three (27.3%) rated the priority level as “extremely high” (i.e., SDH receives as much attention as a basic science course (e.g., Anatomy, Physiology) or a clinical course (e.g., Cardiology), and one (9.1%) rated the priority as “low” (i.e., SDH are mentioned but not a focus). Table 2 summarizes the medical educators’ rankings of the most significant SDH influencing a person’s health status on a Likert scale of 1 = most significant to 5 = least significant. Economic stability had the highest mean ranking ($x = 1.73$; $SD = 0.90$) and social and community context had the second highest mean ranking ($x = 2.73$; $SD = 1.27$).

To answer the third research question, nine respondents (81.8%) answered yes to the

Table 1

Health Literacy Items Taught in Medical Schools That Reported Having a Required Health Literacy Curriculum

In the required curriculum, what “health literacy” items are being taught? (check all that apply)	Number and percentage of schools ($n = 10$)
Prevalence of low literacy or low health literacy	7 (70.0%)
Association between literacy or health literacy and patient outcomes	7 (70.0%)
How to use plain language skills for oral communication	10 (100.0%)
How to use plain language skills for written communication	9 (90.0%)
How to use a “teach back” or “show me” technique to check patients’ understanding	9 (90.0%)

Table 2

Medical Educators’ Rankings of the Most Significant Social Determinants of Health Influencing a Person’s Health Status (1 = most significant; 5 = least significant)

Social Determinant of Health	Frequency and Percentage of Participants (n = 11)					Mean Rank (SD)
	1	2	3	4	5	
Economic Stability	5 (45.5%)	5 (45.5%)	0 (0.0%)	1 (9.1%)	0 (0.0%)	1.73 ± 0.90
Social and Community Context	2 (18.2%)	3 (27.3%)	3 (27.3%)	2 (18.2%)	5 (45.5%)	2.73 ± 1.27
Education Access and Quality	2 (18.2%)	2 (18.2%)	3 (27.3%)	3 (27.3%)	1 (9.1%)	2.91 ± 1.30
Healthcare Access and Quality	2 (18.2%)	0 (0.0%)	4 (36.4%)	2 (18.2%)	2 (18.2%)	3.09 ± 1.38
Neighborhood and Built Environment	0 (0.0%)	0 (0.0%)	1 (9.1%)	3 (27.3%)	6 (54.5%)	4.55 ± 0.69

belief question, “Do you believe that health literacy is a social determinant of health?”; two (18.2%) answered maybe, and zero answered no. Three belief questions used a Likert scale of 1 to 10 (1 = strongly disagree; 10 = strongly agree). The question, “To what extent do you believe that health literacy is a social determinant of health in a medical setting?”, yielded a mean of 8.5 on a Likert scale response. The item stating, “Health literacy is a predictor of health status,” yielded a mean of 7.82 on a Likert scale response. The Likert scale mean for the question, “Health literacy is a social determinant of health,” was 8.73.

Discussion

The attitudes and beliefs towards health literacy as a SDH among medical educators have been unexplored until now (Felter,

2022). The current investigation sought to fill this void by drawing upon two lines of research that focused on health literacy as a topic within medical education (Coleman & Appy, 2010) and social determinants of health as a topic within medical education (Lewis et al., 2020). By integrating these parallel topics into one, this study advanced the vision of the World Health Organization to “improve social determinants of health literacy more widely” (Commission on Social Determinants of Health, 2008).

To address Research Question 1, the current investigation offered a glimpse into five topics being taught in the health literacy curriculum within medical schools. Survey responses in Table 1 indicated that faculty at medical schools taught topics about ‘plain language techniques’ in oral and written

communication at higher rates than they taught topics about the ‘prevalence of low literacy or health literacy’ and topics about ‘health literacy and patient outcomes.’ In addition to the use of plain language techniques, medical educators reported a high curriculum use of “teach back” or “show me” techniques to check for patients’ understanding. Previous literature has established educational competencies for health literacy. For example, Coleman, Hudson, and Maine (2013) conducted an in-depth literature review to compile a list of possible practices and competencies in health literacy. Using a modified Delphi method, experts from different health professions accepted 62 out of 64 potential competencies and 32 out of 33 potential practices after multiple rounds of discussion and rating (Coleman et al., 2013). Recently, Coleman, Hudson, and Pederson (2017) used 25 health literacy experts to rank the 32 identified practices in order of importance to further prioritize health literacy practices. Ubbes and Njoku (2022) have advocated for a Curriculum, Instruction, and Assessment Framework in Health Literacy Education (CIA-HLE), which could assist medical and health professions schools to ensure their students are well prepared to use oral and written communication with their patients or clients. In their thematic framework for curriculum, schools could emphasize more interprofessional communication in health literacy education, cultural and linguistic competencies in health literacy education, and a multimodal language typology that informs health literacy education. In addition, medical and health professions schools could implement ten skill-based instructional strategies for advancing health literacy by practicing the use of plain language, increasing active listening, and encouraging patients to ask questions (Ubbes & Njoku, 2022). This literature could provide support

for institutions trying to update their health literacy curriculum.

To address Research Question 2, survey results showed that only three (27.3%) respondents reported that the priority of methods used to explicitly teach about the social determinants of health at their institution was “extremely high,” seven (63.6%) respondents rated the level of priority as “high,” and one (9.1%) rated the level of priority as low. There is evidence that social and environmental factors influence health outcomes more than clinical care (Galea et al., 2011). The “Attitudes and Beliefs Towards Health Literacy Education” survey included in the current study suggests that this sample of medical educators’ beliefs coincide with the literature that SDH greatly impact patient health. Yet, the level at which they believe SDH impacts health does not align with the priority given to SDH by their institutions. In addition, respondents were asked to rank the five SDH factors from most significant to a person’s health status to least significant to a person’s health status. From most significant to least significant, the five factors were ranked: economic stability, social and community context, education access and quality, healthcare access and quality, and neighborhood and built environment. This finding could be used to influence further development of SDH curricula in medical education. Research has shown that medical educators’ beliefs about their teaching and their level of content knowledge influence their teaching practices (Ottenhoff-de Jonge et al., 2021; Visser-Wijnveen et al., 2009). Thus, future curriculum development should focus on economic stability and social and community contexts to coincide with faculty beliefs on the most significant SDH to a person’s health status.

To address Research Question 3, survey results indicated that nine (81.5%) medical

educators agreed that health literacy is a social determinant of health ($M = 8.73$) and a predictor of health status ($M = 7.82$). This coincides with the extant literature. For example, one study concluded that comprehensive health literacy acted as an “independent direct determinant of self-assessed health,” using the data set from the Health Literacy Survey - Europe (Pelikan et al., 2018, p. 64). Further, Pelikan and colleagues (2018) found that comprehensive health literacy mostly impacts health as a direct determinant; only some of its impact takes place by moderation or mediation effects from other determinants of health. While Pelikan and colleagues (2018) provided evidence that health literacy acts a direct determinant of health using a large data set, results from the current investigation provide evidence that this same conclusion is reached by medical educators who agreed that health literacy is a predictor of health status.

A limitation of this study was the low response rate (30.5%) to completing the survey sent to medical school educators. If respondents and nonrespondents differ significantly on the variable of interest (i.e., health literacy), nonresponse bias is a potential issue that jeopardizes the generalizability of the results. A second limitation of the study was the timing of the data collection which began August 1st, 2021. Considering that most medical schools begin classes at the end of July, August 1st was chosen because medical educators would have returned from any time off taken during the summer months. However, sending the initial recruitment for medical educators’ participation in parallel with the beginning of academic classes could partially explain the low response rate. In addition, faculty may have experienced survey fatigue and medical educator burnout worsened by the COVID-19 pandemic.

Implications for Health Behavior Theory

Reciprocal determinism within social cognitive theory (Bandura, 1986) suggests that a person’s behavior is influenced by personal factors and social environments in an interactive triadic process. Medical students who are taught about this theoretical model for how personal and social factors interact with health-related behaviors may be more confident in recognizing reciprocal determinism reflected in their clients and patients. For example, social determinants of health (e.g., education, economics) are factors that can play a significant role in whether patients can access valid and reliable health information and services or have the ability to interpret health assessments in a medical environment. To address personal factors, patients will need to be able to read, write, and speak about health on a personal level before they can advance to interactive health literacy with their physician and medical care team (Ubbes & Njoku, 2022). This assumes that the physician and medical care team are adequately taught and prepared during their medical education to “recognize health literacy as a barrier to care.” including “the ways in which it is a social determinant of health” (Ross et al., 2013, p. 115).

Health behavior theory also provides a salient way for thinking about and acting on one’s personal beliefs, namely self-efficacy, which may lead to a social empowerment model that can be advanced as a critical health literacy topic in medical school curricula. Medical students will need to be assessed for their self-efficacy, beliefs about health literacy, and even their collective efficacy beliefs as a professional cohort, to determine whether they are able to effect personal and social change in healthcare contexts for their clients and patients. Hence, medical educators will need to initiate this agenda for assessing whether medical students coming from universities have

excellent, sufficient, problematic, or inadequate health literacy behaviors in a medical context themselves. Nutbeam and Lloyd (2020) describe one possible application of critical health literacy skills as “collective organizing and action” (p. 34). As such, health literacy as a social determinant of health (Nutbeam & Lloyd, 2020) can use “critical problem posing with creative solutions to empower people who have a variety of backgrounds, health needs, and interests” (Ubbes & Ausherman, 2018, p. 31). The integration of critical health literacy as a social determinant of health may be dependent on whether medical educators are confident to teach health literacy as a social determinant of health and whether medical students have the collective efficacy to recognize and advance health literacy as a social determinant of health in their future professional practice. The critical need is whether medical students will learn *about* social determinants of health or learn *how* to engage in transformative social change (Sharma et al., 2018) for advancing health literacy skill competencies during and after their medical education. Such developments could potentially decrease health disparities (Ross et al., 2013).

Discussion Question

Our study points to the potential application of social cognitive theory as a useful tool to advance critical health literacy as a social determinant of health. What other interpersonal behavior theories could be relevant when exploring the intersectionality between health literacy and social determinants of health?

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