The Use and Creation of Analogies as a Teaching Tool for Health Professional Trainees

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Purpose

Health literacy is a growing issue affecting healthcare today. Healthcare providers must be able to communicate effectively with patients to engage them in shared decision making and increase the likelihood they will follow through with agreed upon management plans for care. Components of the patient encounter including communication of prognosis, diagnosis, procedural steps, complex medical concepts, risks and benefits of medical interventions, and importance of lifestyle and preventative health interventions can be intimidating for patients without scientific backgrounds. Lack of comprehension can hinder the physician-patient relationship and negatively impact health outcomes. Utilizing existing knowledge of the familiar can build associations that support learning, understanding, retention, and communication of complex concepts. By making the unfamiliar more approachable through analogies, physicians can better explain complex concepts to patients, which fosters informed decision-making and ultimately leads to better health outcomes.

Methods

Analogies were used as a teaching tool during an immunology course for dental, medical, and physician assistant students to explain complex concepts and enhance the learning and retention of a wide variety of complex foundational immunology concepts. The use of analogies was modeled during class sessions to provide students with a teaching tool they could imitate to create analogies to enhance their understanding and communication of complex concepts. At the conclusion of the course, students were surveyed about the utility and value of analogies using Likert and open-ended questions (Survey A). A different survey (Survey B) was administered to two classes of medical students after their core clinical year spent managing patients in both outpatient and inpatient settings, asking how helpful analogies were for communicating information and facilitating conversations with patients. Surveys A and B contained no common questions. Some students completed both surveys, Survey A before the clinical year and Survey B afterwards, allowing for longitudinal tracking of analogy use and attitudes. Thus, only medical students who completed both surveys were included as part of the medical student subgroup in our quantitative analysis.

Results

Surveys A and B were completed by 416 and 371 students, respectively, with 82 medical students completing both surveys. The response rate for Survey A could not be calculated; Survey B had a response rate >95% (N=371/387). Results from preliminary analyses of Survey A indicate that using analogies to learn complex concepts was associated with self-reported improvements in confidence in understanding and retention of concepts (N= 301, 94%) and a deeper and more nuanced understanding (N = 301, 94%). Most students felt that they could use analogies to explain complex concepts to non-scientists (N=301, 91%). Results from Survey B focusing solely on medical students who took both Survey A and B (n = 82) revealed that all medical students in this subgroup used analogies during their clinical year and 86% (n = 82) found analogies very or mostly helpful for communicating medical information to patients. Future analyses will include comparisons across health profession groups, changes in medical student perceptions from pre- to post-clinical year, and thematic analyses of analogy use in practice.

Discussion

Our data shows that most students find benefit in using analogies to communicate clinical concepts and medical terminology to patients, families, and other non-scientists. The incorporation of analogies into the learning process can increase scientific communication skills and promote health literacy and better patient outcomes.