Numeracy
LEARNING ACTIVITIES

Description
Numeracy is the ability to understand and use numbers in daily life. Examples include being able to follow proper dosing instructions on prescription or non-prescription medications, calculating serving sizes from nutrition labels or understanding statistics and health risks. Students will learn the definition and importance of numeracy, the prevalence of numeracy in the population and strategies for addressing low health numeracy.

Competencies
C2. Effective Communication and Health Literacy

- 2.3 Numeracy
  - Knows definition of numeracy
  - Knows importance of low or limited numeracy.
  - Knows the prevalence of low or limited numeracy among U.S. adults and identifies subgroups at increased risk.
  - Demonstrate knowledge of and ability to use basic verbal and written strategies and resources to address low or limited numeracy.

Learning Outcomes
- Define numeracy.
- Describe the prevalence of low numeracy and its importance to population health.
- Name strategies for addressing low numeracy among patients.
- Apply strategies for addressing low numeracy in a clinic setting.

Activities
Instructor provides didactic lecture on numeracy and strategies for addressing low numeracy. Students should also complete the CDC trainings on Creating Easier to Understand Lists, Charts, and Graphs and Using Numbers and Explaining Risks. Then, review Dr. Stephanie Evergreen’s books and blog on data visualization.
Activity 1. Out of Range
Students will develop an example blood test result for Patient X (e.g. Hemoglobin A1C or glucose tolerance test, complete blood test). The student will decide how to display this in a table or graphic format. Then students will test their product for understanding with a non-healthcare audience and revise if necessary. Students will present their work, including the decision-making process in the classroom.

Activity 2. Communicating risk
Students will select a medication prescription or chemotherapy for this exercise and review the statistics on side effects. Then, using the University of Michigan’s Pictographs/Icon Arrays develop an icon array displaying the risk of the side effect. Students will practice with a partner explaining the patient’s risk of side effects using the icon array as a visual display.

Activity 3. Data Visualization
Students will work individually or in groups to create a chart or infographic from data found in a table. The instructor can preselect the data or allow students to find their own data. Students will present their data visualization out to the classroom with an explanation of how the visualization was selected.

Step 2 of this exercise can be assessment of their chart using the PMOSE/IKIRSCH readability formula for structured lists, charts and graphic displays.

Student Assessment
- Quiz on principles of plain language and using readability formulas
- Level of participation in group discussion and activities

Resources

Journal articles
• Zikmund-Fisher BJ (2013). The Right Tool is What They Need, Not What We Have: A Taxonomy of Appropriate Levels of Precision in Patient Risk Communication. Medical Care Research and Review, 70(1 Suppl): 375-49S.

Videos


Websites

• University of Michigan. Pictographs/Icon Arrays. Center for Bioethics and Social Sciences in Medicine.
Suggested Placement within Curriculum

It is ideal to introduce the concept of health numeracy in preclinical instruction when the student is developing their patient education skills. With numeracy as a key element of prescription writing and patient medication education, Pharmacology courses offer the perfect opportunity to apply numeracy principles. Continuous clinical care application will allow the student to reinforce best practices with numeracy.