

MEDICAL ILLUSTRATIONS AS A TOOL FOR HEALTH LITERACY

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BACKGROUND

Health literacy is defined as the ability of an individual to obtain, comprehend, and utilize information related to their health.

Including the ability to read, write, speak, and display numeracy in medical situations, rates of health literacy impact the ability of an individual to navigate the healthcare system and make informed decisions.

As reported by the National Assessment of Adult Literacy (2003), only 12% of individuals have the proficiency to understand and manage their health, and most Americans read at a fifth-grade level.

Low health literacy rates are significantly associated with higher all-cause mortality, higher hospital costs, and poorer health outcomes.

Medical illustrations and visuals have been shown to support reader's understanding of medical and scientific information.

Chronic diseases are the main contributors of poor health and cause nearly 66% of deaths worldwide.

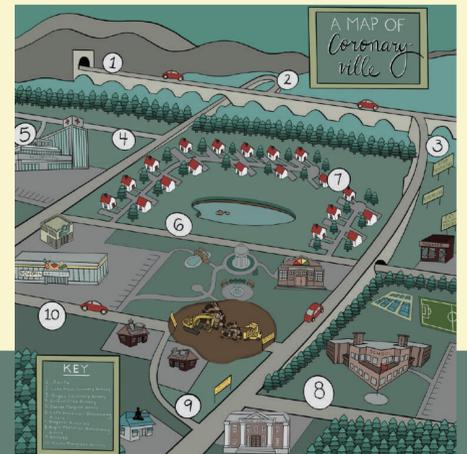
DIABETES

For this product, the subject was narrowed to focus on type II diabetes. A gap in patient understanding of proper self-management of diabetes exists in current research and educational materials. Existing diabetes informational materials contain advanced numerical concepts, high reading levels, and low reading ease scores. Therefore, an accordion-style booklet was designed to address the anatomical/physiological nature of type II diabetes, as well as a general overview of type II diabetes, treatment information, and questions to ask your doctor. All text was written at a fifth-grade reading level using the SMOG readability formula.



HEART DISEASE

For this product, the subject was narrowed to focus on coronary artery disease. Semiotics, or the study of communicating using signs, symbols, or metaphorical images, is shown to improve doctor-patient communication. A map based on a semiotic framework was produced to symbolize the coronary arteries surrounding the heart. While roads symbolize arteries and their respective branching patterns, buildings represent health factors that may contribute to or relieve heart disease (i.e. a dilapidated tobacco store or a shiny, new gym). A road obstruction and detour help explain the concept of heart blockages and bypasses.



OBJECTIVES

Analyze the intersections between art and science, mainly in the way medical illustrations can be used as a form of biocommunication.

Create a series of biomedical visualization-based materials for consumer health education. Each product corresponds to one of the leading chronic diseases in the United States (diabetes, heart disease, cancer, and kidney disease).

Design materials with readability, accuracy, organization, and accessibility in mind. Ensure they demonstrate visual communication of scientific concepts and processes.

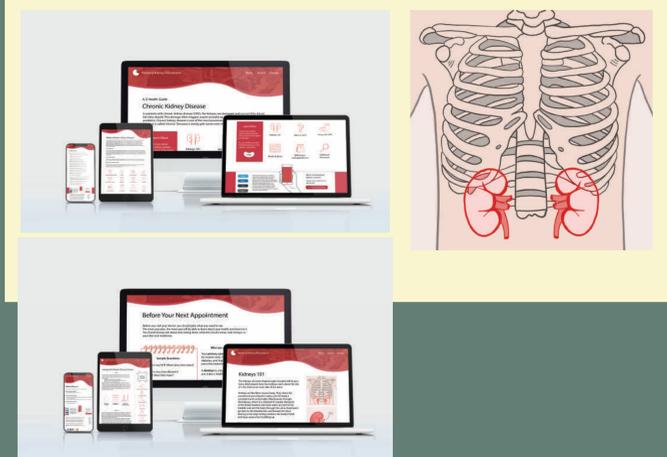
CANCER

For this product, the subject was narrowed to focus on cervical cancer. Cancer-related disparities are especially determined by health literacy levels. Also, using narratives and comic-styled images has been shown to increase understanding and recall. For this product, an Instagram account was created to document the story of Elizabeth Watkins, a 17-year-old sharing her mother's recent stage two cervical cancer diagnosis. Elizabeth symbolizes both Latina women, who are at the highest risk of cervical cancer, and Kentucky residents, from the state with the highest frequency. Elizabeth's account documents her mother's treatment journey, and it shares her own journey of preparing to manage her own health and prevention.



KIDNEY DISEASE

For this product, the subject was narrowed to focus on chronic kidney disease. Online patient education materials are some of the most utilized by consumers. However, many of these resources, such as the National Kidney Foundation's page on chronic kidney disease, are written at a high reading level and present few images. This product revised the National Kidney Foundation's website, making it more readable, accessible, and organized. The text was rewritten from an eleventh-grade to a fifth-grade reading level using the SMOG readability formula. Illustrations were created and distributed on each of the website's pages, including kidney anatomy, CKD basics, living with CKD, and planning before a future appointment.



NEXT STEPS

An extension of this product would include testing the efficacy of each product among consumer and patient populations. Literacy and understanding of the subject would be measured before and after exposure to health education materials to determine readability and accessibility.