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Health Literacy and Youth Online: Challenges & Opportunities

National Academies of Sciences, Engineering, & Medicine
Roundtable on Health Literacy

Developing Health Literacy Skills in Youth: A Workshop

November 19, 2019

OUTLINE



BACKGROUND:

Why is the online environment important for youth?



SKILLS:

How does it relate to health literacy?



USES:

How can it be used for health literacy interventions?

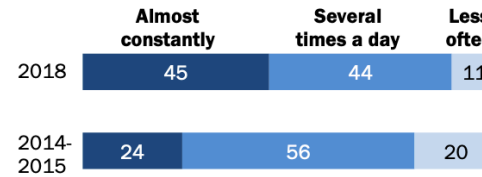


A CONNECTED POPULATION

THE INTERNET

45% of teens say they're online almost constantly

% of U.S. teens who say they use the internet, either on a computer or a cellphone ...



Note: "Less often" category includes teens who say they use the internet "about once a day," "several times a week" and "less often."

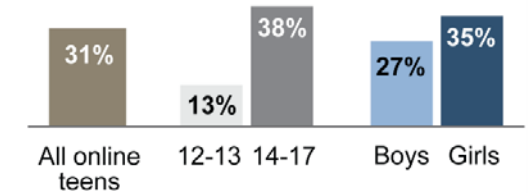
Source: Survey conducted March 7-April 10, 2018. Trend data from previous Pew Research Center survey conducted in 2014-2015. "Teens, Social Media & Technology 2018"

PEW RESEARCH CENTER

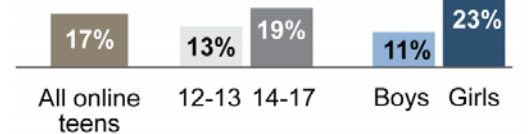
- 88% teens 13-17 have a computer at home but that varies by income and parent education
- 95% have a smartphone

- Girls online more than boys
- Boys play games more than girls

Searching for health, dieting, or physical fitness information



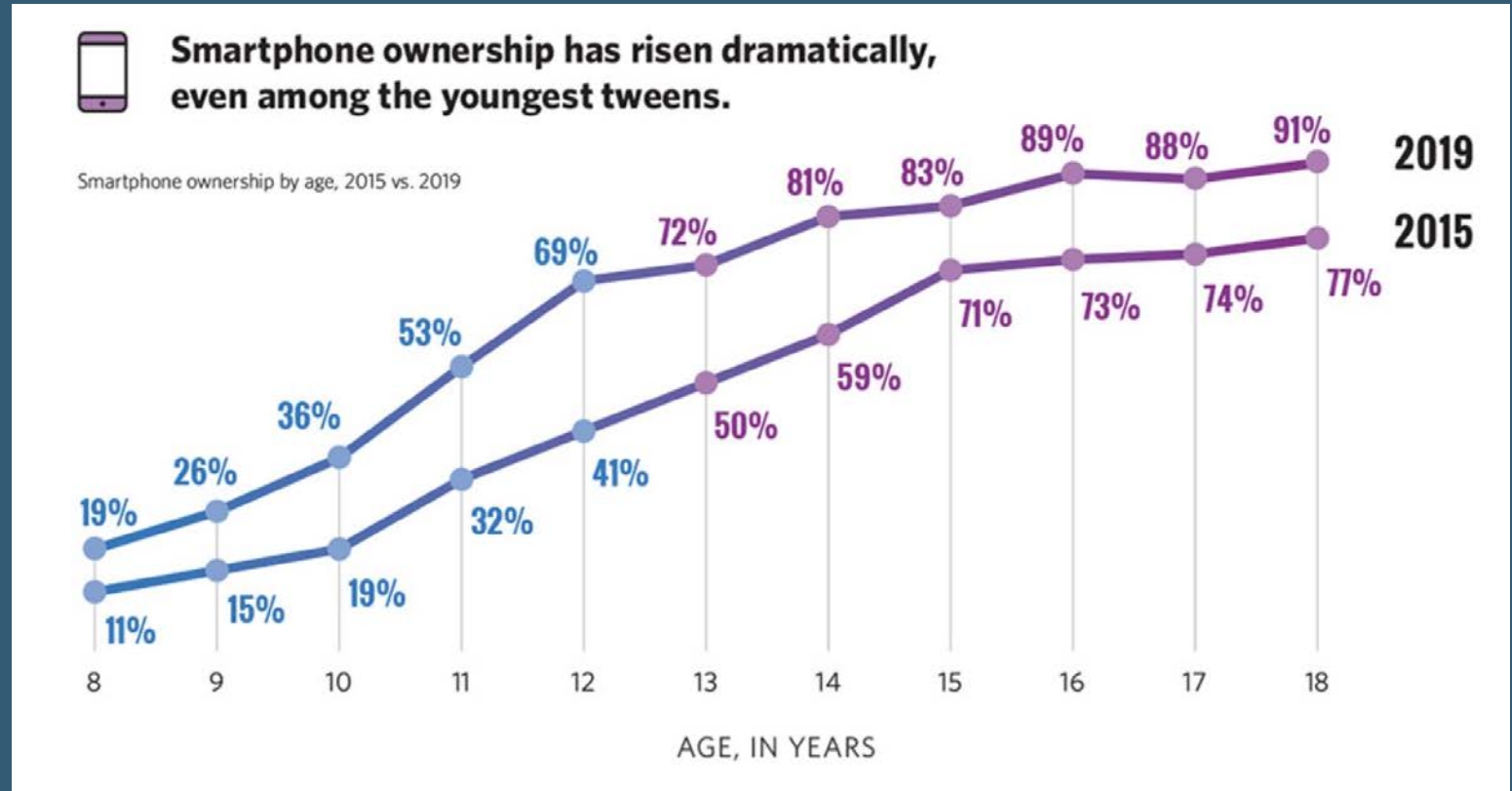
Searching for sensitive health information



Pew Internet
Pew Internet & American Life Project

Percentages are for internet users ages 12-17. September 2009 data.

SMART PHONES



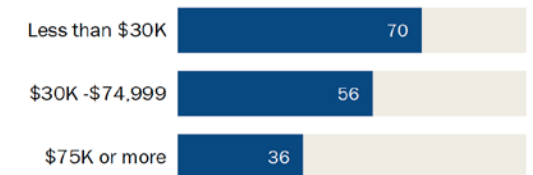
SOCIAL MEDIA



- Youth under 13 are not supposed to have accounts, but many do
- 97% of youth ages 13-17 use social media (Pew, 2018)
 - YouTube (85%), Instagram (72%), and Snapchat (69%)
 - Facebook more popular with lower income groups
- Mixed findings for health effects (Kranzler & Bleakley, 2019)
 - Studies show increase in behaviors like alcohol & e-cigarette use
 - Other studies show some success with social media health interventions
 - Mixed mental health results
 - Depends on the user and the context of use
- Teens themselves have mixed views (Pew, 2018)
 - Connections vs bullying
 - Support vs peer pressure

Lower-income teens are more likely than teens from higher-income households to use Facebook

% of U.S. teens, by annual household income, who say they use Facebook



Source: Survey conducted March 7-April 10, 2018.
"Teens, Social Media & Technology 2018"

PEW RESEARCH CENTER

Pew Research Center, November 2018, "Teens' Social Media Habits and Experiences"

Kranzler, E. & Bleakley, A. (2019). Youth social media use and health outcomes: #diggingdeeper. *J of Adolescent Health*, 64, 141-142.

Pew Research Center, May 2018, "Teens, Social Media & Technology 2018"

MEDIA

- Tweens ages 8-12: use media for 4:44 hours on average per day
- Teens ages 13-18: use media for 7:22 hours on average per day
- Youth in lower income homes use more media
- Media use has changed...hard to separate from internet & social media
- Edutainment

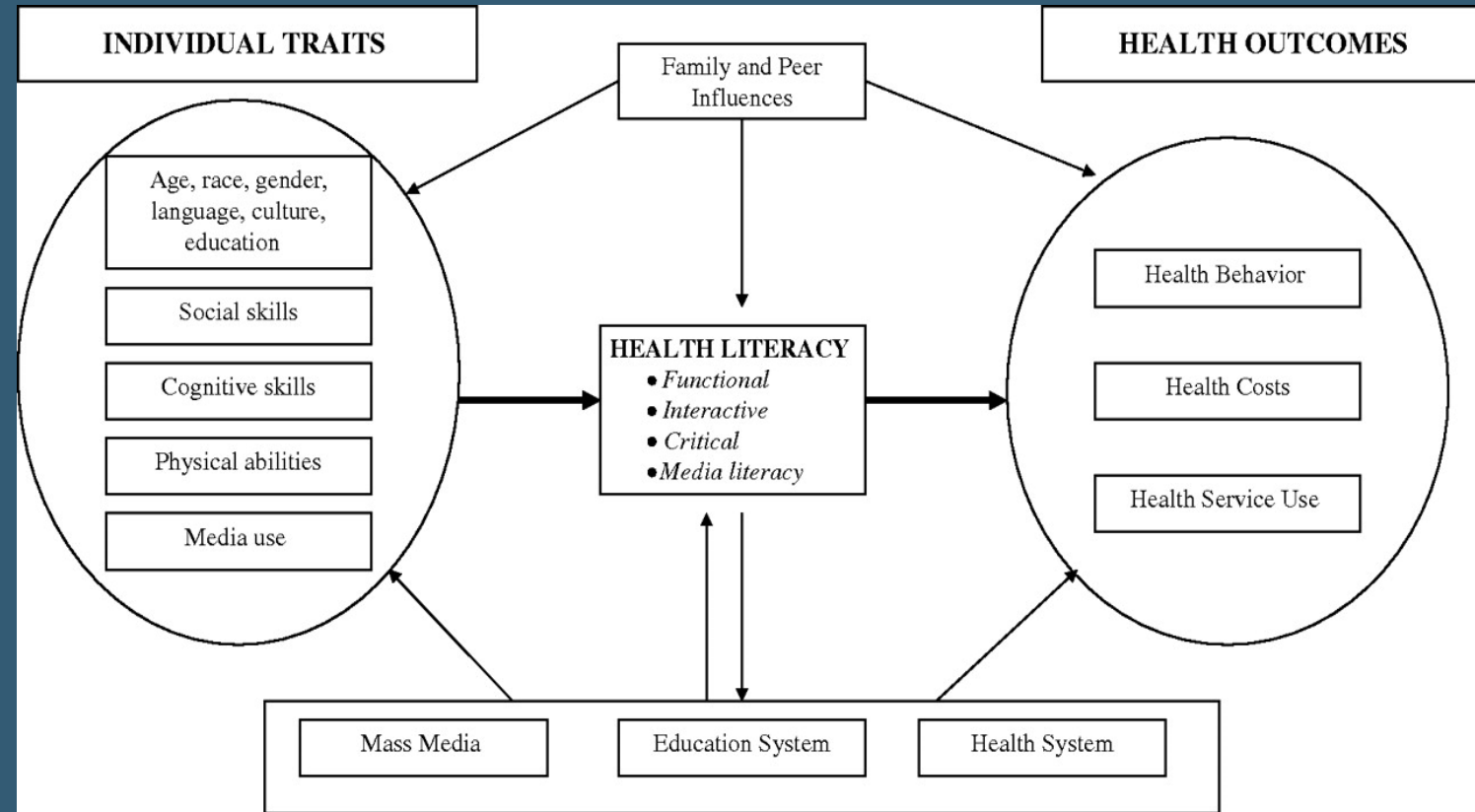


2019

Tweens who ... "every day"		Teens who ... "every day"	
Watch TV	63%	Listen to music	82%
Watch online videos	56%	Watch online videos	69%
Listen to music	47%	Use social media	63%
Play mobile games	46%	Watch TV	57%
Read for pleasure	35%	Play mobile games	46%
Play video games*	24%	Play video games*	27%
Use a smart speaker	17%	Read for pleasure	22%
Play computer games	15%	Play computer games	17%
Use social media	13%	Shop online	15%
Shop online	4%	Use a smart speaker	13%
Use virtual reality	2%	Use virtual reality	4%

SO WHAT?

Fig. 1. A framework for studying adolescent health literacy



SO WHAT?

- Need to have health literacy skills to navigate the online environment
- Can use the online environment to build health literacy skills and educate about health



SKILLS

HEALTH LITERACY

“the degree to which individuals can obtain, process, understand, and **communicate** about health-related information needed to make **informed** health decisions”

-Berkman, Davis, & McCormack, 2010, p.16

- One of many definitions
- Measured in various ways
- Given today's connected world, heavily tied to the online environment and electronic information sources

eHEALTH LITERACY

“the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem”

-Norman & Skinner, 2006

- Specifically focused on electronic sources of information
- Commonly measured using 8 self-report questions from the eHealth Literacy Scale (eHEALS)
 - “Q1: I know how to find helpful health resources on the Internet”
- Digital Health Literacy Scale (van der Vaart & Drossaert, 2017) and others
 - Web 1.0 vs Web 2.0
 - Not just the internet anymore

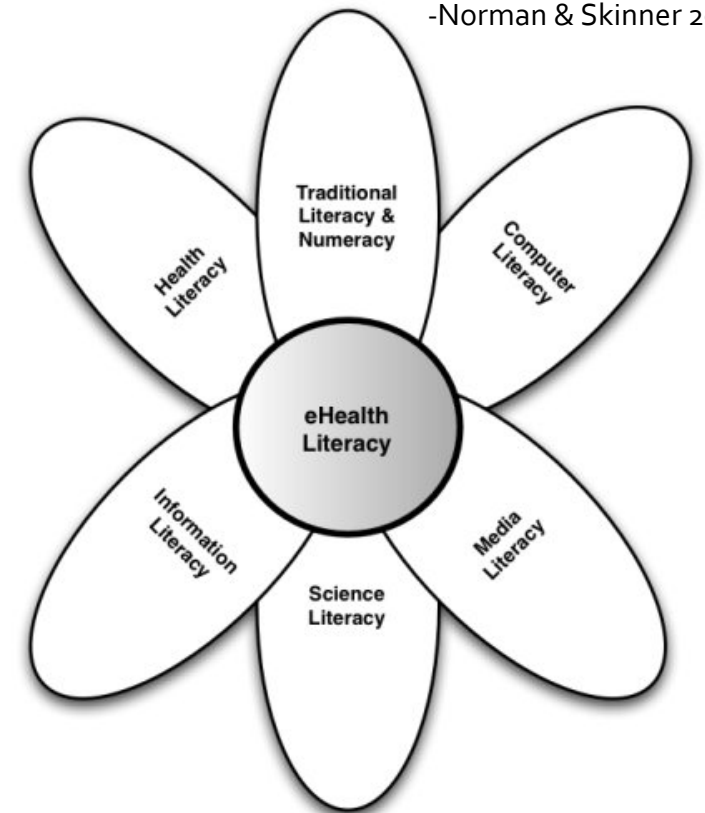
Norman, C. D., & Skinner, H. A. (2006). eHEALS: The eHealth Literacy Scale. *JMIR*, 8(4), e27.

van der Vaart, R., & Drossaert, C. (2017). Development of the Digital Health Literacy Instrument: Measuring a broad spectrum of health 1.0 and health 2.0 Skills. *JMIR*, 19(1), e27.

OTHER LITERACIES

- **Media literacy**: “ability to access, analyze, evaluate and create media in a variety of forms”
-1992 Aspen Media Literacy Leadership Institute
- **Topic literacies**: looking at knowledge and skills (i.e., nutrition literacy, diabetes literacy, oral health literacy)
- **Information literacy**: “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning”
-Association of College and Resource Libraries, 2015
- **Science literacy**: “enables people to use scientific principles and processes in making personal decisions and to participate in discussions of scientific issues that affect society”
-National Science Education Standards, 1996, p.ix

-Norman & Skinner 2006



eHLA

- eHealth Literacy Assessment Toolkit (Karnoe et al., 2018)
- Combines
 - health literacy
 - computer and digital literacy
 - information literacy
- Seven unique scales, or tools

LEARNING SKILLS

- Where are these skills being taught?
- Mainly through schools
 - Science class
 - Health education
 - Computer literacy
 - Family and consumer science
 - Others...
- Other learning opportunities come from parents, libraries, after school programs, summer camps, health care facilities, and online resources

NATIONAL HEALTH EDUCATION STANDARDS

- Must be able to understand the influence of **media and technology** on health
- Can learn how to use the **online environment** to advocate for health

Standard 2

Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Standard 8

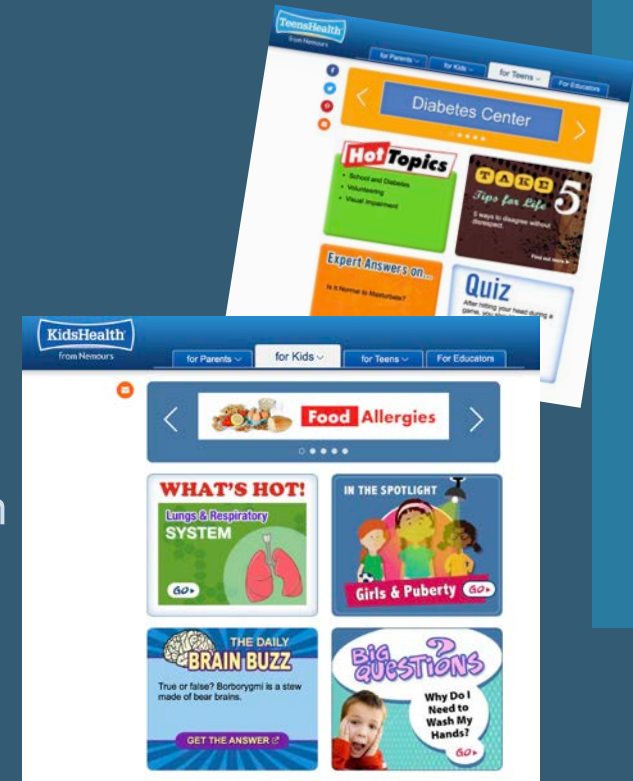
Students will demonstrate the ability to advocate for personal, family, and community health.



USES

HEALTH ONLINE

- The online environment is a great resource
 - But, search for stomach pain gives about 254,000,000 results
 - Need health literacy skills!
- Unintentional exposure & negative health messages
 - Searching YouTube or TikTok can have some interesting results!
- Consume vs create health information
- Health websites designed for youth
- Several studies of health info seeking and youth
 - Some include HL and eHL measures



HEALTH ONLINE: RESEARCH

(Park & Kwon,
2018)

- Information seeking is the most common use of the internet for health
 - Common topics include sports injuries, flu, chronic diseases, asthma, sexual health, fitness, and mental health
 - Greater use as youth get older
- Communication and support
 - Youth report using online support groups and communities
 - Examples include youth with specific conditions and LGBTQ youth
- Youth have concerns about privacy and accuracy of information
 - *Need skills*
- Prefer sites that are easy to use and updated
 - *What are we putting out there*

PROGRAMS: RESEARCH

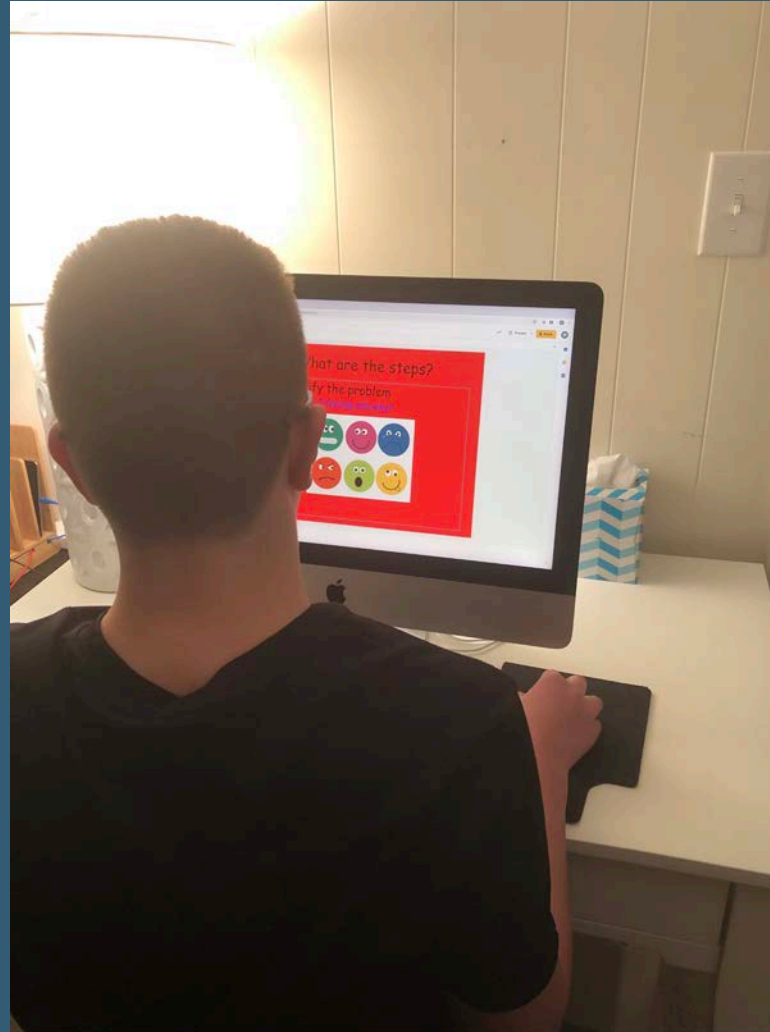
- eHealth interventions to change knowledge and/or behavior
 - Most research in this area
 - Examples include programs to prevent smoking (Kahlil et al., 2019) & reduce indoor tanning (Hillhouse et al., 2017)
- eHealth literacy interventions
 - Some research in this area
 - May or may not be online
 - Several for older adults
 - How is it defined? What is being taught?
- Health literacy interventions online
 - Almost no research in this area
 - How is it defined? What is being taught?



Hillhouse, J., et al. (2017). A web-based intervention to reduce indoor tanning motivations in adolescents: A Randomized Controlled Trial. *Prevention science*, 18(2), 131–140.

Khalil, G. E., Wang, H., Calabro, K. S., & Prokhorov, A. V. (2019). Revealing users' experience and social interaction outcomes following a web-based smoking prevention intervention for adolescents: A qualitative study. *PloS one*, 14(10), e0223836.

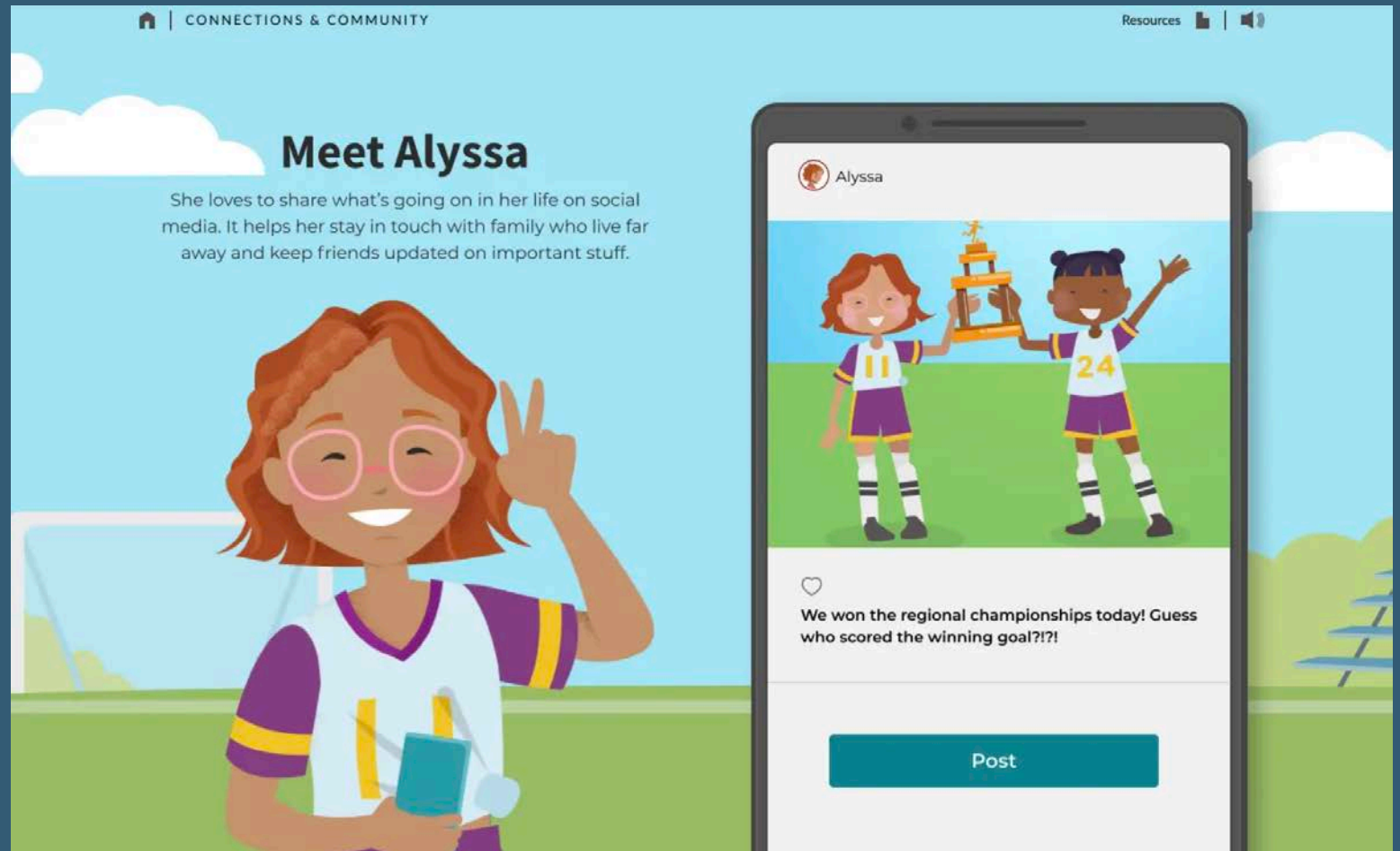
ASSIST WITH HEALTH EDUCATION IN SCHOOL



- Online activities, homework, quizzes on school classroom site

PROVIDE EDUCATION ONLINE

- Companies have online courses that are available to purchase
 - Sometimes available free for educators
 - Some feature health literacy related content



HACK HEALTH




- HackHealth program (Subramaniam et al., 2015)
 - Designed to improve eHealth literacy and health literacy skills
 - Targets youth in middle school
 - 12 week after school program
 - Led by school librarians
- 8 Pods
 - Choosing the right search terms
 - Introduction to relevance and credibility

NATIONWIDE CHILDREN'S HOSPITAL




- Nationwide Children's Hospital with Deena Chisolm created a tool to teach adolescent girls how to use the internet to find health information
- Teen focus groups to inform tool (n=20 girls)
 - Themes included confusion, education, convenience and behavior change
- Parent focus groups to inform tool (n=13)
 - Themes included accessibility, trust, and fear
- Consists of a webpage, a video, and an interactive game
- Bought ads to publicize the tool in Fall 2018
 - YouTube ads most successful

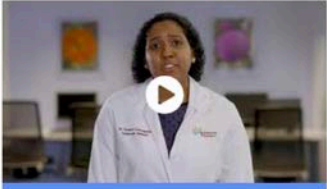
 **NATIONWIDE CHILDREN'S** For Medical Professionals Quality Research Giving Careers

[Find A Doctor](#) [Conditions We Treat](#) [Specialties](#) [Locations](#) [Your Visit](#) [Family Resources & Education](#)


Check Out Our YouTube Videos!



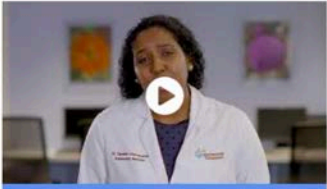
Blue Waffle Disease



The Internet Says I have Cancer



Online Detoxes and Cleanses



Telling your Doctor What Is Worrying You



YOUTUBE

GET HEALTH'e'TM

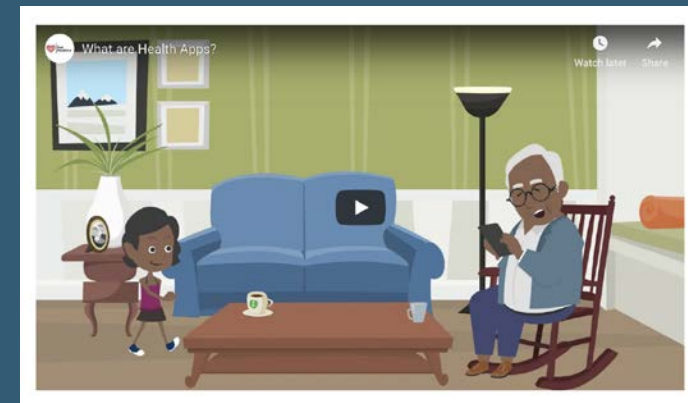


Welcome to Get Health'e'!

- An online 'course'
- Takes less than an hour
- Includes plain language text & short videos
- Consists of six lessons
 - (1) What is eHealth literacy?
 - (2) Online health information
 - (3) Patient portals
 - (4) Social media
 - (5) Health apps
 - (6) Wearable devices

Some examples of what you could find on these social media pages include:

- Updates on hours so you know when you can see your doctor
- Information on policies and doctors
- Events that may be happening such as health fairs
- Health tips



Manganello, J., Colvin, K., Hadley, M., & O'Brien, K. Get Health'e': A pilot test of an eHealth literacy intervention for young adults. *In preparation.*

Funding received from the University at Albany Presidential Innovation Fund.

GET HEALTH'e'TM

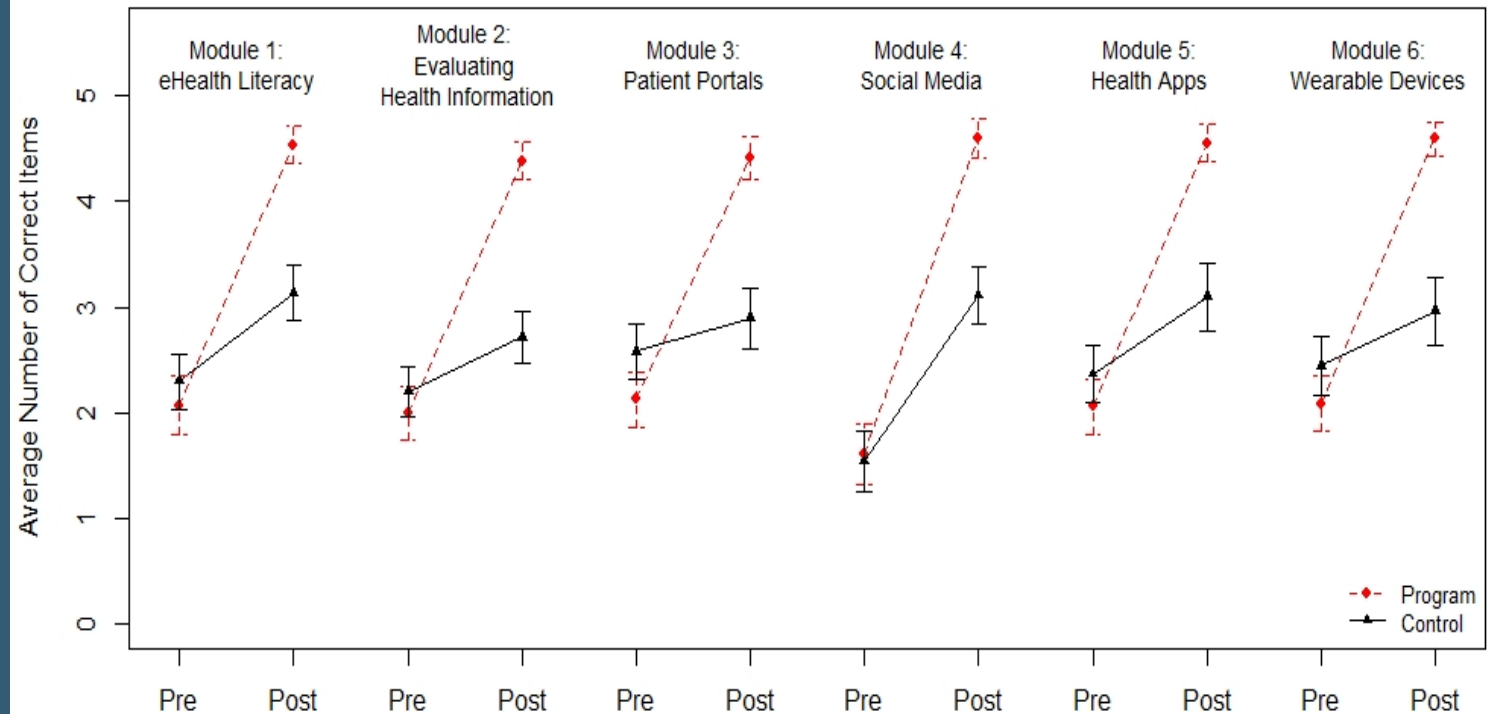


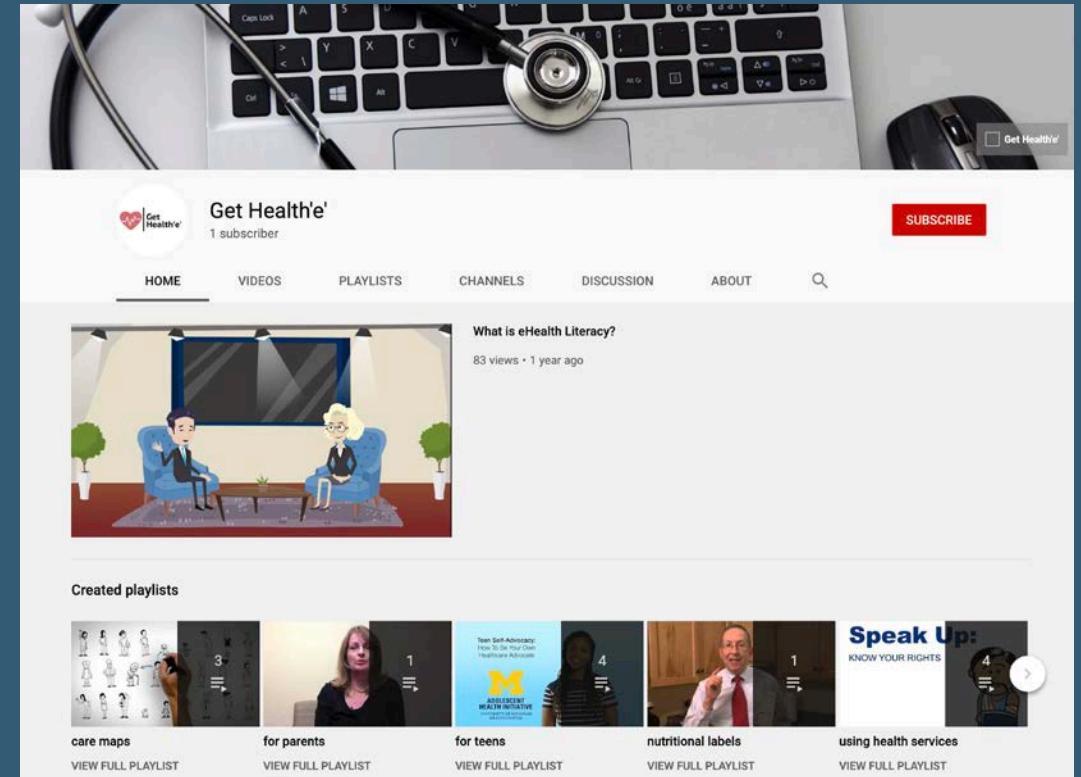
- Sample=145 (control group, $n = 74$; program group, $n = 71$)
- Age range 18 to 24 years old ($M = 20.95$, $SD = 1.58$)
- Mostly female (72% female, 28% male)
- 65% White, 15% Black, 13% Asian/Pacific Islander, 7% “other”
- Most participants were students (86%)

GET HEALTH'e'TM



- Quiz at end of each lesson had 5 multiple choice questions
- Repeated measures ANOVA used to compare change in pre- to post-quiz scores
- Medium effect size





YOUTUBE

GET HEALTH'e'TM



Next steps...

- Publish manuscript
- Seek funding to develop additional modules related to health literacy skills
 - eHealth literacy was the pilot module
 - Insurance literacy is the priority per focus groups
- Conduct a larger evaluation
- Develop plans for sustainability

**CONCLUDING
THOUGHTS**



ISSUES

- Do youth have the health literacy skills needed to use the online environment to IMPROVE their health?
- Are youth able to critically evaluate information & messages they see?
 - Trust issues and misinformation
- Mixed messages online → mixed effects
- Digital divide
 - Most have access, but what about skills? Outcomes of use?
- And, not all youth have the same access
 - How youth access the internet may differ
 - Limited data and interruptions in service
 - Parents have different rules
 - Libraries and schools often have filters-may restrict certain content

POTENTIAL

- This is what they know!
- Provides an easy way to host programs, videos, courses to teach health literacy skills to youth
 - Easy tailoring (age, disabilities)
- Can consider how to use online resources to better connect youth to health services and manage care
- Can use a youth-engaged approach to designing information and programs
- May help address disparities

FUTURE

- Conduct research to better understand the links between the online environment and health literacy (issues and potential)
- Consider new measurements tools
- Support funding for the development of programs to build skills
- Encourage multi-disciplinary collaboration
 - Public Health, Communication, Education, Information Studies, Computer Science
- Partner with online learning companies, schools, and community organizations
- Stay current...technology is always changing!



THANK YOU

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