



Education and Literacy

Part of socioeconomic status is education, but in this set of slides we're also going to talk about literacy because, of course, we're going to be talking about what it is about education that potentially drives health outcomes.



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References



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Education as a concept



- Education
- Health education
- Health literacy

When we think about how education affects health, people have different thoughts about what it is that you mean when you say education. Sometimes they think you mean educational attainment – that is, the number of years that someone has been in school. Sometimes people think in terms of health education, particularly if they have been trained in that area. More recently, there is a body of literature relating health literacy to health outcomes. In this module, we are going to try to address all three of those aspects of education from various perspectives.



Defining Education

- Number of years in school?
- Formal versus informal?

Historically, in public health questionnaires education has typically been defined in terms of the number of years someone completed in school. However, education, as with many things in public health, is not as easy to measure as one would think. If you are talking about the U.S. educational system, generally speaking, that is grades 1 through 12 -- but what do you do about kindergarten? Kindergarten now is much more common, and it is a very important part of education, as is pre-school. The point is: which grades or how many years do you include in your question?

The real challenge comes when you are working with populations that may not have been educated in this country, and that is increasingly likely because of growing diversity in our population, our globalization, and other similar factors. The educational systems in other countries may have a different number of years of formal education, so putting those individuals on the US 12-year scale may not be appropriate. In addition, it is unclear whether the number of years one sits in classrooms is the defining feature of education. Given our access to computer-based methods of obtaining information, people are educating themselves by reading – either books or the internet – more and more. I suspect we all know individuals who do not have a lot of years of formal education, yet are very well-educated overall. The question, then, becomes: Is it the exposure to information (that is, the number of years in school) or the consumption and assimilation of information that matters with respect to health outcomes?

Mechanisms linking education to health



Education → ?????? → Health outcome

- Occupation ?
- Information → behavior ?
- Abstract skills → problem solving
- Other?

What are the mechanisms that are linking education to health? This slide presents some potential pathways. For example:

- We know that people who have more education tend to get different jobs. Those jobs have different exposures. Those jobs may pay more, so there is a link to income, which is why education and occupation are a part of the whole SES concept.
- Do people who have more education have a greater amount of information in their storeroom, in their brains, that they then bring to bear on healthier behaviors?
- Do they have a different level of abstract skills and problem-solving skills?
- Or is it some other mechanism that is working as a mediator between education and the health outcome?

Health Education



- Educating people about health
- “...principle by which individuals and groups learn to behave in a manner conducive to the promotion, maintenance or restoration of health...”

Health education is one of the other constructs within the overall education topic. Health education is a big part of public health, focused on educating people about health, increasing awareness of health issues, increasing awareness of how best to take care of one's health, and promoting those behaviors that are more likely to generate positive health outcomes. In many ways, health education has been a cornerstone of public health activity.

Health Education – where?



- Elementary/secondary schools
- Communities
- Clinical settings
- Others

The health education process takes place in a wide range of settings. It certainly occurs in elementary and secondary schools. In a more formal way, you could also include colleges, but in the context of formal educational processes in the US, everyone takes a health education course or health course or classes in elementary, middle school, and high school. It occurs in communities. A variety of methods are used for health education in communities, including newspapers, brochures, billboards, formal education programs, and education within families. It occurs in clinical settings, when a doctor or nurse talks to a patient about what it is they have, what they need to do about it, and what it means for their health overall. You could probably add to this list.

Literacy



- Ability to read & write
- Add numeracy
 - Make change, balance checkbook
- Add computer
 - Web browsers, word processing, text messaging

Health literacy is a concept that has been discussed with increasing frequency within the last 5 to 10 years.

Literacy has been talked about in other arenas for decades. Educators have talked about literacy – people’s ability to read and write – for many, many years. Later the concepts of math literacy or numeracy were added to literacy as a concept because it came to be well understood that people, to function in society at maximum capacity with maximum comfort, need to be able to work with numbers in our everyday lives (balancing our checkbooks, making change, etc.). As computers became more prominent in our society, we began to hear people talk about computer literacy and how older generations may not be as computer literate as younger generations.

The point is that literacy is one of those terms that has multiple definitions. It needs an adjective at the beginning to tell you what kind of literacy is being considered.

Other forms of literacy



- Arts literacy
- Critical literacy
 - Analyzing text
- Media literacy
 - Analyze, evaluate, create messages
- Ecological literacy
 - Understand natural systems that make life on Earth possible
- Statistical literacy

To some extent, the term literacy has now become an over-used word. One hears about arts literacy and critical literacy and media literacy and many others.

Health literacy



“...the degree to which individuals have the capacity to obtain, process, and understand basic information and services needed to make appropriate health decisions.”
(HP2010)

Health literacy is one of those things that does not have a common, fully understood definition. It is one of those words, like “culture”, that everyone thinks they know what is being talked about -- but do they really? Are we all really talking about the same thing? The developers of Healthy People 2010, attempted to address this definition issue by defining health literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic information and services needed to make appropriate health decisions.”

Health Literacy



- Complex group of reading, listening, analytical, decision-making skills
 - With ability to apply these skills
- Need to be able to understand instructions & negotiate health system
 - Prescription bottles
 - Appointment slips
 - Medical education brochures
 - Doctor's directions
 - Consent and HIPAA forms

That definition sounds pretty straight-forward -- until you start thinking about what really goes into your ability to obtain, process, and use information. That turns out to be a fairly complex group of reading, listening, analytic, and decision-making skills and the ability to apply those skills. People need to be able to understand instructions and negotiate the health system; the things we have listed here are some of the things that are needed.

For example, patients have to be able to read and understand labels on prescription bottles. They need to be able to understand appointment slips and to be able to make and keep appointments. They need to be able to read and understand and apply the information from medical education brochures, doctor's directions, and the like. And do not forget about those HIPAA forms (and other consent forms) that are presented for signature every time someone goes to the doctor.

Many believe that there are two kinds of health literacy. One is having a fund of core knowledge and the ability to problem-solve and use information overall. That may be based on education, grounded in the idea that people who are more educated are better able to communicate and to understand the information that is provided them. They are able to seek their own information and problem-solve with that information. The second kind of health literacy is having specific skills, skills that can be developed if one focuses on them. Examples might be the ability to

take one's own blood pressure, to monitor one's blood glucose, to adjust the insulin that is taken based on what the blood glucose is at the time, to administer medications. Those are specific skills that can be taught and are not necessarily dependent on one's level of formal education.

Health Literacy

- Individuals need to be:
 - Visually literate
 - Read graphs, etc.
 - Computer literate
 - Information literate
 - Obtain and apply
 - Numerically/computationally literate

Thus, individuals need to be visually literate (that is, able to read graphs, charts, etc.), computer literate, information literate (able to obtain and apply information), and numerically and computationally literate.

Health Literacy Skills



- Evaluate information for credibility, quality
- Analyze relative risks, benefits
- Calculate dosage
- Interpret test results
- Local health information
- Other specific tasks

People also, though, need to be able to evaluate information, analyze risk, and then apply that information. They need to be able to evaluate information with regard to its credibility and quality. They should be able to calculate dosages (for example, insulin dose based on blood sugar levels), interpret test results, find information about local health resources and then access those resources, and other things. All skills can be taught, but these are a little broader and not as easy to measure, if you need an objective measure of where someone is or starts on the continuum.

Low health literacy



- Cancer
 - Cancer screening information less effective
 - Diagnosis at later stage
 - Informed consent too complex
 - Make suboptimal decisions about interventions
- Diabetes
 - Poor glycemic control
 - Increased retinopathy

There is a growing body of literature focused on the relationship between health literacy and health outcomes. They tend to focus, so far, on the impact that low health literacy has on outcomes. There are other issues to be considered, however. It has been documented that cancer screening information is less effective; failure to understand that information may lead people to delay screening and thus risk having cancers diagnosed at later stages when they are harder to treat. It has been also shown that informed consent documents are too complex for the average consumer, which makes it much harder for the patient to make good decisions about treatment options. Another example is found in diabetes, where it has been shown that lower health literacy is associated with poor glycemic control, which is associated with increased frequency of complications, such as retinopathy.

Low health literacy



- Less ability to care for chronic conditions & increased use of health services
 - Decreased lifestyle modifications to control disease
 - Increased ED use
 - More hospital visits, longer stays

There is also evidence that persons with low health literacy have less ability to care for chronic conditions, leading to increased use of health services. They are less likely to make the lifestyle modifications needed to control disease, leading to more health emergencies, more hospital visits, and longer hospital stays.

One issue to consider is the target audiences for health education and health literacy interventions and the content of those interventions. If we want people to have more information and be better able to interact with the health care system, we need to be very careful that the written materials we give people are written at a low literacy level so that people who do not have a large or very medically or legally sophisticated vocabulary can understand the information that is given to them.

A number of interventions have been implemented focusing on health care providers, in an attempt to make sure that providers of all types can interact effectively with their patients. These interventions tend to work on helping providers change how they explain things so that all of their patients, regardless of their educational level, can really understand. The interventions often also emphasize the importance of making sure that patients actually do understand what they are being told. Those of us who are health care providers certainly have had the experience of talking to a patient and seeing them sit there and nod their head up and down and agree with what is being said. We walk away with the impression

that we are communicating well with that patient and that they are really understanding us, only to find out later that really the patient did not understand what we were saying. (We may have had that experience personally as well – thinking that we understood what the doctor was telling us but later saying “Now what did he say?”)

It is important to focus on interactions with people, in clinical and in community settings. We must make sure that we give them appropriate information that they can understand, that they can read, that is not too wordy, that is bulleted, that is easy to digest. Training health care providers to interact effectively, communicate well with their patients, and ensure that the patients understand what is being told to them is also critical. Helping people develop the skills – the reading skills, the math skills, the computer skills, the critical analysis skills, and others – to manage their health and interact effectively with the health care system is another area of critical focus for public health.

It is disturbing to hear people use health literacy as another reason for why patients or people more broadly are not doing what they need to be doing to take care of their health. It is all too easy for us to blame the patient or to put the burden of improvement on the patient. Perhaps a more productive approach is to work with both the population – to improve their educational skills, their base of understanding and abilities – AND with providers, both public health and health care providers -- to be sure that they are providing information in ways that people can understand it and interact with it appropriately.

Thought questions



- What did you read or hear in this discussion that was new information for you?
- What surprised or challenged you?
- What did you agree with or disagree with and why?
- How does this information make sense in terms of your work in the field of public health?