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The psychology of Health Literacy

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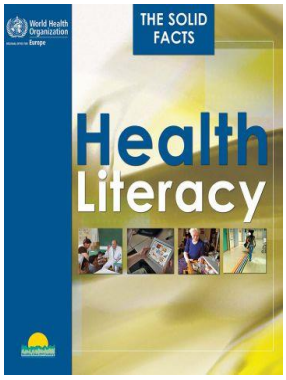
Health Literacy



« *A person's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course* »

Sørensen et al., Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health. 2012*;12:80

The importance of Health Literacy

- An outcome of health education
  (as a strategy of health promotion)

  Nutbeam, D. (1998). Evaluating health promotion - progress, problems and solutions. Health Promotion International, 13(1), 27-44.
- A determinant of the quality of health care
- A determinant of health outcomes and health care costs
- A possible mediator of the relationship between social disparities and health outcomes

Expanding research on Health Literacy

- First research articles on health literacy published in the late 1970s
- More than 8500 publications on health literacy listed today
  - 70% published in the last 5 years
  - > 1000 new publications per year

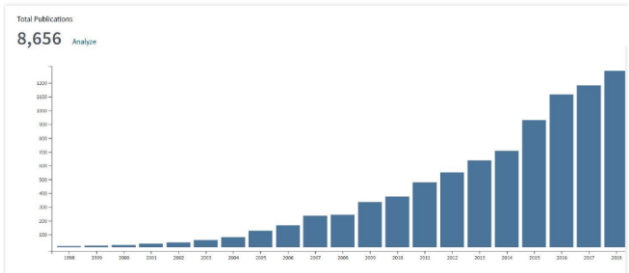
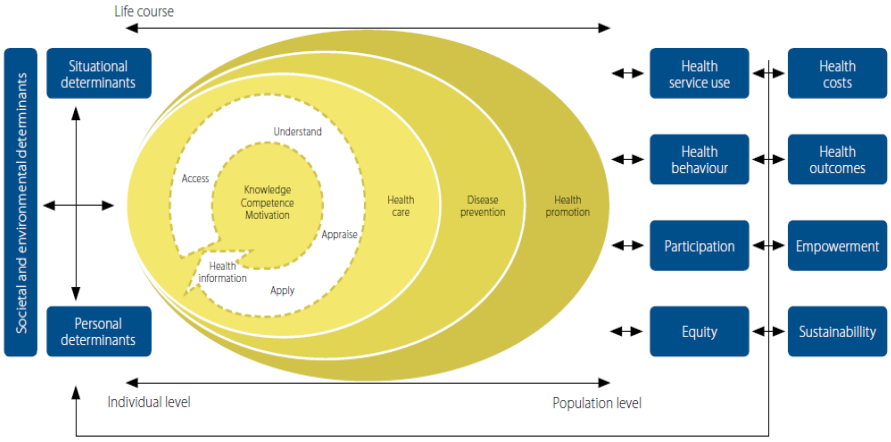


Chart from Thomson-Reuters *Web of Science* database. Accessed January 2019

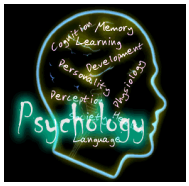
Conceptual model of Health Literacy



Sørensen et al., Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health*. 2012;12:80

Why does health literacy influence health outcomes?

- The processes of finding, understanding, appraising and acting on health information are not well understood
- The causal pathways that link low HL to health behaviour and health outcomes are not clearly mapped out
  - some underlying psychological mechanisms and processes have been suggested
  - very little empirical research exists to date to support these mechanisms
    - only a handful of studies have directly investigated the mediating effects of social cognitive variables on the relationship between HL and health behaviors and outcomes
    - most of them focusing on a single mediator



Psychological processes underlying Health Literacy

- Cognitive processes
  - information processing
    study of the way in which information is acquired, represented, stored in memory and retrieved
  - risk assessment
  - decision making
- Motivational processes
  - expectancies and attitudes
  - social learning (observational learning, perceived norms, …)
  - perceived competence
  - metacognition and self-determination
- Emotional processes

Apply to

Accessing (health) information 

Understanding information 

Evaluating (appraising) information 

Applying (using) health information 

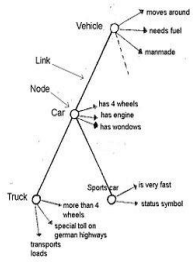
Psychological processes of *accessing* health information

- Consultation of different, often contradicting information sources

	Personal	Impersonal
Professional	doctors pharmacists nurses	associations of health care professionals, specialized journals, health insurance funds
Nonprofessional	family, friends, patients patient organisations	internet, mass media (newspapers, magazines, television, radio) online social networks

- Selecting information from these sources is not a rational decision
  - involves the use of (unconsious) information processing strategies
    - to select sources of information
    - to select information from these sources
    - to judge the importance of the information
  - influenced by context and by emotions

Information processing



- Based on cognitive theories about the role of associative knowledge networks
  - ***Selective attention*** makes that more attention is paid to information on certain issues and less to others
    cognitive schemes for these topics are more easily accessible
  - Cognitive ***schemas*** are used to filter, classify and complete (health) information
    e.g., pre-existing beliefs can substitute missing information
  - ***Information nodes*** are activated to process information

- Role of heuristics
  - Mental "shortcuts" that ease the cognitive load of accessing information and making decisions
  - Are often the source of bias

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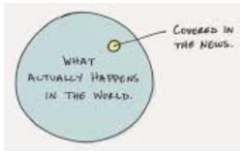
Biases in accessing health information



- Availability / acessibility bias

  Tendency to pay more attention to information that is available or easy to access
- Attentional bias

  Tendency to pay attention to some features while ignoring others

- Confirmation bias

  Tendency to seek information that confirms the beliefs one already holds, and to ignore or discard information that contradicts these beliefs or that is ambiguous

The role of emotions in accessing health information

- Emotions
  - Influence perceptions
  - Regulate the quantity and quality of information processing
  - Elicit specific cognitive evaluations
- Dual process theory (Marcus, 2000)
  - Two levels of information processing: pre-conscious (spontaneous, intuitive) and conscious
  - Preconscious processes are more likely to be influenced by emotion
- Impact on health information seeking
  - Concern leads to additional information seeking
  - Distress (fear, anger, disgust) leads to seeking less information

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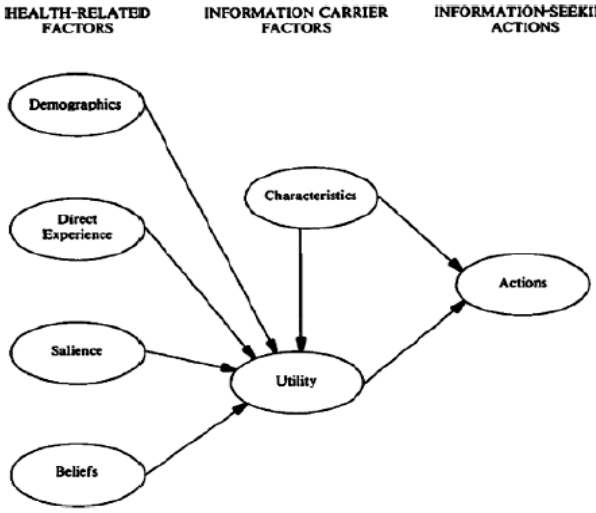
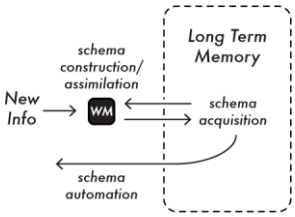
A comprehensive model of health information seeking



Johnson et al (1995), *Science Communication*

Psychological processes of *understanding* health information



- Understanding health information is an active process that requires
  - 'reflecting' and 'considering' of new information
  - making connections with already available knowledge to develop a meaningful and coherent synthesis
- Involves the activation of **cognitive schemes** to filter, classify and assimilate (health) information

  e.g. pre-existing beliefs can substitute missing information

Biases in understanding health information

- Confirmation bias

  Tendency to seek information that confirms the beliefs one already holds, and to ignore or discard information that contradicts these beliefs or that is more ambiguous
- Anchoring Bias

  Tendency to rely too heavily on the first piece of information one learns
- Memory bias

  cognitive bias that enhances or impairs the recall of a memory or that alters the content of a reported memory

Psychological processes of *evaluating* health information

- Decision-making in health is not done on the basis of understanding of health information, but on its appraisal

  health information is evaluated, interpreted and integrated into existing belief systems

- This evaluation process is influenced by
  - cognitive biases
  - social influences
  - emotions

Biases in evaluating health information

- Confirmation bias
  - Information that contradicts already held beliefs is more easily discarded or considered as less relevant
  - Ambiguous information is more likely interpreted as a confirmation of existing beliefs
- Familiarity and recency bias

  Things that are familiar or easily retrieved from memory are considered as more « true »
- Negative and positive information bias
  - Tendency to attach more importance to negative than to positive information (« catastrophic thinking »)
  - Tendency to consider oneself as less at risk for negative consequence (« unrealistic optimism »)
- Status quo bias

  Risks of change are overestimated and benefits underestimated
- Illusion of truth effect

  Information that is often repeated tends to be more easily considered as « true »
- Illusion of correlation effect

  Tendency to infer or exaggerate relationship between events that co-occur but are not related
- False consensus effect (enforced by social media)

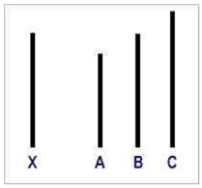
Social influenes in evaluating health information

- Observation (social learning)
- Conformity

  when a norm is accepted by a majority it is imposed onto others, even when they do not share the norm (Ash, 1952)

- Normalisation

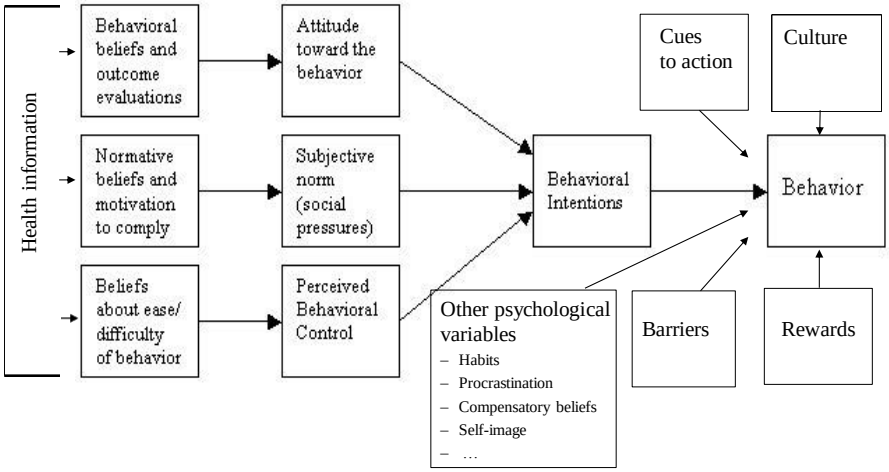
  Reduction of an initial difference with regard to norms through social interaction, leading to a common norm (Sherif, 1936)



Psychological processes in *applying* health information

- Cognitive processes
  - decision making
  - metacognition
- Motivational processes
  - expectancies and attitudes
  - perceived norms
  - perceived competence
  - self-determination
- Other psychological factors
  - habits
  - procrastination
- Contextual factors
  - barriers
  - rewards
- Emotional factors

Motivational & contextual processes of applying health information



Emotional influences in applying health information

Emotional distress and depression reduce the positive effects of health literacy on diabetes self-management

Regression and interaction analysis to predict reported diabetes self-care behaviors.

	R^2	β	t	p
Model 1	0.317			≤0.001
Health literacy (HLS-EU-Q6 + Diabetes specific HL)		0.301	3.018	≤0.005
Self-efficacy		0.350	3.509	≤0.001
Model 2	0.380			≤0.001
Health literacy (HLS-EU-Q6 + Diabetes specific HL)		0.321	3.030	≤0.005
Self-efficacy		0.415	3.642	≤0.001
Distress		0.092	0.987	0.326
Health literacy*Distress		−0.256	−2.490	≤0.05
Self-efficacy*Distress		0.137	1.334	0.185
Model 3	0.402			≤0.001
Health literacy (HLS-EU-Q6 + Diabetes specific HL)		0.300	2.987	≤0.005
Self-efficacy		0.346	3.335	≤0.001
Depression		−0.089	−1.003	0.319
Health literacy*Depression		−0.322	−3.260	≤0.005
Self-efficacy*Depression		0.151	1.515	0.133

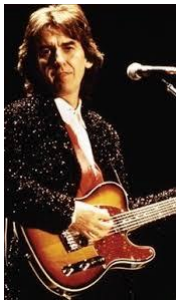
Schinckus et al (2018). Patient education and counseling, 101(2), 324-330.

Conclusions

- The psychological processes of finding, understanding, evaluating and using health information are not well understood
- Psychological theory can help to unravel
  - the role of cognitive motivational, social and emotional processes that define health literacy
  - their impact on health outcomes
- These roles remain largely hypothetical, and have not yet been studied in relation to health literacy
- Further research is required to highlight
  - the extent to which these factors influence the processes of finding, understanding, evaluating and using health information
  - the nature of their impact on the health outcomes

"It's all in the mind."

— George Harrison



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