



October 2016 – SUPPORT Summary of a systematic review

What are the effects of interventions to improve healthcare utilization and health outcomes in people with low health literacy?

People with low health literacy are more likely to use health services incorrectly and to have poorer health outcomes than people with high health literacy. Single strategies to improve health literacy (e.g. alternative presentations of numerical data) might improve health service utilisation and health outcomes by improving health literacy. Other mixed strategies, such as self-management, disease management, and adherence interventions, might improve healthcare utilization and health outcomes in people with low health literacy by facilitating patient/provider communication, circumventing barriers to healthcare, or improving health-related skills.

Key messages

- Some single strategies may improve comprehension for people with low health literacy, such as presenting essential information by itself, using the same denominators to present baseline risk and treatment benefit information, and adding icon arrays to numerical presentations of treatment benefit information.
- It is uncertain whether single strategies improve the use of healthcare services, health outcomes, resource use, or disparities in the use of healthcare services.
- Some mixed strategies such as intensive self-management and adherence interventions probably improve the use of healthcare across health literacy levels.
- Some mixed strategies such as intensive disease management programs probably reduce disease prevalence across health literacy levels.
- It is uncertain whether mixed strategies improve resource use or disparities in the use of healthcare services.
- Only one of the included studies were conducted in a low-income country.



Who is this summary for?

People making decisions concerning interventions to improve healthcare utilization and health outcomes in people with low health literacy

! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Berkman ND, Sheridan SL, Donahue KE, et al. Health literacy interventions and outcomes: an updated systematic review. *Evid Rep Technol Assess* 2011; (199):1-941.

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

SUPPORT was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

Glossary of terms used in this report:
www.supportsummaries.org/glossary-of-terms

Background references on this topic:
See back page

Background

Health literacy is ‘the extent to which individuals can obtain, process, and understand the basic health information and services they need, to make appropriate health decisions’. However, health literacy is not defined and measured consistently. Most health literacy interventions (including most of the studies of “single strategies” included in this review) primarily focus on functional skills such as reading, writing and numeracy; and do not include critical or social skills. “Mixed strategies” that aim to improve the use of healthcare and health outcomes in people with low health literacy, may not aim to improve health literacy at all (including most of the studies of mixed strategies in this review).

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here:

www.supportsummaries.org/how-support-summaries-are-prepared/

Knowing what’s not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

About the systematic review underlying this summary

Review objective: To assess the effects of health literacy interventions on health services utilisation and health outcomes

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	<p>Randomised trials, cluster-randomised trials, quasi-experimental studies, cohort studies, before-after studies, cross-sectional studies</p> <p>All interventions specifically designed to mitigate the effects of low health literacy by improving the use of healthcare services or health outcomes in low health literacy or low numeracy individuals</p>	<p>42 intervention studies, including randomised trials (27), cluster-randomised trials (2), quasi-experimental pre-post studies (10), and quasi experimental post only studies (3).</p> <p>The interventions included: alternative document design (2 studies), alternative numerical presentations (3), additive or alternative pictorial representations (8), alternative media (4), combinations of alternative readability and document design (7), physician notification on patients' literacy status (1), intensive self-management (3), educational interventions (1), and intensive disease management programs (2).</p>
Participants	People of all ages, including different ethnicities and cultural groups	People of all ages, whites, blacks, Hispanics, different ethnicities and cultural groups
Settings	All settings	Inpatient or outpatient settings in healthcare systems and institutions, various community-based settings or homes. Only one of the studies was conducted in a low-income country.
Outcomes	<p>Use of healthcare services such as emergency room visits, office visits, hospitalizations and prevention</p> <p>Health outcomes such as disease, disease severity, quality of life and death.</p>	<p>For single strategies (21 studies): physician use of effective communication (1), comprehension (14), knowledge (3), accuracy (3), self-efficacy (1), intent (1), choices (3), adherence (1), health outcomes (1)</p> <p>For mixed strategies (21 studies): comprehension (1), knowledge (10), self-efficacy (8), adherence (5), use of healthcare (6), and health outcomes (10)</p>

Date of most recent search: May 2010

Limitations: This is a well-conducted systematic review with only minor limitations.

Berkman ND, Sheridan SL, Donahue KE, et al. Health literacy interventions and outcomes: an updated systematic review. *Evid Rep Technol Assess* 2011; (199):1-941.

Summary of findings

The review included 81 studies (91 articles) that reported on the relationship of health literacy and various outcomes (including disparities in the use of healthcare services) and 42 studies (45 articles) that assessed the impact of various health literacy interventions. Of the 42 intervention studies, 21 studies focused on single design features (e.g. alternative document design) while the other 21 studies focused on combining multiple strategies (e.g. preventive service education to both providers and patients to mitigate the effects of low health literacy). The majority of the studies were from high-income countries. Only the results of the impact of health literacy interventions is summarised here.

1) Effects of health literacy interventions using single strategies

- Some single strategies may improve comprehension for people with low health literacy, such as presenting essential information by itself, using the same denominators to present baseline risk and treatment benefit information, and adding icon arrays to numerical presentations of treatment benefit information. The certainty of this evidence is low.
- It is uncertain whether use of single strategies improves use of healthcare services, health outcomes, resource use, or disparities in healthcare use. The certainty of this evidence is very low or no studies were found.

About the certainty of the evidence (GRADE) *



High: This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different[†] is low.



Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different[†] is moderate.



Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different[†] is high.



Very low: This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different[†] is very high.

* This is sometimes referred to as 'quality of evidence' or 'confidence in the estimate'.

[†] Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Effects of health literacy interventions using single strategies			
People	Individuals and caregivers of all races and ethnicities		
Settings	All settings		
Intervention	All single strategies specifically designed to mitigate the effects of low health literacy		
Comparison	Any comparator designated by investigators		
Outcomes	Impact	Number of studies	Certainty of the evidence (GRADE)
Comprehension, accuracy and choice of higher quality options	<p>Overall the certainty of the evidence for single strategies was very low.</p> <p>Some single strategies showed improvements in comprehension for low health literacy populations in one or a few studies, including: presenting essential information by itself, presenting essential information first, presenting information so that the higher numbers indicate better quality, using the same denominators to present baseline risk and treatment benefit information, adding icon arrays to numerical presentations of treatment benefit information and adding video to verbal narratives.</p> <p>On the other hand using coloured traffic symbols to denote hospital quality seemed to worsen health choices among the people with low literacy. Likewise, adding symbols to non-essential quality information seemed to draw attention away from the essential information and worsened health choices among those with low health literacy.</p>	25	<p>⊕○○○ Very low</p> <p>⊕⊕○○ Low</p>
GRADE: GRADE Working Group grades of evidence (see above and last page)			

2) Effects of health literacy interventions using mixed strategies

- ➔ Interventions such as intensive self-management and adherence interventions probably improve the use of healthcare across health literacy levels. The certainty of this evidence is moderate.
- ➔ Interventions such as intensive disease management programs probably reduce disease prevalence across health literacy levels. The certainty of this evidence is moderate.
- ➔ It is uncertain whether the use of mixed strategies improves resource use. The certainty of this evidence is very low.
- ➔ No studies were found that evaluated the impact of mixed strategies on disparities in the use of healthcare services.

Effects of health literacy interventions using mixed strategies			
People	Individuals and caregivers of all races and ethnicities		
Settings	All settings		
Intervention	All mixed strategies specifically designed to mitigate the effects of low health literacy		
Comparison	Any comparator designated by investigators		
Outcomes	Impact	Number of studies	Certainty of the evidence (GRADE)
Use of healthcare services	Interventions such as intensive self-management and adherence interventions probably reduce emergency room visits and hospitalizations across health literacy levels.	6 studies	⊕⊕⊕○ Moderate
	The effects of other mixed strategies on the use of healthcare services are mixed or uncertain.		⊕○○○ Very Low
Health outcomes	Intensive disease management programs probably reduce disease prevalence across health literacy levels.	39 studies	⊕⊕⊕○ Moderate
	The effects of other mixed strategies on health outcomes are mixed or uncertain.		⊕○○○ Very Low
Resource use	There was insufficient evidence to assess the effects of mixed interventions on resource use.	2 studies	⊕○○○ Very low
Disparities in healthcare use	No studies were found that examined the effects of mixed interventions on disparities in the utilisation of healthcare services.	No studies	---
GRADE: GRADE Working Group grades of evidence (see above and last page)			

Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
APPLICABILITY	
→ Only one included study was conducted in a low-income country.	▷ There is insufficient evidence of the effectiveness of health literacy interventions in low-income countries. The effects observed in these studies were limited to clinical environments and narrow geographical areas. Impacts in low-income countries may be different because of differences in literacy levels and other contextual factors.
EQUITY	
→ The effects of single and mixed strategies on disparities in the use of healthcare services are uncertain. → Some single strategies may improve comprehension in people with low health literacy.	▷ To the extent that improvements in comprehension led to improvements in the use of healthcare and health outcomes, single strategies could be expected to reduce inequities. ▷ Mixed strategies could potentially reduce inequities (e.g. if they were targeted at disadvantaged populations), increase inequities (e.g. if they were less effective or available for disadvantaged populations), or have no impact on inequities.
ECONOMIC CONSIDERATIONS	
→ The impacts of single and mixed strategies on resource use are uncertain.	▷ Interventions such as intensive self management and intensive disease management programs may have considerable cost implications. Local costing studies are needed for these interventions.
MONITORING & EVALUATION	
→ The certainty of most of the evidence was very low, and only one of the included studies was conducted in a low-income country.	▷ Interventions to improve the use of healthcare and health outcomes in people with low health literacy should be rigorously evaluated before scaling up their use in low-income countries.

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: www.supportsummaries.org/methods

Additional information

Related literature

Stacey LS, David JH, Anthony JV, et al. Interventions for individuals with low health literacy: a systematic review. *J Health Commun* 2011; 16:sup3, 30–54.

Car J, Lang B, Colledge A, et al. Interventions for enhancing consumers' online health literacy. *Cochrane Database of Systematic Reviews* 2011, No 6, CD007092.pub2.

Jacobs RJ, Lou JQ, Ownby RL, Caballero J. A systematic review of eHealth interventions to improve health literacy. *Health Informatics J* 2016; 22(2):81–98.

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Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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This review should be cited as

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The summary should be cited as

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About certainty of the evidence (GRADE)

The “certainty of the evidence” is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By “substantially different” we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE:
www.supportsummaries.org/grade

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is part of the [Cochrane Collaboration](http://www.cochrane.org). The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries. www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking in low- and middle-income countries. www.evipnet.org

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. www.who.int/alliance-hpsr

Norad, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. www.norad.no

The Effective Health Care Research Consortium is an international partnership that prepares Cochrane reviews relevant to low-income countries. www.evidence4health.org

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