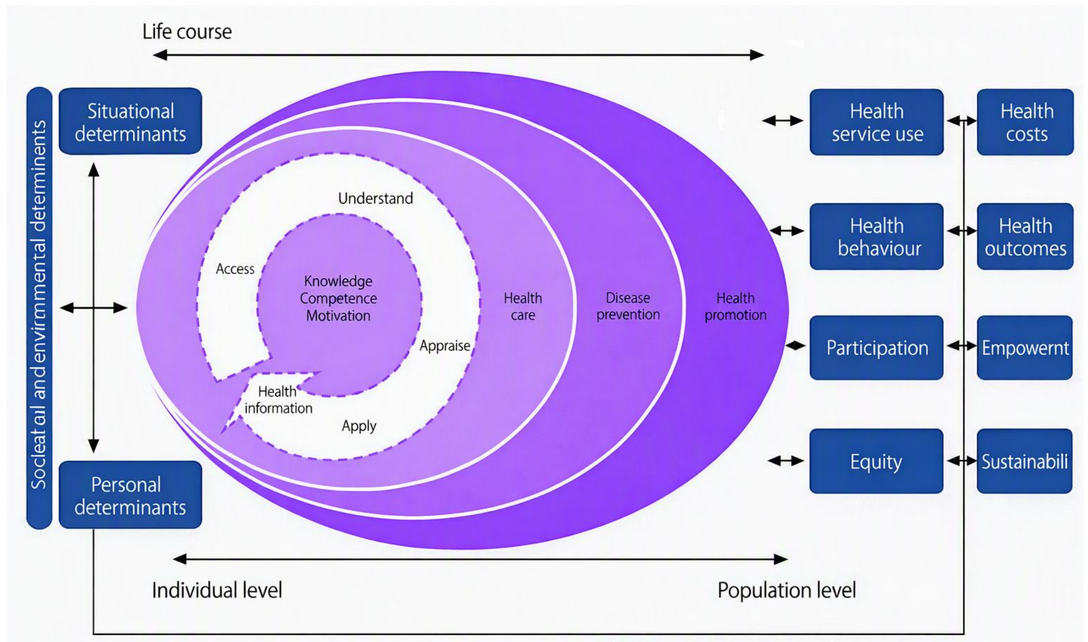
Enablers and Barriers to Health Literacy Interventions Across the Cancer Care Continuum

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BACKGROUND

Health Literacy (HL) is central to cancer care across the whole continuum: health promotion, prevention, screening, treatment adherence, palliative care, survivorship and psychosocial outcomes. Interventions aimed at improving HL in cancer therefore have the potential to influence outcomes at multiple stages of the cancer pathway. However, the factors that facilitate (enablers) or hinder (barriers) the implementation and effectiveness of these interventions have not yet been systematically mapped. In particular, there is no comprehensive overview of how these enablers and barriers vary across the different groups and contexts involved: people with cancer, healthcare and other professionals, and the settings in which interventions are delivered.



Health Literacy Model Pathway (Edwards et al., 2012)

RESEARCH QUESTION

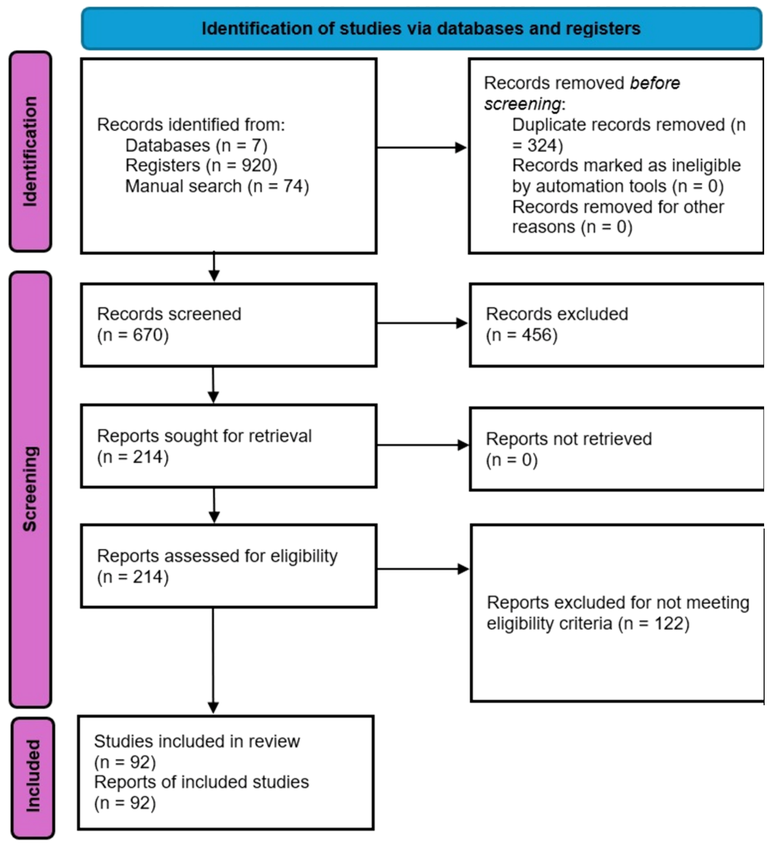
What is the effectiveness of health literacy interventions in cancer patients and/or caregivers and/or professionals and/or citizens throughout the cancer continuum on health literacy (HL)?
What tools are used to measure health literacy and other specific aspects of HL in accordance with the HL pathway model?
Which are the barriers and enablers influencing the effectiveness of interventions on health literacy?

METHOD

This PRISMA-compliant systematic review (PROSPERO: CRD420251165432), part of iNTERVENE (EU4Health, GA101219203), searched seven bibliographic databases (2006–2025) and manually screened reference lists for controlled trials and single arm studies of Health Literacy interventions in adults across the cancer continuum. Search strategies combined cancer-related, Health Literacy and intervention-related terms, adapted to each database's indexing system and syntax. No language restrictions were applied during the initial search.

Two independent reviewers screened titles and abstracts using Covidence. AI-assisted full-text data extraction and risk-of-bias assessment (RoB-2) followed a hybrid workflow with systematic human verification of every extracted field. Interventions were classified using the WHO International Classification of Health Interventions (ICHI).

Random-effects meta-analysis was planned where sufficient clinical and methodological homogeneity permitted; otherwise, findings were synthesized narratively. Certainty of evidence is being assessed using GRADE across Health Literacy, knowledge, self-efficacy and behavioral outcomes.



RESULTS AND DISCUSSION

33.7% (95% CI 24–44) of studies identified digital platforms as leading enablers, followed by **32.6% (95% CI 23–42)** for content personalization/tailoring and **26.1% (95% CI 18–36)** for cultural/linguistic adaptation.

Among barriers, **16.3% (95% CI 10–25)** reported anxiety/psychological distress, while **14.1% (95% CI 8–23)** identified low Health Literacy/education and **14.1% (95% CI 8–23)** digital divide/technology barriers.

A "digital paradox" emerged: **25.8% (95% CI 17–35)** of studies identified digital platforms as enablers while also reporting the digital divide as a barrier. Knowledge gains often failed to translate into sustained behavior change, while barriers clustered into mutually reinforcing "vulnerability constellations" (e.g., low Health Literacy, low income, older age, mistrust in healthcare professionals).

Trust in healthcare profesionals and multicomponent, culturally tailored, navigator-supported interventions were consistently associated with greater benefit.

Improving cancer Health Literacy requires more than delivering information. Digital tools are most useful when they complement, rather than replace, human support and non-digital options. Because barriers cluster, interventions should address them jointly and be tailored to the people they serve, with trust-building at their core. Future studies should measure sustained behavior change over longer follow-up and examine digital equity explicitly.

POINTS FOR DISCUSSION

Could AI be used to elaborate digital Health Literacy tools tailored to the specific needs and requirements of different segments of populations, especially vulnerable ones, such as the elderly or lower-educated populations?
Do Health Literacy enablers and barriers found in the scientific literature match the ones that professionals find in their practice?
How can emotional distress be systematically addressed within Health Literacy interventions without over-medicalising routine cancer communication?

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