Interventions to Counter Health Misinformation Among Older People: Protocol for a Scoping Review

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Abstract

Background: In contemporary society, misinformation and disinformation have emerged as significant challenges, impacting various aspects of public health and societal cohesion. Some authors argue that older adults are particularly vulnerable to the effects of misinformation due to potential digital health literacy challenges. A previous review identified pedagogical approaches most commonly adopted in interventions aiming to improve digital literacy of older adults but did not specifically address digital health literacy.

Objective: This scoping review protocol aims to explore digital health literacy interventions targeting health misinformation and designed specifically for older adults.

Methods: Following the methodology outlined by Arksey and O'Malley, this protocol delineates a systematic approach encompassing five stages: identification of research questions, identification of relevant studies, selection of studies, data charting, and collation of findings. Our scoping review will include peer-reviewed literature on interventions targeting misinformation for older adults. Research will be conducted on the MEDLINE (OVID), Embase (Elsevier), PsycINFO (OVID), CINAHL, and Web of Science databases. Gray literature will also be surveyed by carrying a Google search to identify interventions and tools employed by public or private organizations, institutes, groups or agencies. The databases and grey literature will be searched to identify relevant publications. 2 members of our team will independently select publications to include in the review using the review software Covidence (Veritas Health Innovation). Publications included will specifically address our research questions, be peer-reviewed, evidence-based, and published from January 1, 2005, in full-text English or French version. Data will be extracted from the included publications to mainly chart, the intervention's objectives, types, target age groups, effectiveness and risks reported. A thematic analysis will be conducted to categorize the study findings.

Results: The research questions were identified in January 2024. The databases and gray literature search strategies were developed in February 2024.

Conclusions: This protocol will enable us to contribute to the advancement of knowledge in combating health misinformation among older adults. The results will also be utilized for the development of interventions targeting misinformation among older adults.

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Original Manuscript

Protocol

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Keywords: Misinformation; disinformation; older adults; intervention; health literacy.

Introduction

Background

Misinformation and disinformation in health are significant issues because they undermine trust in public health authorities, scientists, and governments [1-4]. Health misinformation encompasses information that deviates from the established scientific consensus about a phenomenon [5]. Conversely, disinformation involves the intentional spread of inaccurate information with the aim of misleading or causing harm, while misinformation, although still incorrect, is shared without malicious intent [6]. In this protocol, the term "misinformation" will be used with regard to whether it is intended to deceive or not as assessing intent can be challenging.

Health misinformation poses a threat to health and wellness, but also to democracies and social cohesion. Indeed, it can undermine trust in public health authorities, scientists and governments, foster polarization, and fuel feelings of anxiety, fear and depression [7,8]. Additionally, through its strong emotional appeal, it captures attention and distracts from pertinent information [9]. Health misinformation can also lead to misconceptions that may prompt potentially harmful actions [2,10]. Although its scope was highlighted by the recent COVID-19 pandemic, health misinformation is not a new phenomenon. Its negative consequences have previously been described for various public health topics such as vaccination, dietary regimes and disorders, drugs, new tobacco products, treatments for chronic diseases and medication use [2,10-12], as well as in relation to climate change [1].

Whenever unreliable information is mentioned, the social and digital media are often called into question. Social media such as Facebook, X, Instagram, Reddit or YouTube promote the dissemination of false information and fake news [13]. As the internet and social media become increasingly popular for finding health-related information [14], it is necessary to examine how people assess or evaluate the quality of information present on these platforms.

Older people (over 60 years old) are often identified as more vulnerable to misinformation than other demographic groups due to their potential lack of necessary skills to retrieve and evaluate online information [15-17]. The concept of digital health literacy (e-health literacy) is frequently mobilized in these studies. They encompass the ability to search, find, understand, and evaluate health information from electronic sources, and to apply the acquired knowledge to address or resolve a health issue [18].

To address this issue, various interventions have been developed to enhance digital health literacy among older adults. Most interventions target the use of social media, online services, software, applications and search engines and focus on older adults' abilities to understand and evaluate online information [19]. A systematic review [19] identified the pedagogical approaches most commonly adopted in these interventions. The first type of approaches are formal pedagogies focused on teaching through fixed-duration courses with predetermined content and objectives. These pedagogical designs often included peer learning support through collaborative tasks. The other type is pedagogies centered on the individual and their specific needs, which means they are based on the learning objectives of the participants, their experience, capabilities, or existing habits of using devices and technologies. Some studies identified in the systematic review observed an improvement in the abilities of their participants to use the Internet, as well as an enhancement in self-confidence and quality of life following the intervention, while other studies did not measure any changes. While these interventions aimed to enhance literacy, they were not designed to specifically address digital health literacy as well as misinformation. This section can include background information such as theories, prior work, and hypotheses.

Review Objectives

The objective of this scoping review is to describe digital health literacy interventions and tools that have been implemented to counter health misinformation and that are specifically targeting older adults, thereby providing a more nuanced exploration of this critical area.

Methods

Scoping Review Methodology

A scoping review is particularly valuable to map the body of literature because it allows for an expansive exploration of the existing literature [20]. By systematically mapping the literature, scoping reviews provide a comprehensive overview of the available evidence, including diverse sources such as academic papers and gray literature [20]. This inclusive methodology will enable researchers to identify gaps, patterns, and key concepts within the literature landscape related to digital health interventions developed to counter health misinformation.

Protocol design

This scoping review is based on the methodological design constructed by Arksey and O'Malley (2005), and the enhanced version by Levac et al. (2010). This design includes five stages.

Stage 1: Identification of the Research Question(s).

The research question guiding our scoping review is: what digital health literacy interventions, directed specifically towards older adults, have been deployed to address or counter health misinformation? By ‘’interventions’’, we are referring to various actions such as workshops, experiments, the creation of toolkits, etc.

Stage 2: Identification of Relevant Studies.

With the collaboration of a specialized librarian (FB), we selected five databases relevant to our research question: MEDLINE (OVID), Embase (Elsevier), PsycINFO (OVID), CINAHL and Web of Science. We identified five concepts to help us find relevant studies: older adults, digital health literacy, interventions, misinformation and health.

To make sure to target articles that align with the scope of our search criteria, we added the concept of "health" for PsycINFO and Web of Science as PsycINFO is dedicated to psychology, and Web of Science encompasses multidisciplinary content. Including the term "health" in these searches helps to filter and focus on articles that are relevant to our specific area of interest in health research. We identified free-text keywords through the databases for each of the five concepts (Table 1) targeted by our research question. Subsequently, we searched for corresponding controlled vocabulary employed by the MEDLINE, Embase, CINAHL and PsycINFO databases, using their respective search tools (Table 2). These two steps enabled us to establish preliminary search strategies for each database (Multimedia Appendix 1).

Table 1. Concept associated free-text keywords identified to search in databases.

Concept	Free-text keywords
Older adult	
	Older adult*, older people, old people, old person*, senior*, elder*, aged, geriatric*
Digital health literacy	

	Health literacy, medical literacy, health information literacy, e-health literacy, digital health literacy *, technolog*, computer*, ICT, information and communications technolog*, digital illiteracy
Interventions	
	Interventions*, workshop*, training program*, course*, pedagogy, instruction*, skill*, learning, teaching, exposure*, tool*, resource*, app, apps, application*, device*, approach*, experiment*, experimental research*, prebunking, pre-emptive, debunking, reactive of fact-checking, inoculation, immunizing
Misinformation	
	Misinform*, disinform*, dis inform*, mis inform*, malinfor*, mal infor*, infodem*, infobesit*, rumor*, rumour*, hoax*, fallac*, conspirac*, myth, myths, gossip*, skeptic*, sceptic*, infoxication, veracity, polariz*, polaris*, controvers*, denial*, dessent*, contest*, deny, denier*, alarmism, contrarianism, reinformation, false belief*, falsehood*, trolls, post-truth, misconception, deception, ((inaccurate, false, fake, poor quality, low quality, misleading, distorted) AND (information*, news, communication*))
Health	
	Well-being, health, medical, public health, treatment*

* = various terminations are included

Table 2. Concept associated controlled vocabulary search terms identified to search in databases.

Concept	Databases' controlled vocabulary search terms			
	MEDLINE	Embase	PsycINFO	CINAHL
Older adult				
	Aged, 80 and over	Aged, very elderly	Older adulthood, geriatric patients, aging	Aged, 80 and over
Digital health literacy				
	Health education, health literacy, internet, digital technology, computers, computer literacy	Health literacy, internet literacy, ehealth literacy, computer literacy, social media, information technology, communication technology, digital	Digital literacy, health literacy, health promotion, technology, health information, health knowledge, health	Health literacy, computer literacy, social media, digital technology, digital health, health information, health education

		technology, computer, technology, health education	education, digital information, digital health resources, internet, computers, internet usage, computer usage, information and communication technology	
Interventions				
	Computer user training, problem-based learning, simulation training, cognitive training, internet-based intervention, education, mentoring, teaching, learning, media exposure, software, mobile applications, immunization	Intervention study, web-based intervention, workshop, simulation training, learning, experiential learning, skill, mobile application, devices, human experiment, experimentation, immunization	Group intervention, intervention, training, ability, adult learning, learning, cooperative learning, teaching, exposure, computer applications, mobiles applications, experimental methods, prevention, immunization	Seminars and workshops, community programs, peer assistance programs, skill acquisition, learning, teaching, media exposure, information resources, mobile applications, experimental studies, quasi-experimental studies, immunization, immunization programs
Misinformation				
	Deception, disinformation, infodemic, denial	Misinformation, disinformation, propaganda, information overload, infodemic, conspiracy theory, denial, deception, public opinion, information dissemination	Misinformation, deception, information dissemination, conspiracy beliefs, conspiracy theories, gossip, skepticism, denial, false beliefs	Misinformation, disinformation, information avoidance, information explosion, medical mistrust, denial (psychology), propaganda, deception, scientific misconduct
Health				

			Well being, health, health attitudes, health behavior, public health, public health attitudes	

In a next phase, we will carry out a gray literature overview (reports, theses, working papers, blogs, research data) to identify interventions and tools employed by public or private organizations, institutes, groups or agencies that may not appear in scientific literature, and that are related to our research concepts. Free-text keywords related to our concepts identified for the bibliographic database search strategies (Table 1) will be used to search through Google. The first 100 Google search results will be screened for relevant publications. Gray literature searches will be documented in a spreadsheet, which will table the following information for each search: date of search, terms or expressions used in search, number of results found, number of results retained, and comments.

The searching through the databases and the gray literature will be carried by a research professional (VT).

Stage 3: Selection of Relevant and Reliable Studies.

Publications identified in stage 2 will be exported into the bibliographic management software EndNote and the Covidence platform (Veritas Health Innovation). Using Covidence, we will remove duplicates and select the publications relevant to our research based on our inclusion and exclusion criteria (Table 3) and the abstracts of the publications, following Levac et al's [20] methodological design. Two members of the research team, the principal investigator (MV) and a research professional (VT), will independently conduct this activity. Team discussions will be held to address articles that present challenges for inclusion or exclusion. We will refine our research strategies if necessary.

Table 3. Criteria for including or excluding publications in the review

Inclusion Criteria	Exclusion Criteria
Covers interventions or tools to counter health misinformation among older people Provides author's name and publication date Published after January 1, 2005 Available in full text version Available in English or French Consists of an original article, systematic literature review, meta-analysis, scoping literature review,	Covers interventions or tools to counter other type of misinformation (like political) among older people or other group of population Covers interventions or tools to counter health misinformation among other group than older people Offers ideas for interventions or tools (that have not been carried out) Does not provide publication date or author's name Not available in full text version

textbook, book, thesis or report	Only published in another language than English or French Consists of an opinion piece, media article, written or video commentary, editorial, letter to the editor, dissertation or conference proceeding

Publications covering interventions or tools to counter other types of misinformation (such as political misinformation within the context of elections) will be excluded, as our focus is solely on health misinformation. We will also exclude interventions dedicated to populations other than older adults. Publications suggesting ideas of interventions or tools (rather than describing interventions that have been implemented or tested) to counter health misinformation will be excluded. We chose the start date of 2005, as it marks the beginning of increase internet usage among older adults and interest in research literature regarding media literacy among this group of population [19,21].

Stage 4. Charting the Data From the Included Studies

To document the relevant information related to our research question, a data extraction form (box 1) will be completed for each included publication. We will ensure that the extraction form is reviewed and discussed by members of the research team before its utilization to ensure a common understanding.

Box 1. Preliminary data extraction form
Title of publication: Type of publication: Author’s name: Year of publication: Objective of the intervention: Type of intervention: Target age groups: Effectiveness of the intervention: Risks of the intervention: Research limits: Other:

Stage 5. Collating, Summarizing, and Reporting the Findings

This scoping review will provide an overview on a broad range of interventions and tools that have been implemented to counter health misinformation and that are specifically targeting older adults. To collate those result, we will utilize qualitative method to identify key themes relevant to our research question and generate meaningful insights. This scoping review will allow us to compare the different strategies existing, their advantages and disadvantages, their effectiveness and their effects on older adults. Subsequently, the results will be summarized in a clear and concise manner, ensuring that important findings are accurately represented.

Results

The identification of the research questions, was achieved by the research team in January 2024. The literature search strategies for the bibliographic databases were iteratively developed in February 2024 by FB, VR, VT and MV. The gray literature search strategy was developed in July 2024 by VR and MV. The search through the bibliographic databases and the gray literature is planned for May to July 2025. The final selection of publications, the charting, collating, and summarizing of data, as well as the reporting of findings is scheduled for August to September 2025. The findings of this scoping review will be disseminated through publication in an open-access journal and presentations. These are only examples of possible headings. Please feel free to use different headings to best describe your results.

Discussion

Expected Outcomes

Our result will enhance a comprehensive overview of the literature and contribute to advancing understanding in the field of misinformation. Results will be valuable for guiding communication professionals dedicated to combating misinformation and effectively tailoring their message to the targeted population. Additionally, this scoping review marks a preliminary step in a project aimed at collaboratively developing interventions or tools with older adults to combat misinformation. The findings of this scoping review will serve as a foundational element in this endeavor.

Limitations

This protocol for a scoping review has a few limitations. Language restrictions to English and French may result in the exclusion of relevant studies published in other languages. Since this scoping review aims to map the overall landscape of research on digital health literacy interventions and tools designed for older adults to counter health misinformation, approaches and definitions of misinformation used by the different included publications may vary substantially. This could make it challenging to extract data, collate, summarize, and collectively report the findings gathered from the different publications. Following delineated data extraction and analysis processes will facilitate the synthesis of findings.

Conclusions

This scoping review protocol will outline a comprehensive approach to investigate interventions aimed at addressing health misinformation among older adults. By recognizing the pervasive impact of misinformation on public health and social dynamics, this scoping review ensures a broad exploration of diverse literature sources, including gray literature, to capture a comprehensive understanding of existing interventions. This scoping review aimed to contribute to the advancement of knowledge in the field of misinformation, with implications for communication professionals and policymakers tasked with addressing this multifaceted challenge. Moreover, the protocol sets the stage for future collaborative efforts to develop targeted interventions tailored to the needs of older adults in combating misinformation. Thus, this scoping review not only serves as a critical exploration of existing literature but also as a foundational step towards meaningful intervention development and implementation.

Conflicts of Interest

None declared.

Multimedia Appendix 1

Databases search strategies.

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Supplementary Files

Multimedia Appendixes

Preliminary databases search strategies.
URL: http://asset.jmir.pub/assets/bb524d15affce34968728faf61aa68ae.docx