PEER REVIEW HISTORY

ARTICLE DETAILS

Title (Provisional)

Readability of online and offline written health information: a protocol of a systematic review of systematic reviews

Authors

Okuhara, Tsuyoshi; Furukawa, Emi; Okada, Hiroko; Kiuchi, Takahiro

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VERSION 1 - REVIEW

Reviewer	**1**
Name	**Worrall, Amy**
Affiliation	**Royal College of Surgeons in Ireland, Infectious Diseases Beaumont Hospital**
Date	**24-Oct-2023**
COI	**None**

This is a study design plan for a systematic review of all published systematic reviews that assess readability of written health information. It is topical and reflects a growing body of evidence that health literacy is an issue for global populations, and that health care professionals need to consider accessibility and readability of issued written health information prior to publication. This will contribute positively to this field. The greatest impact will be if the authors elucidate some tools or methods by which they can provide recommendations to readers, as no doubt their study will identify what the literature often finds which is that the readability of health information is poor. I would accept this study design plan and look forward to the results.

Reviewer	**2**
Name	**Grewal, Udhayvir Singh**
Affiliation	**University of Iowa Hospitals and Clinics**
Date	**15-Feb-2024**
COI	**None**

I appreciate the opportunity to review this manuscript. I'm unsure of what the authors would like to accomplish through this systematic review.

I would encourage them to:

- Highlight what knowledge gaps there are in existing research regarding readability analysis.

- How does the systematic review plan to fill these gaps?

- Why did they choose written health information and not online health information? The latter arguably appears to be more relevant in this age.

- Does the review plan to capture variations in use and reporting of readability scales and how and why that is important?

- Could the authors provide a neat study schema?

Reviewer	**3**
Name	**Daraz, Lubna**
Affiliation	**University of Montreal, School of Library and Information Science**
Date	**05-May-2024**
COI	**No conflict of interests.**

Methods

The selection of databases is incomplete; it should include databases like EMBASE, Cochrane Reviews, etc., to ensure comprehensive coverage.

Screening 90% of the included studies with a single reviewer raises concerns about bias and accuracy. It's recommended to have at least two independent reviewers screen all included studies from Title to Full-text screening.

Citation Issues

There are issues with citing direct quotes, such as the definition of Health Literacy on Page 4, and the use of Organizational Health Literacy.

Data Synthesis

More details are needed about the 'evidence gap map,' including what the table will include. Providing a sample would be beneficial.

The 'analytical framework' requires further explanation as it's currently unclear.

Limitations

The limitations of the review are not well described, except for language barriers. More clarity on other limitations is needed.

VERSION 1 - AUTHOR RESPONSE

Reviewer: 1

Dr. Amy Worrall, Royal College of Surgeons in Ireland

Comments to the Author:

This is a study design plan for a systematic review of all published systematic reviews that assess readability of written health information. It is topical and reflects a growing body of evidence that health literacy is an issue for global populations, and that health care professionals need to consider accessibility and readability of issued written health information prior to publication. This will contribute positively to this field. The greatest impact will be if the authors elucidate some tools or methods by which they can provide recommendations to readers, as no doubt their study will identify what the literature often finds which is that the readability of health information is poor. I would accept this study design plan and look forward to the results.

➔ Thank you very much for spending your valuable time and effort on reviewing our manuscripts. We promise that we will conduct our study to provide significant implications for the future researches and practices in this area.

Reviewer: 2

Dr. Udhayvir Singh Grewal, University of Iowa Hospitals and Clinics

Comments to the Author:

I appreciate the opportunity to review this manuscript. I'm unsure of what the authors would like to accomplish through this systematic review.

I would encourage them to:

- Highlight what knowledge gaps there are in existing research regarding readability analysis.
- How does the systematic review plan to fill these gaps?

➔ Thank you very much for your helpful advice on specifying our study aim. We have revised as follows.

[The 4th paragraph of the Introduction]

Several systematic reviews have reported the readability of health information in each area. However, there is no cross-area overview of readability studies. Due to the lack of cross-area overviews, it is not known in which clinical areas, target populations (e.g., adult patients, pediatric patients, and general public) and media types (e.g., web pages, printed materials) readability has been comprehensively investigated and what levels of readability have been identified. A review of systematic reviews of readability studies will show in which areas

readability studies have already been overviewed (and need to be overviewed) and in which areas readability should be improved. Thus, synthesising evidence regarding readability from existing systematic reviews will contribute to improving organizational health literacy in terms of health communication practices, including the provision of health information.

- Why did they choose written health information and not online health information? The latter arguably appears to be more relevant in this age.

➔ Our meaning of "written health information" includes both online and offline information. We have revised as follows.

[Title]

Readability of online and offline written health information: a protocol of a systematic review of systematic reviews

[The 4th paragraph of the Introduction]

Several systematic reviews have reported the readability of online or offline health information in each area…

…Thus, synthesising evidence regarding readability from existing systematic reviews will contribute to improving organizational health literacy in terms of health communication practices, including the provision of online and offline health information.

[Inclusion criteria in the Methods]

► Type of media: Any online or offline text-based media that was evaluated for readability will be eligible (e.g. , web pages, printed materials).

- Does the review plan to capture variations in use and reporting of readability scales and how and why that is important?

➔ We will capture variations in use and reporting of readability scales as we included it in the "Data extraction" in the Methods (► Readability assessment methods: names of scales (e.g. Flesch Reading Ease Scale, SMOG Readability Formula) or other methods that assessed readability).

This is important because different readability scales have different ways of calculating and reporting scores. For example, some scales present scores numerically, another presents them at grade level, and another presents them on a level from easy to difficult. Such variations in scales undermine the comparability of research findings. Therefore, identifying variations in readability scales in this systematic review will provide important implications for future research.

- Could the authors provide a neat study schema?

➔ We have provided a study schema as Figure 1. Please see the Figure 1.

[Study design and registration]

…Figure 1 shows the study schema….

Reviewer: 3
Dr. Lubna Daraz, University of Montreal
Comments to the Author:
Methods
The selection of databases is incomplete; it should include databases like EMBASE, Cochrane Reviews, etc., to ensure comprehensive coverage.

➔ Thank you very much for your helpful advice. We have added Pubmed, Scopus and Cochrane Database of Systematic Reviews to the databases. We chose Scopus rather than EMBASE because EMBASE is a biomedical and pharmacology bibliographic database and do not correspond to our study aim.

[Literature search]

The following databases will be searched: Pubmed, MEDLINE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, the Web of Science Core Collection, Scopus, and Cochrane Database of Systematic Reviews. Google Scholar will be also searched for the triangulations.

Screening 90% of the included studies with a single reviewer raises concerns about bias and accuracy. It's recommended to have at least two independent reviewers screen all included studies from Title to Full-text screening.

➔ We have revised as follows.

[Screening of studies]

…First, titles, and abstracts will be screened to identify eligible studies using the selection criteria. This first screening will be independently conducted by both the first (TO) and second authors (EF). Disagreements will be discussed until a consensus is reached. When a consensus cannot be reached, the third author (HO) will be involved in resolving the disagreement.

Second, the full text of the remaining literature will be screened independently by both the first (TO) and second authors (EF). Any disagreements will be resolved through discussion and the third author (HO) will be involved, if necessary. The screening process will be displayed in a PRISMA flow diagram.

Citation Issues
There are issues with citing direct quotes, such as the definition of Health Literacy on Page 4, and the use of Organizational Health Literacy.

➔ We have revised and added quotation marks to indicate direct quotes as follows.

[Introduction]

Healthy People 2030 defines personal health literacy as "the degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others."[3] Additionally, *Healthy People 2030* defines organizational health literacy as "the degree to which organisations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others."[3]

Readability is defined as "the determination by systemic formulae of the reading comprehension level that a person must have to understand written materials."[10]

Data Synthesis
More details are needed about the ‘evidence gap map,’ including what the table will include. Providing a sample would be beneficial.

➔ We have revised and added a sample as Table 1 as follows.

[Data synthesis]

…To answer our research questions, we will summarize and synthesise the findings of the included literatures using an evidence gap map in a concise table. The evidence gap map will show, for example, the presence and absence of systematic reviews and the level of readability per area. The evidence gap map will provide an overview of which gaps and issues future research and practice should address. Table 1 shows a sample of an evidence gap map.

Table1. A sample of an evidence gap map

Clinical areas		**Targeted audience/Readability level**
Communicable diseases	COVID-19	public/easy[x], public/difficult[x], patients/difficult[x]
	Ebola	None
	Hepatitis B/C	public/difficult[x], patients/difficult[x]
	HIV / AIDS	public/easy[x], patients/difficult[x]
	……	……
Noncommunicable diseases	Cardiovascular diseases	public/easy[x], public/difficult[x], patients/difficult[x]
	Cancers	public/easy[x], public/difficult[x], patients/easy[x], caregivers/difficult[x]
	Chronic respiratory diseases	None
	Diabetes	public/difficult[x], public/difficult[x], patients/difficult[x]
	……	……

x: A number of reference will be inserted.

The ‘analytical framework’ requires further explanation as it's currently unclear.

➔ We meant by the ‘analytical framework’ that our analysis and discussion will be guided by each research question. Therefore, we revised as follows.

[Data synthesis]

…We will discuss the key findings and implications for future research and practice as we answer each of the research questions in a descriptive narrative review. Namely, we will organize what evidence exists in what areas and propose what gaps need to be filled in the research and practice of the readability of written health information.

Limitations
The limitations of the review are not well described, except for language barriers. More clarity on other limitations is needed.

➔ We have added "Limitations" at the end of the manuscript.

Limitations

Our study will have several limitations. First, although we will use a comprehensive search strategy and screen literatures by two independent reviewers, we cannot entirely rule out the possibility of relevant studies being missed. Second, our study will include literatures written in English, which may exclude relevant studies published in languages other than English. Third, our study will include systematic reviews of quantitative analyses of readability but qualitative studies will be excluded. Qualitative studies, such as interviewing participants about the ease of reading and understanding health information, are also important for improving health information. Therefore, future studies will be expected to review qualitative studies on readability of health information. Finally, as our study includes systematic reviews, we will be unable to identify the current state of readability studies in areas where no systematic review has been conducted. However, our study will be an important first step towards a cross-area overview of readability studies of health information.

VERSION 2 - REVIEW

Reviewer	**3**
Name	**Daraz, Lubna**
Affiliation	**University of Montreal, School of Library and Information Science**
Date	**04-Jul-2024**
COI	**None**

Dear Authors,

Thank you for making the revisions. I still think the protocol is weak. Your revision was not good enough, for example, you did not respond properly to the questions of the 2nd reviewer.

You rightly identified several weakness of the review. Therefore, the systematic review you are proposing will have significant gaps.

Best of luck.

Daraz