## **Landing Page**

### **Intended use**

This Generalized Systematic Review Registration Form is intended as a general-purpose registration form. The form is designed to be applicable to reviews across disciplines (i.e., psychology, economics, law, physics, or any other field) and across review types (i.e., scoping review, review of qualitative studies, meta-analysis, or any other type of review). That means that the reviewed records may include research reports as well as archive documents, case law, books, poems, etc. This form, therefore, is a fall-back for more specialized forms and can be used if no specialized form or registration platform is available. Below are some currently available specialized registration tools you may consider:

### **Specialized registration platforms**

PROSPERO is a free database of health-related systematic review protocols for health-related outcomes.

### **Specialized guidance**

Consider using the following guidelines when completing your registration:

The Non-Interventional, Reproducible, and Open (NIRO) Systematic Reviews guideline, which includes fields specific to non-interventional reviews: https://osf.io/f3brw/

Methodological Expectations of Cochrane Intervention Reviews (MECIR): CID: 20.500.12592/vxj0sb

Methodological Expectations of Campbell Collaboration Intervention Reviews (MECCIR): https://www.campbellcollaboration.org/meccir.html

Preferred Reporting Items for Systematic reviews and Meta-Analysis Protocols (PRISMA-P): https://doi.org/gcpzzq

Preferred Reporting Items for Systematic reviews and Meta-Analyses literature Search extension (PRISMA-S): https://doi.org/gh2z2k

Peer Review of Electronic Search Strategies (PRESS): https://doi.org/10.1016/j.jclinepi.2016.01.021

### **Relation to reporting guidelines**

Many disciplines have developed reporting guidelines for specific types of reviews (e.g., ROSES: the RepOrting standards for Systematic Evidence Syntheses in environmental research, and PRISMA: the Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Whereas reporting guidelines were optimized for application after conclusion of a systematic review, this form was optimized to publicly register (‘freeze’) the research plans (or to record adjustments to research plans) before (or during) a systematic review. These different end goals resulted in different choices regarding included items. For example, this form includes a number of questions about planning that are important for a registration but typically are not included in reporting guidelines.

Nonetheless, these reporting guidelines do partly capture the same information as registration forms. For each item in this form, we specified the corresponding PRISMA item (PRISMA items P1-P22 and P25-27 were applicable; P16-P23 cover reporting of results and P24 refers to registration forms like this). Researchers planning to use a specific reporting standard to report the results of their review, should enter the information required by that reporting standard in the corresponding (overarching) fields of this form.

### **Instructions for effectively using the form**

To align with general use and open science best practice, all items are mandatory. Completion makes your registration more useful for readers, funders, and others, so check carefully whether you did not accidently omit an item. If an item asks about a procedure you do not plan to use or is not applicable, indicate that in the corresponding field (including, ideally, the underlying reason).

You should be transparent about any deviations from the preregistration and provide the rationale for these deviations in your final review. If you already foresee some deviations when filling out the form (e.g., you anticipate that you will not have enough studies in a moderator group), provide a contingency plan for these deviations in the relevant parts of the registration.

### **Planned improvements / extensions**

The aim of this registration form is to be optimally inclusive (i.e., to be usable for registration of any systematic review, regardless of scientific discipline or review type). Because this aim precludes 1:1 correspondence with the existing reporting guidelines, this form is also intended as a basis to develop more specialized forms that do correspond closely to more specific reporting guidelines. Such specialized forms can include, for example, additional fields, added comments, and worked examples. Please contact the Center of Open Science at contact@cos.io if you would like to propose such a specialized version. Please do reach out if you want to be involved in any of these projects.

### **Citation**

Van den Akker, O. R., Peters, G. Y., Bakker, C., Carlsson, R., Coles, N. A., Corker, K. S., Feldman, G., , Moreau, D., Nordström, T., Pickering, J. S., Riegelman, A., Topor, M., Veggel, N., Yeung, S., Mellor, D., & Pfeiffer, N. Generalized Systematic Review Registration Form. MetaArXiv.. https://doi.org/g5fj.

## **Review Methods**

In this section, you register the general type, background and goals of your review.

**Type of review**

Scoping Review : PRIMSA - ScR

**Review stages**

Search, Screening, Extraction, Synthesis, and Reporting

**Current review stage**

Screening

**Start date**

11/29/2023

**End date**

1/1/2024

**Background**

Current evidence indicates that disadvantaged populations including those experiencing poverty, the elderly, residents in rural areas, and racial/ethnic minorities did not have adequate access to the Internet and technology before or during the pandemic (Anjana et al., 2020; Choi et al., 2022; Cortelyou-Ward et al., 2020; Dang et al., 2022; Dow-Fleisner et al., 2022; Gordon & Hornbrook, 2016; Quinton et al., 2021; Ramsetty & Adams, 2020; Reddick et al., 2020; Smith et al., 2015). For those populations burdened with chronic diseases, such as Type 2 diabetes (T2D), inadequate health care access can have a negative impact on health outcomes. The aim of this review is to identify the effects of Internet access on health outcomes for adults with T2D in the United States.

No other reviews have been identified on this topic.

**Primary research question(s)**

What is known in peer-reviewed scientific articles, written in the English language, published in the last 10 years about health disparities in adults with type 2 diabetes who have insufficient access or digital literacy of the Internet and related technologies?

**Secondary research question(s)**

What other social determinants of health are impactful on adults with Type 2 diabetes when considering Internet access?

**Expectations / hypotheses**

I expect that there will be limited studies looking at Internet access as a independent variable relating to health outcome of people with diabetes.

**Dependent variable(s) / outcome(s) / main variables**

Health outcomes and/or prevalence of adults with Type 2 diabetes

**Independent variable(s) / intervention(s) / treatment(s)**

Internet access, digital divide, technology access, digital literacy

**Additional variable(s) / covariate(s)**

Social determinants of health such as financial status, housing, food security, geographic location, and comorbidities

**Software**

Excel, Zotero, Word. Windows 11.

**Funding**

No funding for this project.

**Conflicts of interest**

No conflicts of interest to disclose

**Overlapping authorships**

There are no other authors on this project.

## **Search Strategy**

In this section, you register your search strategy: the procedures you designed to obtain all (potentially) relevant sources to review (e.g., articles, books, preprints, reports, case law, policy papers, archived documents).

**Databases**

CINAHL, PubMed, Scopus

**Interfaces**

EBSCO

**Grey literature**

I do not intend on including grey literature

**Inclusion and exclusion criteria**

Inclusion criteria included peer-reviewed, English language studies published in the last 10 years that include dependent variables of diabetes health outcomes or type 2 diabetes prevalence with independent variables internet access or access to digital technology. Exclusion criteria included digital health application studies, type 1 diabetes only, clinical guidelines, letters to the editor, pharmacological studies, unrelated to diabetes, studies about genetics or biochemistry, theory articles, and reviews

**Query strings**

Database Search Terms Limits Notes Results (n)

PubMed (("deprival"[All Fields] OR "deprivation"[All Fields] OR "deprivations"[All Fields] OR "deprive"[All Fields] OR "deprived"[All Fields] OR "deprives"[All Fields] OR "depriving"[All Fields] OR ("divide"[All Fields] OR "divider"[All Fields] OR "dividers"[All Fields] OR "divides"[All Fields] OR "dividing"[All Fields]) OR "disparity"[All Fields] OR ("underserved"[All Fields] OR "underserviced"[All Fields] OR "underservicing"[All Fields]) OR ("access"[All Fields] OR "accessed"[All Fields] OR "accesses"[All Fields] OR "accessibilities"[All Fields] OR "accessibility"[All Fields] OR "accessible"[All Fields] OR "accessing"[All Fields])) AND ("internet"[MeSH Terms] OR "internet"[All Fields] OR "internet s"[All Fields] OR "internets"[All Fields] OR "web"[All Fields]) AND ("diabetes mellitus"[MeSH Terms] OR "diabetes complications"[MeSH Terms] OR "diabetic ketoacidosis"[MeSH Terms] OR "diabetic neuropathies"[MeSH Terms] OR "diabetic angiopathies"[MeSH Terms] OR "diabetes mellitus, type 2"[MeSH Terms] OR "diabetes mellitus, type 1"[MeSH Terms] OR "diabetic nephropathies"[MeSH Terms] OR "diabetic retinopathy"[MeSH Terms] OR "diabetic cardiomyopathies"[MeSH Terms] OR "diabetes prevalence"[All Fields])) AND ((english[Filter]) AND (alladult[Filter]) AND (2013:2023[pdat])) English Language; Adults 19+ years 194

CINAHL TX ( (deprival OR deprivation OR deprive OR deprived OR deprives OR depriving OR divide OR divider OR dividers OR divides OR dividing OR disparity OR underserved OR underserviced OR underservicing OR access OR accessed OR accesses OR accessibilities OR accessibility OR accessible OR accessing) AND (internet OR web) ) AND TX ( (diabetes mellitus OR diabetes complications OR diabetic ketoacidosis OR diabetic neuropathies OR diabetic angiopathies OR diabetes mellitus, type 2 OR diabetes mellitus, type 1 OR diabetic nephropathies OR diabetic retinopathy OR diabetic cardiomyopathies OR diabetes prevalence) ) English language; Peer Reviewed; Publication date: 2013-01-01 to 2023-11-29 345

Scopus ( deprival OR deprivation OR deprive OR deprived OR deprives OR depriving OR divide OR divider OR dividers OR divides OR dividing OR disparity OR underserved OR underserviced OR underservicing OR access OR accessed OR accesses OR accessibilities OR accessibility OR accessible OR accessing ) AND ( internet OR web ) AND ( diabetes AND mellitus OR diabetes AND complications OR diabetic AND ketoacidosis OR diabetic AND neuropathies OR diabetic AND angiopathies OR diabetes AND mellitus, AND type 2 OR diabetes AND mellitus, AND type 1 OR diabetic AND nephropathies OR diabetic AND retinopathy OR diabetic AND cardiomyopathies OR diabetes AND prevalence ) AND PUBYEAR > 2012 AND PUBYEAR < 2024 AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( SRCTYPE , "j" ) ) English Language; >2012 to < 2024; article document type; journal source type 2 articles were flagged at retracted (Alessi et al., 2022; Padhy et al., 2022)

2,588 (-2)

**Search validation procedure**

I will not employ a search validation procedure.

**Other search strategies**

I would like to use both approaches (ascendacy and descendancy) if the amount of literature is not satisfactory to answering the research question.

**Procedures to contact authors**

I do not plan to contact the authors at this time.

**Results of contacting authors**

I do not plan to contact the authors at this time.

**Search expiration and repetition**

I do not plan on repeating the search

**Search strategy justification**

The search criteria and strategy is quite broad due to the limited articles available for more strict criteria including internet access, diabetes outcomes, and digital divide.

**Miscellaneous search strategy details**

nothing to disclose

## **Screening**

In this section, you register your screening procedure: the procedure you designed to eliminate all irrelevant sources from the results of the search strategy (and retain the relevant sources).

**Screening stages**

The first screening will be the titles followed by abstract screening, then full text. Screening will be done by a human without computer/automated assistance.

Deduplication methods: Excel function to remove duplicates based on title, ISSN, and DOI

**Screened fields / blinding**

The visible columns are:

Publication Year Author Title Abstract Note Manual Tags (assigned by Zotero)

**Used exclusion criteria**

Exclusion: Internet-based treatment study, Type 1 diabetes only, pharmacological studies, education-related, does not include internet, digital divide, or digital literacy

**Screener instructions**

Screener is myself. Screen the articles listed in the csv file for the

*No files selected*

**Screening reliability**

One screener only.

**Screening reconciliation procedure**

One screener only.

**Sampling and sample size**

I plan to use all sources identified.

**Screening procedure justification**

Due to the nature of this dissertation project, I will be doing this review independently. I will utilize all the tools available to ensure rigor and proper procedure for the review.

**Data management and sharing**

Full search strategy terms are shared and CSV for each search results will be shared.

**Miscellaneous screening details**

nothing to disclose

## **Extraction**

In this section, you register your plans for data extraction: the procedures you designed to extract the data you are interested in from the included sources. Examples of such data are text fragments, effect sizes, study design characteristics, year of publication, characteristics of measurement instruments, final verdicts and associated penalties in a legal system, company turnovers, sample sizes, or prevalences.

**Entities to extract**

Variables to be extracted: 1. Population studied 2. Country/Region/State 3. Type of Study 4. IV 5. DV 6. Sample characteristics (n, demographics) 7. Timeframe of study 8. Article metadata 9. Recruitment and Data Collection Source (Online only vs. In-person) 10. Summation of study findings

**Extraction stages**

First stage is full text review which will allow extraction of all variables. If extraction is not successful during full text review, the variable will be listed as not disclosed

**Extractor instructions**

For the screened articles, access or request access for full text review. Located the variables to be extracted and record in thh spreadsheet literature review matrix.

*No files selected*

**Extractor masking**

No masking will be used

**Extraction reliability**

One extractor

**Extraction reconciliation procedure**

One extractor

**Extraction procedure justification**

Due to the nature of this study, one extractor will be used (myself).

**Data management and sharing**

All data will be as csv files with the exception of the full text articles which will be saved as PDFs. The files will be accessible to the single author.

**Miscellaneous extraction details**

nothing to disclose

## **Synthesis and Quality Assessment**

In this section, you register the procedure for the review’s synthesis: the procedure you designed to use the data that was extracted from each source to answer your research question(s). This often includes transforming the raw extracted data, verifying validity, applying predefined inference criteria, interpreting results, and presenting results. Additionally, you register procedures you designed to assess bias in individual sources and the synthesis itself.

**Planned data transformations**

I do not plan any data transformations at this time.

**Missing data**

Missing data will be listed as "not disclosed" when missing from full text. Depending on the area these are applicable, will be reported in the study. I do not plan on contacting authors at this time.

**Data validation**

Retractions are monitored by Zotero after the studies are loaded into the software. Any retraction will be removed from the review.

**Quality assessment**

Quality assessment will not be utilized for this study.

**Synthesis plan**

The results will be thematically summarized.

**Criteria for conclusions / inference criteria**

Thematic saturation will be the criteria for conclusions.

**Synthesist blinding**

will not be using blind procedures for this study.

**Synthesis reliability**

one author is conducting this study.

**Synthesis reconciliation procedure**

not applicable

**Publication bias analyses**

no plan to assess publication bias

**Sensitivity analyses / robustness checks**

no plans for sensitivity analysis

**Synthesis procedure justification**

due to the nature of this study, blinding will not be used by the single author

**Synthesis data management and sharing**

all files will be kept by the one author

**Miscellaneous synthesis details**

nothing to disclose