

Supplemental Online Content

Higashi RT, Thakur B, Repasky EC, et al. Digital health technology use among Spanish speakers in the US: a scoping review. *JAMA Netw Open*. 2025;8(5):e2510386. doi:10.1001/jamanetworkopen.2025.10386

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. PRISMA ScR Checklist

Note: page numbers refer to clean (non-track change) version

| SECTION | ITEM | PRISMA-ScR CHECKLIST ITEM | REPORTED ON PAGE # |
|---|------|--|---------------------------------|
| TITLE | | | |
| Title | 1 | Identify the report as a scoping review. | 1 |
| ABSTRACT | | | |
| Structured summary | 2 | Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives. | 1 |
| INTRODUCTION | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach. | 2 |
| Objectives | 4 | Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives. | 2 |
| METHODS | | | |
| Protocol and registration | 5 | Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number. | N/A |
| Eligibility criteria | 6 | Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale. | 2-3, Figure |
| Information sources* | 7 | Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed. | 2 |
| Search | 8 | Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated. | 2 eTable 2 in Supplement 1 |
| Selection of sources of evidence† | 9 | State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review. | 2-3, Figure |
| Data charting process‡ | 10 | Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators. | 2-3, eFigure in Supplement 1 |
| Data items | 11 | List and define all variables for which data were sought and any assumptions and simplifications made. | 3, eTables 3-4 in Supplement 1 |
| Critical appraisal of individual sources of evidence§ | 12 | If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate). | Not done |

| SECTION | ITEM | PRISMA-ScR CHECKLIST ITEM | REPORTED ON PAGE # |
|---|------|---|----------------------------|
| Synthesis of results | 13 | Describe the methods of handling and summarizing the data that were charted. | 3 |
| RESULTS | | | |
| Selection of sources of evidence | 14 | Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram. | 4, Figure |
| Characteristics of sources of evidence | 15 | For each source of evidence, present characteristics for which data were charted and provide the citations. | Table 3 |
| Critical appraisal within sources of evidence | 16 | If done, present data on critical appraisal of included sources of evidence (see item 12). | Not done |
| Results of individual sources of evidence | 17 | For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives. | 4-10, including Tables 1-3 |
| Synthesis of results | 18 | Summarize and/or present the charting results as they relate to the review questions and objectives. | 7-10 |
| DISCUSSION | | | |
| Summary of evidence | 19 | Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups. | 10 |
| Limitations | 20 | Discuss the limitations of the scoping review process. | 12 |
| Conclusions | 21 | Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps. | 12 |
| FUNDING | | | |
| Funding | 22 | Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review. | 13 |

eTable 2. Literature Search Strategy

| Query Date | Database | Time Period | Search Term |
|------------|----------------|-------------|--|
| 7/21/23 | PubMed | 10 years | ("Patient Portals"[Mesh] OR "Health Records, Personal"[Mesh] OR "Patient access to records"[Mesh] OR "telemedicine"[Mesh] OR "Consumer Health Informatics"[Mesh] OR "Access to Information"[Mesh] OR "patient portal") AND ("Healthcare disparities"[Mesh] OR "Limited English Proficiency"[Mesh] OR "Sociodemographic Factors"[Mesh] OR "Socioeconomic Factors"[Mesh] OR "Health Services Accessibility"[Mesh] OR "Health Status Disparities"[Mesh] OR "Multilingualism"[Mesh] OR "Vulnerable Populations"[Mesh] OR "Diversity, Equity, Inclusion"[Mesh] OR "Hispanic or Latino"[Mesh] OR "Communication Barriers"[Mesh] OR "Health literacy"[Mesh] OR "health equity"[Mesh] OR "Minority Groups"[Mesh] OR "Ethnicity"[Mesh] OR "Population Groups"[Mesh]) AND Spanish |
| 7/21/23 | Scopus | 10 years | TITLE-ABS-KEY((TITLE-ABS-KEY ("Health Records" OR "Patient access to records" OR "telemedicine" OR "Consumer Health Informatics" OR "Access to Information" OR "patient portal")) AND (TITLE-ABS-KEY ("Healthcare disparities" OR "Limited English Proficiency" OR "Sociodemographic Factors" OR "Socioeconomic Factors" OR "Health Services Accessibility" OR "Health Status Disparities" OR "Multilingualism" OR "Vulnerable Populations" OR "Diversity, Equity, Inclusion" OR "Hispanic or Latino" OR "Communication Barriers" OR "Health literacy" OR "health equity" OR "Minority Groups" OR "Ethnicity" OR "Population Groups"))) AND TITLE-ABS-KEY (Spanish)) |
| 7/21/23 | Web of Science | 10 years | TI=((("Health Records" OR "Patient access to records" OR "telemedicine" OR "Consumer Health Informatics" OR "Access to Information" OR "patient portal") AND ("Healthcare disparities" OR "Limited English Proficiency" OR "Sociodemographic Factors" OR "Socioeconomic Factors" OR "Health Services Accessibility" OR "Health Status Disparities" OR "Multilingualism" OR "Vulnerable Populations" OR "Diversity, Equity, Inclusion" OR "Hispanic or Latino" OR "Communication Barriers" OR "Health literacy" OR "health equity" OR "Minority Groups" OR "Ethnicity" OR "Population Groups") AND Spanish) OR AB=((("Health Records" OR "Patient access to records" OR "telemedicine" OR "Consumer Health Informatics" OR "Access to Information" OR "patient portal") AND ("Healthcare disparities" OR "Limited English Proficiency" OR "Sociodemographic Factors" OR "Socioeconomic Factors" OR "Health Services Accessibility" OR "Health Status Disparities" OR "Multilingualism" OR "Vulnerable Populations" OR "Diversity, Equity, Inclusion" OR "Hispanic or Latino" OR "Communication Barriers" OR "Health literacy" OR "health equity" OR "Minority Groups" OR "Ethnicity" OR "Population Groups") AND Spanish)) OR AK=((("Health Records" OR "Patient access to records" OR "telemedicine" OR "Consumer Health Informatics" OR "Access to Information" OR "patient portal") AND ("Healthcare disparities" OR "Limited English Proficiency" OR "Sociodemographic Factors" OR "Socioeconomic Factors" OR "Health Services Accessibility" OR "Health Status Disparities" OR "Multilingualism" OR "Vulnerable Populations" OR "Diversity, Equity, Inclusion" OR "Hispanic or Latino" OR "Communication Barriers" OR "Health literacy" OR "health equity" OR "Minority Groups" OR "Ethnicity" OR "Population Groups") AND Spanish)) |

| | | | |
|---------|----------------|-------------------|---|
| 8/3/23 | Google Scholar | 10 years | Search ("patient portal" and "Spanish"); review first 5 pages of results against final Covidence results; import any non-duplicative results |
| 4/28/24 | PubMed | 7/22/23 – 4/28/24 | ("Patient Portals"[Mesh] OR "Health Records, Personal"[Mesh] OR "Patient access to records"[Mesh] OR "telemedicine"[Mesh] OR "Consumer Health Informatics"[Mesh] OR "Access to Information"[Mesh] OR "patient portal") AND ("Healthcare disparities"[Mesh] OR "Limited English Proficiency"[Mesh] OR "Sociodemographic Factors"[Mesh] OR "Socioeconomic Factors"[Mesh] OR "Health Services Accessibility"[Mesh] OR "Health Status Disparities"[Mesh] OR "Multilingualism"[Mesh] OR "Vulnerable Populations"[Mesh] OR "Diversity, Equity, Inclusion"[Mesh] OR "Hispanic or Latino"[Mesh] OR "Communication Barriers"[Mesh] OR "Health literacy"[Mesh] OR "health equity"[Mesh] OR "Minority Groups"[Mesh] OR "Ethnicity"[Mesh] OR "Population Groups"[Mesh]) AND Spanish |

eFigure. Covidence Extraction Template

PREVIEW

Methods

Study Class

☐ Quantitative

☐ Qualitative

☐ Mixed Methods

Study Design

e.g. RCT, cohort study, interview, focus group, observation, usability, etc.

Study Population (i.e. core patient characteristics, clinical environment, patient type)

Study Setting

Core information such as:

- Urban/suburban/rural

- Region of country (a la Northeast, Midwest, South, West, Pacific)

https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf

Objective

Core questions, interventions, outcomes of the study. Will vary based on the design.

Study Start Date

Please use (MM/DD/YYYY).

i.e. 01/01/1987

Study End Date

Please use (MM/DD/YYYY).

i.e. 01/01/1987

Technology Used

(Choose all that apply)

☐ Patient portal

☐ Telehealth

☐ Text messaging

☐ Wearables

☐ Web-based resources

☐ Other

Results and Conclusions

Total Sample Size

Total Spanish Sample Size

Key Findings

Notes

Definitions:

- “Patient portal” included studies about the portal (e.g., Epic’s MyChart) or other personal health records
- “Telehealth” included synchronous audio-video or audio only communications
- “Text messaging”, “wearables” (e.g. Apple Watch, FitBit), and “other” mobile technologies such as apps, social media, and home health monitoring devices were later grouped under the category mobile health (“mHealth”)
- “Web-based resources” included educational or interventional content intended for use via a browser on a personal computer, rather than on a mobile device
- “Spanish sample” was documented using the article’s native definition, usually based on participant self-identification, and may have included individuals who were “Spanish speaking”, “Spanish preferring”, “monolingual/ speaks only Spanish”, or “speaks Spanish better than English”. We excluded: “English preferring” (if also spoke Spanish), “speaks English better than Spanish”, and “bilingual” persons of any age

eTable 3. Thematic Analysis Codebook Exemplar (Population Characteristics)

| Code | Definition |
|-----------------------------|--|
| <i>Population</i> | |
| age | target or eligible age of study population, if limited |
| gender | target or eligible gender of study population, if limited |
| other | other demographic characteristic defined for study population |
| <i>Setting</i> | |
| health system type | e.g., academic medical center, federally qualified healthcare center |
| clinic type | e.g., pediatrics, emergency department |
| other | e.g., community health fair |
| <i>Eligibility criteria</i> | |
| illness type | e.g., persons at risk for type 2 diabetes, persons with HIV |
| technology | e.g., persons who completed at least 1 telehealth appointment |
| other | e.g., persons who currently smoke |
| Notes | |

eTable 4. Thematic Analysis Codebook Exemplar (Key Findings)

| Code | Definition |
|---------------------------|---|
| barriers | barriers to technology use |
| facilitators, suggestions | facilitators, critiques, and ways to enhance technology |
| impacts, outcomes | outcomes of technology use or intervention, e.g., promoted healthy behavior; feasibility/acceptability intervention studies. e.g., "privacy a concern among Spanish speakers" = impact because it is an outcome |
| experiences, perceptions | positive or negative experiences, preferences, opinions, attitudes, perceptions. If about an outcome, code to impacts. e.g., "Spanish speakers were open to using telehealth for consult services" |
| descriptive | sociodemographic characteristics associated with a technology, e.g., telehealth users were more likely to be English-speaking |