

# Exploring the use of the Fogg Model in Health: A scoping review protocol investigating its role in behavior change interventions

## Protocol for a Scoping Review

Prepared for Registration to Open Science Framework

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### 1.1 Review title and timescale

**1\* Review title:**

Exploring the use of the Fogg Model in Health: A scoping review protocol investigating its role in behavior change interventions

**2\* Anticipated or actual start date:**

May 2024

**3\* Anticipated completion date:**

May 2025

**4\* Stage of review at time of this submission:**

This review has not yet started

**Review stage** (Please check all that apply)

	Started	Completed
Preliminary searches	✓	✓
Piloting of the study selection process	✓	✓
Formal screening of search results against eligibility criteria	✓	<input type="checkbox"/>
Data extraction	<input type="checkbox"/>	<input type="checkbox"/>
Risk of bias (quality) assessment	<input type="checkbox"/>	<input type="checkbox"/>
Data analysis	<input type="checkbox"/>	<input type="checkbox"/>

Provide any other relevant information about the stage of the review here: N/A

### 1.2 Review team details

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N/A

**9\* Organisational affiliation of the review**

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**10\* Review team members and their organisational affiliations**

First name	Last name	Credentials/ Experience	Role	Affiliation
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### 11\* Funding sources/sponsors

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### 12\* Conflicts of interest

The authors have no conflicts to declare.

## 1.3 Review methods

### 13\* Review question(s):

Which studies have applied the Fogg Model in the health domain?

What are the main outcomes of applying the Fogg Model in health-related behavior change?

Which components of the Fogg Model are most frequently utilized in health interventions?

How are the dimensions of Fogg's model operationalized in health interventions?

Which populations have benefited the most from the use of the Fogg Model in health-related behavior change?

What are the limitations and challenges associated with the use of the Fogg Model in the health domain?

Have new applications or adaptations of the Fogg Model been developed specifically to address specific health challenges?

### 14\* Literature Search:

Literature searches will be developed and conducted by an experienced librarian (and peer reviewed by a second librarian) in the following electronic databases: PubMed/MEDLINE, PsycINFO, Cochrane Library, and Epistemonikos. Grey literature will also be searched using the CADTH Grey Matters checklist as a guide. The references of included articles, related reviews will also be scanned for relevant citations.

Where possible, we will consider converting this into a living review using the Cochrane guidance on living reviews. In particular, the search will be re-conducted after the review has been completed (if funding is available) to assess the extent of new literature since the original search and to ensure that the most up-to-date evidence has been collected. If the search returns at least 10% new citations, the review will be updated. If not, the searches will be re-run monthly until the threshold for new citations has been reached, at which point the review will be updated.

### 15 URL to search strategy:

Not applicable

### 16\* Condition or domain being studied:

The condition or domain being studied in this protocol is the application of the Fogg Behavior Model in the health domain, specifically in health-related behavior change interventions. This study aims to explore how the Fogg Model has been applied in various health contexts, evaluating the

outcomes, the most frequently used components, the populations that have benefited, the limitations and challenges, as well as any new applications or adaptations of the model to address specific health challenges.

#### 17\* **Participants/Population:**

The participants or population for this scoping review include individuals involved in health-related behavior change interventions that have applied the Fogg Behavior Model. This encompasses a wide range of demographic groups, including but not limited to:

**General population:** involved in preventative health measures, such as smoking cessation, increased physical activity, and improved dietary habits.

**Patients with chronic conditions:** such as diabetes, hypertension, and obesity, where behavior change is crucial for disease management.

**Specific age groups:** including children, adolescents, adults, and the elderly, who may require tailored approaches to behavior change.

**Healthcare professionals:** who implement or facilitate behavior change interventions using the Fogg Model.

**Vulnerable populations:** including those with low socioeconomic status, limited access to healthcare, or higher health risks, who may particularly benefit from targeted interventions based on the Fogg Model.

The review will include studies from diverse settings and various healthcare settings to provide a comprehensive overview of the application and impact of the Fogg Behavior Model in health-related behavior change.

#### 18\* **Intervention(s)/Exposure(s):**

The interventions or exposures being investigated in this scoping review are health-related behavior change interventions that utilize the Fogg Behavior Model. These interventions are designed to influence and modify health behaviors through the application of the model's principles. The review will consider a broad range of interventions, including but not limited to:

**Digital health interventions:** such as mobile health apps, wearable devices, and online platforms that leverage the Fogg Model to promote health behaviors like increased physical activity, improved diet, or medication adherence.

**In-person interventions:** including counseling sessions, workshops, and group programs where the Fogg Model is applied to support behavior change in areas such as smoking cessation, weight management, or chronic disease management.

**Educational interventions:** targeting behavior change through the dissemination of information and skills training using the Fogg Model principles, aimed at various populations including patients, caregivers, and healthcare professionals.

**Community-based interventions:** initiatives that apply the Fogg Model in community settings to foster health-promoting behaviors, such as community fitness programs, health promotion campaigns, and peer support groups.

**Environmental interventions:** modifications to physical or social environments designed to facilitate health behavior change based on the Fogg Model, such as workplace wellness programs or changes in school environments to promote healthy eating and physical activity.

The review will examine how these interventions operationalize the components of the Fogg Behavior Model (Motivation, Ability, and Prompts) and assess their effectiveness in achieving health-related behavior change outcomes.

#### 19\* **Comparator(s)/Control:**

In this scoping review, the comparators or control groups are defined as follows:

**Standard care or usual practice:** Interventions that do not explicitly use the Fogg Behavior Model

but rather follow conventional methods or standard care practices for health-related behavior change.

**Alternative behavior change models:** Interventions that utilize other established behavior change models, such as the COM-B model, to compare the effectiveness and outcomes against those that use the Fogg Behavior Model.

**No intervention:** Groups that do not receive any specific behavior change intervention, serving as a baseline to assess the impact of the Fogg Model-based interventions.

**Placebo or minimal intervention:** Interventions that provide minimal input or support, serving as a control to understand the additional impact of applying the Fogg Model.

The review will compare the outcomes of health-related behavior change interventions utilizing the Fogg Behavior Model with these comparators to determine the relative effectiveness, strengths, and limitations of using the Fogg Model in various health contexts.

## 20\* **Types of study to be included:**

This scoping review will include a variety of study types to comprehensively explore the use of the Fogg Behavior Model in health-related behavior change interventions. The types of studies to be included are:

**Randomized Controlled Trials (RCTs):** Studies that randomly assign participants to intervention or control groups to evaluate the efficacy of interventions based on the Fogg Model.

**Quasi-experimental studies:** Studies that assess the impact of interventions without random assignment, such as pre-post studies, non-randomized controlled trials, and interrupted time series.

**Observational studies:** Including cohort studies, case-control studies, and cross-sectional studies that investigate associations between the use of the Fogg Model and health behavior outcomes.

**Qualitative studies:** Research that provides in-depth insights into the experiences, perceptions, and implementation processes of interventions based on the Fogg Model, such as interviews, focus groups, and case studies.

**Mixed-methods studies:** Studies that combine both quantitative and qualitative approaches to provide a comprehensive understanding of the application and impact of the Fogg Model in health interventions.

**Systematic reviews and meta-analyses:** Reviews that summarize and analyze the findings from multiple studies on the use of the Fogg Model in health-related behavior change.

**Pilot and feasibility studies:** Early-phase studies that test the feasibility, acceptability, and preliminary effectiveness of interventions based on the Fogg Model.

**Reports and evaluations:** Grey literature, including program evaluations, reports from health organizations, and conference proceedings that provide data on the implementation and outcomes of the Fogg Model in health contexts.

By including a diverse range of study types, this review aims to capture the breadth and depth of evidence on the application and impact of the Fogg Behavior Model in health-related behavior change interventions.

## 21 **Context:**

The context of this scoping review is the field of health and health-related behavior change. It focuses on the application of the Fogg Behavior Model in interventions aimed at modifying behaviors that impact health, such as preventing chronic diseases, managing existing conditions, promoting health and mental well-being, and addressing specific populations. This context provides the framework for examining how the Fogg Model is used and its effectiveness in various health contexts and populations.

## 22\* **Primary outcome(s):**

**Utilization of the Fogg Model in Health Interventions:** Determine how extensively the Fogg Behavior Model is used in health-related behavior change interventions. For example, assessing the frequency and types of applications across different health contexts, like diabetes management apps incorporating Fogg's principles for motivation and prompt delivery.

**Impact on Health Behavior Change:** Evaluate the effectiveness of Fogg Model interventions in promoting desired health behaviors. For instance, studying how a fitness app employing Fogg's prompts and ability factors affects users' exercise frequency and duration.

**Identification of Most Utilized Components:** Identify which elements of the Fogg Model (Motivation, Ability, and Prompts) are most commonly utilized. For example, analyzing whether weight management programs predominantly focus on motivation through goal-setting or on enhancing ability through skill-building exercises.

**Operationalization of Fogg Model Dimensions:** Examine how the dimensions of the Fogg Model are put into practice in health interventions. For instance, investigating how a smoking cessation program implements prompts through push notifications and motivational messages to enhance quitting success rates.

**Benefited Populations:** Determine which groups benefit most from Fogg Model interventions. For example, studying whether elderly individuals with limited mobility benefit more from interventions focusing on ability enhancement for physical activity engagement.

**Limitations and Challenges:** Explore barriers and challenges associated with using the Fogg Model in health interventions. For instance, identifying issues such as user engagement drop-off in apps due to ineffective prompt delivery or lack of sustained motivation.

**Innovations and Adaptations:** Investigate new applications or adaptations of the Fogg Model for specific health challenges. For example, assessing the effectiveness of a modified Fogg Model approach in a weight loss program tailored for pregnant women.

#### 23\* Secondary outcome(s):

N/A

#### 24\* Data extraction (selection and abstraction):

**Selection of Relevant Studies:** Initial screening of studies will be conducted based on predefined inclusion and exclusion criteria. Relevant studies will be identified through electronic database searches and grey literature sources. Two independent reviewers will screen the titles and abstracts to determine eligibility for full-text review.

**Full-Text Review:** Full-text articles of potentially relevant studies will be retrieved and assessed for inclusion. Two reviewers will independently review the full texts to determine final eligibility for inclusion in the scoping review. Any discrepancies will be resolved through discussion or consultation with a third reviewer if necessary.

**Data Abstraction:** Data from included studies will be systematically extracted using a standardized data extraction form. Key information to be extracted includes study characteristics (e.g., author, publication year, study design), participant characteristics (e.g., population demographics, health condition), intervention details (e.g., Fogg Model components used, intervention duration), outcomes measured, and findings related to the primary outcomes of interest.

**Quality Assessment:** Given the exploratory nature of scoping reviews, a formal quality assessment of individual studies will not be conducted. However, the transparency and methodological rigor of included studies will be noted during data extraction and synthesis.

**Data Synthesis:** Extracted data will be synthesized narratively to address the research questions and primary outcomes. Themes and patterns related to the utilization and effectiveness of the Fogg

Behavior Model in health-related behavior change interventions will be identified and presented descriptively.

**Consultation:** Throughout the data extraction and synthesis process, consultation with subject matter experts or stakeholders may be sought to ensure comprehensiveness and accuracy of the findings.

All study screening will be carried out using the RayyanTM software (<https://www.rayyan.ai/>).

By following these steps, the scoping review will systematically identify, select, and abstract relevant data to provide a comprehensive overview of the use and impact of the Fogg Behavior Model in health-related behavior change interventions.

**25\* Risk of bias (quality) assessment:**

Quality appraisal will not be conducted as per scoping review guidance.

**26\* Strategy for data synthesis:**

Results will be reported using the PRISMA scoping reviews extension as a guide. Since this is a scoping review, no meta-analyses will be performed. The results will focus on identifying interventions to optimize gender equity within and outside of health and academia, and categorizing these interventions by study characteristics, participant characteristics, context, and outcomes. Findings will be summarized using descriptive frequencies.

"Fogg Behavior Model" OR "Fogg Model" OR (fogg OR "Fogg's") AND (behav\* OR model\* OR "FBM") AND ("Health Behavior" OR "Health Promotion" OR "Disease Management" OR "Behavior Model" OR "Behavior Change" OR "behav\*" OR ("behavioral choice theory") OR ("economic theory") OR ("behavioral economic theory") OR ("behaviour change interventions") OR ("behavioural change") OR ("behavior change") OR ("change interventions") OR ("intervention design") OR ("behavior change interventions") OR ("Behavior Design") OR ("behavior-change interventions") OR ("long-term behaviour change") OR ("behavioural interventions") OR ("health behaviour change") OR ("behavioral change techniques") OR "Persuasion" )

**27\* Analysis of subgroups or subsets:**

Not applicable

**1.4 Review general information**

**28\* Type of review**

Select one of the following:

**Review Type**

- Scoping review
- Rapid review
- Systematic review
- Other: \_\_\_\_\_

**29 Language**

English

**30 Country**

Spain

**31 Other registration details**

Not applicable

**32 Reference and/or URL for published protocol**

*Give the citation for the published protocol, if there is one.*

N/A

*Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in PDF format.*

N/A

I give permission for this file to be made publicly available: Yes

**33\* Dissemination plans:**

We have devised a comprehensive strategy to share our findings with diverse audiences and maximize the impact of our research:

**In-Person Meeting with Knowledge Users:** We will organize face-to-face meetings with key stakeholders, including policymakers, healthcare professionals, and community leaders, to present our findings and engage in discussions about potential implications for policy and practice.

**Manuscript in a Peer-Reviewed Journal:** We will prepare a detailed manuscript outlining our research methodology, findings, and conclusions for submission to a reputable peer-reviewed journal in the field of public health or behavior change.

**Research Brief:** A concise research brief summarizing the key findings and implications of our study will be developed and distributed to relevant stakeholders, including government agencies, non-profit organizations, and academic institutions.

**National and International Meetings/Webinars:** We will seek opportunities to present our findings at national and international conferences, symposiums, and webinars attended by professionals and researchers in public health, psychology, and related fields.

**Executive Summary with Infographics:** An executive summary accompanied by visually appealing infographics will be created to provide a succinct overview of our study findings. This summary will be shared with decision-makers and other stakeholders who may benefit from a quick and accessible overview of our research.

**Websites:** Our findings will be prominently featured on relevant websites, including institutional websites, research repositories, and professional networks, to ensure broad accessibility to interested parties.

**Newsletters:** Summaries of our findings and updates on our research progress will be included in newsletters distributed by relevant organizations, such as professional associations and advocacy groups, to reach a wider audience.

**Social Media:** We will utilize social media platforms such as the university platform, Twitter, LinkedIn, and Facebook to disseminate key findings, engage with stakeholders, and promote discussion around our research topic. Regular updates and insights will be shared to maintain engagement and foster collaboration within the research community and beyond.



*Do you intend to publish the review on completion?*

Yes

No

**34 Keywords**

Knowledge synthesis, scoping review, interventions, gender equity, gender inequity, diversity, randomized trials

**35 Details of any existing review of the same topic by the same authors**

Not applicable

**36 Any additional information:**

This protocol registration form was adapted from Tricco, A., & Zarin, W. (2016, September 7). Social Media for Pharmacovigilance. <https://doi.org/10.17605/OSF.IO/H7ETS>