

A systematic review of the effects of digitally-mediated cooking interventions on millennials' meal preparation behavior, diet quality and weight status.

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Review question

What are the effects of digitally-mediated cooking interventions on the meal preparation behavior, diet quality and weight status of Millennials (16-37 years old)?

Searches

Sources: Web of Science, MEDLINE, ACM, Cochrane Library, PsycINFO;

Search dates: from 16.09.2019 to 30.09.2019;

Restrictions: Articles in English published in peer-reviewed journals after 2000.

Types of study to be included

Inclusion criteria: The studies to be included are interventions with or without random assignment using control or a comparison conditions, and pre- and post-test studies with a control or a comparison group.

Exclusion criteria: Observational research such as cross-sectional and cohort studies, case studies and qualitative research will not be included in the review. Studies will also be excluded if participants are under 16 or over 37, or if the intervention does not contain any digital-mediated intervention or if it does not have any cooking/dieting outcomes.

Condition or domain being studied

The domains being studied are Millennials' cooking behavior, diet quality and weight status.

Participants/population

All Millennials (from 16 to 37 years old) irrespective of their physical and mental health status.

Intervention(s), exposure(s)

It will be reviewed digital interventions only, meaning that the nature of the interventions or exposures will have to use

digital technology to promote behavior change.

Comparator(s)/control

Control or comparison conditions are non-digital interventions and no interventions.

Main outcome(s)

Interventions administering objective or validated measures of home cooking attitudes, motivations and behaviors at baseline, directly post-intervention and at least three months later were included.

Measures of effect

Measures at baseline, directly post-intervention and at least three months after the intervention.

Additional outcome(s)

Additional outcomes are other objective or validated measures to assess home cooking knowledge, skills and self-efficacy, food choice (e.g., Food Frequency Questionnaires), food intake (e.g., 24-hour dietary intake recalls), healthy eating (e.g., Healthy Eating Index) or weight status (e.g., BMI, percentage weight loss, waist circumference), measured at the same time points as the main outcomes.

Measures of effect

Measures at baseline, directly post-intervention and at least three months after the intervention.

Data extraction (selection and coding) [1 change]

Study screening and data extraction will be carried out using the Covidence systematic review management tool.

Titles and/or abstracts of studies retrieved from the search strategy will be screened independently by two authors to identify the studies that potentially meet the inclusion criteria. The full text of the potentially eligible studies will be retrieved and independently assessed by two authors.

A standardized, pre-piloted form will be used to extract data from the eligible studies for assessment of study's quality and evidence synthesis. Extracted information will include 1) setting, 2) sample, 3) intervention type and controls, 4) methods and 5) outcomes. Two authors will extract data independently. Missing information will be requested from study authors.

Any discrepancies over eligibility or quality assessment will be resolved by consensus through discussion with a third author.

Risk of bias (quality) assessment [1 change]

Risk of bias (quality) assessment will be carried out using the Covidence systematic review management tool. We expect selected studies to include both RCT and non-RCT. Therefore, we will use Covidence's built-in Cochrane Risk of Bias (RoB) template for RCT studies, adding customized domains to assess non-RCTs. Domain addition will reflect the use of valid and reliable assessment tools specific to the study design being evaluated, such as the EPHPP.

Two review authors will independently assess the RoB (quality) of each study included, at study level, by considering the following characteristics:

- Clear definition of interventions;
- Initial assembly of comparable groups:
 - RCT studies: adequate randomization (sequence generation), treatment allocation (allocation concealment), blinding (participants and personnel, outcome assessors), whether potential confounders were distributed equally among groups;
 - Non-RCT studies: selection bias, consideration of potential confounders (with either restriction or measurement for adjustment in the analysis), consideration of inception cohorts;
- Withdrawals and drop-outs: important differential loss to follow-up or overall high loss to follow-up, study power;
- Intervention integrity, maintenance of comparable groups (includes attrition, cross-overs, adherence, contamination);
- Outcome Measurements: equal, reliable, and valid (includes masking of outcome assessment);
- All important outcomes considered;
- Overall RoB (quality) assessment.

Discrepancies in their assessments will be resolved through discussion with a third review author.

Strategy for data synthesis [1 change]

We expect this review will synthesize data from interventions with fairly diverse characteristics in terms of setting, population, design, outcome and measures. In view of this, its primary aim will be to produce a narrative synthesis of the evidence extracted from each study. Tables and text will provide a descriptive summary of study characteristics and an interpretation of findings, respectively.

The outcome variables considered in this review are those measuring home cooking behaviours (cooking behaviour, cooking intention, cooking frequency) cooking motivation, cooking attitudes, home cooking knowledge, cooking skills, cooking self-efficacy, food choice (Food Frequency Questionnaires), food intake (24-hour dietary intake recalls), healthy eating (Healthy Eating Index) and weight status (BMI, percentage weight loss, waist circumference). Regarding these variables, risk ratios (dichotomous outcomes) or standardised mean differences (continuous outcomes) will be furthermore estimated for each study, whenever possible and adequate.

Effect sizes will then be computed using the Psychometrica software. In order to handle different types of data (e.g., dichotomous and continuous data), all values will be converted to standardised mean differences. Confidence intervals (95% CI) will be computed for interpretation - because confidence intervals describe the uncertainty inherent to an estimate, as well as the range of values within each effect, it is possible to identify where exactly the effect lies. For example, if the confidence interval is narrow, the effect size is known with more certainty. On the contrary, if the confidence interval is large, there is much more uncertainty associated to the effect.

When such effect estimates can be produced for at least 4 RCT studies or 5 non-RCT studies with fairly homogeneous characteristics and lower than average RoB (higher than average quality), relative to the pool of studies included, a random-effects meta-analysis will finally be run with RevMan software, in order to be able to estimate overall effects.

Analysis of subgroups or subsets

If appropriate, subgroup analyses will be conducted.

Contact details for further information

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Review team members and their organisational affiliations [1 change]

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Type and method of review

Intervention, Meta-analysis, Narrative synthesis, Systematic review

Anticipated or actual start date

16 September 2019

Anticipated completion date

15 September 2020

Funding sources/sponsors

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Conflicts of interest

None known

Language

English

Country

Portugal

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Body Weight; Cooking; Diet; Humans; Meals

Date of registration in PROSPERO

28 April 2020

Date of first submission

10 September 2019

Stage of review at time of this submission

The review has not started

Stage	Started	Completed
Preliminary searches	No	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

28 April 2020