

A systematic review of behavioral interventions to promote intake of fruit and vegetables

Thomson CA, Ravia J

Options

Print

PDF

Set alert

Fast track

PubMed record

Original research

Share

|

You need to be logged in
to see your keywords

CRD summary

This review concluded that behaviour-based interventions modestly increased the intake of fruit and vegetables across the target population, but increases were small compared to the recommended level of intake. These conclusions should be interpreted with caution because of uncertainty on study quality and limitations in review methods.

Authors' objectives

To assess the effectiveness of behaviour-based interventions on the promotion of fruit and vegetable intake.

Searching

PubMed and PsycINFO were searched for English studies between 2005 and 2010. Search terms were reported. Reference lists of retrieved studies were screened and experts in the field were contacted for any additional relevant studies.

Study selection

Randomised controlled trials (RCTs; with at least 30 participants) and studies of pre-post, single-group design (with at least 80 participants), that evaluated behaviour-based interventions to promote intake of fruit and vegetables in the United States, were eligible for inclusion. Studies were only included if they explicitly reported the behaviour theory or construct used for the behaviour-based interventions. Studies of individuals with a specific clinical diagnosis (such as cancer, hypertension, diabetes or obesity) were excluded. Eligible studies had to report the outcome of fruit and vegetable intake (servings per day).

The included studies adopted a variety of behaviour theories and/or constructs applied in the interventions, such as Transtheoretical Model, social cognitive theory, behavioural construct of self-efficacy and health promotion model with tailored messages. Motivational interviewing and group/individual diet education appeared to have been the main elements of behaviour-based interventions. For controlled trials, the most common comparators were no intervention and standard programme without tailored education sessions. The dietary measurement instruments used to estimate fruit and vegetables intake also varied between studies. The most commonly used tools were food frequency questionnaires, National Cancer Institute fruit and vegetables screener and 24-hour dietary recalls. Most included studies recruited healthy adults or children; some studies recruited special populations (such as work-site-based, minority and lower-income populations).

The authors did not state how many reviewers assessed studies for inclusion.

Assessment of study quality

The authors did not state that they assessed study quality.

Data extraction

Data were extracted on mean and standard deviation for daily number of serving before and after intervention where possible. The significance levels between group comparisons were also reported.

Data extraction was performed in triplicate.

Methods of synthesis

The studies were combined in a narrative synthesis, stratified by age group and specific populations. An average value of the outcome across studies was calculated.

Results of the review

Thirty-four studies were included in the review. The total number of included participants was not reported. Where reported, the sample size of studies ranged from 38 to 48,835.

Compared with control groups, behaviour-based interventions were associated with an average increase in fruit and vegetable intake of 1.13 servings per day in adults (nine studies) and 0.39 servings per day in children (seven studies). Behaviour-based interventions also led to an average increase in fruit and vegetable intake of 0.97 servings per day in minority adults or low-income populations (nine studies) and 0.8 servings per day in work site participants (seven studies).

Authors' conclusions

Behaviour-based interventions modestly increased the intake of fruit and vegetables across the target population, but increases were small compared to the recommended level of intake.

CRD commentary

This reviewer's inclusion criteria were clear. Relevant databases were searched. No sufficient attempts were made to find unpublished studies, which may have increased the risk of publication bias. Only studies in English were included, which increased the risk of language bias. Steps were made to minimise reviewer biases and errors in the process of data extraction, but it was unclear whether study selection was performed in duplicate. A formal quality assessment was not performed. A narrative synthesis was employed, but deriving an average value of the outcome across studies might be not appropriate given the high level of clinical heterogeneity between included studies. All the included studies were conducted in the United States, so the generalisability of the findings to other countries was limited. The authors' conclusions should be interpreted with caution in view of the uncertainty on study quality and limitations in review methods.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that further studies, which evaluated behaviour-based interventions in combination with other interventions (such as social marketing, behavioural economics approaches and technology-based behaviour change models) were required to investigate whether the goals of achieving fruit and vegetables intake at the recommended level across the population were met and sustained.

Funding

Produce for Better Health.

Bibliographic details

Thomson CA, Ravia J. A systematic review of behavioral interventions to promote intake of fruit and vegetables. Journal of the American Dietetic Association 2011; 111(10): 1523-1535

PubMedID

[21963019](#)

Original Paper URL

<http://www.sciencedirect.com/science/article/pii/S000282231101220X>

Indexing Status

Subject indexing assigned by NLM

MeSH

Adolescent; Adult; Attitude to Health; Behavior Therapy; Female; Food Habits /psychology; Fruit; Health Behavior; Health Promotion /methods; Humans; Male; Middle Aged; Motivation; Outcome Assessment (Health Care); Patient Education as Topic; Public Health; Self Efficacy; Vegetables; Young Adult

AccessionNumber

12011007183

Database entry date

05/07/2012

Record Status

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.