

Preventing the obesity epidemic by second generation tailored health communication: an interdisciplinary review

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CRD summary

This review concluded that tailoring was shown to be an effective method in nutrition interventions, but the results for physical activity were mixed. Limitations in the review included the possibility of missing studies, a lack of a formal quality assessment and limitations with the analysis. The conclusions should be interpreted with caution.

Authors' objectives

To review the literature on tailored health communication and present an interdisciplinary analysis of studies on second-generation tailored interventions aimed at behaviour change in nutrition, physical activity or weight management.

Searching

PubMed, Science Direct, LISTA, Emerald, ERIC, Scopus, Sociological Abstracts, Web of Science, Academic Search Premier and ABI/INFORM databases and Google Scholar were searched between January and August 2009. Search terms were reported. References of retrieved studies were screened. Only studies available in full text were included.

Study selection

Randomised controlled trials (RCTs) and quasi randomised studies that assessed second-generation interventions targeted at health behaviour related to nutrition, physical activity or weight management alone or in combination were eligible for inclusion. Studies had to report pre- and post-test data for behavioural, psychological or physiological outcomes. Studies that measured only the feasibility and acceptability of computer-delivered tailored health communication, that focused on diabetes self-management and that gave advice in a computer kiosk or online shopping site were excluded.

Interventions (all tailored) included fruit and vegetable consumption, fat information, pre-contemplation feedback, contemplation feedback, action feedback, intervention/advice (no further details), concept of self efficacy group, self efficacy plus action planning group, advice plus emails, advice plus exercise, computer-automated counselling and human email counselling. Control interventions included tailored print delivered intervention, general intervention, waiting list control, no information control, exercise only, and no counselling. Interventions were administered by email, CD-ROM, internet program/site and newsletters. Most studies performed the intervention in a real-life setting; three were conducted in a controlled situation in which participants performed assessments and received tailored information or feedback in classrooms or offices.

Studies reported the outcomes of weight, physical activity, blood pressure, body fat percentage, blood lipids, waist circumference, flexibility and cardiorespiratory fitness. Three studies targeted minority groups including 11 to 14 year-old urban African Americans, low-income culturally diverse seventh grade students and ethnically diverse women. Other specific risk groups studied included sedentary adults and overweight or obese individuals. Most studies reported follow-up of less than six months; the longest follow-up was 13 months.

The authors did not state how studies were selected for inclusion.

Assessment of study quality

No formal validity assessment was conducted. Data were extracted on types of bias present in the selected studies.

Data extraction

The authors did not state how data were extracted from the studies.

Methods of synthesis

A narrative synthesis was presented.

Results of the review

Twenty-three studies were included (12,417 participants, range 31 to 2,862): 21 RCTs and two quasi-experimental studies. One of the non-randomised studies assigned patients based on classroom assignment and the other allowed patients to choose their preferred dietary emphasis. Fifteen studies used self report as the only method of data collection. Fourteen studies lacked a no-information control group. Twelve studies over-represented one gender over the other. Ten studies differed from the national average in terms of socioeconomic background. In three studies participants were more physically active than the national average. In three studies the intervention was controlled. Two studies had a high withdrawal rate.

Nutrition (10 studies): Eight studies reported significant beneficial effects of the intervention. Two studies with no inactive control report no statistically significant effects for any of the outcomes assessed.

Physical Activity (seven studies): Three studies reported significant beneficial effects of the intervention. Four studies reported mixed or negative effects of the interventions

Nutrition and Physical Activity (two studies): Both studies reported significant beneficial effects of tailored interventions on physical activity and dietary fat intake compared to no-information/waiting list control.

Weight Management (four studies): Three studies reported mixed or negative effects of the intervention.

Authors' conclusions

Tailoring was an effective method in nutrition interventions, but the results for physical activity were mixed. There was potential for bias in existing studies and this merited attention when planning intervention and future meta-analyses.

CRD commentary

The review addressed a broad question. Inclusion criteria were defined. The literature search was adequate for published studies. No specific attempts were to locate unpublished studies and so there was a possibility of publication bias. No details of the review process were reported and so it was not possible to determine whether appropriate steps were taken to minimise bias and errors. No formal quality assessment was conducted. The authors discussed several items that they considered to be potential sources of bias, but these related more to the applicability of the included studies than to bias and the risk of bias in the included studies was unclear. Some details of the included studies were summarised in a table, but this lacked some important information. A narrative synthesis was appropriate given the differences between studies, but the synthesis lacked clarity and numerical/statistical results. The summary table only reported results for outcomes that were shown to significantly favour the tailored information group; details on other outcomes evaluated and the results for these outcomes were lacking. It was, therefore, difficult to relate the results discussed in the text to the findings in the table and there was a possibility of selective outcome reporting.

This review contained a number of methodological weaknesses and the conclusions should be interpreted with caution.

Implications of the review for practice and research

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

Research: The authors stated that potential for bias in existing studies (by which they appeared to mean applicability) should be considered when planning future interventions and meta-analyses.

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