Effectiveness of diabetes educational interventions in Iran: a systematic review

Baradaran HR, Shams-Hosseini N, Noori-Hekmat S, Tehrani-Banihashemi A, Khamseh ME

CRD summary
This review concluded that insufficient and conflicting findings precluded any firm conclusions regarding diabetes educational intervention in Iran. However, educational interventions appeared to have short-term effects on glycaemic control and knowledge of diabetes in Iranian patients with diabetes. The authors’ conclusions should be interpreted with caution given the possibility of publication bias and the limited quality of the included studies.

Authors’ objectives
To assess the effectiveness of educational interventions in Iranian patients with diabetes.

Searching
MEDLINE, Scientific Information Database, Iranian Document and IranMedex databases were searched for published studies in Persian and English from April 2002 to December 2008. Search terms were reported. Reference lists of relevant publications were screened. Relevant journals were handsearched for additional studies.

Study selection
Randomised controlled trials (RCTs), pre-/post-treatment studies and quasi-experimental studies that evaluated individual- or group-based educational interventions in Iranian patients with type 1 and/or type 2 diabetes (with any degree of disease severity and any comorbidity) were eligible for inclusion. Eligible interventions were those for improving diabetes knowledge, changing lifestyle behaviours (including diet and physical activity), developing skills to improve glycaemic control and cardiovascular disease risk factors, developing skills to prevent and identifying complications and developing coping skills to improve psychosocial function (such as stress management). Studies with multicomponent interventions were included only if the effects of the educational details could be assessed separately.

Most of the included studies used face-to-face group-based educational interventions. Frequency and duration of educational sessions varied between studies. The included studies measured diabetes knowledge using a variety of instruments. Most of the included studies recruited patients with type 2 diabetes. Where reported, the patient age ranged from seven to 75 years.

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

Assessment of study quality
The authors did not state they assessed validity.

Data extraction
Data were extracted on mean and standard deviation.

The authors did not state how many reviewers performed data extraction.

Methods of synthesis
The studies were combined in a narrative synthesis supported by data tables.

Results of the review
Eighteen studies were included in the review (n=1,496 participants): five RCTs (n=527), six pre-/post-treatment studies (n=397) and seven quasi-experimental studies (n=572). Follow-up ranged from one to six months.

Thirteen studies (three RCTs, four pre-/post-treatment studies and six quasi-experimental studies) showed that educational interventions improved diabetes knowledge with follow-up of one to six months after the last intervention contact. Five studies (two pre-/post-treatment studies and three quasi-experimental studies) observed increased
frequency or accuracy of self-monitoring of blood glucose. Three studies (two RCTs and one pre-/post-treatment study) showed that educational interventions improved quality of life.

Percentage changes in HbA1c ranged from 0.75% to 3.2% in the intervention groups and from 0.2% to 1.52% in the control groups (number of studies not reported). Five studies (two RCTs and three quasi-experimental studies) showed that both educational interventions and control groups improved HbA1c measure; HbA1c measure decreased more in the educational intervention group of four studies. Four studies (two pre-/post-treatment studies and two quasi-experimental studies) demonstrated improved glycaemic control at three-month follow-up after completion of an intervention.

Results for other outcomes, such as changes in nutritional diet and weight, were reported.

Authors' conclusions
Insufficient and conflicting findings precluded any firm conclusions regarding diabetes educational intervention in Iran. However, educational interventions appeared to have short-term effects on glycaemic control and knowledge of diabetes in Iranian patients with diabetes.

CRD commentary
This review's inclusion criteria were clear. Relevant sources were searched. Efforts were made to find published studies, but not unpublished studies; this increased potential for publication bias. Only studies in Persian and English were searched, so the risk of language bias could not be ruled out. It was unclear whether sufficient attempts were made to minimise bias and errors in the review process. No formal quality assessment was performed. The included studies were generally of low methodological rigour, given that most had pre-/post-treatment or quasi-experimental study designs. The diversity of the included studies made a narrative synthesis was appropriate.

The authors' conclusions should be interpreted with caution because of the possibility of publication bias and limited quality of included studies.

Implications of the review for practice and research
Practice: The authors stated that a course for training diabetes educators should be designed in Iran because to enable them to tailor appropriate education intervention for patients with diabetes.

Research: The authors stated that further studies with more rigorous methodology and long-term follow-up were required to compare different types of health educational interventions within specific groups defined by age.

Funding
Iran University of Medical Sciences (grant number 289/MT).

Bibliographic details

PubMedID
20210572

DOI
10.1089/dia.2009.0118

Original Paper URL

Indexing Status
Subject indexing assigned by NLM

MeSH
Diabetes Mellitus /blood /psychology; Health Knowledge, Attitudes, Practice; Humans; Iran; Patient Education as Topic; Risk Factors

Accession Number
12010004423

Date bibliographic record published
01/06/2011

Date abstract record published
24/08/2011

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.