

Research paper

Strategies and effectiveness of diabetes self-management education interventions for Bangladeshis

Rahul Alam BSc (Hons) MMedSci
Research Fellow

Laura Singleton BSc (Hons) MSc
Research Associate

Jackie Sturt PhD BA (Hons) RGN RMN
Associate Professor

Health Sciences Research Institute, Warwick Medical School, University of Warwick, Coventry, UK

What is known on this subject

- In comparison with the general UK population, the prevalence of type 2 diabetes is particularly high among South Asian communities in the UK, including the Indian, Pakistani, Sri-Lankan and Bangladeshi communities.
- There are marked differences between these South Asian communities in relation to behaviour, lifestyle, cultures, beliefs, literacy and education, socio-economic factors and morbidity and mortality.
- National guidelines stipulate that patient education is fundamental for the effective self-management of diabetes and it should be available to the broadest range of people, taking into account their culture, ethnicity, disability and geographical issues.
- Members of the Bangladeshi community have the lowest levels of knowledge about diabetes, its risk factors and prevention, but are amongst the most likely to develop diabetes.

What this paper adds

- This review highlights the need for additional research in the Bangladeshi community to ascertain the most effective health education strategies.
- Despite high levels of attrition and difficulties in recruitment, there is willingness and enthusiasm from the Bangladeshi community to take part in diabetes health-education interventions.
- Culturally adapted self-efficacy tools have been tested in the Bangladeshi community; they are acceptable to the community and have been shown to be effective.

ABSTRACT

The study aimed to review the evidence regarding the effectiveness of diabetes health-education strategies used for Bangladeshi populations, who are among the most susceptible of the UK communities for developing diabetes, and unfortunately receive inequitable care. Reducing health inequalities and improving health education for patients living with chronic conditions is central to national policy, and the *National Service Framework for Diabetes* has set nationwide standards for diabetes health education.

The development of effective structured patient-education programmes is an important public health challenge, and more so for hard-to-reach black and minority ethnic (BME) groups. Such programmes rely on the evidence base, and this review sets out to investigate the effectiveness of health-education strategies used for a vulnerable and particularly high-risk group.

The literature was searched using the following databases from inception to August 2008: AMED,

CAB Abs, CINAHL, EMBASE, Ovid MEDLINE(R), PsycINFO, DARE, Cochrane, NIH and the NHS ethnicity and health library. Two reviewers independently assessed studies for inclusion in the review against the following inclusion criteria: a health-education intervention of any setting and type with the aim of providing diabetes-related health education to Bangladeshis. Data were extracted on the participants, interventions, delivery methods, comparison groups and outcome measures.

The search strategy revealed four interventions. The authors of the only randomised controlled trial explain that a community lay-led intervention in providing diabetes education was successful, but the benefits were restricted due to a lack of uptake and attendance. Three others have qualitatively described

the beneficial effects of link workers/health advocates within the communities, but have not systematically reported outcome measures.

The small number of studies retrieved, and the heterogeneity between the studies, make it difficult to make recommendations on particular strategies that are most beneficial to this group. There is an urgent need for further quantitative and qualitative research, including formative, process and outcome evaluations, in order to ascertain the most effective education models for specific minority groups, especially for those who are disadvantaged and more susceptible to disease progression.

Keywords: Bangladeshi, diabetes, health, patient education, Sylheti

Introduction

Diabetes is a lifelong chronic condition, which contributes to significant morbidity and mortality worldwide. In the absence of successful management, end-stage complications include heart disease, stroke, kidney failure, retinopathy and neuropathy. It is estimated that in the year 2000, 171 million people suffered from diabetes worldwide, and this figure is set to double by 2030 (Oldroyd *et al*, 2005; World Health Organization (WHO), 2006). Currently, diabetes accounts for 5% of deaths globally each year, and without urgent action this is anticipated to increase by 50% over the next ten years (WHO, 2006).

As in most developed countries, the prevalence of diabetes in the UK is rising. It particularly affects migrant members of the South Asian communities: Indian, Pakistani, Sri-Lankan and Bangladeshi minorities (Chowdhury *et al*, 2006; Varma Chittari, 2007). These subgroups are heterogeneous, with varying religions, languages, dialects, cultures, dietary habits, attitudes and health beliefs (Hawthorne, 1994; Bhopal *et al*, 1999; Kuppaswamy *et al*, 2005; Gupta *et al*, 2006). Additionally, differences in disease morbidity and mortality, access to education and healthcare, literacy levels, employment, housing and socio-economic status have been widely reported (Marmot *et al*, 1984; Hawthorne, 1994; Balarajan and Raleigh, 1997; Bhopal *et al*, 1999; Dale *et al*, 2000; Rhodes *et al*, 2003; Banerjee *et al*, 2004; Szczepura, 2005). Despite these large and dynamic variations, well-designed research studies continue to employ a one-size-fits-all approach when targeting these subgroups in complex interventions aimed at delivering culturally appropriate health education (Vyas *et al*, 2003; O'Hare *et al*, 2004;

Baradaran *et al*, 2006). Such studies are likely to introduce between-group variability in uptake, adherence or outcomes, thus masking the effects of interventions on specific community groups. While it may be more convenient to group ethnic minorities who share native borders, it may not be the most prudent approach. Consequently there is a need for focused attention between these diverse community groups to provide personalised care that can improve patient well-being and be economically viable (Arblaster *et al*, 1996; Balarajan and Raleigh, 1997; Bhopal *et al*, 1999; Stone *et al*, 2005; Glazier *et al*, 2006).

As with their South Asian counterparts, people of Bangladeshi origin have a genetic and environmental predisposition towards the development of diabetes (Chowdhury *et al*, 2006). However, of the South Asian communities, the Bangladeshis are of particular concern, and Bhopal and colleagues amongst others have highlighted this community's disproportionately high susceptibility towards disease progression (Bhopal *et al*, 1999; Nazroo, 2001, 2003; Rankin and Bhopal, 2001; Griffiths *et al*, 2005; Merrell *et al*, 2005; Kuppaswamy and Gupta, 2005).

UK National census data indicate that the 283 000 UK Bangladeshi migrants have the worst self-reported health and the highest age-standardised risk ratios for type 2 diabetes (Office for National Statistics, 2001). Poor lifestyle habits such as poor diet and the lowest physical activity levels (Rankin and Bhopal, 2001), the highest smoking amongst males (Greenhalgh *et al*, 2005), poor metabolic profiles with increased insulin resistance, the worst lipid profiles (Bhopal *et al*, 1999), socio-economic factors such as family dynamics, lowest education, lowest literacy levels, lowest housing tenure, lowest employment, and the lowest annual income (Rankin and Bhopal, 2001) and access to

healthcare services (Greenhalgh *et al*, 2005; Griffiths *et al*, 2005) as well as the lowest car ownership (Rankin and Bhopal, 2001) contribute to the high levels of morbidity and mortality in this particular group. Additionally, Rankin and Bhopal (2001) report that Bangladeshis have the lowest understanding of heart disease and diabetes. The multiple levels of disparity can partially explain the highest levels of chronic disease in this population compared with any other UK communities (Griffiths *et al*, 2005).

The Bangladeshis are further disadvantaged by their reduced capacity to benefit from mainstream health-education programmes, which are widely accepted to be instrumental in the successful self-management of diabetes (Hawthorne, 2001). While conventional patient-education programmes such as the Diabetes X-PERT Programme (Deakin *et al*, 2006), Dose Adjustment for Normal Eating (DAFNE) (DAFNE Study Group, 2002), Diabetes Education for Self-Management for Ongoing and Newly Diagnosed (DESMOND) (Davies *et al*, 2008; Department of Health and Diabetes UK, 2005) and the Diabetes Manual (Sturt *et al*, 2008) can be adapted and readily translated for other South Asian communities, this is not the case for the majority of Sylheti-speaking Bangladeshis, who have no form of written language (Greenhalgh *et al*, 1998; Rhodes *et al*, 2003; Johnson, 2006). While education *per se* may not necessarily lead to behaviour change and improvements in clinical outcomes, positive behaviour change and effective self-management cannot occur in the absence of knowledge. Accordingly, standard 3 of the National Service Framework pledges to provide support and structured education in an appropriate format and language to all newly diagnosed patients with diabetes (Department of Health, 2001). Quite how this will be achieved for minorities with higher learning needs (Rankin and Bhopal, 2001) and for those heavily reliant on a spoken dialect with no form of written language is somewhat unclear. The added difficulty of delivering health-education information to these harder-to-reach groups has so far been neglected.

Although previous reviews (Glazier *et al*, 2006; Peek *et al*, 2007; Saxena *et al*, 2007) have considered educational interventions in improving diabetes outcomes for ethnic minority groups in general, few have isolated specific subgroups, and none have addressed the effects of interventions on communities with limited written language skills. Consequently, this review aims to synthesise evidence of the strategies used and the effectiveness of health-education interventions to improve diabetes outcomes amongst Bangladeshi migrants.

Method

Eligibility

Eligible studies were randomised controlled trials (RCTs), quasi-experimental studies, observational studies or process evaluations that provided diabetes-related health education to Bangladeshis with diabetes. Studies utilising participants from wider black and minority ethnic (BME) groups were excluded if the outcomes on the Bangladeshi population could not be isolated. The review was not restricted to any particular age group, sex, country, language or type of diabetes. Outcomes of interest were recruitment strategies, education-delivery methods, clinical outcomes, such as glycosylated haemoglobin (HbA_{1c}), blood pressure, lipid profiles, weight, body mass index (BMI), self-reported measures and quality-of-life indicators. Studies not evaluating outcomes were included to allow the synthesis of various education strategies used for this community.

Data sources

The literature search was conducted using the following databases from inception to October 2007 and later updated to August 2008: AMED, CAB Abs, CINAHL, EMBASE, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations (prem), Ovid MEDLINE(R) and PsycINFO. Additionally we searched evidence-based reviews including the Cochrane database (www.cochrane.org), DARE (www.crd.york.ac.uk/crdweb) and the US National Institutes of Health clinical trials website (www.clinicaltrials.gov). Specialist libraries were searched, including the NHS Specialist Library for Ethnicity and Health, which is based and maintained at the University of Warwick (www.library.nhs.uk/ethnicity). We also searched the reference lists of included studies and the grey literature using Google Scholar, and we contacted experts to identify potential papers and reports.

MeSH headings used

Diabetes or type 2 or NIDDM or adult onset.mp. [mP = ti, hw, ab, it, sh, tn, ot, dm, mf, nm, tc, id] AND (Bangladesh\$ or Bengal\$ or Bangal\$ or Bangla or Sylhet\$ or Shylet\$).mp. [mP = ti, hw, ab, it, sh, tn, ot, dm, mf, nm, tc, id] AND education or knowledge or information or awareness or learn\$ or taught or teach\$ or understand\$ or train\$ or skill\$ or qualified or coach\$ or instruct\$ or guide\$ or lecture\$ [mP = ti, hw, ab, it, sh, tn, ot, dm, mf, nm, tc, id].

Selection criteria

Interventions in all settings were to be included, as were interventions delivered by any provider, health-care professional, peer group or link workers, in any format: written, oral, pictorial or film. Group-based or individual interventions of any duration or intensity were included.

Abstract review and data extraction

Two reviewers independently assessed the abstracts identified by the literature search for inclusion in the review, and any disagreements were resolved through dialogue. Full text articles of selected abstracts were obtained, and both reviewers (RA and LS) independently screened the full text articles for inclusion. Data extraction was independently completed by two reviewers (RA and LS) using a standard data-extraction form. Data collected included study objectives, study design, clinical subgroup of population, baseline characteristics, description of participants, intervention details (setting, methods, type, delivery specialist, duration, provider(s) and training received), description of controls, and outcome measures.

Quality assessment

The quality of quantitative reports was assessed by three main criteria as specified by Schulz *et al* (1995) and Jadad *et al* (1996). These included: (i) selection bias in terms of adequate randomisation and allocation concealment; (ii) attrition bias, that is to say a description of withdrawals, dropouts and inclusion of intention-to-treat analysis; (iii) detection bias, which includes masking of outcome assessors. Qualitative reports were assessed using the 10 criteria described in

the Critical Appraisal Skills Programme (CASP) qualitative research tool.

Studies were classified as good quality (score A) when meeting > 80% quality criteria, moderate (score B) when meeting > 50% to < 80% quality criteria, and poor (score C) when achieving < 50% criteria.

Data analysis

Due to the heterogeneity and number of studies retrieved, both reviewers agreed that statistical analysis would be unsuitable, and it was decided that a narrative analysis would be more appropriate.

Results

The database search revealed 85 articles, 17 of which were short-listed to obtain the full papers. Search of the grey literature revealed an additional four papers, none of which were included (see Figure 1). The Cochrane, DARE, NIH and NHS specialist libraries did not reveal any additional studies for inclusion. In total, the literature search revealed four papers to include in the review (see Table 1).

The search strategy revealed four interventions with the aim of conveying diabetes-related health messages to British Bangladeshis. Despite convention, we describe our results grouped by individual study rather than by component, due to the low number of studies retrieved and the heterogeneity between the four studies.

Griffiths and colleagues (2005) describe a socio-cognitive theory-based RCT. The culturally adapted chronic disease self-management programme (CDSMP) utilised translated self-efficacy scales, videocassettes in place of written material and expert patients as

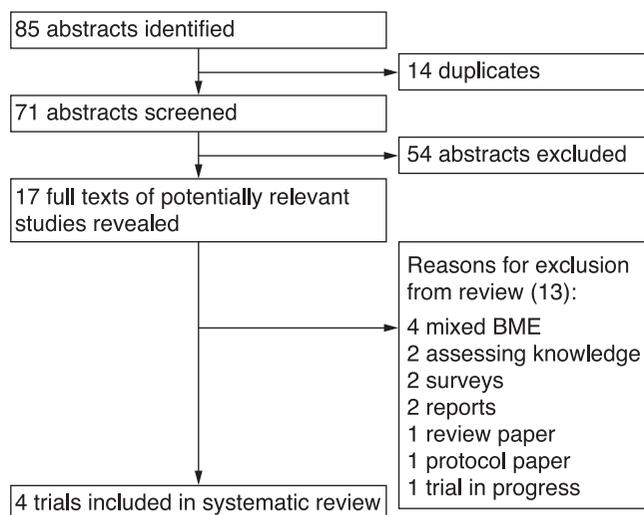


Figure 1 Quorum flowchart of review process

Table 1 List of included studies

Author (year), country	Number of participants recruited/follow-up	Mean age (SD); mean education; employment	Clinical subgroups	Theoretical model	Model and duration of intervention	Regimen in intervention group and delivery specialist	Model and duration of control group	Regimen in control group and delivery specialist	Longest follow-up	Cost of programme	Study quality
Lee (1994), UK	59 households identified of whom 34 attended (58% agreement to take part); of the 34 families (226 family members), 207 attended (53 adult men, 50 adult women, 104 children >16 years)	Not specified; 27 out of 53 men in employment; 2 out of 50 women in employment	General population; registered with a London inner-city practice	Not specified	Weekly, 1.5-hour sessions; one household was invited each week	A medical history was taken, adults screened for diabetes and coronary heart disease risk factors, and cervical cytology offered to women. Immunisation status recorded and adults immunised, concluding with health-education sessions focusing on smoking, exercise and diet; provided by GP, health visitor and Bangladeshi health worker	No control group reported	No control group reported	Not specified	Not specified	N/A: process evaluation
Chowdhury <i>et al</i> (2003), UK	120 people attended the Ramadan education class	Not specified	Patients living with type 2 diabetes	Not specified	Four (3-hour) classes of 30–40 patients prior to Ramadan	Patient group-education class for management of diabetes during Ramadan covering basics of diabetes, diabetes care during Ramadan, smoking cessation, tailored medication advice, telephone support and dispelling myths; provided by GP, Bangladeshi link worker and lead diabetes nurse	No control group reported	No control group reported	Not specified	Not specified	N/A: process evaluation

Table 1 Continued

Author (year), country	Number of participants recruited/follow-up	Mean age (SD); mean education; employment	Clinical subgroups	Theoretical model	Model and duration of intervention	Regimen in intervention group and delivery specialist	Model and duration of control group	Regimen in control group and delivery specialist	Longest follow-up	Cost of programme	Study quality
Griffiths <i>et al</i> (2005), UK	476/439 (1363 invited to take part, certificate and supermarket vouchers provided on completion of at least 5 sessions – 34% agreement to take part)	48.9 (9.9) years; completed by 12 years; 8% employed	Diabetes (66%), asthma (19%), arthritis (9%) and cardiovascular disease (6%)	Bandura's theoretical model of self-efficacy	6-weekly, 3-hour sessions for 4 months in GP practices or community centres	Six sessions facilitated by pairs of accredited Bangladeshi lay tutors using strategies of mastering self-management skills, role modelling and reinterpretation of symptoms	Waiting list	Not specified	4 months	£123 per participant	A
Greenhalgh <i>et al</i> (2005), UK	8 to 42 attendees in 18 months	Not specified	Female population with approximately 50% diagnosed with diabetes	Action learning using the action research cycle	Weekly diabetes 'story-telling' group; length not specified	Story-based group intervention in a regular women's lunch-club setting. Discussions focused on standard diabetes education topics (diagnosis, diet, exercise, check-ups)	No control group reported	No control group reported	18 months	Not specified	B

facilitators. The authors report improvements in self-efficacy and self-care behaviours amongst 439 Bangladeshi patients living with chronic disease. Over two-thirds were patients living with diabetes, and the remainder consisted of people living with musculoskeletal or respiratory conditions. There were no effects on psychological status and other secondary outcomes. Physiological measures were not recorded. The participants had a mean age of 48.9 years (standard deviation (SD) 9.9) and mean age at completion of formal education of 12.2 years (SD 6.7), 56% were female and 8% were in employment.

Despite benefiting from Sylheti-speaking research assistants, the authors report moderate uptake and attendance. Qualitative data from attenders and non-attenders highlight cultural and religious issues as barriers to attendance. An additional 14 participants volunteered after hearing about the programme by word of mouth. The trial had a relatively short follow-up period of 4 months, and found no reduction in the frequency of visits or improvements in communication with their general practitioners (GPs). The authors report the cost of the programme to be £123 per participant and the trial was classified as A for quality.

In an exploratory study using the action research framework, Greenhalgh *et al* (2005) developed a complex intervention for diabetes education for ethnic minority groups who do not speak English. In one of the advocate-led user groups, the study utilised bilingual health advocates in providing support and education to Bengali women living with diabetes.

The Bangladeshi group was established by word of mouth and grew from 18 to 42 regular attendees in 18 months. The intervention consisted of advocates and service users sharing stories in a seemingly chaotic fashion and frequently drawing upon clinical advice to resolve disputes between attendees. This platform provided an opportunity to openly discuss and debate medical issues, and allowed the benefits of a qualified arbitrator to provide sound clinical advice when needed. The group was proactive and engaged in blood glucose measurements as well as using the group as a forum to negotiate other medical issues such as outpatient appointments and confronting their GPs with pertinent issues.

Interestingly, the authors highlight that many of the participants attended the group to check their blood glucose concentrations despite having their own meters and being shown how to use them. Furthermore, participants in the group compared their blood glucose results with others in the group rather than with their own previous results, resulting in reflection and discussions, and included comments such as 'she didn't have a second helping and look, her result is better than yours'.

Glucose concentrations of longstanding attendees decreased over time, although values were not reported, but did not reach significance and the authors reported no other outcome measures. Additionally, the paper describes the complexities in setting up, training and conducting such groups, and highlights the resistance of the Bangladeshi group to formal structured education. The study was classified as B for quality.

Chowdhury *et al* (2003) describe an intervention that delivered educational classes to patients with type 2 diabetes prior to the Islamic month of Ramadan, when the majority of Sylhetis start their month-long fast between dawn and dusk. The project had no control arms and the classes were delivered by a link worker and lead diabetes nurse. The classes provided: (i) basic diabetes information on self-management followed by discussions and sharing experiences contributing to their learning; (ii) specialist diabetes care during Ramadan, including dispelling myths; and (iii) tailoring medication for use during Ramadan. Telephone support was also made available during Ramadan, with an uptake of 5–7 calls per day and equal numbers visiting the drop-in sessions each day. The authors report that the service was well received by all the patients, but did not report any outcome measures. The paper describes a process evaluation with no predefined outputs, and therefore we feel that it is inappropriate to provide a classification score.

Lee (1994) provided a screening clinic for Bangladeshi families, with health-education sessions focusing on smoking, exercise and diet. The intervention was conducted by a GP, a health visitor and a Bangladeshi health worker, and was held once a week and lasted for one and a half hours between 14.00 and 15.30. Fifty-three of the 59 men attended (90%), 50 of the 53 women attended (94%) and 104 of the 114 children (aged 16 years or less) attended (91%). Of those who attended (207), 104 (50%) were aged 16 years or less, 99 (48%) were aged 17–64 years, and only 4 (2%) were aged 65 years or over. The study had no control arms and aimed to improve the care provided. The attendance of invited households was moderate (58%). However, through the use of genograms and multilingual staff, the intervention was able to capture a rich snapshot of health issues pertinent to this local population and, on the whole, generalisable to the larger Bangladeshi population. The families were particularly large in size, with between 3 and 16 members (with a mean of 6), and were of poor socio-economic status; smoking rates in males were 38%, and 9% of adults were hypertensive; 16% of males had type 2 diabetes and 38% of those screened had a first- or second-degree relative with a family history of diabetes.

The author describes the benefits of a family-orientated approach in addressing health-education

issues, discovering undiagnosed diabetes and improvements in the uptake of services such as cervical screening. Biomedical measures such as random cholesterol level, blood pressure and urinalysis were performed, but these were not reported. The Bangladeshi community appreciated the clinics, and some families contacted the practice to make an appointment, having heard about it through word of mouth. This study was not classified as it is a process evaluation with no predefined outputs.

Discussion

There is little evidence on which to base recommendations about the effectiveness of different health-education strategies used for British Bangladeshis. Studies that have sought to address this issue have been limited by small samples, methodological diversity and the reporting of study outcomes.

In an attempt to overcome linguistic, communication and cultural barriers, all four studies employed the use of Sylheti-speaking advocates. The inherent absence of written material, the utilisation of video-cassettes in one study (Griffiths *et al*, 2005), and the explicit use of Sylheti-speaking staff suggest a unique preference and dependency on the verbal form of communication by this community that has been demonstrated elsewhere (Lloyd *et al*, 2008b). It is likely that this trend is the consequence of low literacy levels and low levels of educational attainment within this community.

Communication barriers pose additional difficulties in measuring outcomes, and limit the use of psychosocial and knowledge-assessment tools which are an integral part of assessing the effectiveness of educational interventions. Griffiths and colleagues (2005) skilfully utilised a translated version of the self-efficacy scale, and Sylheti-speaking researchers were able to administer them face to face. Lloyd and colleagues (2008b) have recently advanced work in this area and developed audio methods of delivery as well as a Revised Diabetes Knowledge Scale (RDKS) and the Diabetes Management Self-Efficacy Scale (DMSES) for Sylheti and Mirpuri communities. The tools have been welcomed by Sylheti and Mirpuri patients and, although the development and evaluation of culturally sensitive tools for communities with little or no written language skills remains in its infancy, developing work provides scope for future optimism. Additionally, none of the included papers reported clinical outcome measures. It is not clear whether members of the Bangladeshi community are hesitant in enrolling on trials where such data would be collected/published. Clarification is needed in this area, as clinical outcome

measures may aid in the triangulation of the intervention effect.

Participation by ethnic minority groups, and specifically the South Asian groups, into research trials have been reported to be poor (Hussain-Gambles *et al*, 2004a,b; Jolly *et al*, 2005). There are few data on barriers to participation from British Bangladeshis, and there is a need to identify the barriers and facilitators to participation in order to improve the involvement of Bangladeshi participants in medical research. One trial in this review (Griffiths *et al*, 2005) reported disappointing recruitment and retention of participants. However, it is likely that the absence of linguistically competent advocates would have led to poorer results in recruitment and retention. Three of the four studies in this review (Lee, 1994; Chowdhury *et al*, 2003; Greenhalgh *et al*, 2005) reported that participants volunteered after hearing about the study by word of mouth. Thus the particular recruitment strategies used may not have been effective in reaching the target audience from the outset as described in one of the trials (Griffiths *et al*, 2005). It is also possible that community/individual enthusiasm led to additional volunteers enrolling. The studies report a high level of satisfaction and appreciation of the interventions, suggesting that there is a drive within this community to increase awareness and knowledge; similar findings have been reported previously (Greenhalgh *et al*, 1998; Lloyd *et al*, 2008a).

Two of the interventions were undertaken in a clinical setting (Lee, 1994; Chowdhury *et al*, 2003), one was undertaken in a mixed community and clinical setting (Griffiths *et al*, 2005), and one was undertaken in a community setting only (Greenhalgh *et al*, 2005). There were no descriptions of the setting preference by participants, and as access to services has been reported as a key barrier (Rhodes *et al*, 2003), additional research to establish the most appropriate settings is needed.

Rankin and Bhopal (2001) have previously highlighted poor levels of diabetes knowledge, including risk factors and prevention strategies, among British Bangladeshis. The findings by Greenhalgh *et al* (2005) where patients compared their blood glucose results with the results of others in the group would corroborate this assertion. Although not described in the paper in any detail, it is likely that poor understanding of diabetes and how it affects individuals and the body led to such comments being made by the participants. In order to deliver effective structured patient-education programmes to members of the Sylheti-speaking Bangladeshi community where knowledge deficits may be greater (Rankin and Bhopal, 2001), there is a need to develop a greater understanding of the areas and depth of knowledge deficit within this community, using appropriate and culturally sensitive tools.

Standard 3 of the *National Service Framework for Diabetes* published in 2001 pledges to provide support and structured education in an appropriate format and language (Department of Health, 2001), yet the evidence from this review suggests that, for this particularly vulnerable group, we are far from achieving a suitable evidence base from which any such programme can be nationally implemented. Hawthorne (1994) has previously identified the lack of research on diabetes health education and on its effectiveness for this vulnerable population, and despite 15 years of advances in diabetes research, the void in this subject remains.

Strengths, limitations and future research

Two reviewers independently searched, screened, reviewed and extracted data, and this was a key strength of the study. Additionally, the review was updated to August 2008, ensuring that our paper did not omit any recent publications. However, the review was limited due to the number of studies, and there is scope for additional work on health-education strategies in other communities that have no form of written language. These include the Punjabi, Mirpuri and Romani communities in the UK, and various other minorities across the world who suffer an exacerbated incidence of diabetes, such as the Aboriginal community in Australia (Department of Health, 2001). We would also suggest incorporating the evidence covering all major chronic conditions that require substantial self-management. Such a review will provide heterogeneous outcomes, but the primary aim of synthesising the evidence of different strategies used with minority groups who have no formal written language would, nonetheless, aid healthcare professionals and policymakers in planning and delivering appropriate care.

While the papers included in this review describe various methods for educating the Bangladeshi community, none report an educational needs assessment to inform the content and delivery mode of education for this population. The availability of such data, and a knowledge base surrounding it, will aid in the development of future trials, and we would urge authors to consider this for future research.

Conclusion

In complex interventions there remains much debate about which aspects of the interventions are beneficial, how they exert their effects, and for how long. The mechanisms for each component may differ between

different cultural groups, and we report on the implementation of three process evaluations and one RCT in British Bangladeshi populations. While each study provides valuable insights into the workability of the programmes, further quantitative and qualitative research, including formative, process and outcome evaluations, is needed to identify suitable interventions and their effectiveness in larger-scale studies with measures of clinical outcomes and longer follow-up periods.

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CONFLICTS OF INTEREST

None.

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ADDRESS FOR CORRESPONDENCE

Rahul Alam, Health Sciences Research Institute, Warwick Medical School, University of Warwick, Coventry CV4 7AL, UK. Tel: +44 (0)2476 574490; fax: +44 (0)2476 528375; email: R.Alam@warwick.ac.uk

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