Cardiovascular risk assessment of South Asian populations in religious and community settings: a qualitative study

Sophie V Eastwood, Greta Rait, Mimi Bhattacharyya, Devaki R Nair and Kate Walters

Background. Cardiovascular disease (CVD) is a leading cause of mortality, and South Asian groups experience worse outcomes than the general population in the UK. Regular screening for CVD risk factors is recommended, but we do not know the best settings in which to deliver this for ethically diverse populations. Health promotion in religious and community settings may reduce inequalities in access to cardiovascular preventative health care.

Objectives. To use stakeholders’ and attendees’ experiences to explore the feasibility and potential impact of cardiovascular risk assessment targeting South Asian groups at religious and community venues and how health checks in these settings might compare with general practice assessments.

Method. Qualitative semi-structured interviews were used. The settings were two Hindu temples, one mosque and one Bangladeshi community centre in central and north-west London. Twenty-four participants (12 stakeholders and 12 attendees) were purposively selected for interview. Interviews were recorded and transcribed verbatim. Themes from the data were generated using thematic framework analysis.

Results. All attendees reported positive experiences of the assessments. All reported making lifestyle changes after the check, particularly to diet and exercise. Barriers to lifestyle change, e.g. resistance to change from family members, were identified. Advantages of implementing assessments in religious and community settings compared with general practice included accessibility and community encouragement. Disadvantages included reduced privacy, organizational difficulties and lack of follow-up care.

Conclusion. Cardiovascular risk assessment in religious and community settings has the potential to trigger lifestyle change in younger participants. These venues should be considered for future health promotional activities.

Keywords. Cardiovascular disease, general practice, NHS health checks, primary prevention, South Asian.

Introduction

Cardiovascular disease (CVD) is the leading cause of mortality globally and in the UK. People of South Asian ethnic origin experience an earlier age of onset and higher myocardial infarction rates than Caucasian populations, this is the case for both migrant populations in industrialized countries and populations resident in the Indian subcontinent. In the UK, targeted outreach programmes addressing CVD risk in South Asian groups have been proposed. A UK CVD risk factor identification programme, known as ‘NHS Health Checks’, was introduced in 2008, to be administered by GPs or other providers. Population-level modelling has shown that 10% of those eligible for the checks (40–70 years old with no pre-existing CVD) have high CVD risk and may be suitable for interventions.

Previous evaluation of participants in community CVD risk assessment programmes targeting South Asian groups in the UK has shown good uptake, acceptability and short-term outcomes. However,
stakeholder viewpoints have not been examined, and there is a lack of qualitative evaluation of the National Health Service (NHS) Health Check specifically in these groups. Cross-sectional surveys have shown high uptake in South Asian groups.9,12

Several UK studies have examined barriers to lifestyle change in South Asian populations. Factors such as language barriers and lack of culturally appropriate opportunities have been cited.10 A review of health promotion in ethnic minority groups emphasized understanding differences of health beliefs.13

In the UK, there is little literature on the use of faith-based settings for CVD screening, though one Scottish CVD screening programme targeting South Asians incorporated religious venues.11 A systematic review of health promotion in churches in the USA suggested specific benefits including potential to target individuals who do not frequently attend health services and social support facilitating behaviour change.14

In order to inform service commissioners of the feasibility of community initiatives targeting high-CVD-risk groups in religious or community venues, there is a need for qualitative evaluation of experiences or potential impact of initiatives and the views of stakeholders. No previous studies have looked at the feasibility or acceptability of NHS Health Checks (the UK Department of Health's nationwide initiative) in South Asian groups in religious and community venues, as opposed to locally developed pilot screening programmes. The perspective of stakeholders in service implementation has not been explored—particularly for cross-cultural work. Additionally, no study has attempted to compare user perceptions of how such initiatives delivered in community venues might compare with preventative care in general practice. This study investigated the views of stakeholders and attendees involved in a programme of CVD risk assessments in faith-based and community settings for South Asian groups in London.

Method

Study design: qualitative study, in-depth interviews

Study setting and population. Two Hindu temples in North London (attended by a Gujarati Indian population) and a Mosque (attended mostly by a Bangladeshi Muslim population) and a Bangladeshi community centre in central London.

Study sample

Stakeholders. All key stakeholders responsible for delivering or organizing the checks at each venue were approached, including religious and community leaders at each venue and members of the clinical team from the Royal Free Hospital NHS Trust. Additionally, the two individuals with the chief responsibility for commissioning the service were approached directly. GPs in 3 practices local to the initiatives were invited to interview over email, and two agreed.

Attendees. Recipients of the NHS health checks were approached at their check and asked if they wished to take part in the study. Those who agreed (n = 24) were then purposively sampled to achieve a spread across ages, genders, ethnicities and first languages (English or non-English). A provisional quota of 15 attendees was set to capture a variety of experience or opinions; the final number was governed when no new themes emerged from interviews. Attendees were interviewed between 2 and 6 months post-health check.

NHS Health Check

These consisted of a 40-minute appointment, including anthropometrics, blood pressure, point-of-care cholesterol and glucose testing and lifestyle assessment, followed by tailored advice on lifestyle improvement.

Data collection

Stakeholders were interviewed at their workplaces or religious setting. Digitally recorded interviews were transcribed by an independent transcriber; transcripts were then checked. Attendees were contacted by phone, and interviews were conducted at attendees’ homes (n = 5), the temple (n = 3), workplaces (n = 2) or the research centre (n = 2). Nine attendee interviews were completed in English by SE and three in Gujarati by a bilingual researcher. Gujarati interviews were back-translated into English by an independent researcher. Interviews lasted 20–55 minutes. Topic guides were developed by the research team to address specific areas of interest around the initiatives, see Table 1 for content outlines. They were modified after initial piloting in 2–3 individuals in each group (which were included in the analysis).

Data analysis

Interview data were analysed using thematic framework analysis.15 This encompassed the stages of familiarization, developing a thematic framework, indexing, charting onto Excel spreadsheets and interpretation. Evidence to support or refute each theme was sought. The framework was developed by researchers independently and agreed by consensus.

Results

Study sample

The study sample consisted of 12 stakeholders and 12 attendees. Stakeholders were 30–67 years old (9/12 male): one was Bangladeshi British, six were Indian British and five were white British. They comprised three health check team members, two commissioners, two GPs, four temple community leaders and
one Bangladeshi community organizer. Attendees were 27–49 years old; 6 out of 12 were male, 3 were Bangladeshi British, and none were Indian British. No attendees had hypertension, type 2 diabetes or hyperlipidaemia identified by the check although they were counselled regarding increased body mass index, lack of exercise, high consumption of dietary fats and smoking. Attendees were also alerted if their blood pressure or lipids were ‘borderline’—as was the case for 4 of those interviewed, who were advised to get these metrics re-checked in general practice. All stakeholders approached agreed to participate, and all attendees who had initially expressed interest at the health check agreed to participate once contacted.

Five main themes arose: experience of the check, impact of the check, facilitators to lifestyle change, barriers to lifestyle change and comparison with health promotion in general practice, see Table 2 for quotes pertaining to each theme.

**Experience of the check.** All attendees were positive about the check, praising its convenience and the motivating attitude of staff. Most attendees were unable to cite any negative aspects.

Most attendees stated the check improved their knowledge of cardiovascular risk factors. In general, they had not known about their own risk prior to the check, none had discussed it with their GP and some were surprised by their results. The overall feeling was that it was better to learn about personal risk as early to tackle risk factors. Stakeholders commented on the high yield of modifiable risk factors identified.

Stakeholders described challenges in service delivery e.g. managing large numbers of people, clinical waste disposal and the enforcement of exclusion criteria. Two important factors in dealing with these issues at the temples were the community volunteers and ‘champions’, i.e. organizers or leaders who were willing to help administer the programme and inspire community participation. A similar champion was absent in the Bangladeshi community setting, which clinical stakeholders felt was a problem.

**Impact of the check.** All attendees reported making lifestyle changes after the check, most commonly increasing their exercise levels or modifying their diet. They discussed changes to cooking habits such as using less oil. The two attendees who smoked had not quit but were planning to. Several attendees stated they had lost weight.

Attendees reported that their post-check lifestyle counselling had concentrated on small adjustments, with practical tips, a strategy which they felt would render changes more sustainable. They gave examples such as walking to work or doing their grocery shopping on foot.

Similarly, stakeholders from the venues had observed people changing their behaviour, e.g. attending gyms, as a result of the checks.

**Facilitators to lifestyle change.** Attendees cited several factors facilitating lifestyle change. These included awareness—through knowledge and personal experience. One participant described the experience of seeing his father suffer multiple strokes and cited this as a motivating factor for healthy lifestyle. External sources of encouragement included the health check team, religious or community leaders, family members and media sources. Individual parameters such as self-control and adherence to religious beliefs, e.g. forbidding alcohol consumption, smoking or immoderate food consumption, were mentioned.

**Barriers to lifestyle change.** Factors inhibiting lifestyle change included views or practices of family members; it was felt that living with family restricted food choices, possibly because older generations preferred traditional food cooked in the conventional manner rather than lower fat recipes. Many commented on the high volume of ghee (clarified butter), oil and fried foods in traditional South Asian cooking. Some participants felt that cooking healthy vegetarian food was a challenge (with regards to the Gujarati population).

Certain obstacles were felt to be cultural, e.g. busy social lives. There was a perception that being healthy is time-consuming, and attendees cited many work, domestic and social commitments, including caring for relatives, that could impede this.

Some attendees thought that women in the Bangladeshi community were less likely to do exercise as they might be more socially restricted though some attendees gave examples of exercise classes targeting this group that had good attendance.

---

**Table 1 Content of attendee and stakeholder topic guides**

<table>
<thead>
<tr>
<th>Type of participant</th>
<th>Content of topic guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendee</td>
<td>Experience of the check</td>
</tr>
<tr>
<td></td>
<td>Prior knowledge of CVD risk factors</td>
</tr>
<tr>
<td></td>
<td>Cultural influences on modifiable CVD risk factors</td>
</tr>
<tr>
<td></td>
<td>Impact of the check on lifestyle/other barriers and facilitators to lifestyle modification</td>
</tr>
<tr>
<td></td>
<td>Pros/cons of NHS health checks in community (non-GP) venues in comparison to GP settings</td>
</tr>
<tr>
<td>Stakeholder</td>
<td>Involvement in health checks: how and why</td>
</tr>
<tr>
<td></td>
<td>How checks were publicised and implemented</td>
</tr>
<tr>
<td></td>
<td>Perceptions, successes and problems of programme</td>
</tr>
<tr>
<td></td>
<td>Impact of the check on participants</td>
</tr>
<tr>
<td></td>
<td>Pros/cons of NHS health checks in community (non-GP) venues in comparison to GP settings</td>
</tr>
</tbody>
</table>
I think people expect that too, I feel sad I can't do more.’ (Stakeholder 9, community leader)

anything you tell the GP is confidential, and they're in the room alone with their GP ...’ (Stakeholder 3, clinical staff)

by the law of averages somebody ... so perhaps they might feel a bit more comfortable sort of saying that in their GPs ... they'll understand that barrier, which is access, but there's probably other barriers in terms of people's motivation, desire to change or do something about their health.

medicines so they will try alternative medicines before going to the GP .' (Stakeholder 12, community leader)

understanding of people.’ (Attendee 11, 35 year old female, temple)

commitments.' (Attendee 4, 45 year old female, temple)

a lot of their time's taken up with that ... so even if they did want to go to a keep-fit class or whatever, they might not be able to do it because of their own health and lifestyle ... and sometimes I find with the Indian community, I mean they might have a father-in-law or a mother-in-law, and

Bangladeshi community centre)

you know, I probably would've not changed as much. From an Asian perspective ... they stick together ... they're under one roof and everyone's

an early age ...’ (Attendee 3, 27 year old male, Bangladeshi community centre)

'we're actually starting to see a lot more people from the community also coming to the gym ... I can see a progression in terms of people are actually trying to do something.' (Stakeholder 12, community leader)

Facilitators to behavior change

'... My dad, he's had a few strokes over the past few years. My uncle's had it, and I thought the fear of having, I don't want to have a stroke at an early age ...’ (Attendee 3, 27 year old male, Bangladeshi community centre)

'The religious way is to lead a healthy life, so being religious helps with this.' (Attendee 5, 45 year old female, temple)

Barriers to behavior change

'... luckily, the reason I found it quite easy as well 'cause I've moved house from my parents. Because I think if I was in my mum's house, you know, I probably would've not changed as much. From an Asian perspective ... they stick together ... they're under one roof and everyone's having the same stuff throughout the day and I think that's why people would find it more difficult to change.' (Attendee 3, 27 year old male, Bangladeshi community centre)

'... it's probably the pace of life and the stress and if they've got children as well, that plays a big factor ... so I find that people tend to neglect their own health and lifestyle ... and sometimes I find with the Indian community, I mean they might have a father-in-law or a mother-in-law, and a lot of their time's taken up with that ... so even if they did want to go to a keep-fit class or whatever, they might not be able to do it because of commitments.' (Attendee 4, 45 year old female, temple)

'I think it's an education thing ... Bengali men have a high smoking rate ... I don't think they realise how high risk they are.' (Stakeholder 2, clinical staff)

Comparison to health promotion in general practice

'There is a common saying that one should only visit a doctor if one is ill, otherwise doctors will put false doubts in one's mind. That is an understanding of people.’ (Attendee 11, 35 year old female, temple)

because Indians, they would bear the pain and not go to the doctor ... the older generation certainly do believe in black magic or alternative medicines so they will try alternative medicines before going to the GP.’ (Stakeholder 12, community leader)

'... just because you've made an effort to go out there I think doesn't guarantee that people will be interested ... you're breaking down one barrier, which is access, but there's probably other barriers in terms of people's motivation, desire to change or do something about their health. If they're not motivated to go and see their GP they might not be motivated to come and talk to you.' (Stakeholder 7 general practitioner)

'We haven't got anybody who admits to drinking alcohol, because in that particular sect ... of Hinduism, there's no alcohol allowed ... and by the law of averages somebody ... so perhaps they might feel a bit more comfortable sort of saying that in their GPs ... they'll understand that anything you tell the GP is confidential, and they're in the room alone with their GP ...' (Stakeholder 3, clinical staff)

'We get quite a lot of high risk people, but we can't get involved in the treatment or follow-up. We would like to follow them up here and I think people expect that too, I feel sad I can't do more.’ (Stakeholder 9, community leader)
Lack of education was also indicated as a barrier; stakeholders felt that lack of CVD awareness was a key issue in post-check likelihood of lifestyle change in the Bangladeshi community.

Comparison of religious and community venues with health promotion in general practice.

Advantages. Benefits cited by health check recipients were high recruitment, an opportunity to educate whole families (leading to sustained lifestyle improvement across generations) and mutual support through ‘community spirit’. They also felt more comfortable in the community venues and empowered to ask questions without language barriers as many volunteers spoke Gujarati at the temples, and interpreters were assisting the checks at the other venues. Stakeholders felt that targeting South Asian groups in community settings was advantageous as they could sometimes elude general practice. Stakeholders outlined reasons for this including mistrust of the medical profession and use of alternative medicines.

Other benefits stakeholders gave included increased uptake due to encouragement from community leaders and the availability of lifestyle interventions at the temple (e.g. cookery classes) that attendees could attend post-screening. They argued that the programme was cost-efficient because of the use of community volunteers, potential to reach large numbers of people and the ‘one-stop shop’ service—i.e. point-of-care testing with blood results (therefore cardiovascular risk levels and tailored advice) that were available within the check.

Problems specific to general practice that were overcome in community settings were difficulty obtaining appointments, geographical inconvenience and waiting times. The perception that GPs were too busy was held by attendees and stakeholders, and attendees often felt their GP’s role as dealing with disease only rather than having a role in health promotion. Moreover, some attendees perceived the quality of care at the checks to be superior, with more time taken to explain the results and more specialized staff. One stakeholder felt that the consultation at the religious or community venue was more likely to be ‘patient-centred’ rather than ‘GP-centred’.

However, one stakeholder felt that personal motivation was the most important contributory factor to potential ensuing lifestyle change rather than the venue of the health checks.

Disadvantages. Attendees felt that there were advantages of screening in general practice in comparison with community settings, including familiarity of the family doctor and confidentiality. Privacy was felt to be suboptimal at all venues, and stakeholders felt this may have affected the disclosure of culturally taboo behaviours.

It was postulated by stakeholders that gender-related issues, i.e. wanting a health care worker of the same sex (which was felt to be particularly important in the Bangladeshi community) and the need to keep men and women separate at the venues, would not have been as problematic in general practice.

Despite the excellent uptake at the temple, the numbers screened at the Mosque and Bangladeshi community centre were much lower; stakeholders felt this may have been because the screening was held on weekdays when the majority of the male target population would have been at work. Though procedures were in place regarding management of seriously abnormal values, e.g. of blood pressure, concerns were voiced regarding data transfer to GPs and lack of infrastructure for follow-up at the venue—a problem compounded by the fact that some attendees in the Bangladeshi community could not identify a GP. Community leaders regretted the limited scope of the checks.

An issue mentioned by attendees and stakeholders was the programme’s focus on only two ethnic groups. Some attendees felt the programme should be extended to other communities.

Interface between checks and general practice. Opinions were mixed concerning how the health checks might dovetail into GP’s work. Some stakeholders felt that the programme was beneficial to GPs, providing them with data for the Quality Outcomes Framework. It was thought that the programme could increase GP’s workload, albeit appropriately in response to the pathology discovered in the checks. There was concern among stakeholders that people without GPs or who could not give their GP’s address and who were found to be at high risk might be suboptimally followed up. This was dealt with by encouraging them to register with a GP and directing them back into mainstream health services.

Discussion

Summary of main findings

Attendees who had undergone a health check at the religious and community venues unanimously reported positive experiences and lifestyle changes. This was enabled by advice from the health check team, focusing on small changes easily incorporated into everyday life. Barriers to lifestyle change were family commitments, traditional diet and lack of time. Culture-specific facilitators and barriers were highlighted by attendees in particular. Advantages of health promotion in religious or community settings rather than in general practice were numbers of people accessed and ease of access. Disadvantages included problems maintaining privacy, the focus on only two ethnic groups and lack of follow-up care at the venues. Stakeholders agreed it was therefore crucial to channel high-risk participants back into mainstream services. An overarching link between themes was the importance of community encouragement in health promotion. There were several
differences between the programmes in the Temples and those in the other venues, including enhanced background knowledge of CVD risk in the Temple communities (due in part to prior health education programmes administered by the venues to ‘prime’ the population), champions at the Temples who aided organization and motivation and health promotion activities (e.g. healthy cooking classes) at the Temples. Consequently, the Bangladeshi attendees interviewed focused more on personal lifestyle changes than taking part in group activities to improve lifestyle.

Strengths and limitations of the study
The qualitative approach, incorporating purposive sampling and flexible topic guides, allowed collection of in-depth data concerning a range of stakeholders’ and attendees’ experiences and attitudes towards the checks and lifestyle change. A recent review article emphasized the dearth of research in this area\(^1\) and how increased understanding could help to inform future policy. In a cross-cultural setting, where developers or commissioners of health programmes may not be aware of cultural norms and factors influencing the adoption of programmes, such qualitative analysis provides a powerful programme development tool. In this way, user or stakeholder accounts may form part of an iterative process to ensure the service is as culturally acceptable as possible. There is very little literature exploring the experiences and impact of CVD health checks performed in religious settings for UK South Asian populations. However, the small sample size means that this study can only comment on feasibility, acceptability and potential impact rather than effectiveness of such interventions.

The study’s main weakness was the sample representativeness—with under-representation from the Bangladeshi community sites and a limited (younger) age range—despite purposive sampling intended to maximize the diversity of the sample. The findings may not apply to older age groups. However, as the NHS Health Check is being rolled out to South Asians of 30 years and over in some areas (and some authors argue this should be a national policy),\(^{16}\) reflecting higher cardiometabolic risk at lower ages than for Caucasian populations,\(^{17}\) the relatively young population of this study does not affect its applicability. Participants may have felt reluctant to criticize the programme though the interviewers were independent from the NHS checks programme and probed for disadvantages or problems. The attendees interviewed may have been among some of the more motivated individuals screened, reflecting their willingness to embrace lifestyle change. Interview of non-participants may have yielded different views of the feasibility of the service. None of attendees interviewed were at high CVD risk (i.e. they all had a 10 year CVD risk score of less than 20% according to an ethnicity-modified Framingham risk algorithm),\(^{16}\) and this study therefore does not explore whether the checks’ impact on high-risk individuals. However, most attendees interviewed did have at least one modifiable CVD risk factor, e.g. smoking, low exercise levels etc. Additionally, the South Asian community is culturally heterogeneous and therefore caution was needed with data interpretation on cultural issues.

Comparison with existing literature
Several studies have described community assessment for CVD risk factors in South Asian populations.\(^{6,10,19}\) A multi-ethnic intervention in Birmingham, in which 57% of participants screened were South Asian, showed high rates of modifiable risk factor identification.\(^{6}\) Equally, a risk assessment and educational programme for men in Bradford, showed increased knowledge and motivation for change after the intervention but did not examine consequences of the check.\(^{19}\) In one study, a clinic in various non-clinical community venues (including religious venues) provided screening and advice to individuals from three South Asian communities in Edinburgh; this showed improved lipids, blood pressure, self-reported physical activity levels, reduction in fried food consumption and decrease in stress at 6–12 months.\(^{10}\) These results support our findings of positive lifestyle changes resulting following a risk assessment intervention. Reports from focus groups on this intervention showed that attendees appreciated the positive attitude of staff, availability of interpreters and the encouragement received, in accordance with our findings.\(^{31}\) This study also identified some barriers to lifestyle change, some of which reflected those found in our study, namely work or time pressures and female caring responsibilities. In another focus group study of South Asians in Leicester, similar barriers to lifestyle change to those found in our study were reported, including difficulties making healthy traditional food and stress.\(^{30}\) They also reported language barriers in accessing health services, as in our study. A review of UK diabetes prevention programmes for ethnic minorities indicated that behaviour change can be prevented by social and cultural norms, which also fits with our findings.\(^{31}\)

None of these studies interviewed stakeholders for their perspectives or examined how user perceptions of health promotion in the community might compare with primary care though the need to direct people seen in such community services back into mainstream health care has been repeatedly highlighted.\(^{6,31}\) An assessment of providers of cardiovascular screening in a multi-ethnic population in Birmingham found that GPs were the preferred providers, which fits in with the opinions of some of the attendees in this study.\(^{22}\)

Implications for future research or clinical practice
Our study has shown that targeting high-risk South Asian populations in community and religious settings
has benefits and the health checks encouraged self-reported behaviour change in the younger participants interviewed. There needs to be clear pathways for directing people back to general practice for follow-up.

The use of qualitative analysis as a programme development tool for initiatives targeting ethnic minorities is recommended as in this study, several ethnicity-specific potential barriers to adoption of the service were identified.

Future research should focus on evidence for the effectiveness of CVD risk assessments in South Asian groups in terms of uptake, resulting behavioural modifications and cardiovascular end-points. A comparison of these outcomes from different venues would help establish the most appropriate settings for these checks.

Acknowledgements

SE, KW, GR and MB were responsible for developing the topics guides. SE and qualitative researchers from Ethnic Focus carried out the interviews. SE, KW, GR and MB were responsible for data analysis and drafting the manuscript. DN is a Consultant Lipidologist and leads the CVD check programme; all other members of the research team were independent of the programme. The authors would like to thank the following people for their help with the study: Mr Darren Harvey, Ms Laura Robertson, Ms Keta Desai, Dr Lalit Nirmal, Dr Divya Nirmal, Dr Mayank Shah, Mr Govind Raygani, Mr Lalji Vekaria, Mr Vishram Bhudia and Mr Jilani Chowdhury, STRC-Research (ethnic focus). In addition, the authors would like to thank all stakeholders and participants in the screening who were interviewed in this study.

Declaration

Funding: National Health Service Improvement grant from the Department of Health.

Ethical approval: Outer West London Regional Ethics Committee.

Conflict of interest: The programme in the temples was financially supported by a Pfizer Foundation award 2008, Pfizer UK, in addition to educational grants from Merck Sharp and Dohme, Abbott and AstraZeneca. The research team and the execution of this study were independent of this funding. DN has advisory board membership for Merck Sharp & Dohme and Roche, and is a speaker for Merck Sharp & Dohme, Abbott and Pfizer.

References


