

Health beliefs of African–Caribbean people with type 2 diabetes: a qualitative study

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ABSTRACT

Background

There is evidence that African–Caribbean people with diabetes have poorer outcomes than other individuals with diabetes. It is not fully understood why this happens.

Aim

To gain an understanding of how health beliefs influence the way African–Caribbean people with diabetes manage their illness.

Design of study

Qualitative study using one-to-one interviews.

Setting

Inner-city Nottingham during 2003–2004.

Method

A purposive sample of 16 African–Caribbean people with type 2 diabetes. Participants took part in semi-structured in-depth interviews which were audio-taped recorded and transcribed. Transcripts were analysed for emergent themes and validity was checked by an independent researcher and through discussion with a local community group. Data were managed using NVivo software.

Results

Participants were strongly influenced by memories of growing up in the Caribbean, migration to the UK, and friends' and families' accounts of diabetes, as well as their own experiences of the illness. Knowledge and understanding of diabetes was sometimes poor. There was some mistrust in the value of advice and treatment offered by professionals and a preference for natural treatments. Health professionals were generally praised but some interviewees felt that the NHS did not cater properly for black people. Insulin treatments were feared and diet- or tablet-controlled diabetes was seen by some as a mild form that did not warrant serious concern.

Conclusions

These findings have implications for how some people manage their diabetes and how diabetes care is delivered to the African–Caribbean community.

Keywords

African Caribbean; health beliefs; qualitative; type 2 diabetes.

INTRODUCTION

Diabetes is one of the most common chronic illnesses in the UK, affecting about 5.7% of the African–Caribbean population compared with around 4.4% of the general population.^{1,2} Complications of diabetes cause disability, such as renal failure, blindness, and lower limb amputation, and premature death, chiefly through coronary heart disease and stroke. The prevalence of stroke and chronic kidney disease is higher in African–Caribbean people than the general population of the UK.³

It is not clear why African–Caribbean people with diabetes have worse outcomes, but studies have provided some clues. Good blood glucose and blood pressure control reduce the risk of developing complications of diabetes;^{4,5} however, this is likely to mean more contacts with health professionals and an increase in prescribed medication. Studies suggest that non-attendance rates were higher⁶ and adherence to medication regimes was poorer^{7,8} in patients from minority ethnic groups compared with other patients. This may be the case with diabetes also. There is evidence that women from black and ethnic minority groups are more likely to continue unhealthy lifestyle behaviours,⁹ and have higher rates of obesity.¹ Reports of inferior service provision for people with diabetes from South Asian backgrounds have been published,^{10,11} and this may be similar for people of African–Caribbean origin in the UK.

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How this fits in

African-Caribbean people with diabetes have poorer outcomes than the general population with diabetes in the UK. Health beliefs have an influence on health behaviour and health outcomes. This study found that African-Caribbean people with diabetes mistrust the advice, medication, and services provided to them by health professionals, which influences their self-management. Helping individuals manage their diabetes, including African-Caribbean people, needs to involve an understanding of their culture. Changes in service provision to understand, accept, and incorporate African-Caribbean people's health beliefs may improve self-management.

Health beliefs appear to have a major impact on people's adherence to treatment for diabetes, and this may affect outcomes.¹² Studies of health beliefs in black people with diabetes have been reported in the US and Canada.¹³⁻¹⁶ Responders described feelings of powerlessness over the illness, fear, ambivalence, knowledge gaps, and an inability to link their behaviour to outcomes, lack of social support, and a reliance on hope as explanations for poor adherence. In the UK, Scott described how difficult it was for West Indian people with diabetes to follow dietary advice because it did not include Caribbean traditional foods or cooking methods.¹⁷ Scott also described how health beliefs of African-Caribbean people may lead to less effective self-management of their diabetes.¹⁸

Box 1. Topic guide used to help conduct interviews.

- ▶ Ask about upbringing and what influenced you
 - Prompts: Family and friends
Environment
Lifestyle
- ▶ Ask about how you think you developed diabetes
 - Prompts: Lifestyle
Inheritance
Other beliefs about causes
- ▶ Ask about present diabetes
 - Prompts: How you feel?
How you cope?
Day to day routine, lifestyle, monitoring sugar
Your treatment
- ▶ Ask about complications
 - Prompts: What causes them?
What you feel about them?
How you cope?
- ▶ Ask about services
 - Prompts: How they effect you?
How you feel about them?
- ▶ Any other questions

The recently published Medical Research Council Diabetes Research Strategy highlighted the need to investigate the health beliefs of people with diabetes from black and minority ethnic groups.¹⁹ A recent focus group study identified that people with diabetes wanted to know how cultural backgrounds influenced outcomes of diabetes.²⁰ The aim of this study was to explore how health beliefs, the risks associated with diabetes, and the expectations of treatment influence the way African-Caribbean people with diabetes manage their illness.

METHOD

A qualitative approach was chosen to gain an in-depth insight into the views and beliefs held by participants. Interviews were loosely based on a topic guide (Box 1) developed from a literature search about health beliefs and diabetes, followed by discussion with a local African-Caribbean diabetes self-help group. The interview was piloted with the first participant and was not significantly changed thereafter. All interviews were carried out in people's homes or in their doctors' surgeries, depending on their preference, and lasted between 45 and 90 minutes each. All interviews were audio-taped and transcribed verbatim. Problems transcribing from the patois dialect were later 'translated'. Basic demographic data about each participant were collected at the beginning of each interview. Field notes were made immediately after each interview was completed, and a reflective diary was kept.

Sampling strategy

Participants were drawn from the African-Caribbean community of the city of Nottingham. All had type 2 diabetes, were over 18 years of age, and were able to give informed consent to be interviewed. A theoretical sampling technique was used, as described by Silverman.²¹ Cases were recruited through the self-help group and through general practices. The major criterion for selection was being able to gain consent for interview, but it was possible to get a sample of participants with a wide range of experiences of diabetes (Table 1). Recruitment continued until no new information was found during analysis.

Analysis and validity

Transcripts were examined closely, and a framework of coding was constructed based on the conversations and interactions in the interviews. The field notes, basic demographic data, and information from the literature were also used in the process of reducing codes and developing themes that described the main findings of the study. The findings were all grounded in the data present in the interviews.²² Analysis was carried out soon after each interview, so that any findings could be

tested out in subsequent interviews. NVivo, a computer-assisted qualitative data analysis system, was used to manage the data.

A sample of interviews was independently analysed, and the coding structure and findings were compared. Analysis included looking actively for opposing views in the interviews once a theme had been developed to test the strength of each finding. Each finding was considered for credibility and plausibility as described by Hammersley.²² At the end of the study, a discussion with the self-help group explored the credibility and completeness of these findings.

RESULTS

Seventeen people were interviewed. Data were excluded from one interview, as the participant was of African rather than African-Caribbean descent. Thirteen of the participants were first-generation immigrants and three were second generation. Demographic data of the 16 participants are shown in Table 1.

Findings were organised into seven main themes of how participants felt about the management of their diabetes (Table 2). There was dichotomy of views between participants; however, these themes represent explanations of their health beliefs.

Childhood memories

First generation immigrant' health beliefs were all strongly influenced by their memories of growing up in the Caribbean. Most described a carefree existence in a country with few restrictions and little stress, in which they felt close to nature. The emphasis was always on the natural and fresh nature of their traditional diet, considered healthy despite its high sugar and starch content:

'Well it's sunshine and fresh food, plenty of water to bathe in the river and whatever. And growing up as a kid everything is there, you don't know no other life so it's just wonderful.' (Interview 14)

'Oh I enjoy my West Indies food, banana, green or ripe, yam and the sweet potato I love that, mango. I love the West Indies food because that's what I grew up with.' (Interview 11)

Participants who were born in the UK also preferred traditional food:

'Well yeah because you know we used to have like cornmeal porridge, obviously the rice and peas which we still have now, we used to have something called Saturday soup which was on Saturday and it was cooked in dumplings, yams and chicken.' (Interview 9)

People felt that they kept healthy because the hot weather in the Caribbean helped burn off extra calories and that physical exertion was part of their everyday life:

'... in the West Indies we could eat more because of the sun and we burn it up more. But we don't here, we don't burn it up that much. And so for dinner some they'll have three, four portions of the same starchy things and don't realise that there's too much starch.' (Interview 3)

'... some of the questions that has occurred around the increase of diabetes, it's only the diet and the exercise that implements it. I used to go and carry water on my head and ever time I go to fetch a pan of water I would be skipping or they're playing rounders so it take me longer to carry a pan of water.' (Interview 13)

There were few accounts of contacts with health professionals in the Caribbean, with people relying more on herbal remedies:

'No well for a start I'd never been to a doctor in Jamaica, all my life. The only time I could remember when I went to doctor there when I was young I had to go to, and get circumcised.' (Interview 12)

'There's something they called cerassee, it's a bush, you boil that when you've got a cold and

Table 1. Demographic characteristics of participants.

Characteristics	
Mean age (range), years	62.2 (40–76)
Sex	
Male	6
Female	10
Place of birth	
UK	3
Caribbean	13
Diabetes control	
Insulin	6
Tablets	5
Diet only	5
Mean length of time with diabetes (range), years	10.4 (0.3–29)
Complications	
Yes	10
No	6
Length of time in UK (range), years	41.3 (38–53) ^a
Mean Townsend score based on postcode of residence (range)	4.23 (–4.08 to 7.32)

^aExcludes the three participants born in the UK.

Table 2. Table showing the three aims of the study and the relationships of the main themes.

Health beliefs	Risk of complications	Expectations of treatment
Childhood memories Fresh food Exercise Caribbean lifestyle Herbal remedies not health services Second generation immigrants also have memories of Caribbean foods and herbal remedies	–	–
Migration to the UK Stressful Adaptation as a cause of diabetes	–	–
Beliefs in the causes of diabetes Lifestyle factors Influence of Caribbean climate Stress	–	–
Knowledge and understanding Not global, but often limited understanding Influences of others' accounts considered important	Variable acknowledgement of the existence of possible complications Influence of other people's stories	–
Mistrust in the value of treatment Advice about diet at odds with health beliefs	–	Mistrust of the chemicals in tablets and insulin Preference for herbal remedies
Strategies to control diabetes Symptoms more important than objective measures Influence of strong Christian faith in some people Diabetes not a serious illness	Fear, denial, and acceptance of complications Influence of other people's stories	–
Perception of racism	–	NHS not catering for black people Individual health professionals considered quite highly

what do you call lemongrass, we call it fever grass, when you've got a temperature you boil that and drink it.' (Interview 8)

Migration to the UK

Migration to the UK was described by some as a temporary, economic necessity to gain paid employment. Many described the stress that they encountered from the change in culture, climate, poor housing, and racial tension. Some felt that the stress of migration contributed to the onset of diabetes:

'... you'd come to someone you knew had a house so they let you have a room and if it's a four bedroom there would be four different families and it was horrible. I think that started out the stress. Oh you could get jobs, get jobs, no problem about jobs. You could leave one at dinner time and you'd get one in the evening. There was lot of racial prejudice, but as I said I could get on with people so it didn't bother me much.' (Interview 3)

'I tend to feel that it was the major upheaval what happened, the transformation when she came

over here which I think given her diabetes.' (Interview 9)

Beliefs in the causes of diabetes

Most participants were aware of lifestyle factors, such as obesity and lack of exercise, and family history that predispose individuals to diabetes, but some felt that these were exacerbated by adapting from Caribbean to British lifestyles:

'I have a son now he was 22 yesterday and I think he's overweight ... he's putting on too much weight because he keep eating these fast foods and sleeping and things like that.' (Interview 15)

'... and when you come to this country everything is bread, milk ... back home you don't fancy them things.' (Interview 11)

Some lacked understanding about what was happening to their body and felt that diabetes was in some way different when in the Caribbean environment. Accounts of other people's experiences were commonplace and sometimes appeared to

influence health beliefs more than information from professional sources:

'I'm telling you I've known people take insulin here and they go back to the Caribbean and don't take insulin. And this person, well more than one person, when they go back to the Caribbean it's a different environment, they don't have the pollution that you have here, your body perspires more so all the impurities or all the stuff that it retains in your body keeps coming out and that is what I've been told.' (Interview 16)

Knowledge and understanding

Most had a basic knowledge of diabetes, some a very good understanding; some knew of others who had a limited knowledge of their diabetes:

'They talked, the diabetic nurse she gave me the charts and the testing kit initially and showed me how to use it and talked about how I was feeling. After I done the blood test she discussed with me and you know they said, "It's a lot better than it was when you first came".' (Interview 1)

'It's still not getting through, I can assure you it's not getting through. Some people it has, but on the vast I'd say 85% of people still don't understand, are not getting through.' (Interview 16)

At the time of interview, some participants seemed to lack the understanding needed to manage their illness successfully. However, the influence of other people's accounts or experiences of having the complications of diabetes often appeared to highlight the message that complications really do happen. The influences of others' views assisted some people in making the link between taking good care of their diabetes and preventing complications:

'... you see people with sores which turn into ulcers ... those are people with massive problems of sugar.' (Interview 16)

Even when the link between complications and poor diabetes control was understood, many found it difficult to keep up the measures needed to control their sugar over the long term. Stress was often mentioned as a demotivating factor:

'In fact I think I'm taking myself for granted here right now when I have something I ought not to have because at the back of my mind I believe that my eyes are going to be here forever, which it isn't ...' (Interview 2)

Some female participants expressed the view that men were more likely to have difficulty in maintaining motivation to keep good control of their sugar; however, the male participants did not all agree with this view.

Mistrust in the value of treatment

Participants found it difficult to incorporate dietary advice about treating diabetes with their traditional diet, and doubted the value of advice that was at odds with beliefs about natural foods being wholesome and good for you. Many felt that health professionals did not take their dietary preferences into account when giving advice, and this included participants who were born in the UK. On discussion with the self-help group, this finding was emphasised. The group felt that it would take three generations before African–Caribbean people would change their traditional eating habits:

'They didn't say, "Instead of using condensed milk use this". You know they didn't say "Instead of using the coconut milk for your rice and peas try and use this".' (Interview 9)

Participants were often mistrustful of medication used to treat diabetes. They appeared to be concerned about the chemical nature of tablets and insulin. The self-help group, on discussing these findings, felt that many people in their community actually believed that tablets could bring about more harm than good, or even cause complications of diabetes. This view was not overtly expressed by the participants:

'I've never been sick you see, so I never have to take no medication, I only have a cold sometimes. But other than that I don't like tablets. I don't think they are good.' (Interview 8: diabetes for 10 years and prescribed tablets during this time)

'But I do know there's people what think, "Oh I don't really want a doctor, all the chemicals that they're gong to tell me to take or whatever, my body is going to be worse for it".' (Interview 9)

'Well just this general concern of injecting yourself and the residue what it leave in your body. I mean because is it a hormone or something like that?' (Interview 16)

Strategies to control diabetes

Symptom beliefs. Several participants felt that current symptoms were more important than objective measures of blood sugar control. Some

participants described how, even when they checked their blood sugar using a blood glucose monitor, they took more notice about how they felt than the outcome of the blood sugar test. Several people described running their blood sugars higher than advised because they felt better. Many described how they had to eat regularly to avoid feeling weak. This belief was just as prevalent in people not taking medication for their diabetes, and appeared unlikely to be linked with actual low blood sugar:

'Yes and on the card it says 5-point something or other, normality, my normality is 8.1 and I'm getting the shakes, so I eat and it goes up to 18-point something and other and then that's my normality because I'm starting to move again.' (Interview 2)

'If I wasn't doing it right then I would be feeling very knackered, lethargic, you know, couldn't be bothered to do anything. But at this present moment I'm alright.' (Interview 9)

Only in some cases this belief was driven by experiences of uncomfortable hypoglycaemia:

'The first time it happened was, I wasn't feeling very good and I went upstairs, lying down on the bed and, my son, he said I was on the floor ... and he tried to wake me and I couldn't wake and the next thing I'm in the ambulance.' (Interview 5)

Influence of faith. Several of the participants had a strong Christian faith. This faith was often accompanied by a feeling that the outcome of their illness was in the hands of a higher power. This belief was not necessarily a barrier to participants trying to keep control of their blood sugar:

'Whatever will happen is what is, it's within your destiny you know and I just feel that, you know, I just have to see life in that way because worrying is not going to help any more.' (Interview 1)

Diabetes is not serious. Some participants expressed the view that diabetes, when not requiring insulin therapy, would not lead to serious harm to their health:

'So it was years before when I find out for sure that I've got diabetes it didn't really affect my life. I goes out and used to have a drink once in a while, not excessive ...' (Interview 14)

Some described the 'sugar' illness they had heard of as young people in the Caribbean, where older

people took little action to treat the condition; therefore, it could not have had much consequence. Other participants suggested that the reason 'sugar' was previously disregarded in the Caribbean was that few people understood it:

'When I went back and my aunty had it in Jamaica, she wasn't on any tablets and she's 80 odd and she's still going. So I was saying may be it's the sun ...' (Interview 7)

Insulin treatment marks the onset of a more serious illness. Many were fearful of insulin. Some described fear of injections, some a fear of the restrictive nature of being on insulin, others reported a fear of gaining weight. Several were concerned about their diabetes entering a more serious phase, with the threat of complications much closer to home:

'... she just brushed it to one side because it wasn't, she wasn't on insulin straight away ... when she went onto the insulin that's when everybody thought oh this is serious.' (Interview 7)

Fear, denial, and acceptance of complications. Participants' views varied about how the risks of diabetic complications affected them. Most were fearful of the consequences. This sometimes had a positive effect, encouraging better blood sugar control or improved lifestyle or better adherence to tablets. Fear also had negative effects; some people described denial of the possibility of complications:

'What happens if she says, "You're at risk of a stroke, a heart attack, all this kind of thing"? She can't know that can she, she couldn't know that? She'd be frightening me.' (Interview 8)

'Yes but when you go back and you see proof of what it can do then you've got to draw a line and say well this is my life I got to do something about it.' (Interview 14)

'I've been told years before that I'm risking getting diabetes, a stroke, and a heart attack but it didn't register because up here didn't want to know, you understand?' (Interview 2)

Other participants were quite accepting of the possible consequences of diabetes, and even encouraged health professionals to be more plain speaking about the risks of complications with people from their community who have diabetes:

'And show them the dangers, tell them more about the dangers ... I think they need to know the effects on their kidneys and their vision and strokes because they don't seem to put it together.' (Interview 1)

Perception of racism

Many of the participants discussed their feelings that the NHS does not give black people the same quality of service that white people receive:

'When it comes to especially black people you know you must hear about it whereas if they don't get the treatment and the care that they ought to be getting I'm just hoping that I am getting the care that I'm getting is appropriate and is right.' (Interview 2)

People did not describe incidents of overt racism, but a lack of understanding of Caribbean people's needs. Some felt that individual professionals did not understand their food and cooking preferences and so could not provide adequate advice about an appropriate diet for them:

'So they didn't tell me you know about yam and bananas, things like that so I don't know whether it's good or bad ...' (Interview 7)

'Ignorant to other cultures is a racism in society.' (Interview 9)

Some expressed a feeling that the NHS was seen as part of a wider white society, which did not understand the needs of black people and so ignored them. There was, therefore, a lack of trust in the NHS. Participants expressed a desire for the NHS to assist their community in developing new ways to prevent and treat diabetes in black people, as had been done successfully with sickle cell services:

'You've got to target your audience ... You know when you're at your doctor's next time or go out your way and make an appointment, ask for a diabetes check. I mean that one tablet a day could make you feel better. It's not all about injections right.' (Interview 9)

'... you talk about sickle cell and I guess health [professionals] see that as one of their successes, that they managed to get the message into the black community that sickle cells exists. Here's a service that you can come to get some good advice.' (Interview 9)

'... people, or the establishment in a way at some

time or other, thought black people: one, as spongers; two, as a threat to everything that they are, the establishment does, rather than learning from black people and seeing what the problems are and what effect it has on black people and trying to understand.' (Interview 16)

In discussion with the self-help group when validating the main themes, the group members confirmed that they felt a strong sense of racial prejudice in the NHS. They also volunteered the model of sickle cell services as being potentially helpful to patients with diabetes in their community.

Despite expressions of racism and a feeling that some health professionals did not understand their food and culture, most participants were very positive about the relationships they had with health professionals who looked after their diabetes. Patient-centred care was very much valued. Participants liked professionals who tried to incorporate management of their illness into their individual lifestyle:

'I think in my situation they're quite good actually, I can sit and talk to them.' (Interview 16)

DISCUSSION

Summary of main findings

Participants were strongly influenced by memories of growing up in the Caribbean, migration to the UK, and friends' and families' accounts of diabetes as well as their own experiences of the illness. Second-generation immigrants also had strong influences from a chiefly Caribbean diet and use of herbal medications. Knowledge and understanding of diabetes was sometimes poor and responses to complications varied. There was some mistrust in the value of advice and treatment offered by professionals and a preference for natural treatments. Health professionals were generally praised but some felt the NHS did not cater properly for black people. Insulin treatments were feared and diet- or tablet-controlled diabetes was seen by some as a mild form which did not warrant serious concern.

Strengths and limitations of the study

This study was generated by a previous study involving user participation,²⁰ and filled a nationally recognised research gap.¹⁹ The qualitative methods used were rigorous and the study suggested some new findings which fit with what is already known about the health beliefs of African-Caribbean people in the UK.

A weakness of the study may be the generalisability of the findings. The small group of

people interviewed comprised often older, mostly first-generation immigrants, and many participants came from areas of high deprivation. This may not be representative of the wider Caribbean community in the UK. Many of the findings may not be views particular to the African–Caribbean community. The study had no comparison group, and people from other ethnic minority groups or the white population probably share some of their views. This study only allows comparison with data from other studies on different groups. It is important that the findings are placed within the limitations of the methods used.

Participants' accounts are influenced by the context in which they are given. Some areas may be embellished, some memories seen through rose-tinted spectacles, and some participants may change their story to emphasise a point or demonstrate an issue to the interviewer. There was a dichotomy of views within this small group, suggesting that each person remains an individual; however, there were some consistent accounts that were considered important. The findings are based on the authors' own concepts of what happened in the interviews. It is important that the findings of this study are offered as possible explanations of why Caribbean people have poorer outcomes in diabetes only, and not extrapolated as the actual reasons.

Comparison with existing literature

The lack of awareness about West Indian culture and diet among health professionals was described a decade ago.¹⁷ A lack of trust in doctors in West Indian patients with diabetes has been reported,²³ as has a mistrust of medication and health professionals in African–Caribbean people with hypertension.^{7,8} Non-concordance and high usage of herbal remedies described by participants in this study have been previously identified.²⁴ It is also known that many non-African–Caribbean people with diabetes have trust and non-concordance issues.^{25,26} It is likely that professionals need to recognise the individual needs of all their patients with diabetes, as well as having an awareness of the influence of different cultures.

One study discussed poorer understanding of diabetes in black people in the US.¹³ A study exploring the perception of cardiovascular risk in a general population of people with diabetes attending a UK hospital showed a poor awareness of how closely cardiovascular risk was linked to diabetes.²⁷ These studies agree with the present findings but suggest that understanding and knowledge may well be poor in many groups of people with diabetes, and that ethnicity may not necessarily be a factor.²⁸

Several of the findings in this study have been described in other studies. Schoenberg *et al* described how perceptions of the causes of diabetes influenced how older women in the US managed their illness.²⁹ Higginbottom described how issues of ethnicity, cultural adaptation, racism, and discrimination had an impact on the chronic illness experience in African–Caribbean people with hypertension.³⁰ Egede and Bonadonna explored the role of fatalism in African–Americans and found that this may influence how people coped with the effects of diabetes complications.³¹ Schorling and Saunders³² found that over 30% of rural African–Americans believed they had 'sugar' rather than diabetes and that this was a condition less serious than diabetes.³² Greenhalgh *et al* described how the influence of others' stories have an impact on people's health beliefs about diabetes.³³

Perceptions of racism have been described in organisations before, including social services,³⁴ the police,³⁵ and the NHS.³⁶ The Audit Commission has suggested that the major requirements for an appropriate diabetes service for people from ethnic communities should include seeking views from the community, having a policy of detecting diabetes in high-risk groups, giving advice on diet that is sensitive to cultural differences, and making attempts to increase awareness of diabetes among high-risk groups.³⁷ These factors are very similar to those discussed by participants in this study, championing the success of the sickle cell service in Nottingham.

Implications for future research and clinical practice

This study provides some accounts of what influences self-management in a group of African–Caribbean people with type 2 diabetes. The findings will be valuable for the future development of diabetes services for African–Caribbean people in the UK. The study may help to explain why there may be poorer outcomes in some African–Caribbean people with type 2 diabetes, based on their health beliefs. Outcomes and health beliefs may be influenced by feelings of mistrust in advice, treatment, and in services in general, as well as poor knowledge and understanding of diabetes. There was a wide range of beliefs among participants and it is likely that these issues are not exclusive to African–Caribbean people alone. Health professionals should treat all their patients individually but have an understanding of the influence of culture.

Participants have given some suggestions as to how services may be improved: involving local community groups, improving targeted education,

and raising cultural awareness in health professionals. While the government recognises that there is still need for change,³⁸ further studies on how to implement changes in diabetes services that meet the needs of the African–Caribbean community would be desirable. Further work on how to improve diabetes self-management in African–Caribbean people may also be worthwhile.

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Ethics committee

Ethical approval was granted by Nottingham Research Ethics Committee (P2120301)

Competing interests

The authors have stated that there are none

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