

Better
Health
Briefing

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**Ethnicity and
coronary heart
disease:
making sense
of risk and
improving care**

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Briefing Paper

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Key messages

- 1 Cardiovascular disease, such as coronary heart disease, has significant consequences for individuals, their families and health care organisations. It is predicted that cardiovascular disease will become the dominant cause of death and disability across the globe over the next decade and beyond
- 2 Five coronary risk factors contribute to 80 per cent of coronary heart disease cases. Less is known about why such risk factors vary in their potency across different ethnic groupings. A better understanding of the influence of social context is fundamental, especially when developing interventions aimed at reducing the risk of coronary heart disease
- 3 People from minority ethnic groups living in the UK seem to differ from the general population in their susceptibility to cardiovascular disease. Ethnicity is recognised as a risk factor for developing coronary heart disease, although the evidence suggests that the relationship between the two is complex
- 4 There is a need to develop culturally appropriate services to increase people's awareness of coronary risk factors and to support people to live a healthier lifestyle. Understanding the complex dynamic of service delivery is the challenge facing policy and practice.

Introduction

Cardiovascular disease (CVD) is a progressive long-term condition in which the heart and/or circulatory system becomes 'diseased'. It includes a host of conditions, examples of which are coronary heart disease (CHD) and stroke. Living with one or more of these conditions has a significant impact on quality of life for both the individual concerned and those around them who provide care and support ([Lichtman *et al.*, 2008](#)).

People living with CHD require long-term support. Cardiac rehabilitation can potentially improve health and is cost-effective, especially when integrated with other services provided in community and hospital settings. Programmes vary, but generally consist of education and supervised exercise to help people recover from CHD. According to the National Service Framework for CHD ([DH, 2000](#)), every eligible person admitted to hospital with CHD should be invited to attend cardiac rehabilitation before they go home. However, less than half the people entitled to cardiac rehabilitation receive it and the majority who do are 'white' males. This leaves minority ethnic groups, women, older people and those of lower socio-economic status under-represented ([BHF, 2009](#)).

Emerging evidence, although important in addressing these problems, requires careful interpretation. This briefing paper aims to make sense of this evidence, especially within the context of developing culturally competent provision. In doing so, it focuses on populations of 'South Asian' origin, as they are the largest minority ethnic group living in the UK and, for the present, have the highest risk of developing CHD ([Bhopal *et al.*, 2004](#)).

The burden of cardiovascular disease

1

The CVD burden is significant, irrespective of ethnicity. From a global perspective it is predicted that CVD will become the leading cause of death and disability over the next decade and beyond (Capewell and Reissman, 2008). This is because populations across the world are both ageing and increasing in number. People living in countries such as those of South Asia face the dual challenge of pandemic infections, on the one hand, and rising rates of long-term conditions, such as CVD, on the other.

In the UK over three million people live with CVD, a figure predicted to increase as more live longer. Mortality rates have decreased in the UK over the last forty years (Zaman and Brunner, 2008), although this trend could be reversed as levels of obesity, high blood pressure and Type 2 diabetes increase among younger adults. Further, a closer look at data documenting the decline in CVD mortality shows that the *rate* of decline is inconsistent across different groups within the population. CVD mortality for men aged between twenty and sixty-nine years living in England fell by 29 per cent between 1971 and 1991. For men living in England but born in South Asia, the decline was considerably less (20 per cent). A similar trend was evident for women (Harding *et al.*, 2008). Despite this overall decline, CVD remains the leading cause of mortality and morbidity, accounting for 40 per cent of all deaths in the UK (Allender *et al.*, 2007). With targeted interventions that aim to encourage behavioural change in order to reduce a person's risk, a large proportion of these deaths are potentially preventable.

Understanding risk factors for coronary heart disease

2

There is no complete cure for CHD. The most effective treatment is prevention. Coronary risk factors increase an individual's risk of developing CHD and occur irrespective of ethnicity. Coronary risk factors can be divided into three groups: biological, psychosocial and behavioural. Biological factors are those with a strong genetic component, such as a family history of high blood pressure. Social class and personality type are examples of psychosocial factors. Behavioural factors include levels of physical activity, cigarette smoking and dietary habits. For the purpose of clinical assessment, coronary risk factors can be categorised as those that are modifiable and those that are not.

Although we have identified coronary risk factors individually, it is important to note that these factors are interdependent, interactive and function together. The increase in CHD risk resulting from individual coronary risk factors is not simply additive, but multiplicative in nature. Further, the relationship between individual coronary risk factors is complex. Diet, lipoprotein metabolism, cholesterol levels, physical activity and socio-economic status not only influence one another, but are also potentially changed by other biological processes that occur in the human body. It is, however, equally important to bear in mind that total cardiovascular risk (based on summation of an individual's coronary risk factors) is of greater importance than individual risk factors alone, and this emphasises the importance of context (Grundy *et al.*, 2004).

More often than not, attention is focused more on biological factors than on psychosocial factors. This is misleading. Depression, social isolation, a lack of social support, and work and domestic stress are recognised as important factors that contribute to the development of CHD and subsequent prognosis (Fourth Joint European Societies' Task Force, 2007). Social context is, therefore, as important as individual behaviour in understanding risk, and interventions need to recognise this.

Studies have shown that 80 per cent of the global burden of CHD can be attributed to five coronary risk factors, all of which are relevant to the UK. Most are potentially modifiable: these are abnormal concentration of cholesterol (and other related substances found in the body), diabetes mellitus, cigarette smoking, hypertension (or high blood pressure) and lack of physical exercise (Yusuf *et al.*, 2004). There is less evidence to explain differences in the potency of individual risk factors across distinct groups, such as individuals from different ethnic groups or younger or older adults. One reason for this is that few studies reflect ethnic, cultural and linguistic diversity and this is a major limitation of the current evidence.

Another limitation is the failure of policy to engage with the subtle nuances of how people make sense of their health and interpret risk. Improving knowledge among those 'at risk', although important, does not necessarily lead to behavioural change (Bethell *et al.*, 2008). This is a common problem, although lack of evidence on the experience of minority ethnic groups means that limited information is available from which to develop successful services for these people.

3 Ethnicity as a coronary risk factor

Approximately 12 per cent of the UK's population consists of minority ethnic groups and, at 4 per cent, South Asian communities (people who describe their ethnic origin as Indian, Pakistani, Bangladeshi or Sri Lankan) constitute one of the largest groupings. Unfortunately, health inequalities among ethnic groups living in the UK are widening rather than narrowing (Nazroo, 2006).

South Asians living in the UK have a high rate of CVD compared to the majority population. For example, South Asians living in Scotland have a 60-70 per cent higher incidence of acute myocardial infarction (heart attack) than the general population (Fischbacher *et al.*, 2009). Women of South Asian origin do not seem as protected from CVD as women in the general population. Further, young men of South Asian origin experience a high relative risk, at a younger age, compared to those of the majority population.

The reasons for higher morbidity and excess death among South Asian populations remain unclear (Aarabi and Jackson, 2005). Conventional factors, such as high blood pressure and high blood cholesterol, undoubtedly contribute to this increase. On their own, however, they do not account for the full extent of increased risk (Forouhi and Sattar, 2006). This has led to the proposition that there are differences, among ethnic groupings, in the role and potency of coronary risk factors (Kuppuswamy and Gupta, 2005). Several risk factors might explain this. Diet and lack of exercise are perhaps generic problems for socially disadvantaged groups. People of South Asian origin living in the UK, for instance, tend to have low levels of physical activity and fitness compared to the general population (Fischbacher *et al.*, 2004).

Some biological factors linked with CVD are more common in people of South Asian origin than in other ethnic groups. Metabolic syndrome is one of these: a condition in which a group of risk factors (such as high blood pressure and large waistline) occur together, increasing the risk of CVD (Kuppuswamy and Gupta, 2005). Other biological factors more common in South Asian people and linked to CVD are endothelial dysfunction (malfunctioning cells lining the inside of blood vessels) and high levels of other biological compounds such as homocysteine (a chemical building block used by the body to make protein).

The link between CHD and diabetes is especially strong. The prevalence of Type 2 diabetes, for example, shows marked differences among ethnic groups. Almost one in five people of South Asian origin living in the UK develop diabetes, compared to one in twenty-five among the general population. This increased prevalence is coupled with earlier disease onset: UK South Asian people tend to develop diabetes eleven years earlier than their white counterparts (at age forty-six versus age fifty-seven) and at a Body Mass Index less than their white

counterparts ([Mukhopadhyay *et al.*, 2006](#)). It is also worth remembering that there is one case of undiagnosed diabetes for every five diagnosed cases.

Genetic factors also influence an individual's predisposition to CHD (and diabetes), but should not be overestimated. Biological and behavioural factors cannot explain all ethnic variations either ([Nazroo, 2004](#)). Socio-economic status, disadvantage and social exclusion, alongside inappropriate and inaccessible service support, are equally likely to be important. None of these factors, however, has been studied systematically and little is known about their actual impact.

There is little doubt that socio-economic disadvantage is a major risk factor in developing CHD, and minority ethnic populations are disproportionately affected by such disadvantage. Admittedly, studies that have attempted to control for social class across different ethnic groups are sometimes flawed because the measurement tools used tend to reflect Eurocentric approaches to socio-economic status. Nonetheless, once socio-economic status had been controlled for, the risk of being diagnosed as having CHD, when compared to the general population, fell for all ethnic groups, especially for those of Indian origin (see [Nazroo, 2004](#)).

Evidence, however, remains confusing. Although the relationship between risk of CHD and social class is strong for the majority population, it is less clear for people of South Asian origin: gender, place of origin and history of migration seem to be equally important mediating factors ([Bhopal *et al.*, 2004](#)). Such evidence also emphasises the problem of treating South Asian populations as a homogeneous group. Among those aged forty or more, almost 25 per cent of people of Pakistani and Bangladeshi origin say they have CHD, compared to 13 per cent of people of Indian origin, whose risk factors are increasingly similar to the general population ([Nazroo, 2004](#)).

Consequently, *'explanations that emphasise only one risk factor may fail to identify the inter-relationship between different risk factors'* ([Nazroo, 2004](#), p. 67). There is no *'simple, unequivocal answer'* in explaining why CHD is so common among people of South Asian origin, and four interrelated explanations emerge: people of South Asian origin are more susceptible to established CHD risk factors; they are more likely to experience established CHD risk factors; there are more specific risk factors, which are not known about; and there are fewer competing causes of death in middle-aged people of South Asian origin (see [Bhopal, 2007](#), p. 233).

Making changes for life

4

People with, or at risk of, developing CHD can improve their health and quality of life by adopting healthy lifestyle habits and taking prescribed medication. Unfortunately, large-scale European studies suggest that people have limited success in making lifestyle changes to reduce coronary risk after a cardiac event ([Pyorala *et al.*, 2004](#)). Moreover, adherence to prescribed medicines for those with established CHD is typically less than 50 per cent ([Kripalani *et al.*, 2007](#)). Clearly, more effective ways need to be developed, through effective lifestyle change and medicine management, to prevent the development of CVD and reduce mortality and morbidity in those with established disease. Structured cardiac rehabilitation is an effective way to support people with CHD to make the aforementioned changes, thereby reducing cardiac-related deaths ([Jolliffe *et al.*, 2001](#)). Uptake of cardiac rehabilitation, however, remains poor among women, older people and those from lower socio-economic groupings and minority ethnic communities. People who do not speak or understand English also face considerable difficulties due to the limited availability of interpreters. Access to culturally appropriate rehabilitation, therefore, remains a problem for many groups.

A recent initiative to encourage CVD prevention is the NHS Health Check Programme, which will be rolled out across England between 2010 and 2012. Every primary care practice will be inviting 20 per cent of its patients

each year to have their risk of developing a vascular disease assessed and to receive appropriate lifestyle advice or medication (DH, 2008). The programme has two aims: to reduce the incidence of vascular illness and to reduce health inequalities. Recent debates, however, have highlighted how ethnically diverse and socially deprived populations may find 'the offer' less acceptable and have greater difficulty with assimilating advice in their everyday lives (Patel *et al.*, 2009). The programme might therefore have the consequence of widening health inequalities rather than narrowing them (Capewell and Reissman, 2008).

More recently, access to services, such as diabetes care, seems to have improved for people of South Asian origin in some geographical areas. Some of this research, however, is difficult to make sense of. People of South Asian origin are less likely to have improved angina symptoms than the general population after undergoing coronary angioplasty or bypass surgery, although mortality rates did not differ by ethnicity (Zaman *et al.*, 2009). This, if nothing else, illustrates the importance of introducing patient-defined, symptomatic outcomes alongside standard mortality outcomes.

Further, and unfortunately, better access is not automatically coupled with improved health outcomes (Fischbacher *et al.*, 2009). This also suggests that people might be gaining access to an inappropriate service (Sedgwick *et al.*, 2003). The challenge facing policy and practice is to understand the complex dynamic of service delivery. This involves reconciling acceptance of difference with ensuring that such difference does not become the basis of discrimination and inequalities. It may be that risk factor modification in people of South Asian origin needs to be more targeted to be effective (Mukhopadhyay *et al.*, 2006).

Such observations raise broader issues, relevant to our discussion. The problems experienced by people from minority populations can be attributed to both inequalities in health status and inequities in the way health services respond to need (Bhopal, 2009). 'Cultural competence' is often used as an aspirational benchmark in overcoming ignorance, prejudice and stereotyping among health and social care staff (Papadopoulos *et al.*, 2004). However,

Resources 1

British Heart Foundation

www.bhf.org.uk

The British Heart Foundation is one of the few national charities to have developed resources, interventions and initiatives relevant to a multicultural society. A recent example includes a Healthy Hearts Kit, an interactive training initiative to help health trainers and advocates, as well as statutory and voluntary organisations, convey health messages to minority ethnic populations. It explains how the heart works, the risk factors for CHD and how to reduce them. Other examples include a cookery book containing examples of healthy South Asian recipes, and culturally sensitive DVDs aimed at encouraging greater rehabilitation following a heart attack, for people of South Asian origin.

Diabetes UK

www.diabetes.org.uk

Diabetes UK has also become increasingly sensitive to the needs of a multicultural society. Examples include a 'Bollywood'-style DVD, *Meethi Baatein*, developed in association with the South Asian Health Foundation and Pink Sequin Productions, which aims to raise awareness of the seriousness of Type 2 diabetes among the UK's South Asian population. In addition, the organisation has produced various fact sheets, including one on fasting during Ramadan.

South Asian Health Foundation

www.sahf.org.uk

The South Asian Health Foundation provides more general advice on the health needs of the UK's South Asian population, much of which is relevant to CHD. They have, for example, produced a healthy eating guide and offer a broad range of guidance and evidence on CHD.

idiosyncratic and poorly contextualised ideas of what ethnicity and culture mean remain commonplace (Craig, 2007). One example is the supposed fatalism of South Asian people with chronic conditions such as CHD. This is a feature of the literature, with little recognition that fatalism does not preclude active engagement with the condition or that fatalism can occur, irrespective of ethnicity, as people try to make sense of what has happened to them (Darr *et al.*, 2008).

Nonetheless, cultural competence has informed several initiatives concerned with community engagement and, more specifically, the targeting of screening and information in particular communities or localities as a means of improving health outcomes and self-management. These initiatives are often delivered through a partnership between third sector organisations and local health personnel via lay community members who are trained to provide healthy lifestyle support (Fox, 2004). Projects, although usually reporting enthusiastic feedback from participants, remain largely unevaluated, particularly in relation to their ability to achieve long-term health gain (Farooqi and Bhavsar, 2001). They do, however, represent a commitment to building competency and capacity within communities. Such initiatives can support people to develop confidence and control in the management of their day-to-day life, as well as to demand access to appropriate services, when needed.

Conclusion

Despite a commitment by many public organisations in the UK to tackle health inequalities, there remains an ongoing disparity between understanding of the issues and commitment to act (Atkin and Chatoo, 2007). Understanding the risk of CHD among minority ethnic populations is fraught with difficulties. Potential factors include a broad range of environmental, social and genetic risks, although few of the identified risk factors, and the relationship among them, have been studied systematically. This is perhaps why there is no simple answer when explaining why CHD is so common among people of South Asian origin living in the UK. Service interventions need to reflect this, rather than rely on stereotyped generalised accounts of ethnic differences.

In addressing these difficulties, the National Service Framework for CHD emphasises the importance of meeting people's needs in a way that is religiously, culturally and linguistically appropriate (DH, 2000). In facilitating more appropriate policies and procedures for minority ethnic groups at risk of CHD, the process whereby research makes sense of the complex and multifaceted nature of ethnic and cultural diversity needs to be explored in greater detail. Further and more generally, socio-economic status, age and gender can be equally as important as ethnic origin when making sense of a person's risk of CHD. The challenge is to know when ethnicity makes a difference and mediates a person's experience, and when it does not. Ensuring that policy and practice reflect this complexity, while maintaining an appropriate evidence base, represents an ongoing challenge for policy and practice.

Resources 2

Various examples of good practice are cited in the literature. These include Project Dil, a coordinated primary care and health promotion programme for reducing risk factors for CHD among the South Asian community of Leicester (Farooqi and Bhavsar, 2001). Stone and his colleagues (2008) report a development of a modified version of a patient education module for non-English speakers with Type 2 diabetes. An accessible book, written by Rajan Bowri, aimed at lay people of South Asian

origin and focusing on preventing heart disease and diabetes, can be found at:

<http://heart-diabetes.blogspot.com>

Other initiatives that make reference to CHD include the Healthy Communities Collaborative:

www.improvementfoundation.org/page/hcc

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We welcome feedback on this paper and on all aspects of our work. Please email briefings@racefound.org.uk

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