Connecting Gender and Ethnicity in an investigation of Social Inequality in Health

Helen Cooper
Department of Sociology
University of Surrey

Ph.D Sociology, 2002.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Pg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract .....................................................................................</td>
<td>i</td>
</tr>
<tr>
<td>Acknowledgements ......................................................................</td>
<td>ii</td>
</tr>
<tr>
<td>List of Tables and Figures ................................................................</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter 1: Introduction ..................................................................</td>
<td>1</td>
</tr>
<tr>
<td>LITERATURE REVIEWS</td>
<td></td>
</tr>
<tr>
<td>Chapter 2: Socio-economic position and Health ................................</td>
<td>17</td>
</tr>
<tr>
<td>Chapter 3: Social Embeddedness and Health ..................................</td>
<td>53</td>
</tr>
<tr>
<td>Chapter 4: Cigarette smoking and Health .....................................</td>
<td>79</td>
</tr>
<tr>
<td>Chapter 5: Methodology ..................................................................</td>
<td>97</td>
</tr>
<tr>
<td>ANALYSIS CHAPTERS .......................................................................</td>
<td></td>
</tr>
<tr>
<td>Part I: Inequalities in cigarette smoking</td>
<td></td>
</tr>
<tr>
<td>Chapter 6: Socio-economic position and Cigarette smoking ..............</td>
<td>134</td>
</tr>
<tr>
<td>Chapter 7: Social Embeddedness and Cigarette smoking ....................</td>
<td>161</td>
</tr>
<tr>
<td>Part II: Inequalities in health ................................................</td>
<td></td>
</tr>
<tr>
<td>Chapter 8: Socio-economic position and Health .............................</td>
<td>188</td>
</tr>
<tr>
<td>Chapter 9: Social Embeddedness and Health ...................................</td>
<td>227</td>
</tr>
<tr>
<td>Chapter 10: Cigarette smoking, Socio-economic position, Social ... ..</td>
<td>260</td>
</tr>
<tr>
<td>Chapter 11: DISCUSSION AND CONCLUSIONS .....................................</td>
<td>294</td>
</tr>
<tr>
<td>Chapter 12: Bibliography ................................................................</td>
<td>315</td>
</tr>
</tbody>
</table>
Health inequality within British society has been consistently reported alongside concern that disparities in ill-health have widened over recent decades using indicators such as occupational social class. There is also growing recognition that characteristics such as age, gender, and ethnic group are social divisions that intersect with health, and the risk factors associated with poor health, in ways that can illuminate new patterns of inequality. It is to this body of work that this thesis contributes by focusing on the interaction between two social divisions given primacy in contemporary society; gender and ethnic group. Patterns of self-reported poor health are investigated for men and women of working-age (20-60 years) who are white or among the four largest ethnic groups in the UK.

This is achieved through secondary analysis of national data from the Health Survey for England (1993 to 1996), and of two Health Education Authority surveys conducted in 1992. These data sources permit further investigation of potential explanations for the substantially poorer health found among minority ethnic groups, particularly women, relative to whites.

Established socio-economic and behavioural explanations for poor health, that give emphasis to 'structure' and 'agency' respectively, are examined along with the role of community based relationships and activity, encapsulated by the concept of 'social embeddedness' introduced in this thesis. Investigating the relative contribution of these different factors reveals that the markedly poorer health of minority ethnic groups, notably women, is associated in large part with their poor socio-economic circumstances, but not with social embeddedness or cigarette smoking. Despite the much lower prevalence of smoking among many minority ethnic men and women than for whites, this health-related behaviour is itself socially structured by socio-economic position and, to a lesser extent, social embeddedness. The questions this raises about structure and agency for gender and ethnic groups is addressed using Bourdieu's concepts of habitus and class.
ACKNOWLEDGEMENTS

This research was funded by the ESRC. The Health Survey for England data used in this analysis was made available from the Data Archive and Manchester Computing centre (MIMAS). I am grateful to Antony Morgan at the Health Development Agency for access to the HEA Health and Lifestyles Survey (HALS) and the survey of Black and Minority Ethnic Groups (BMEG).

The advice and guidance of Professor Sara Arber has been of great value to me throughout my research career and I appreciate all the time she gave as my Ph.D supervisor. Thanks are also due to Dr. Chris Smaje, Dr. Jay Ginn and other colleagues at Surrey University for their comments on drafts of this thesis.

Thanks and love to my parents, to Jenny and Bernard Innes and to friends whose encouragement I have counted on. To MRI, for the Wonder of You.
### Chapter 3

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3.1</td>
<td>The concept of social embeddedness</td>
<td>71</td>
</tr>
<tr>
<td>F3.2</td>
<td>A proposed contextual effect of residential concentration on health for minority ethnic groups</td>
<td>77</td>
</tr>
</tbody>
</table>

### Chapter 5:

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5.1</td>
<td>Number of men and women aged 20-60 from different ethnic groups in the HSE and HEA surveys</td>
<td>111</td>
</tr>
<tr>
<td>T5.2</td>
<td>Employment status profiles of gender and ethnic groups aged 20-30 (HSE)</td>
<td>124</td>
</tr>
<tr>
<td>T5.3</td>
<td>Occupational social class of gender and ethnic groups aged 20-60 (HEA)</td>
<td>126</td>
</tr>
<tr>
<td>T5.4</td>
<td>Occupational social class of gender and ethnic groups aged 20-60 (HSE)</td>
<td>126</td>
</tr>
<tr>
<td>T5.5</td>
<td>Material deprivation score of gender and ethnic groups aged 20-60 (HSE)</td>
<td>129</td>
</tr>
<tr>
<td>T5.6</td>
<td>Key social embeddedness measures in the HEA surveys for gender and ethnic groups aged 20-60</td>
<td>131</td>
</tr>
<tr>
<td>F5.1</td>
<td>Percentage of men and women in each ethnic group by 10-year age band: HSE and HEA surveys</td>
<td>122</td>
</tr>
</tbody>
</table>

### Chapter 6:

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6.1</td>
<td>Age standardised prevalence of cigarette smoking by ethnic group and gender (HSE)</td>
<td>137</td>
</tr>
<tr>
<td>T6.2</td>
<td>Odds ratios for current cigarette smoking for men and women aged 20-60</td>
<td>152</td>
</tr>
<tr>
<td>F6.1</td>
<td>Age standardised prevalence of cigarette smoking for gender and ethnic groups by educational qualifications</td>
<td>141</td>
</tr>
<tr>
<td>F6.2</td>
<td>Age standardised prevalence of cigarette smoking for gender and ethnic groups by occupational social class</td>
<td>144</td>
</tr>
<tr>
<td>F6.3</td>
<td>Age standardised prevalence of cigarette smoking for gender and ethnic groups by material deprivation score</td>
<td>147</td>
</tr>
<tr>
<td>F6.4</td>
<td>Odds ratios from logistic regression model of ethnic differences in smoking for men and women, controlling for socio-economic position</td>
<td>157</td>
</tr>
</tbody>
</table>

### Chapter 7:

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>T7.1</td>
<td>Age standardised prevalence of cigarette smoking by ethnic group and gender (HEA)</td>
<td>163</td>
</tr>
<tr>
<td>T7.2</td>
<td>Gender and ethnic differences in the prevalence of cigarette smoking: comparing HSE and HEA data</td>
<td>165</td>
</tr>
</tbody>
</table>
Chapter 8:

T 8.1 Gender differences in reported 'less than good' health
T 8.2 Age standardised prevalence of 'less than good' health by material resources: men and women aged 20-60
T 8.3 Ethnic differences in reported 'less than good' health by age
T 8.4 Ratios of 'less than good' health for minority ethnic groups relative to whites by age
T 8.5 Age standardised prevalence of 'less than good' health by gender and ethnic group
T 8.6 Ethnic differences in health for men and women: age standardised ratios of 'less than good' health
T 8.7 Logistic regression models of 'less than good' health
T 8.8 Logistic regression models of 'less than good' health

F8.1 Age standardised prevalence of 'less than good' health by educational level: men and women aged 20-60
F8.2 Age standardised prevalence of 'less than good' health by socio-economic group: men and women aged 20-60
F8.3 Age standardised prevalence of 'less than good' health by material deprivation score: men and women aged 20-60
F8.4 Age standardised prevalence of 'less than good' health by educational level and ethnic group: men and women aged 20-60
F8.5 Age standardised prevalence of 'less than good' health by occupational class and ethnic group: men and women aged 20-60
F8.6 Age standardised prevalence of 'less than good' health by material deprivation score and ethnic group: men and women
Chapter 9:

T 9.1 Ethnic differences in reported 'fairly poor' or 'very poor' health by age

T 9.2 Ratios of 'fairly poor' or 'very poor' health for minority ethnic groups relative to whites by age

T 9.3 Age standardised prevalence of 'fairly poor' or 'very poor' health by gender and ethnic group

T 9.4 Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by informal associational activity with relatives.

T 9.5 Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by informal associational activity friends.

T 9.6 Age adjusted prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by experience of crime and problem neighbours in the last year.

T 9.7 Logistic regression of 'fairly poor' or 'very poor' health by gender and ethnic group.

T 9.8 Logistic regression of 'fairly poor' or 'very poor' health with the addition of measures of social embeddedness and socio-economic position

T 9.9 Odds ratios of 'fairly poor' or 'very poor' health to show the contribution of social embeddedness and socio-economic position to gender inequality in health within ethnic groups

F 9.1 Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by neighbourhood perception score.

F 9.2 Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by perceived close friends and relatives

F 9.3 Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by reported community activity in the last two weeks.

F 9.4 Comparing the contribution of social embeddedness and socio-economic position to inequalities in health for white women and minority ethnic men and women

Chapter 10:

T 10.1 Age and sex adjusted prevalence of 'fairly poor' or 'very poor' health by ethnic group and cigarette smoking status (HEA)
T 10.2  Age and sex standardised prevalence of 'less than good' health by ethnic group and cigarette smoking status (HSE) 266
T 10.3  Cigarette consumption of current smokers in the HEA surveys by ethnic group 272
T 10.4  Odds ratios of 'fairly poor' or 'very poor' health for each ethnic group using different measures of cigarette smoking 276
T 10.5  Logistic regression of 'less than good' health by different measures of cigarette smoking 279
T 10.6  Logistic regression of 'fairly poor' or 'very poor' health by different measures of cigarette smoking, social embeddedness and socio-economic position. 283
F 10.1  Age adjusted prevalence of poor health by cigarette smoking status of men in the HSE and HEA surveys 268
F 10.2  Age adjusted prevalence of poor health by cigarette smoking status of men in the HSE and HEA surveys 269
F 10.3  Cigarette consumption by gender and ethnic group 274
F 10.4  The change in odds ratios of 'poor health' for gender and ethnic groups by controlling for cigarette smoking, socio-economic position and social embeddedness. 287
F 10.5  Odds ratios of poor health for current smokers in each ethnic group with addition of social embeddedness and socio-economic measures 289

Chapter 11:
F11.1  Pathways for gender and ethnic inequality in health 309
Good health is not evenly distributed throughout the population. There is ample evidence to show that it is possible to identify certain social groups who are particularly disadvantaged in their health. This thesis focuses on two key social divisions in contemporary society; gender and ethnicity, and explores how in combination they shape the health of working-age adults.

Over the last quarter of a century, gender and ethnicity have become more central to sociological research and have begun to challenge the predominance of social class, traditionally at the heart of the health inequalities debate (e.g. Townsend & Davidson, 1982). Ethnic divisions in particular have attracted greater research interest as the proportion of the British population that belong to minority ethnic groups steadily increases. Recent figures show that between 1992-1994 and 1997-1999, the minority ethnic population grew by 15 percent compared with 1 percent growth in the white population (Scott et al. 2001). The same study reports that in the year 2000, 4 million adults were classified as belonging to a minority ethnic group; some 7.1 percent of the total population. The composition of the minority ethnic population varies according to gender, owing to differences in the timing and pattern of migration, which itself differs for Black and Asian minority ethnic groups (Blakemore & Boneham, 1994). Figures from the 1991 Census show that Indian, Pakistani and Bangladeshi groups contain a greater proportion of men than women, probably because men tended to migrate earlier than women, whilst there is much less gender difference for adults who originated from the Caribbean (Coleman & Salt, 1996).

The central argument of this thesis is that gender and ethnic group are inextricably linked, that is, different combinations of gender and ethnicity interact in ways that pattern inequalities in health. To date it has been comparatively rare for studies to connect ethnicity with gender in an investigation of health inequality, instead research
in these areas has tended to proceed in a rather polarised way. Feminist researchers have highlighted the diversity of experience among the category ‘women’ and this has included an appreciation of ethnic differences (e.g. Maynard, 1994). However, much less is known, for example, about how ethnicity differentiates men’s health or about the magnitude of gender inequality in health within different ethnic groups where it is common research practice to ‘control out’ any effects of gender on ethnic inequality in health (e.g. Nazroo, 1997). The 1999 Health Survey for England is one recent exception where a ‘booster sample’ of minority ethnic groups allowed an investigation of differences in health between ethnic groups (Erens et al, 2001). A clear relationship between self-assessed health and ethnic group was found in this study after accounting for age differences. Ethnic health inequality was similar for both sexes, but the magnitude of health disadvantage varied by gender within ethnic groups.

Investigation of the interaction between gender and ethnic divisions is important and timely because these divisions are not fixed or rigid, but are subject to changes over time. In the 1970’s and 1980’s, studies consistently reported higher morbidity among women than men (e.g. Verbrugge, 1982; Nathanson, 1975), but by the 1990’s this established finding was called into question, with little or no gender difference found across a range of health measures (Macintyre et al. 1996). A principle explanation for this apparent change relates to societal changes, such as the move from an industrial to a service sector economy, that have arguably had a differential impact on gender roles (Annandale & Hunt, 1999) and may further create new patterns of gendered inequalities associated with ethnic group. A primary focus on gender and ethnicity may therefore find new and emergent patterns of health inequality otherwise obscured in the general adult population.

In exploring the relationships between gender, ethnicity and health, this analysis therefore focuses on two key questions; firstly, how are combinations of gender and ethnic group associated with inequalities in health? and secondly, to what extent are gender and ethnic health inequalities mediated by social differences existing between these groups?

---

1 Note: the 1999 HSE data was unavailable when the analysis for this thesis was conducted.
1.1. GENDER AND ETHNICITY

Before expanding on the structure of the analysis in more detail, it is first necessary to clarify the terms used, notably to discuss the meaning of 'gender' and 'ethnicity' in the context of this research and to make clear any assumptions on which the analytic and theoretical aims are founded.

i) 'natural difference'

A traditional recourse for inequalities in health associated with gender and ethnic group invokes ascriptive characteristics linked to biological or genetic differences associated with 'sex' and 'race'. Obvious biological differences that exist between the sexes and impact on their health experience include childbirth, for example. It is also established that the incidence of certain specific diseases (e.g. sickle-cell disorder) are correlated with racial background. However, this perspective is not without controversy, particularly in relation to ethnic groups, as an overriding explanation for inequalities in health associated with gender and ethnicity. It can result in essentialist explanations where characteristics associated with gender and/or ethnic differences in health are perceived as naturally occurring and thus, to a large extent, unavoidable and inevitable (Abbott, 2000; Nazroo, 1998; Sheldon & Parker, 1992).

There is now general consensus that both gender and ethnic group have a much more complex relationship with health. This complexity has unravelled particularly for ethnicity, where the focus has moved beyond a simple distinction between those who are 'white' or 'non-white' to recognise differences in health for diverse minority ethnic populations. In British research, this is reflected in the more popular usage of the term 'ethnicity', rather than race, to embody many more characteristics than skin colour or genetic make-up. Ethnicity may include self-identification with cultural traditions, language, religion, ancestry and social identities that are acknowledged to be fluid and subject to changes over time and in different social contexts (Mason, 2000).
Of the many minority ethnic groups living in the UK, this study focuses on the four largest, namely adults who classified themselves as African Caribbean, Indian, Pakistani and Bangladeshi. Although open to the charge that ethnicity as a concept in social surveys is difficult to capture in a meaningful and reliable way, with fixed choice categories creating 'artificial' ethnic boundaries that have little salience for individuals in their everyday lives (Aspinall, 2001), studies have shown marked differences in the health and life chances of these UK ethnic groups (e.g. DoH, 1998b; Nazroo, 1997; Rudat, 1994) compared to the white population.

ii) 'unequal social relations'

The conceptualisation of inequality associated with gender and ethnicity that is adopted here focuses their social meanings, perpetuated from birth through processes of socialisation. Adults of the same gender or who identify with the same ethnic group may share similar life experiences, values and attitudes; a culture or social identity. From this perspective, differences associated with gender or ethnicity can be viewed as divisions in contemporary society that mark substantial differences between people in terms of their culture, material and social living conditions (Payne, 2000). A main assumption of the analysis presented in this thesis is that the characteristics of gender and of ethnicity represent measurable social divisions that acquire meaning as they structure everyday beliefs and social interaction in spheres such as the labour market, home and wider community.

Of key significance for this analysis is the notion that the social bases of gender and ethnic divisions are unequal and hierarchical, sustained by discrimination, both intended and unintended, that serve to deny opportunities to some whilst rewarding it to others. It follows therefore that ethnic group membership and gender may structure individuals' relative position in social space in terms of power and resources. These arguments have been most clearly made in relation to gender. Feminist sociologists introduced, and have continued to expand upon, the concept of patriarchy to describe the dominant position of men over women in terms of power and control over valued

---

1 Reference to 'minority ethnic groups' in this thesis therefore excludes adults of Chinese or any other ethnic origin.
resources (e.g. Walby, 1990). Indeed, there is ample research evidence that women are disadvantaged in the labour force, disproportionately represented in lower paid, lower status occupations (Annandale & Hunt, 1999; Arber, 1996b; Jacobs, 1993) and that this is often combined with domestic labour and child-care. The social position of women may therefore make them more vulnerable than men to negative health effects associated with poverty, socio-economic disadvantage or social exclusion (DoH, 1999). However, there has been growing recognition of the need to consider social divisions that exist among women (and men), including those related to ethnic group (e.g. Walby 1997; Maynard, 1994).

A number of British surveys have found that minority ethnic groups are more disadvantaged compared to whites, particularly in the spheres of health, employment, education and housing (Nazroo, 1997). It is however, important to recognise that while all non-white groups may share experiences of discrimination on the grounds of skin colour, substantial diversity exists among different minority populations. A number of studies report that Pakistanis and Bangladeshis are most disadvantaged on a range of outcomes, including health (Nazroo, 1997; Modood et al, 1997) and that their circumstances differ markedly from Indian adults.

1.2 CONNECTING GENDER AND ETHNIC GROUP IN A STUDY OF HEALTH INEQUALITY

This thesis argues that gender and ethnicity should not be viewed as discrete influences on health because it is together that these two social divisions give rise to unequal patterns of social advantage or disadvantage that are related to the experience of health. By examining combinations of gender and of ethnic group, this analysis can reveal much about differential exposure to health risks and ultimate perceptions of health (Payne, 2000). This is based on the premise that the way in which the social world is experienced will differ for, i) men and women according to their ethnic group and, ii) within ethnic groups according to gender. What it means to be a white woman will, for example, differ from a Bangladeshi woman who differentially experiences the status of ‘woman’ and ‘minority’ simultaneously in the context of paid employment,
home and community life. At the same time, the lived experience of a Bangladeshi woman will not be the same as that of a Bangladeshi man owing to gendered socialisation and roles that are acceptable within the bounds of that ethnic group membership. The emphasis given here is that gender and ethnicity together influence the subjective perceptions of health (O’Brien & Howard, 1998; Maynard, 1994). This differs from an assumption that gender and ethnic divisions are additive in their health effects.

To indicate the inextricable relationship between gender and ethnicity investigated in this thesis, the terminology ‘gender and ethnic group(s)’ is used consistently to refer to the way in which gender and ethnic divisions interact for health. The analysis explores how the health of gender and ethnic groups is associated with key social correlates of health inequality found among the adult population. Self-assessed general health is used as a measure of reported morbidity. There are several reasons why this subjective health measure was chosen; firstly, it facilitates comparison with other health studies in which the same question is commonly used (Sturgis et al. 2001); secondly, studies have demonstrated the continuity and reliability of general health questions for men and women (Manderbacka et al. 1998; Lundberg & Manderbacka, 1996) and their ability to predict mortality; thirdly, general measures of subjective health have typically been neglected for minority ethnic groups in favour of specific health indicators for diseases such as diabetes (e.g. Chaturvedi et al. 1996). A focus on reported general health may be modified, not only by the presence or absence of disease, but also subjective perceptions about fitness, health behaviour, overall quality of life or psychological well-being (Blaxter, 1990). It is therefore likely to reveal new and hitherto neglected patterns of health inequality between and within ethnic groups of men and women, and fits well with the central concern of this thesis to address the social bases of their overall health experience.

1.2.1 Mechanisms associated with health inequality

In a review of the health inequalities literature, two key themes can be identified: (i) socio-economic inequality; (ii) health-related behaviour. These are elaborated on in
this thesis for gender and ethnic groups and are briefly discussed below as an introduction to the analytic aims of this study.

\textit{i) Socio-economic position}

Social class is a key marker of inequality typically related to various measures of health (e.g. DoH, 1999), although its continued prominence today has been questioned because of social changes in occupational structure and the nature of employment (Scambler & Higgs, 1998) and the emergence of new axes of inequality such as the ones investigated here (Bradley, 1997). It does, however remain important to assess the extent to which gender and ethnic group are themselves associated with class-based inequality. Research shows that the labour market is segregated both by gender and ethnic group, with white men most likely to be in ‘advantaged’ occupational groups associated with better working conditions. Levels of economic activity differ markedly by ethnic group, particularly among women, therefore it is important to assess the extent to which inequalities associated with occupational position intersect with gender and ethnicity.

There is, however, some recognition that class-based explanations of health inequality are less than adequate in relation to gender and ethnic groups. Occupational class relies on individuals’ holding a current or previous occupation, so the never employed – which includes a disproportionate number of women from minority ethnic groups – will be excluded. There are additional questions about the meaning or ‘lived experience’ of class and its salience for the health of women and minority ethnic groups. A number of authors have reported ethnic differences within the same occupational group, related to educational qualifications (Blackburn et al. 1997), income or material conditions (Nazroo & Davey-Smith, 2001) which may further vary by gender. The theoretical meaning of class has been questioned and criticised as an ‘undefined proxy for the effects of unknown socio-economic differences’ (Wilkinson, 1986: 18).
Rather than a focus on class per se, this analysis includes several measures more broadly defined as ‘socio-economic’ which include not only occupational social class, but also educational level and material deprivation measures that are not reliant on labour market activity. This approach aims to capture different facets of socio-economic experience relevant to gender and ethnic divisions, highlighting the complex interconnections between gender, ethnicity and socio-economic position.

(ii) Health-related behaviour

Health inequalities can also be conceptualised in terms of lifestyle choices that impact on health. The active avoidance of health-damaging behaviours such as smoking, poor diet and lack of exercise are viewed as essential for maintaining good health. Health education programmes inform the public about health risks and it is viewed as an individuals’ responsibility to adhere to this advice.

Gender and ethnicity both feature in debates about healthy lifestyles. Women are typically portrayed as having healthier lifestyles than men with their ‘natural’ propensity towards caring and bringing about lifestyle changes in others, such as a spouse (Courtenay, 2000; Dean, 1989). This is supported by studies which report married men to have healthier behaviour than divorced, widowed or single men (Umberson, 1992).

It is for minority ethnic groups, however, that lifestyle explanations for health have been most clearly expressed. A number of studies focus on explanations associated with how the health-related behaviour of a minority ethnic group or groups contributes to a higher than average incidence of diseases such as diabetes and hypertension (e.g. Raleigh, 1997). Weight has often been given to ‘cultural differences’ in health behaviour associated with a minority ethnic status. This may include those relating to religion or folklore beliefs, norms and values about health. In some instances, invoking cultural explanations for health behaviour may serve to stereotype or negatively portray minority ethnic differences from the white population as ‘deviant’ and in need of correction (Nazroo, 1999; Smaje, 1996). There becomes a danger that
'culture' constitutes the primary means by which the health experience of minority groups is understood (Brah, 1994), thereby placing the burden of poor health firmly with minority groups themselves, rather than recognising inequalities existing in a broader social context.

This analysis examines gender and ethnic differences in one health-behaviour — cigarette smoking. Unlike alcohol consumption, diet and exercise, smoking status is relatively easy to quantify and the negative effects of smoking on health are unequivocal (DoH, 1998a; HEA, 1996). Cigarette smoking, as a behavioural explanation for poor health, is examined in a broader social context to discern the extent to which this behaviour is socially mediated, an issue that is expanded on in more detail later in this chapter.

1.2.2 Social embeddedness

The concept of social embeddedness is introduced and developed in this thesis. Central to its formulation are the neighbourhoods and wider communities in which gender and ethnic groups are situated, as constituted by social relations rather than geographical location. This concept draws upon recent work in which the impact of residential neighbourhood on health has been increasingly recognised. However, its development has arisen from a critique of the usage and application of Putnam's concept of social capital where social resources such as 'trust' inhering in the community are seen as having a contextual effect on health, over and above individual characteristics such as gender and ethnic group (e.g. Kawachi et al, 1999). The typical conceptualisation of social capital as a collective good from which all members of the community benefit equally (Putnam, 2000) can detract from social divisions that exist and are sustained within a community. In fact, the very notion of a community bound by solidarity and supportive relationships implies that there are 'outsiders' who are unable to access or benefit from these resources as well as 'insiders' who are advantaged by their relative position (in the community in terms of health, for example).
The argument developed here and which underlies the concept of social embeddedness is that neighbourhood is the place where gender and ethnic divisions are 'played out', that within the same neighbourhood or community, gender and ethnic groups will not have equal access to social resources, such as networks or good quality local facilities, thought to impact on health. Thus, greater emphasis is given to inequalities and constraints that differentially impact on gender and ethnic groups whose pattern of social interaction 'embeds' them within a wider neighbourhood to varying degrees. In this respect, social embeddedness is a more critical concept than social capital because it is considered here as a potential mechanism whereby gender and ethnic inequalities in health are created and sustained. Emphasis is given to differences in the integration and involvement of gender and ethnic groups in their community, as well as differential access to supportive social networks of friends and family more widely.

Previous research supports the argument that gender and ethnicity are of key relevance for the subjective experience of neighbourhood and access to the opportunities it provides. A study in London, for example, highlighted that the changing ethnic composition of neighbourhoods was salient in terms of how residents perceived their locality and relations with each other (Campbell et al. 1999). The nature of gender and ethnic relations within a neighbourhood may therefore relate to the subjective experience and the meaning attached to the area in which they live. This may be reinforced by differential integration within a community and the nature of resident's associational ties. Women's roles, for example, are arguably more community-based than men's owing to the greater likelihood that they will assume caring and/or childcare responsibilities and women are often viewed as utilising and relying on support networks of friends and family in ways that are quantitatively and qualitatively different from men (Stansfeld, 1999).

Much less is currently known about the social embeddedness of minority ethnic men and women, although minority populations are highly concentrated in urban, inner-city areas of the UK (Owen, 1992). Whilst social embeddedness in this study concentrates on the subjective perception of neighbourhood facilities and social relationships, the issue of ethnic residential concentration (Smaje, 1996) is an important one that is
returned to in this thesis. This is because one likely consequence of ethnic residential concentration is that a disproportionate number of minority ethnic adults will live in areas that are socio-economically deprived. This in turn is likely to create differential exposure to environmental problems and chronic stress that research shows are associated with poor self-rated health (Steptoe & Feldman, 2001). It does not always follow, however, that the disadvantages associated with living in a socio-economically deprived neighbourhood are universal; such a location may offer benefits in terms of social support that moderate or cancel out the damaging effects of material deprivation. It is important therefore to emphasise that social embeddedness in this thesis is conceived as essentially subjective and experiential in nature, that is, it focuses on how patterns of (formal and informal) social interaction co-vary with gender and ethnic group, whilst giving due weight to wider inequalities which are viewed as an inherent contextual part of this interaction.

1.3. A THEORETICAL PROBLEM: STRUCTURE AND AGENCY

In the two established health inequality explanations being examined here in relation to gender and ethnic health inequalities, namely socio-economic inequality and health-related behaviour, a tension exists between the emphasis given to structural factors and personal choice. This tension is most clearly articulated in relation to ethnicity and health where explanations have tended either to equate a minority ethnic status with class disadvantage or else focus on presumed cultural differences in lifestyle.

This distinction mirrors a concern in contemporary social theory with structure and agency. From a structural viewpoint, health inequalities among gender and ethnic groups largely result from the 'objective' societal conditions in which they are situated. For example, the deprived material living conditions associated with some minority ethnic groups is a causal factor in their poor health. There is a danger that by over-stating structural explanations for gender and ethnic health inequalities, differences in their health come to be 'explained' by conditions, within the neighbourhood or workplace for example, over which they are considered to have little or no control. A dominant structural perspective thereby can portray members of
gender and ethnic groups as little more than the victims of external forces of social circumstance, with women and minority ethnic groups in particular cast as uniformly disadvantaged by virtue of their social position. It cannot therefore easily account for diversity of social circumstances among individuals who belong to the same gender and ethnic group.

The need to give greater emphasis to personal choice or agency is exemplified in the health inequalities literature by a concern with healthy lifestyles and health education. Recognition of agency over structure bestows individuals with ultimate control over their health, either directly through the health behaviours they adopt or indirectly through choices made about the nature of their employment and the area in which they live. However, a neglect of the wider social context in which choices are made has been criticised for unduly 'blaming the victim' for their own poor health (Crawford, 1977).

An explanation that gives precedence to either structure or agency is problematic as an over-riding explanation of health inequality for the reasons outlined above. In social theory, there has been a move towards integrating concerns of structure and agency. Along with theorists such as Giddens (1991) and Archer (1988), a proponent of such an approach is Pierre Bourdieu. This research study does not aim to empirically test Bourdieu's framework, but some key ideas which can be usefully applied to patterns of gender and ethnic health inequalities are distilled from Bourdieu's work. As an introduction, some key concepts are discussed below, followed by a schematic outline of the organisation of the empirical analysis presented in this thesis.

An understanding of Bourdieu's work centres on the concept of habitus and its relationship with the field. Habitus is defined as "the mental or cognitive structures through which people deal with the social world" (Bourdieu 1990:18). A field characterises social relations in terms of a competitive 'marketplace' which functions according to its own specific logic or rules. Individual actors are located within social groups and classes that struggle and compete to maintain and improve their standing in various fields in which economic, symbolic, cultural and social capital are at stake.
The concepts of habitus, field and capital allow Bourdieu to develop what is referred to here as a ‘social theory of class’ because when counter-posed with more traditional theories, it is less reliant on socio-economic effects than the notion of shared experience. According to Bourdieu, social groupings, of which social class is given primacy, cohere through similarities in habitus and fields;

“conditionings associated with a particular class of conditions of existence produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is as principles which generate and organise practices and representations” (Bourdieu, 1990: 53).

This thesis draws upon these ideas in relation to gender and ethnic groups. The habitus, for example, can be usefully applied to the investigation of gender and ethnic differences in cigarette smoking because of its capability to transcend explanations grounded in notions of structure or agency. There is further potential to extend and recast Bourdieu’s conceptualisation of social class to incorporate gender and ethnic divisions.

1.4. THESIS OUTLINE

To investigate the interaction of gender and ethnic divisions for health, this analysis of gender and ethnic groups compares the efficacy of health inequality explanations grounded in the concepts of socio-economic position, social embeddedness and cigarette smoking behaviour. This is achieved through the secondary analysis of data from two health surveys. As a precursor to the analysis, the following three chapters review literature in these areas.

Chapter 2 begins by reviewing the current and expansive literature linking socio-economic inequality with health, drawing out gender and ethnic differences. This includes discussion about the ways in which socio-economic
position is commonly measured and the implications that follow for a study of socio-economic inequality among gender and ethnic groups.

*Chapter 3* introduces a conceptual model of social embeddedness, used in this analysis to investigate patterns of reported health associated with subjective perceptions of neighbourhood, associational activity and reported experiences such as crime. Whilst drawing upon the recent social capital and social support literature, this chapter provides a critique of Putnam's concept of social capital by highlighting its limitations in relation to gender and ethnic difference.

*Chapter 4* discusses gender and ethnic trends in smoking prevalence and the links between smoking and health. It details how smoking differences have been interpreted as socio-cultural, socio-economic or arising from the nature of social relationships. Bourdieu's concept of habitus is discussed in relation to cigarette smoking.

In Chapter 5, the methodology of the thesis is discussed. The research method and the relative strengths and weaknesses of the health surveys utilised in this analysis are focused upon in terms of sampling design and the operationalisation of key analytic concepts. The chapter ends by presenting descriptive information about gender and ethnic groups in these surveys.

As a precursor to the detailed study of health inequality where the relative contribution of smoking behaviour to the poor health of gender and ethnic groups is investigated, two chapters first examine how smoking behaviour itself is socially structured.

*Chapter 6* focuses upon the relationship between socio-economic inequality and current cigarette smoking among gender and ethnic groups. Similarities and differences in the nature of this relationship are explored using indicators of occupational social class, educational qualifications and material deprivation. The relative and overall contribution of these three socio-economic measures is assessed.
Chapter 7 relates social embeddedness to variation in smoking among gender and ethnic groups. This includes the relative contribution of associational activity in community groups and informal contact with friends and family on the likelihood of being a current smoker after taking into account socio-economic inequality underlying this behaviour.

This is followed by three analysis chapters that present a systematic analysis of gender and ethnic inequality in self-assessed general health. The first two health chapters echo chapters 6 and 7 on cigarette smoking in that they separately assess socio-economic position and social embeddedness.

Chapter 8 focuses on socio-economic inequality and reported health using the same indicators of educational qualifications, occupational class and material deprivation as in Chapter 6. Using logistic regression models, the relative and overall contribution of socio-economic position is discussed in relation to the changing pattern of gender and ethnic health inequality.

Chapter 9 explores how different measures of social embeddedness are associated with reported poor health among gender and ethnic groups. The potential of social embeddedness to moderate inequalities in health across gender and ethnic groups is investigated, taking into account socio-economic inequality in health.

Chapter 10 is the final analysis chapter where cigarette smoking is assessed for its relative contribution to gender and ethnic health inequality. The health analysis takes into account not only current smoking status but also past smoking behaviour and current cigarette consumption. Socio-economic position and social embeddedness, which may relate to both smoking and health, are included in order that the independent contribution of smoking may be inferred.
The conclusions presented in Chapter 11 draw together the empirical findings and consider how this study can inform the way in which gender and ethnic differences are conceptualised. The notion of gender and ethnicity as social divisions raised in this introduction is expanded upon in relation to the nature of inequalities in their health associated with socio-economic position, social embeddedness and the health-related behaviour smoking. To do this, the final discussion draws and expands upon the concepts of habitus and social class conceptualised by Bourdieu.
Introduction
This chapter reviews the literature relating socio-economic inequality to health. As such, the main focus is on how the social organisation of society gives rise to forms of inequality among its members. It is argued that life chances associated with an individuals' position in the social hierarchy can have a direct or indirect influence on their health. The concept of socio-economic inequality is first introduced by discussing commonly used socio-economic indicators and the inter-relationships between them. The chapter then focuses on potential explanations for 'socio-economic gradients' in health and argues that socio-economic inequality is inextricably bound with inequalities associated with gender and ethnicity. These arguments are supported by a review of the literature on gender, ethnicity and socio-economic position, and conceptual issues relating to the measurement and meaning of socio-economic measures for the health of these groups are discussed.

2.1. SOCIO-ECONOMIC INEQUALITY AND ITS MEASUREMENT

The concept of socio-economic position is based on the premise that social stratification results in the unequal distribution of desirable resources and rewards in society (Williams, 1990). Socio-economic measures aim to capture the economic and social standing of individuals or households (Annandale & Hunt, 1999). There is considerable interest in the nature of the relationship between socio-economic position and health, since health may be powerfully influenced by socio-economic circumstances and/or health-related social mobility can determine socio-economic position.

The distribution of individuals in a social hierarchy according to their economic relations is encapsulated in the concept of 'social class' (Scott, 2000).
Sociologists have primarily used class to describe economic divisions and employment relations in society, but also differences in status, culture and lifestyle (Weber, 1946; Bourdieu, 1984). A consideration of class theory is beyond the scope of this chapter, but a distinction is made between economic resources and social status embodied in 'styles of life', both of which provide the context for unequal life chances. In capitalist society, the ability to compete in the labour market and the nature of employment are the basis of class position. An occupation embodies specific employment relations as well as occupational prestige (Scott, 2000). Individuals' or households can be allocated to an occupational stratum or social class.

Questions on occupation and industry in the 1911 Census first formed the basis of the Registrar General's social classification (RGSC). The RGSC graded occupations according to their 'standing in the community' and it was not until the introduction of the Standard Occupational Classification (SOC) by OPCS in 1990 that occupations were assigned to social classes much more explicitly in terms of the job skill required (Rose, 1995). Since their inception, social class measures have been subject to much debate about their utility and meaning, particularly in modern society (Scambler and Higgs, 1998; Bradley, 1997). Until the introduction of Socio-economic Classes (NS-SEC) in the 2001 Census, based on the concept of employment relations (Rose & O'Reilly, 1997), the continued absence of a clear theoretical basis on which to allocate occupations attracted much criticism. This included the charge that any class variation may be an artefact of the class schema itself (Thomas & Korovessis, 1998).

Occupational class based on occupational skill or social standing is argued to present an outmoded view of an industrial social structure (Szreter, 1984) with little relevance to today's labour market and its service sector economy. In 1951, a new measure of socio-economic group (SEG) was introduced which took into account employment status, size of employing organisation and occupation, hence it was proposed to measure 'social and economic status' (Rose & Pevalin, 2001). Both RGSC and SEG distinguish job skill and divide manual and non-manual
occupations. It is argued that this divide poorly represents the position of women and minority ethnic groups in the social structure. Specifically, class measures derived in this way are insensitive to labour market segregation and discrimination associated with the increasing employment of women and minority ethnic groups and are problematic in relation to the growing number of adults who are outside the formal labour market. Issues about using these occupational class measures to assess gender and ethnic inequalities in health are examined in more detail later in this chapter.

It is important to understand the underlying construct(s) measured by occupational social class in order to interpret the processes that link class and health. It is often unclear whether class position is being used as a proxy for any one of the following; income, social status, lifestyles or characteristics intrinsic to occupation. In order to develop a clear conceptual model about class and health, it is essential to consider how class fits with other dimensions of social experience. Within the same occupational group, for example, individuals may differ in their educational qualifications, income and working conditions. The following discussion focuses on two other measures commonly used to represent socio-economic position that are included in this analysis to investigate health inequality; education and material deprivation.

Education, based on highest formal qualification has a different meaning to occupational class when used to represent socio-economic position. For Bourdieu, the educational system presupposes and reproduces at every instance the possession of 'cultural capital' by individuals or social groups. This kind of capital facilities educational attainment and ultimately the chances of occupational success (Bourdieu, 1990). British research supports a strong correlation between education and class which is consistent with the idea that the embodiment of cultural capital in educational attainment is a powerful precursor to future labour market position (Wadsworth, 1991). Cultural capital is possessed unequally between the social classes, those from more advantaged class backgrounds, whose dispositions and knowledge accord with the pedagogic actions of the educational
system, have the greatest chance of achieving high educational qualifications that serve to legitimate the dominant occupational positions they come to occupy. From this perspective, education has a key role in the cultural reproduction of the social classes, preserving and legitimating the status quo.

However, whereas class position may change over the life-course, education provides a long-term, more stable socio-economic measure and can represent adults who have never had a paid job. Measures based on educational qualifications can therefore overcome some of the disadvantages associated with occupational class referred to above; whereas class relies on complex information about current or last main occupation, information about educational qualifications is relatively easy and reliable to collect (Arber, 1991). Data about school leaving age or highest qualification can be categorised at meaningful points, e.g. to distinguish adults with higher education from those with secondary or no qualifications (Berkman & Macintyre, 1997).

Access to material or social resources is also used to classify the social position of individuals and households. This approach is commonly based on ownership, e.g. of a car or house, as well as access to amenities such as a telephone or central heating. It has been argued that the former measures of ‘consumption’ have increasingly come to represent major social divisions (Saunders, 1990), whilst individuals or households that lack material resources and amenities ‘taken for granted’ by the majority in society are often characterised as living in conditions of ‘relative poverty’ (Townsend, 1979). Indices of deprivation that combine information about a range of material resources and commodities can arguably provide a ‘finely grained’ picture of relative deprivation in society (Berkman & Macintyre, 1997). The lack of basic necessities can highlight the most materially deprived groups living in conditions of poverty, who may be ‘socially excluded’ from full participation in other areas of social life. Whilst the concept of poverty is conceptually distinct from socio-economic inequality, since the former refers to the ‘unacceptable extreme of inequality’ (Alcock, 1997) and the latter pervades the whole social hierarchy (Blane, 1996), British surveys show a marked increase in
the proportion of the population living in conditions of poverty during the 1980's and 1990's (Gordon & Pantazis, 1997; Gordon et al. 2000).

A number of conceptual issues associated with these material measures of social inequality are relevant to health. It is debatable whether material standard of living can be 'objectively' defined by researchers because definitions of poverty vary over time with changes in societal affluence and may differ from individuals' subjective perceptions. There is also the added danger of conflating measures of material deprivation with employment status and health; paid work is a major determinant of income and purchasing power, but adults in lower social class and educational groups are most disadvantaged by low pay, high unemployment and ill-health. Using cross-sectional data, it is impossible to determine whether or not poor health precedes poor material circumstances, through poor health leading to loss of paid work and income.

The following section examines the evidence for socio-economic inequalities in health. In line with the aims of this thesis, the focus is on morbidity rather than mortality. Whilst social class has dominated investigation in this area, health inequality associated with education and material deprivation is also discussed in relation to the main explanations proposed for socio-economic inequalities in health. Throughout this review, individual, rather than household, socio-economic measures are used because this study aims to highlight how the measurement of socio-economic position based on the characteristics of men and women from different ethnic groups may itself influence health differences. However, it remains important to recognise that the health of working women will be encompassed by both their own occupational position and that of their household (typically represented by the occupational class of a male head of household).

2.2 SOCIO-ECONOMIC GRADIENT IN HEALTH

Numerous studies from Britain and other countries have reported a strong and consistent association between socio-economic position and health. The
likelihood of premature mortality, chronic illness and self reported ill-health is
greatest for individuals at the bottom of the social hierarchy (DoH 1998b).
However, rather than a 'threshold' level of disadvantage determining health, there
is a step-wise gradient in mortality and morbidity that extends across the whole
social spectrum. Thus, individuals within any given socio-economic group have
better health than those at a level below them, but poorer health than adults in
higher social strata (Bartley et al. 1999).

The Black Report (Townsend & Davidson, 1982) was a highly influential study of
health inequality in the UK and suggested 4 types of explanation for class
inequalities in health. These were, firstly that socio-economic differences are
artefactual and, secondly, that health-related social mobility ('health selection')
could account for the association between class and health. A third explanation
centred on class differences in health behaviour or 'lifestyle' and the fourth on
structurally determined differences in the living conditions of socio-economic
groups. Subsequent debate (Whitehead, 1987; Blane, 1985) has largely discounted
artefactual explanations and has instead focused on two major issues; the direction
of causation between social position and health and the mechanisms that underlie
these associations.

Socio-economic gradients in health have been reported using measures of
educational level (Arber, 1991; 1996a), social class (Dahl, 1994; Blaxter, 1990),
housing tenure and car-ownership (Yuen et al. 1990; Arber, 1991) as well as
indices of material deprivation (Townsend et al. 1988). However, the magnitude
of socio-economic differentials in health can vary according to the socio-economic
and health measures used and the population group under investigation (Berkman
& Macintyre, 1997). Due to the different theoretical meaning of different socio-
economic measures, each may capture different dimensions of social experience
that are relevant to health. Issues relating to gender and ethnic groups are
discussed later in this chapter, but this section considers in more detail two
opposing explanations for socio-economic gradients in health; social selection and
social causation.
Social Selection

Social selection has been proposed as an important element in the production of socio-economic inequalities in health (Blane, Davey-Smith & Bartley, 1993). It is argued that poor health can be the cause, rather than the consequence, of downward social mobility into the lower social strata (Stern, 1983). Conversely, 'health selection' can result in the upward mobility of the healthiest individuals into more advantaged socio-economic groups.

From this explanation, it follows that morbidity is concentrated among the poorest and most disadvantaged socio-economic groups because ill-health can lead to labour market discrimination or withdrawal from paid employment and increase the risk of poverty. Analysis of British data shows that health selection out of the labour market is itself socially patterned; for a given level of chronic illness, men from lower socio-economic groups are more likely to become unemployed or economically inactive than men from higher socio-economic groups (Bartley & Owen, 1996). The risk of socio-economic disadvantage is thus magnified for men from lower socio-economic groups, whilst those in more advantaged labour market positions may be more 'protected' against unemployment and labour market exclusion.

However, research using longitudinal data has found that health status has only a minor effect on occupational mobility and class differences in health (Goldblatt, 1989). It is argued that occupational mobility may lead to an under-estimation of the extent of health inequalities by class because the 'upwardly mobile' have less accumulated privilege than those they join, and the 'downwardly mobile' are more advantaged than their class counterparts (Blane, 1999).

Social mobility can be determined by characteristics other than current health status. In particular, childhood health and environment, along with educational achievements, are likely to be important determinants of both socio-economic position and health in adulthood. The potential contribution of early childhood environment to health is most usually considered in terms of advantages and
disadvantages that accumulate over the life-course. Infancy and childhood are thought to be critical periods for biological, social and psychological development that depend on the surrounding social environment, as well as genetic endowment and prenatal care (Wadsworth, 1991; Blane, 1999). Social characteristics such as family socio-economic background, material living conditions and lifestyle can determine exposure to potential health hazards and trigger vulnerability to disease later in life.

The nature of early childhood environment is linked to historical period; birth cohorts differ in their exposure to disease agents and nutrition, for example. Major social changes over recent decades, such as an increase in divorce and relative poverty, may also have long-term implications for health. For these reasons, the life-course approach to health inequalities benefits from the use of longitudinal data sources that survey a cohort of individuals at different stages of their lives (Wadsworth, 1991). These studies have reported that conditions in childhood can determine the likelihood of social mobility. Early disadvantage can precede multiple disadvantages in adulthood, not only for health, but also in terms of educational achievement, labour market position and lifestyle (Blane, 1999; Power & Matthews, 1997). The cumulative experience of socio-economic disadvantage over the life-course may condition the impact of new disadvantage, amplifying its negative effects on health relative to more advantaged individuals (Blane, 1999).

(ii) Social causation

The Black Report proposed two theories of health inequality where socio-economic position was causally prior to health outcomes. These were 'behavioural/cultural' and 'material/structural' arguments (Townsend & Davidson, 1982) which mirror concerns of structure and agency discussed in the previous chapter.

The behavioural/cultural perspective argues that health behaviours, utilisation of health services and preventative care can explain the higher incidence of poor health and diseases such as lung cancer and bronchitis in lower socio-economic
groups (Blane, 1985). The emphasis given to personal behaviour has been the impetus for numerous campaigns to educate members of the population about risky behaviours and the need to engage in preventative health behaviour. It has particular salience for ethnic inequalities in health because assumed 'cultural differences' in behaviour are mapped on to minority ethnic groups (see Chapter 4 for a discussion of cigarette smoking).

The contribution of structural factors to health is at the core of materialist explanations of class inequality in health (Townend & Davidson, 1982). Despite overall improvements in living standards and population health, class inequalities in health have persisted, and reportedly widened, over recent decades (Gordon et al. 2000; DoH, 1998b). These differences are believed to originate in aspects of life experience associated with an individuals' position in the social structure, over which they have little control (Bartley et al. 1999).

Blaxter (1990) found poorer health among lower class groups in the British Health and Lifestyles survey using an index of 'relative health' that combined data on general health, physical fitness, illness and psycho-social well-being. Poor self-assessed health was also associated with poor quality housing, low income and living in council or privately rented accommodation. Localised studies confirm that damp, overcrowded living conditions are linked to respiratory symptoms and infection and that the design of housing can have an impact on psycho-social well-being and the risk of accidents (Bartley et al. 1998).

Many studies report that the links between socio-economic position and health extend to health-related behaviours (Macintyre, 1986; Graham 1994; Cooper et al. 1999). Behavioural explanations of health inequality have therefore been criticised because they neglect the wider social context in favour of placing responsibility for poor health firmly with the individual concerned (Crawford, 1977). There is growing recognition that health-related behaviours, such as cigarette smoking (discussed in Chapter 4), are not purely a matter of free will, but are conditioned by the social and material context in which they occur.
Rather than consider 'material' (structural) and 'behavioural' (agency) theories as discrete explanations for health inequality, Macintyre (1986) advocates a more integrated approach that addresses the social causes of behaviour and considers that behaviour may be one mediator between socio-economic disadvantage and ill health. From this perspective, the distinction between social structure and individual behaviour becomes more blurred and may be viewed as artificial. Theoretically, Bourdieu's concept of habitus can be used to avoid over-stating structure at the expense of agency and vice versa. As outlined in Chapter 1, habitus is viewed as productive of collective practices that accord with 'conditions of existence' shared by members of a class which are internalised and embodied over time (Mouzelis, 1995). Habitus therefore provides an analytic tool with which to interpret class differences in health-related behaviours, for example. Unlike some behavioural models which focus on the translation of health beliefs into action, Bourdieu rejects the notion that lifestyle choices are rationally informed. Rather, health-related behaviours can be recast as strategic practices for the accumulation of capital and, in turn, such behaviours actively reproduce the social structures of which they are part.

2.2.1 Summary
This discussion has centred on explanations for socio-economic inequality in health among the adult population. Empirical research shows that health is related to a number of socio-economic positions, as indicated by education, occupational class or material living conditions. Research suggests that poor social and economic circumstances from childhood onwards contribute to poor physical and psychosocial health in adulthood. However, a number of authors have argued that inequality does not centre exclusively on socio-economic circumstances, rather that there are multiple bases for stratification in modern society (Bradley, 1997; Payne, 2000). Scott (2000) argued that inequality associated with gender and ethnicity may 'rival' class in terms of structuring conditions of living. Subsequent sections of this chapter focus on how exclusion or discrimination on the basis of gender and/or ethnicity interact with socio-economic position to generate unequal life chances and inequality in adult health. It is posited that the
experience and meaning of any given socio-economic position may vary along gender and ethnic lines and so it follows that the relationship between socio-economic position and health cannot be assumed for all gender and ethnic groups.

The following section first discusses how the social position of men and women is related to health, and then reviews work on ethnicity, socio-economic position and health. The final section integrates work on ethnicity and gender and suggests that this approach can provide further insights about socio-economic position and its relation to health by revealing new lines of inequality.

2.3. GENDER, SOCIO-ECONOMIC POSITION AND HEALTH

Inequality and the experience of poverty among women has traditionally been neglected in health research. Income or class measures of socio-economic position are often based on the head of household, most typically men, and so obscure the socio-economic disadvantage experienced by many women. Ideological assumptions made about women's non-employment, economic dependence on men or 'secondary' position in the labour market have meant that concern with women's health has often focused on their family and domestic roles, to the neglect of work-based inequality.

This section argues that the relationship between socio-economic position and health must consider gender, since fundamental gender differences in labour market position mean that men and women are likely to be differentially exposed to health risks associated with their occupational position. The gendered experience of socio-economic disadvantage may be a major factor which accounts for the frequently reported (but not uncontested) finding of higher morbidity among women than men;

'some part of the excess is due to women's concentration in social positions associated with particularly high rates of ill health - social positions that men rarely occupy' (Popay et al, 1993: 28)
This review does not focus on gender differences in health per se, but on understanding the nature of socio-economic inequality in health for men and women. There is a need for more comparative research that considers how gender and socio-economic position interact to influence reported health (Annandale and Hunt, 1999). Such an approach can highlight similarities and differences in socio-economic determinants of health for men and women, raising issues about the gendered meaning of socio-economic status and its measurement.

(i) Gendered inequality

A vast literature testifies to the fact that men and women differ markedly in social roles within the family and workplace (Khlat et al. 2000; Daykin & Doyal, 1999; Arber et al. 1985). Women are traditionally considered to have predominance within the home, assuming child-care and domestic responsibilities, whilst men are the main ‘bread-winners’ of the family. However, the roles of men and women can no longer be simplified in this way because the last few decades have seen a continual rise in the number of women entering paid employment, a growth in the number of lone parent families and changes in the structure of paid employment, such as casualisation of occupations. Thus, health research needs to consider how these changing roles and patterns of employment differentially affect men and women, giving rise to new forms of inequality (Annandale & Hunt, 1999; Daykin & Doyal, 1999).

Employment is often viewed as an ‘additional’ role for women, one that must be reconciled with women’s primary child-care and domestic responsibilities within the home. As such, there is debate about how paid employment contributes to women’s health and well-being. Some studies argue that conflicts, demands and obligations arising from a combination of home and work roles can be a source of ‘role strain’ that negatively affects women’s health (Goode, 1960). However, it is more commonly reported that women’s health benefits from occupying a number of different roles e.g. worker, mother and wife, termed ‘role accumulation’ (Verbrugge, 1983; Arber, 1991). Paid employment may help combat social
isolation, monotony and the low status associated with domestic roles (Arber et al. 1985), so improving self-esteem and well-being. These findings may also reflect selection of the healthiest women into multiple roles (Khlat et al. 2000).

It seems likely, however, that the material circumstances in which women's roles are enacted mediate their impact on health (Arber, 1990). For example, 'role strain' may be more likely among lone parents who must cope with the demands of paid employment and child-care on a low income and/or without the support of a partner, than for women with greater financial resources and support. The advantages of paid employment for health may further depend on the number of hours worked, marital status and the presence of children in the household (Arber et al. 1985). The 'polarisation' of women's employment (Arber, 1996b) means that child-care and flexible work-hours are an option increasingly available to professional women, but not to women in low paid employment. A fuller understanding of women's health will be achieved by integrating socio-economic information along with family roles and responsibilities (Khlat et al. 2000; Arber, 1991). It is, however, notable that there is little debate about the intersection of family and work responsibilities for men's health.

For women, but not men, a key issue is the extent to which domestic or family responsibilities within the household shape opportunities for paid employment and ensuing levels of income or material resources throughout the life-course. Women are more likely than men to have obligations to care for others, e.g. children or elderly relatives, but this time-consuming and difficult job is often not acknowledged as 'work' (Green, 1988). Monotonous, time-consuming and draining domestic work is under-valued, receives no financial reward and may be socially isolating. The 'burden' of caring and domestic work placed on women carries with it high 'opportunity costs' in terms of loss of income and work-related training. The scarcity and prohibitive cost of child-care may act as a barrier to women's paid employment, particularly for the sizeable proportion of single mothers living on low income (Oppenheim & Harker, 1996). These difficulties are compounded by a social security system in which employment-related
contributions are often the basis for determining benefits. Women who have never had a paid job (particularly older women), who have had an intermittent employment history or who live alone will be particularly vulnerable to the deprivation and poverty associated with low benefit entitlement or minimal pensions (Oppenheim & Harker, 1996).

For both sexes, employment status can be seen as a structural variable relating to their position in the labour market and command over material resources. Figures from the Labour Force Survey show 72 percent of working age women were economically active in 1997, a large proportion in part-time employment (ONS, 1998b). Evidence suggests that unequal labour market opportunities and discrimination serve to disadvantage women relative to men. Occupational gender segregation is a key characteristic of the labour market. ‘Horizontal segregation’ refers to the concentration of women in a narrow range of jobs which are often lower paid and of lower status relative to men, and may require long hours or demanding shift work. Women who are employed in traditionally ‘male’ jobs tend to remain in the least senior positions, whilst men working in ‘female’ occupations are over-represented at a senior level (Jacobs, 1993; Williams, 1992).

Women are less likely than men to be self-employed (ONS, 1998b), but more women are engaged in labour intensive home-working, associated with low pay, social isolation and job insecurity (Daykin & Doyal, 1999). Even when men and women are employed in the same occupation, working conditions and career opportunities may be gendered (Emslie, Hunt & Macintyre, 1999). Women who return to work after child-birth may experience ‘occupational downgrading’ and be considered less suitable for promotion than their male colleagues. The consequence of these gender differences is that women are over-represented at the lower ends of both non-manual and manual occupational groups (Arber, 1996a).

Individuals employed in low status, poorly paid, temporary or part-time jobs have a greater risk of unemployment than other employees (Pillinger, 1992; Alcock,
1997), and are less likely to receive work-related benefits in the event of illness or disability. These occupations are most likely to have poor pension provision, which is crucial for determining income and standard of living in old age. The longer life expectancy of women than men, combined with occupational gender segregation and periods of non-employment, compound socio-economic disadvantage and poverty experienced by women. However, it would be misleading to ignore how recent changes in employment have also affected men. There has been growth in the number of households containing 'no-earner' and men have suffered disproportionately from job losses associated with the decline of manufacturing industry and both sexes must contend with greater job insecurity (Annandale & Hunt, 1999).

(ii) Comparing the health of men and women

Occupational gender segregation and non-employment are salient issues when comparing socio-economic inequalities in health for men and women because of a concern that one is not 'comparing like with like'. This problem is paramount when occupational measures of socio-economic position are used. It is argued that class schemas such as the Registrar General's social classes (RGSC) fail to capture gender divisions in occupational status, income and power because they are based on an outdated, male, middle-class model that is an inaccurate representation of current labour market conditions (Hardey, 1998).

Two different approaches have been adopted for the analysis of class inequalities in women's health. The 'conventional' approach bases the social class of married women on the current or last main occupation of their husband, whereas unmarried women are allocated a class position using their own (or last) main job. An 'individualistic' approach classifies all women according to their own occupational class (Arber, 1996). Proponents of the conventional method argue that a husband's occupation is likely to be a better estimate of social and economic resources available to women within their household. However, the concentrated employment of women in lower manual and non-manual occupations will mean
that the class profile of non-married women (using their own occupation) is likely to be more disadvantaged than for their married counterparts (Arber, 1996a), so presenting a distorted view of women's socio-economic position. The growing number of women in the labour force, coupled with a rise in marital breakdown and evidence that women suffer disproportionately from the inequitable distribution of resources within the household (Pahl, 1983) undermines the conventional approach.

Class inequality in health has been reported for men and women, based on their own occupation. A number of studies show similar socio-economic gradients in self-perceived health (Marmot et al. 1991; Matthews et al. 1999), coronary heart disease (Diez-Roux et al. 1995) and minor illnesses (Popay et al. 1993) for both sexes. However, it is often reported that class gradients in health are shallower and less consistent for women than for men (Yuen & Balarajan, 1990; Dahl, 1993; Stronks et al. 1995), particularly during youth (West, 1997) and old age (Arber, 1996a). The magnitude of socio-economic inequality in women's health may also depend on the health measure used, with subjective health being more sensitive to socio-economic circumstances than the reported physical symptoms of ill health or limiting longstanding illness (Macran et al. 1996; Arber, 1996a; Popay et al. 1993).

Health differences among women may be obscured or under-estimated because disparate occupations are grouped together in the same social class. For example, there is considerable variation in health among women employed as teachers, sales or office workers, although all are classified as intermediate non-manual occupations using OPCS occupational groups from the 1981 Census (Macran et al. 1994). Similarly, women employed as factory workers report poorer health than women in service-related semi-skilled occupations. For this reason, some analyses of class inequality among women disaggregate occupational groups that include a large proportion of women (Macran et al. 1994; Martin & Roberts, 1984).
Class measures are also likely to provide a poorer indicator of labour market potential for women than for men, because the nature of women's employment may be tied with family commitments. During the main years of working life, the birth of children prompts the majority of women to move out of paid employment then later re-enter the labour market taking part-time work or a job of lower status. Social class position, based on last main job for economically inactive women (e.g. full-time mothers or housewives), may further misrepresent their current socio-economic position because it disregards the period of time spent out of employment. Finally, there are more women than men who have never had a paid job, and so are excluded from class analyses. However, the never worked form a very small proportion of all working age adults in Britain; only 2.6 percent of women and 0.9 percent of men below retirement age have never had a paid job (Arber, 1997).

The classification of non-employed groups is considered to be of particular relevance to women's health because domestic responsibilities may result in long or multiple periods out of the labour market. However, an increasing proportion of men are also non-employed; figures from the General Household Survey (1991-1992) show 34 percent of men and 51 percent of women aged 16 and above are classified as retired, housewives, unemployed or otherwise economically inactive (Arber, 1996b). The reasons for non-employment are gendered; approximately one-quarter of non-employed women are housewives, whereas a greater percentage of men are unemployed. Retired adults form a growing proportion of non-employed men and women.

Non-employment during working age is concentrated among lower social classes and associated with high levels of reported morbidity. When classified according to their last main job, studies have shown stronger class gradients in health for non-employed men compared with those in current paid employment, but less class variation for non-employed women (Arber; 1996b). Interpretation of these results must consider that at least part of the association between employment status and health may result from health selection out of the labour market.
However, whilst health selection may be a major explanation for the poor health of the unemployed, there is less evidence to suggest that poor health status among women increases their likelihood of being a full-time housewife (Macran et al. 1994). Excluding the non-employed from class analyses is therefore likely to under-estimate the magnitude of class inequality in health.

Socio-economic measures that are not reliant on employment status can overcome some of the disadvantages of using occupational social class to represent women’s position in the social structure. Educational level is viewed as a stable socio-economic measure throughout adult life that powerfully determines occupational status, earnings and material resources (Wadsworth, 1991) and is more likely to have a similar meaning for men and women (Matthews et al. 1999). Arber (1996a; 1997) argues that, compared with class, educational measures can overcome many difficulties associated with occupational downgrading and non-employment among women, but to date have been relatively neglected in UK health research. Analyses of the General Household Survey showed that educational qualifications were strongly associated with reported health, particularly general health among adults of working age (Arber, 1997). For women, education gradients in reported health were more marked than for social class, whereas little difference between these measures was found for men’s health (Arber, 1996a; 1997). Unlike class, education qualifications also differentiated the health of women who were non-employed (Arber, 1997).

In addition to measures of class and education, deprivation measures are independently associated with health inequalities among men and women (Yuen & Balarajan, 1990; Arber, 1996a). These measures, which include indices of ‘material deprivation’ as well as single-item measures of car ownership and housing tenure, are more inclusive than social class. Material resources are thought to be a proxy for labour market position or income, but difficulties associated with this measure include its variability over time and a lack of clarity about the causal direction between health and material circumstances, more so than for class, education and health.
Where different relationships between socio-economic position and health are found for men and women, this could reflect the gendered meaning and significance of these social positions for health. For example, car ownership may be gendered, having a greater significance for men than for women (Berkman & Macintyre, 1997). An analysis of the British Health and Lifestyles Survey found higher morbidity among working-age women than for men occupying the same social class. The authors suggest that the same socio-economic position may be qualitatively different for the sexes (Popay et al, 1993). Hunt and Emslie (1998) report that women, but not men, who are employed at the top of traditionally 'male' occupations are subject to greater psycho-social stresses than those at a lower occupational grade, whilst results from the Women's Employment Survey (WES) highlighted high levels of psycho-social strain experienced by women employed in low skill occupations (Martin & Roberts, 1984) typified by monotonous, repetitive work (Marmot & Wilkinson, 1999). Men and women may further differ in support resources that help to buffer psycho-social stress or may adopt different coping strategies in stressful situations.

(iii) Key issues

Many research studies on gender and health have focused on the family and domestic roles of women only. However, comparing the correlates of health for men and women shows that structural position is a major axis of health disadvantage for both sexes. In the preceding discussion, an emphasis was placed on the gendered dynamics of the labour market and how the different distribution of men and women in socio-economic strata raises conceptual issues about the measurement of socio-economic position. For these reasons, the nature of the relationship between socio-economic position and health may vary by gender, with different socio-economic measures associated with health in different ways for men and women. Measures of education may have particular value in representing the socio-economic position of women, therefore the use of multiple socio-economic indicators is advocated for the analysis of health inequality among men and women.
2.4. ETHNICITY, SOCIO-ECONOMIC POSITION AND HEALTH

Some minority ethnic groups living in the UK are disadvantaged in terms of their labour market position and are likely to be marginalized and excluded in many other spheres, including education, employment and housing (Marmot & Wilkinson, 1999). This discussion focuses on the socio-economic position and health of four main non-white minority groups in the UK; Caribbean, Indian, Pakistani and Bangladeshi adults. It is, however, acknowledged that there are other minority groups who experience discrimination and disadvantage connected with their ethnic group, including 'white' minorities.

The link between socio-economic disadvantage and ethnicity is a politicised and controversial one. A number of commentators have claimed immigrant workers occupy an inferior labour market position (Rex, 1973; Castles & Kosack, 1973) that may set them apart from whites as a separate 'underclass'. From this perspective, a minority ethnic status can be conflated with socio-economic disadvantage (Williams, 1996) and be viewed as the 'cause' of poverty among non-white groups. More recent research highlights the diverse socio-economic profiles of ethnic groups to argue that minority ethnic adults cannot be characterised as uniformly disadvantaged relative to whites (Modood et al. 1997; Anthias & Yuval-Davis, 1992). However, studies continue to show that minority ethnic workers participate within an ethnically segregated labour market, with many concentrated in jobs at the lower end of the class hierarchy.

Whilst socio-economic disadvantage is considered to be a major explanation for the high morbidity of minority ethnic groups, it is not assumed to be a complete one, since ethnicity is not reducible to socio-economic position. However, ignoring the socio-economic circumstances of ethnic groups risks naturalising or pathologising inequality in their health. The following section details the socio-economic profiles of different ethnic groups.
Ethnicity and inequality

The pattern of minority ethnic disadvantage can be traced back to the immigration of minority workers to the UK following the second World War. During this time of severe labour shortage in Britain, immigrant workers were used to fill menial and poorly paid jobs, usually concentrated in urban inner-city areas (Owen, 1992), where housing discrimination compounded problems of low pay and forced many minority groups into a 'ghetto existence' in conditions of poverty.

Differences in health between migrant and indigenous members of the population have focused attention on the migration process itself. Some authors have found class differences in immigrant mortality to be absent and attributed this to the selective migration of the healthiest workers to the UK (Marmot et al. 1984). Migration has also been linked with psycho-social stress that may contribute to poorer health, along with a 'failure to adjust' to British society and/or prior exposure to health hazards in their country of origin. However, country of birth does not clearly differentiate the health of British minority ethnic groups (Nazroo, 1997) and a longer length of residency in the UK is associated with health deterioration among Punjabi migrants (Williams, 1993).

Explanations for ethnic inequality in health may instead arise from the poor social and economic situation of successive generations of minority groups in the UK, perpetuated by racial discrimination and prejudice. A survey conducted in the 1980's reported that the labour market was highly segregated along ethnic lines (Jones, 1993). Minority ethnic workers were disproportionately located in low paid, low status manual work and employed as shift-workers in labour intensive manufacturing (Jones, 1993). Adults from minority ethnic groups are also more likely to be outside the formal labour market; their unemployment rate is considerably higher and of longer duration than for whites (Amin & Oppenheim, 1996) and recruitment procedures can discriminate against minority ethnic applicants.
The situation today is more complex as the experience of different minority ethnic groups has begun to diverge (Mason, 2000). An analysis of British survey data showed that job losses associated with de-industrialisation were less severe among minority ethnic workers than for whites, despite the greater concentration of minority workers in low skilled manufacturing work (Iganski & Payne, 1999). Recent surveys have continued to find socio-economic disadvantage among non-white groups (Chahal, 2000; Berthoud, 1998; Modood et al. 1997; Fenton et al. 1995; Rudat, 1994), but living and working conditions vary markedly among the main minority ethnic groups in Britain who cannot be construed as universally disadvantaged.

Pakistanis and Bangladeshis emerge as the poorest and most deprived ethnic groups across a number of social indicators, despite their very different pattern of migration and geographical settlement. The class profile of these ethnic groups clearly shows their concentration in unskilled manual work; only 11 percent of Bangladeshi adults in the Fourth National Survey of Ethnic Minorities were in social classes I or II, whilst 40 percent occupied the manual social classes (IV and V) (Nazroo, 1997).

The class profile of Indians is more advantaged by comparison, due in part to the high level of self-employment among Indian men. Self-employment among minority ethnic groups is regarded by some as evidence of 'upward mobility', but may also represent an escape route from poorly paid employment and labour market discrimination (Metcalf, Modood & Virdee, 1997). Unlike whites, research shows that self-employment opportunities for Asian groups are often limited to a narrow range of occupations, such as retail and catering. The financial success of small businesses often depends on the labour of family members and may necessitate long hours and low pay, particularly for women, and this may have adverse consequences for health.

A recent study showed that Africans, Pakistanis and Bangladeshis were two and a half times more likely than whites to have no-earner in the family household, after
controlling for age and family structure (Chahal, 2000). The rate of unemployment is approximately four times higher for Pakistani and Bangladeshi men and twice as high for Black Caribbean men as it is for white men (Nazroo, 1997). A large proportion of non-employed Pakistanis and Bangladeshis are classified as looking after the home, and the vast majority of this group are women.

Ethnic differences in employment and non-employment mean that a greater proportion of minority ethnic adults than whites are in low income groups. Due to high unemployment, low pay, and low economic activity among women, a sizeable proportion of Pakistanis and Bangladeshis are living on a low income; a situation that is compounded by large family sizes (Modood et al. 1997) and by sending money to relatives overseas (Beishon, Modood & Virdee, 1998). An estimated one-third of total income for Pakistanis and Bangladeshis comes from means-tested benefit (Chahal, 2000), although benefits paid to minority ethnic claimants tend to be less generous than for whites (Alcock, 1997). Part of this discrepancy results from the calculation of benefit according to employment contributions, since many minority workers are excluded from full-time, secure employment and occupational pension schemes. Stringent controls over benefit payments made to immigrant workers is also likely to exclude or be a disincentive to claimants (Alcock, 1997). The potential of language barriers to accentuate social inequality among minority ethnic groups cannot be ignored; information about benefits, for example, may be unavailable in native languages, so reinforcing benefit-related poverty (Amin & Oppenheim, 1996).

In 1994, approximately one-third of Pakistanis and Bangladeshis lived in households that were overcrowded or that lacked a basic amenity (Nazroo, 1997). Only 28 percent of Bangladeshi households were owned in 1997-8 compared with 70 percent of white households and three quarters of Indian households (Matheson & Pullinger, 1999). Black Caribbean and Bangladeshi households were most likely to be renting from the social sector, and nearly one-quarter of Pakistanis were private tenants. Racial discrimination in the allocation of council housing
and private rental accommodation may contribute to ethnic differences in housing tenure but also to ethnic variation within categories of tenure. Among owner-occupiers, for example, Pakistani homes are disproportionately of poor quality, located in deprived areas and in need of repair.

(ii) Comparing the health of white and minority ethnic groups

A number of recent studies have shown marked ethnic patterning in adult health. Pakistanis and Bangladeshis - who have the most disadvantaged socio-economic profile - report the poorest health, followed by Black Caribbean and Indian adults, whose health is substantially poorer than that of whites (Nazroo, 1997; Rudat, 1994; Fenton et al. 1995). Within ethnic groups, there are socio-economic gradients in health, but all minority ethnic groups continue to have poorer health than whites after adjusting for their social class and material deprivation (Nazroo, 1997).

There is concern that socio-economic measures are not comparable across ethnic groups, and so misrepresent the experience of minority ethnic groups, presenting a distorted picture of socio-economic inequality in health. The heterogeneity within occupational classes has particular consequences for the socio-economic classification of minority ethnic groups. The PSI surveys of ethnic minorities have shown marked differences in the pay and working conditions of white and minority ethnic groups within any social class (Brown, 1984; Modood et al. 1997). Minority ethnic groups were more likely than their white counterparts to be employed at a lower grade, on lower pay and to experience job insecurity, stressful conditions and long work-hours. Disadvantage on these indicators was most evident for Pakistanis and Bangladeshis; ethnic groups who were disproportionately located at the lower end of the class hierarchy (Modood et al. 1997).

Class measures may also be ill-suited to the classification of self-employed groups, since they rely on identifiable occupational skills to assign a rank or social
standing. A study of South Asians in Glasgow by Williams et al. (1998) reported that the self-employed had a higher standard of living than employees, but results varied according to whether they worked on their own, with family or employed others. When compared with a general population sample, South Asians within each social class (except class IV/V) had a significantly lower standard of living. The efficacy of occupational social class measures is therefore likely to be undermined by marked ethnic differences in income, purchasing power, exposure to work-related hazards and psycho-social stresses among those with equivalent occupational status (Williams, 1996). Class adjustment for ethnic variation in health is likely to be inadequate if the socio-economic conditions of white and minority groups do not sufficiently overlap (Krieger, Rowley & Herman, 1994).

The use of class measures to represent the health experience of different ethnic groups is also limited because a larger proportion of minority ethnic adults than whites are non-employed. As discussed earlier in this chapter for women, the classification of the non-employed is likely to affect the magnitude of socio-economic differentials in health. Reasons for non-employment vary across minority ethnic groups; there is a high rate of unemployment (particularly long-term unemployment) among Black Caribbean adults, but a greater number of South Asians are economically inactive or have never been employed. Using last main job to determine class position may misrepresent current socio-economic circumstances, particularly for those who have been out of the labour market for some time, whilst the never employed are excluded from class analyses. For these reasons, the sole use of an occupational class measure is unlikely to encapsulate all dimensions of socio-economic experience that are significant for the health of minority ethnic groups. An alternative is to use multiple socio-economic indicators to make a fuller adjustment for the position of different ethnic groups (Smaje, 1995).

As advocated for women, health researchers have investigated other socio-economic measures that are not dependent on labour market participation. Nazroo (1997) found that a derived measure of ‘standard of living’ was a better
discriminator of self-assessed health among minority ethnic groups than social class position. Access to resources such as central heating and consumer durables may better capture the socio-economic circumstances of minority ethnic groups because this measure is more inclusive and sensitive to material living conditions in everyday life. However, the experience of material living conditions and its impact on health may be mediated by pre-existing experiences and expectations among those born outside the UK (Andrews & Jewson, 1993). It is argued that measures of housing tenure also conceal greater housing disadvantage among minority ethnic groups than for whites within each category of tenure (Smaje, 1995a), so under-estimating health risks associated with poor housing for different ethnic groups.

As noted earlier in this chapter, educational qualifications may be a marker of cultural capital. The term ‘capital’ in this context implies some economic return on educational investment, a return which some studies have suggested is unequal for ethnic groups. Studies of migrant workers, for example, show that they may have occupations in the UK that are incommensurate with their level of educational qualification. Thus, educational qualifications may not represent parity in the labour market for white and minority workers; for adults with the same level of qualification, those from minority ethnic groups may be discriminated against in terms of job opportunity, earnings and working conditions (Krieger, Rowley & Herman, 1994). If this is the case, then level of education may be a less reliable indicator of current socio-economic circumstances for minority ethnic groups than for whites.

A fundamental problem is that socio-economic measures cannot capture the experience of discrimination within the workplace. Studies suggest that racial discrimination is pervasive in the UK, with 1 in 8 minority ethnic adults interviewed in the Fourth National Survey reporting some form of racial harassment (Nazroo, 1999). The experience of discrimination may lead to physiological changes, chronic stress and anxiety that are health-damaging, or else the health effects of racial discrimination may be mediated by restricted choices
and opportunities in housing, education and community participation. Cross-sectional research suggests that racial discrimination and unfair treatment can partly account for differences in physiological and subjective health between African and white Americans (Ren et al. 1999; Krieger & Sidney, 1996). Ren et al. (1999) argue that in the US, exposure to discrimination is class-related and report that African Americans are more likely than whites to experience both racial discrimination and discrimination connected with their low socio-economic position. The authors conclude that;

'\textit{the domains of social stratification are not restricted to an individuals' income, education or occupation. How an individual is perceived and valued in the society on the basis of race is another critical aspect of social stratification}' (Ren et al. 1999 p.162).

Williams (1996) argues that the main function of racism is to transform the meaning of socio-economic position, such that an equivalent socio-economic position represents important differences in socio-economic status depending on ethnic group. Thus, health analysts must consider the 'hidden effects' of racial discrimination on socio-economic position and health.

(iii) Key Issues

This discussion has emphasised the diverse socio-economic characteristics of minority ethnic groups, a diversity that detracts from the view of 'non-white' groups as universally disadvantaged. For example, within the South Asian group, Indians are positioned differently in the social structure from Pakistanis and Bangladeshis. This highlights the importance of analysing not only the socio-economic position, but also the health of these groups separately. The preceding discussion also focused on conceptual difficulties associated with the measurement of socio-economic inequality in minority ethnic health, particularly the limited ability of class to capture living and working conditions. Issues were also raised about the meaning and efficacy of educational qualifications and material
resources for different ethnic groups. Although the use of multiple socio-economic indicators can reduce the overall possibility of ethnic variation within socio-economic strata, these indicators are unlikely to be sensitive to the health effects of racial discrimination.

2.5. CONNECTING GENDER AND ETHNICITY

So far the review has focused on inequality in socio-economic position and health associated with gender or ethnic group, but there is a paucity of research that considers the inter-relationships between gender and ethnicity. Although feminist research has gone some way towards illuminating ethnic diversity among women in terms of their labour market status (Brah, 1994; Anthias & Yuval-Davis, 1992), the health of minority ethnic women is more commonly related to their culture (Fenton & Sadiq-Sangster, 1996) than to their socio-economic position. This is despite research showing marked socio-economic disadvantage (Modood et al. 1997) and poor health (Nazroo, 1997; Fenton et al. 1995) among some groups of minority ethnic women.

There is a lack of gender comparative research for different ethnic groups. Many authors focus exclusively on socio-economic disadvantage experienced by white and/or minority ethnic women (Brah, 1994; Maynard, 1994) rather than contrasting their position with that of men from different ethnic groups. In health research, a common approach to the problem of small sample sizes for ethnic groups within surveys is to standardise results for sex, so ‘controlling out’ the main effects of gender on health and socio-economic position for different ethnic groups (Nazroo, 1997; Fenton et al. 1995). However, this ignores how the relationship between socio-economic position and health may differ for men and women from any one ethnic group. British research shows considerable variation in the socio-economic position of men and women within the same ethnic group (Modood et al. 1997; Fenton et al. 1995), but little is known about how these gendered socio-economic profiles are related to gender and ethnic inequality in reported health.
The following discussion draws attention to what has been referred to as the 'racialised gendering' of labour market position (Brah, 1994), focusing on gender differences within ethnic groups, along with ethnic variation among men and women, to highlight the complex inter-relationships between gender, ethnicity and socio-economic position. The likely implications for the health of different gender and ethnic groups is then discussed, along with the further issues it raises about the measurement of socio-economic position for minority ethnic women in particular.

(i) Gender and ethnic inequality

This chapter has emphasised that non-white minority ethnic groups in the UK cannot be regarded as homogenous, since they differ markedly in their socio-economic circumstances. This section considers gender as a further axis of difference and argues that a focus on gender and ethnicity can draw attention to patterns of socio-economic disadvantage that are hidden when gender and ethnicity are analysed separately.

Results from the Fourth National Survey of Ethnic Minorities (Modood et al. 1997) provide a detailed picture of gender and ethnic inequality in socio-economic position in the mid-1990's. This survey showed considerable ethnic diversity in educational qualifications for men and women of working age. Indian men were much more likely to have a degree level qualification (24 percent) than white men (11 percent), whereas over 40 percent of Caribbean and Pakistani men, and more than half of Bangladeshi men, were not educated to O'Level standard.

The pattern differed for women; Caribbean women of working age were more likely to have qualifications at O'Level or above than white women, although were under-represented at degree level. South Asian women were generally more disadvantaged in their educational attainment, but whereas only 3 percent of Bangladeshi women and 7 percent for Pakistani women had a degree, Indian women were more likely to have a degree than women from other ethnic groups (Modood et al. 1997).
Men in all ethnic groups (including whites) were over-represented at degree level and more likely to have A’level qualifications than women. However, this gender gap was very narrow for Caribbeans and, unlike other ethnic groups, more Caribbean men were in the lowest educational group than women (Modood et al. 1997). This is consistent with recently published findings from the 1999 Health Survey for England, which further reported that Black Caribbean women aged 16 and above were more likely to have a degree than men in this ethnic group (Erens et al. 2001).

Research suggests that differences between Black Caribbean men and women extend into the spheres of paid employment and income (Jayaweera, 1993). A high level of full-time employment is reported for Caribbean women of working age; 61 percent in the Fourth National Survey were employed in the public sector, most commonly in health and local government (Modood et al. 1997). The class profile of Caribbean women shows their concentration in intermediate non-manual jobs (Jayaweera, 1993; Modood et al. 1997), although women in these jobs may experience discrimination. In contrast, Caribbean men are disproportionately located in skilled or semi-skilled manual jobs, such as those in the Engineering sector (Modood et al. 1997) and have a higher rate of unemployment. These differences partly account for the finding of higher average earnings among women than men in this ethnic group (Breugel, 1994).

As well as being different from Caribbean men, the socio-economic position of Caribbean women can be distinguished from women from other ethnic groups. The labour force participation of minority ethnic women has increased over recent decades, as it has for white women (West & Pilgrim, 1995; Bruegel, 1994), but there are substantial ethnic differences in the nature of women’s employment that are likely to be relevant to understanding inequalities in their health.

Among women in paid employment, many minority ethnic women work full-time, whereas a large proportion of white women work part-time hours (Breugel, 1994). This is particularly the case for Caribbean women, whose level of full-time
employment is high, even for those with young children (Modood et al. 1997; Anthias & Yuval-Davis, 1992). However, as discussed for all women, the extent to which full-time paid employment benefits the health of Black Caribbean women is debatable. Lone-mother families are more common within the Black Caribbean group than in other ethnic groups; studies show lone parenthood to be associated with high morbidity, particularly when combined with paid employment (Arber & Cooper, 1999b). There is some evidence that Caribbean women suffer from greater anxiety, stress and neurosis compared with Caribbean men (Nazroo, 1997), but its relation to family and working life is unclear.

Whilst white and minority ethnic women are likely to share an experience of gender discrimination in the labour market, along with demands of work and family, research suggests that many (but not all) minority ethnic women are disproportionately disadvantaged in terms of their job location, pay and working conditions relative to white women. Pakistani and Bangladeshi women are concentrated in low grade manual work and have a higher level of unemployment than other women (Modood et al. 1997). Whilst Indian women are much more likely than other South Asian women to be employed in professional occupations (West & Pilgrim, 1995), studies suggest that minority ethnic women in these jobs are given less responsibility and lower pay than white women (Breugel, 1994; Jayaweera, 1993). A comparison of educational qualifications and occupation also shows that minority ethnic women are more likely to be in unskilled occupations than their level of educational attainment would suggest (Bruegel, 1994). Even when conditions do converge, as in the reportedly narrow income difference between white and Black Caribbean women, women remain disadvantaged relative to white men in the same occupation (Jayaweera, 1993).

The employment rate of women varies markedly across ethnic groups; a high level of full-time employment among Caribbean women and part-time employment among white women contrasts with low economic activity among some South Asian women (West & Pilgrim, 1995). Figures from the 1999 HSE showed that only 18 percent of Pakistani and Bangladeshi women aged 16 and above were in
paid work, whereas this figure was notably higher at 48 percent for Indian women (Erens et al. 2001).

Economic inactivity among Pakistani and Bangladeshi women can be largely understood in the context of their domestic and child-care responsibilities (West & Pilgrim, 1995), and it has been suggested, from family or religious objections to women’s paid employment (Brah, 1994). However, a number of authors have highlighted structural barriers to labour force participation for Pakistani and Bangladeshi women that restrict employment opportunities to a narrow range of occupations (Brah, 1994). Studies suggest that Pakistani and Bangladeshi women are most likely to find employment in family businesses (Metcalf, Modood & Virdee, 1997) or engage in home-working (Phizacklea & Wolkowitz, 1993) to provide essential financial support to their family. However, these types of work are likely to necessitate long-hours, be poorly paid (or even unpaid), to limit opportunities for interaction with social networks and be incompatible with the demands of family and domestic life. Studies suggest that domestic labour and child-care responsibilities alone place heavy demands on South Asian women and are linked to their reports of tiredness and depression (Fenton & Sadiq-Sangster, 1996). It seems likely that the poor labour market position of Pakistani and Bangladeshi women further contributes to their health disadvantage.

Employment status for South Asian men differs from South Asian women because of men’s greater economic activity. However, high levels of unemployment exist among Pakistani and Bangladeshi men, comparable with that for Black Caribbean men. Gender differences in paid employment are more marked for Pakistanis and Bangladeshis than for Indians, because Indian women are likely to have a higher education and more extensive employment in non-manual jobs than other South Asian women (West & Pilgrim, 1993).

Studies show that Pakistani and Bangladeshi men have a particularly disadvantaged and insecure labour market position relative to other men. The employment profiles of Pakistani and Bangladeshi men show that both groups are
concentrated in semi-skilled manual occupations and are more likely to work part-time, to be unemployed or long-term sick, than other men. Occupations in which Pakistani and Bangladeshi men are over-represented include taxi-driving, factory work and the restaurant trade, all of which are likely be characterised by anti-social hours, shift-work and low pay. In contrast, the employment of Indian men is more similar to that of white men, partly due to Indian self-employment (Modood et al. 1997).

These ethnic differences illustrate that not all men are in a position of labour market 'advantage'. Pakistani and Bangladeshi men in particular are concentrated in low paid, low status occupations characterised by poor working conditions and long hours whereas the employment of white and Indian men is more advantaged in comparison. However, all minority ethnic men are under-represented at managerial level compared to white men, even when qualified to the same level (Modood et al. 1997).

(ii) Comparing the health of men and women from different ethnic groups

The finding that the relative health of ethnic groups follows a general socio-economic pattern has lead to the conclusion that ethnic inequality in health is 'less connected to distinctive cultural practices of each group than to divisions in employment, income and standard of living' (Modood et al. 1997 p. 351). However, despite evidence discussed above that employment and standard of living is markedly gendered, many key British studies that relate socio-economic position to ethnic inequality in health are based on standardisation for sex or else aggregate findings for all adults (e.g. Nazroo, 1997; HEA, 1999). It is perhaps surprising that the poor health of minority ethnic women is primarily discussed in terms of culture (Fenton & Sadiq-Sangster, 1996; Sonuga-Barke & Mistry, 2000) when the preceding discussion would suggest many minority ethnic women experience a high degree of socio-economic disadvantage.
Of the few existing British studies, the results suggest that the strength and magnitude of the relationship between socio-economic position and health varies for different gender and ethnic groups according to the health measure used. Williams et al. (1998) compared the health of one South Asian group (Punjabi) living in Glasgow with a general population sample using ‘standard of living’ as a socio-economic measure. Low standard of living was related to high blood pressure among Asian and non-Asian women, but not men, and was not associated with reported symptoms in the last month for Asian men and women. In contrast to the general population sample, the relationship between standard of living and health was weak and non-significant for Asian men and women based on their reported symptoms and limiting longstanding illness.

Curtis and Lawson (2000) analysed differences in reported health separately for men and women who were white or African Caribbean based on 1991 Census data. For both sexes, reported long-term illness was significantly associated with age, marital status and standard of living. However, ethnicity was only independently associated with health for women; African Caribbean women were more likely to report illness than white women, but the health of white and African Caribbean men was comparable after adjusting for socio-demographic factors. The authors suggest that the health difference between white and African Caribbean women, but not men, reflects cultural differences in the way illness is experienced or reported. However, this research finding, coupled with the weaker socio-economic gradients in health found for some gender and ethnic groups relative to whites, may also result from a failure to adequately control for socio-economic position. The measurement difficulties associated with socio-economic measures (see previous sections) are likely to be particularly relevant to minority ethnic women whose labour market position is connected with their status as women and as minority ethnic workers. The socio-economic positions occupied by many minority ethnic women - most notably Pakistani and Bangladeshi women - are those which are typically associated with high levels of morbidity. Non-employment or long working hours and poor working conditions combined with heavy domestic responsibilities, may be health-damaging, not least through
psychosocial pathways associated with stress, anxiety and low job control (Marmot & Wilkinson, 1999). Qualitative studies of African Caribbean and Asian women also highlight the salience of racial discrimination for their emotional well-being and health (Curtis & Lawson, 2000; Fenton & Sadiq-Sangster, 1993), but socio-economic measures are unlikely to capture the psychosocial effects of racism, particularly for women outside the labour market.

2.6. KEY ISSUES

This review has emphasised that socio-economic position may differ in its meaning and significance according to gender and ethnicity and that there are problematic conceptual issues about measuring socio-economic position for women, particularly those belonging to a minority ethnic group. For these reasons, the same relationship between socio-economic position and health cannot be assumed for all adults.

From what is known about the socio-economic position of gender and ethnic groups in the UK, marked socio-economic differences between and within these ethnic groups according to gender will be obscured unless the health of men and women is examined separately. Connecting gender and ethnicity is likely to show that not all men occupy a position of labour market ‘advantage’, rather that Pakistani and Bangladeshi men in particular share many disadvantages of low pay and low status traditionally associated with women’s employment. Although the socio-economic position of women is generally found to be poorer than that of men, this gender difference may not exist within all minority ethnic groups. For example, studies suggest Caribbean women are more likely than Caribbean men to be in non-manual employment and have higher educational qualifications.

This chapter also centred on likely gender and ethnic differences in the meaning and measurement of socio-economic indicators aligned to occupational class, educational qualifications and material deprivation. From this discussion, it might be proposed that socio-economic position based on current or last main occupation
will be most problematic for adequately reflecting the position of women and minority ethnic groups. Rather, occupational class may best represent white men whose employment profiles are more likely to be characterised by a high level of stable employment during the main years of working life.

The following chapter introduces a new concept of social embeddedness, which will be utilised in this analysis of gender and ethnic inequality in health. Rather than focus on position in the social structure, social embeddedness gives primacy to the ways in which gender and ethnic divisions intersect with social communities, subjective perceptions and experiences. However, it remains important that such a focus does not neglect differences in socio-economic position which may profoundly influence perceptions of neighbourhood or forms of associational activity. Thus, the following discussion recognises the importance of both the divergent socio-economic profiles of gender and ethnic groups and the socio-economic characteristics of areas in which they are likely to be situated.
Introduction
This chapter introduces the concept of 'social embeddedness' and outlines the rationale for exploring the differential integration and involvement of gender and ethnic groups in their neighbourhood, community and social networks as a potential correlate of their reported health.

Primary emphasis is given to;

i) the ways in which neighbourhoods and communities are socially constituted but, in being so, are inherently unequal in the benefits, meaning and experiences they provide to different social groups who are situated within them.

ii) The degree of involvement with primary social networks of friends and family that may proxy for social support, social conflict or social isolation and whose meaning and effects may serve to moderate subjective perceptions of community or structural inequalities.

The twin aims of social embeddedness are closely aligned to the current burgeoning literature on social capital and social support. Whilst this chapter will therefore draw closely on literature in these areas, it makes clear how social embeddedness is conceptually distinct from these aforementioned concepts by critically examining some of the assumptions and inconsistencies on which they are based, including their relative neglect of gender and ethnic differences. This critique is particularly important in relation to social capital because its enthusiastic application to studies of health inequality, coupled with its diverse measurement, has led to much debate and confusion about its meaning and utility in health research (Paxton, 1999; Lynch et al. 2000). This confusion extends to the conceptualisation of social support, on the one hand subsumed under the multidimensional 'social capital' and on the other, a concept which has a history of study in its own right.
The concept of social capital has a long history. Developed by Pierre Bourdieu in the 1970's and early 1980's, the term then gained popular usage through the work of James Coleman (1988) and latterly Robert Putnam (1996; 2000). The current interest in social capital and health is largely drawn from Putnam. He argued that social capital is a prerequisite for effective government and democratic processes (Putnam, 1993) and can be related to a range of other outcomes including health (Putnam, 2000). In this chapter, Putnam's concept of social capital is critiqued and discussion re-centred on Bourdieu's conceptualisation of social capital.

In its broadest sense, social capital refers to the 'resources or benefits that individuals can gain from their connections with one another' (Paxton, 1999:89). This basic premise does not embody new ideas in sociology. Durkheim's study of suicide was among the first to highlight the importance of social integration and cohesion (Berkman & Kawachi, 2000) and the role of social relationships in moderating stress and health has been the subject of much investigation since the 1970's (Cassell, 1976; Cobb, 1976).

However, for Putnam (and James Coleman), the benefits of involvement and participation in social life extend beyond the individuals concerned to apply to whole communities (Harriss & De Renzio, 1997; Lomas, 1998). Social capital in this context refers to levels of social cohesion at a community or societal level, or put more simply, is 'the glue that holds groups and societies together' (Narayan, 1999:1). The focus of Putnam's enquiry therefore centres on whether whole communities or societies may be lacking in social connections and resources (Kawachi et al. 1997).

From his study of regional governments in Italy, Putnam concluded that 'civic-mindedness' was a key factor in determining whether a local government succeeded or failed (Putnam et al. 1993b). Governments that invested in the local infra-structure, were democratic and innovative fostered greater social trust, co-operation and communication among citizens than those who did not. These regions were
characterised by a 'rich associational life' of dense formal and informal networks and 'civic engagement' in neighbourhood associations, clubs and societies. The high stock of social capital in these regions was maintained because individuals acted for the benefit of the whole community rather than for personal gain. Putnam's social capital is therefore conceived as a public good or 'moral resource' from which individuals, communities or whole societies can benefit. Putnam's thesis attracted controversy because of his claim that American society has suffered from a steady decline in social capital over the last three decades, as supported by empirical survey measures of social trust and affiliative group membership (Putnam, 1995).

It is argued that an individuals' health benefits from the 'public good' of social capital. Properties of social capital that appeal to health promoters include the assertion that social capital in one area of life can 'spill over' into other, unrelated areas. It can thus be generated and can accumulate through the co-ordinated actions of individuals. Unlike financial capital, social capital is said to increase with use; it is often assumed that health benefits are proportional to the amount of social capital within a community.

A number of influential studies have aggregated individual responses to survey questions to represent social capital at a state or societal level. A reported negative association between income inequality and life expectancy within developed countries and US States has prompted the argument that relative deprivation is important for health, notably through its detrimental impact on social relationships (Kawachi et al. 1997; Wilkinson, 1997; 1999). Social capital and ultimately health will therefore thrive in egalitarian societies associated with greater social trust, integration and affiliative ties among its citizens. These claims are supported empirically by studies where social trust and voluntary group membership represented at state level are positively correlated with lower mortality and better self-rated health, over and above individual characteristics such as gender, income and ethnicity (Kawachi et al. 1997; Kawachi et al. 1999).
(i) Gender and Ethnicity

Putnam’s concept of social capital was developed and is most usually applied as an ecological concept which, as the studies above illustrate, has a contextual effect on health. Putnam’s concern with issues of gender and ethnicity has focused on their utility as explanations for the decline in social capital in American society as a whole. A general downfall in social capital was evident for all ethnic groups in Putnam’s analysis of the General Social Survey (Putnam, 1996), although the demise of social trust and group membership was greater for African Americans and other minorities than for whites. Community disengagement among whites was not, however, correlated with racist attitudes, therefore Putnam rejected racial segregation in American society as the impetus behind decreasing social capital in communities.

Putnam refers to the growing labour force participation of women as ‘probably the most portentous social change of the last half century’ (Putnam, 1996: 7), but can find no supporting evidence that women’s movement into the labour market in any way contributes to what he claims is the ‘loss of social capital’ in communities. What is more important in relation to this analysis, is that he finds associational life quantitatively different for the sexes; an issue which is expanded below.

To understand the difference between social capital and the concept of social embeddedness proposed here, it is first necessary to discuss key weaknesses of Putnam’s concept of social capital as they relate to gender and ethnic groups that are the focus of this analysis.

3.1.1 Neglect of social diversity

A number of critics have drawn attention to diversity existing within communities, that is, among people who live in the same neighbourhood, state or society (e.g. Portes & Landolt, 1996). This is important because the contextual effects of social capital on health would seem to over-state the homogeneity of communities at the expense of individual or family characteristics. Of these characteristics, it is argued here that gender and ethnic divisions are paramount in shaping not only patterns of
social interaction but also inequalities of power and access to social resources within the neighbourhood or wider community. Putnam’s failure to elaborate on these differences has led to the charge that his conception of social capital is both “gender blind” and “ethnocentric” (Morrow, 1999: 749).

Support for gender and ethnic differences related to social capital comes from a number of sources. Interviews with community residents in Britain show that social divisions such as age and ethnic group are salient and may serve to undermine a sense of commonality or belonging within a locality (Campbell et al. 1999). Indeed, what individuals perceive as their ‘community’ may be less dependent on geographical location than allegiances formed on the basis of common characteristics or shared experience, such as that shaped by ethnic group, gender or social background (Jeffers, 1996).

What the concept of social embeddedness aims to capture, that is not provided by extant formulations of social capital, is the sense that the meaning of social interactions, and the access afforded to social resources within a locality, are different for gender and ethnic groups. The following discussion emphasises differences between men and women and ethnic groups identified from the existing literature.

(i) Gender

An implicit assumption of social capital as conceived by both Putnam and James Coleman, is that women have greater responsibility than men for building and maintaining social capital within families (Coleman, 1988) and the wider community. Thus, the ‘burden’ of social capital is unequally divided among the sexes; women’s community-centred roles within the domestic, caring and family spheres make them the primary agents for the creation of social capital.

Research does suggest that women have a more central involvement in everyday community life than men. Putnam’s analysis found that gender was associated with differences in voluntary and associational activity but that this was further related to women’s employment status. American survey data finds that women employed full-
time are less likely than women looking after the home to engage in informal socialising or social clubs (Putnam, 1995), but are more likely to be involved in political activity (Schlozman, 2000). A UK study based in Luton found that women were more likely than men to have strong local networks based on face-to-face contact, mostly with other women (Campbell et al. 1999). Men occasionally accessed these networks through their wives, but most usually had friends and acquaintances linked to work or non-local networks. A detailed analysis of community participation in Australia by Baum et al. (2000) showed that women had greater involvement than men in all kinds of social and civic activity, ranging from informal social contact to participation in civic groups, such as a residents association. Although consistent with Putnam’s notion that women are key figures in communities, gender differences in the type and structure of what is referred to as social capital raise questions about its subjective meaning and significance for men and women. This subjective meaning cannot be adequately addressed when social capital is conceived as a resource to which everyone living in the same community can access and benefit from equally.

(ii) Ethnicity

Ethnicity is an additional axis of difference within communities. Qualitative research has tended to emphasise how expectations and norms of behaviour co-vary with ethnic group in ways that may shape patterns of interaction with social networks as well as the wider community. Findings from in-depth interviews with Pakistani and Bangladeshi families living in the UK suggest that gender and ethnicity are inter-related. Beishon et al. (1998) report that women’s responsibilities were perceived to be within the home and domestic sphere whilst men were connected with work and the outside community. Pakistani and Bangladeshi women were less likely than men to enter public spaces or paid employment for fear of harassment and for ‘cultural’ reasons concerning the socially accepted role of women from their culture.

It is, however, important to contextualise these differences in terms of the known residential concentration of minority ethnic groups in urban, inner-city areas of the UK. Analyses of the 1991 Census show that people from minority ethnic groups are
most likely to live in South East England (especially London), the West Midlands, West Yorkshire and Greater Manchester. These locations are home to 75 per cent of the minority ethnic population compared to only 25 per cent of the majority population (Owen, 1992). One consequence is that spatial location and ethnic identification may overlap to bring about an overall sense of community. Although areas with high minority concentration may be disproportionately socio-economically deprived, studies show minority ethnic adults living in such areas to have better psychosocial health than those residing where the proportion of minority groups is low (Ecob & Williams, 1991). One hypothesis is that individuals benefit from living in areas where the population shares their own characteristics (Halpern, 1993; Smaje, 1995b). Ethnic concentration may therefore serve to buffer men and women belonging to that ethnic group from the negative health effects associated with living in a socio-economically deprived area or an area with high racial discrimination. Support for this argument is suggested by Sooman & Macintyre (1995) who found that one component of their ‘neighbourhood cohesion scale’ – namely ‘neighbouring behaviour’ – was more favourably perceived by individuals living in socially disadvantaged areas compared with more affluent areas of Glasgow. The authors suggest that poor areas may have rich informal networks that can compensate for disadvantage experienced elsewhere. These research findings emphasise the importance of taking into account socio-economic deprivation which is likely to impact on subjective perceptions and patterns of social interaction, although not always in ways that are negative. This issue is returned to later in the chapter.

3.1.2 Neglect of inequality

The discussion above emphasises differences between gender and ethnic groups that are potentially neglected in health studies informed by Putnam’s conception of social capital. The argument so far has drawn attention to gender and ethnic differences in the meaning, access and utilisation of social networks and relationships. Critics of social capital have referred to its capacity to benefit some people at the expense of others (the ‘outsiders’), so accentuating social divisions and inequality rather than promoting social cohesion across diverse groups (Portes & Landolt, 1996; Durlauf,
Interviews with residents living in multietnic cities in the UK suggest that in some instances community participation is highly segregated along ethnic lines, with few community initiatives perceived as available equally to all ethnic groups (Jeffers, 1996).

A key issue is whether such differences in meaning and access to social relationships and resources are sustained voluntarily by members of gender and ethnic groups, result from their exclusion from dominant networks, or their structural position. Group membership and social ties may facilitate access to information and have a key role in the formation and maintenance of a social identity, including that related to gender and ethnic group. However, where such bonding occurs within the boundaries of a social group, the benefits are unlikely to extend to all members of a population, rather it has been proposed that ‘cross-cutting’ ties between different social groups may be more important for an overall sense of cohesion within a neighbourhood or community (Narayan, 1999).

Portes and Landolt (1996) use a close-knit ethnic community in America as an example of how membership in a social group with high social capital brings with it conformity and adherence to norms that may stifle individual opportunity but rather encourage certain modes of collective behaviour consistent with dominant norms and values. Indeed, the ‘collective efficacy’ within such areas (Sampson et al. 1997) is thought to promote health, by fostering greater adherence to norms of healthy behaviour for example (Kawachi et al. 1999). However, as highlighted in the previous discussion on women and social capital, the associated demands of acceptable behaviour are unlikely to be uniform for all members of a population. This issue is discussed further in the following chapter reviewing literature on cigarette smoking (Chapter 4).

The emphasis given in this discussion to diversity and differential access to resource and networks is most closely aligned to Bourdieu's conception of social capital (Bourdieu, 1985) which theoretically implicates it in the production of social inequalities through its relation with other forms of capital. Bourdieu's use of the
term social capital refers to the advantages and opportunities accruing to people through their membership in certain groups. Social capital is produced through social networks based on contacts and group memberships, therefore to possess it, individuals must pursue relationships with others (Bourdieu, 1985). These relationships are the source of social capital and can provide support and access to valued resources through the exchange and accumulation of exchanges and obligations (Morrow, 1999).

In contrast to Putnam, Bourdieu’s social capital is an instrumental concept; individuals are strategic actors, motivated by the benefits to be gained from group membership and social networks, translated into available and valid capital within various fields (the profile of each field is dependent on the proportionate importance of each form of capital within it). Social networks and relationships are not a natural given, rather ‘the profits that accrue from membership in a group are the basis of the solidarity that makes them possible’ (Bourdieu, 1985: 249). The acquisition and maintenance of social capital requires the deliberate investment of economic and cultural resources and the necessary skill to construct ‘sociability’ through obligation, mutual reciprocity and the exchange of gifts, for example (Portes, 1998). The amount or quality of resources that actors can gain from social capital through its effective implementation in the field can allow individuals or social groups direct access to cultural, symbolic and economic capital. It is through the interplay of these forms of capital that social inequalities are produced and reproduced.

3.2. ASSOCIATIONAL ACTIVITY AND HEALTH

Whilst an appreciation of diversity and inequality is increasingly recognised, not least by Putnam himself (Putnam, 2000), studies that consider characteristics such as gender and ethnic group as potential axis of difference remain comparatively rare in the social capital literature. This relates to the way in which social capital is typically conceived as inherent to whole societies, states or communities (e.g. Wilkinson, 1997; Kawachi et al. 1997) with a contextual effect on health over and above individual characteristics (Kawachi et al. 1999). An alternative approach is to derive social
capital indicators for *individuals* in surveys to assess whether indicators of community involvement and social activity are associated with their health over and above characteristics such as gender and ethnic group, or to assess the utility of such indicators to account for area differences in health.

One example of the latter approach is an analysis by Veenstra (2000) where whether individual differences in social trust, civic participation and social networks were related to variance in self-reported health found between areas in a Canadian survey. The analysis showed that participation in social clubs and attendance at religious services were unrelated to health after controlling for marked income and educational inequalities in health. Further analysis of community involvement specified the amount of time and size of the group, along with group composition in terms of age and ethnicity, but none had an independent association with health. Reported health was also unrelated to an index of civic participation that included individual and group activity. Findings reported by Baum et al. (2000) were also equivocal in term of the relationship between community participation and health. This Australian study distinguished between ‘social participation’ and ‘civic participation’ where the former emphasised informal socialising and the latter more formalised activity within the community. After controlling for individual characteristics, Baum et al. found that both types of participation benefited mental health to a greater degree than physical health.

Research by Macintyre et al. (1993) situated individual perceptions of community within areas of residence. Not surprisingly, a ‘poor’ area associated with what may be construed as social and physical disorders, such as inter-personal crime and vandalism, elicited a pessimistic attitude among residents about the local area and lower community morale, as measured by scores representing ‘neighbourhood cohesion’. These scores were associated with a range of health outcomes, but consistent with other studies, low neighbourhood cohesion was more strongly associated with symptoms of ‘malaise’ than with physical health problems.
The finding that subjective health is most strongly associated with perceptions of neighbourhood, formal and informal associational activity, supports the view that psychosocial pathways are important. Psychosocial explanations linking 'social capital' to health are diverse; positive perceptions of neighbourhood and good social relationships may serve to protect against stress or chronic anxiety associated with low social status (Wilkinson, 1999) and/or foster greater psychological resources such as self-efficacy (the degree of control individuals perceive over their lives), self-esteem and feelings of empowerment (Stansfeld et al. 1998). It is, however, important to note that the health studies discussed above have in common the use of cross-sectional survey data which can make conclusions about the direction of causation problematic; poor health, for example, may in some instances act as a barrier to social/civic participation or lead to more negative perceptions of neighbourhood.

3.3 A ROLE FOR SOCIAL SUPPORT

In common with the associational activity reported above, studies have reported a relationship between social support and health outcomes, although this evidence is more compelling for mortality (Berkman & Syme, 1979; House et al. 1982) than for morbidity. Similar to social capital, the measurement and definition of social support is diverse and in some studies the boundaries between these concepts are blurred (e.g. Baum et al. 2000) such that the psychosocial pathways linking social support to health have been subsumed by social capital. In general, however, social support is more likely to involve more private person-to-person interaction whereas community associational activity more generally indicative of social capital may facilitate access to social support, but does not solely constitute it (Lin & Ensel, 1999). A key distinction is made between social support that is functional, based on the subjective perception of the quality of relationships, and structural social support derived from the objective characteristics of an individuals' social network. Structural support includes the size of the network, its composition (e.g. in terms of gender and ethnicity) and the frequency of contacts maintained with members.
There has, however, been a tendency in research on social support to focus on specific health conditions rather than global measures of self-reported health. In a meta-analysis of eighty studies, Schwartzer and Leppin (1992) found measures of social support were correlated with reported general health and physical symptoms. However, the strength of this association varied according to the measure of social support used; social integration was only weakly related to reports of physical symptoms, whereas functional support was a stronger predictor of self-rated health. From this finding, the authors conclude that;

'the quality of support that is subjectively experienced is most crucial for physical symptoms - at least as far as self-reports of such symptoms are concerned' (Schwartzer & Leppin, 1992: 76)

A distinction between *perceived* support and *received* support was also important for health. The former may be characterised by individual perceptions about the quality, availability and adequacy of social support, whilst the frequency and nature of social contact may indicate received support. Schwartzer and Leppin (1992) found that low perceived support was associated with poor health, but received support was positively correlated with more reported symptoms. This finding suggests that stress and poor health can prompt support to be mobilised, rather than social support being causally prior to health outcomes. This highlights a main limitation of cross-sectional studies of social support; levels of social support may be determined by health status rather than support having an influence on health outcomes (Stansfeld, 1999).

A discussion of social support is warranted here because the concept of social embeddedness includes informal associational activity with friends and relatives, from which support may be derived, as well as perceptions about close family and friends. However, whereas the provision of social support is often inferred as a part of the 'public good' of social capital, social embeddedness demands that individuals are active in their participation, appraisal and production of social relations and networks in their own social environment.
Studies of social support have tended to give more focus to how social networks and relationships vary by gender and ethnic group (Pugliesi & Shook, 1998; Matthews et al. 1999; Moore, 1990) than have those concerned with social capital. Characteristics such as age, gender and ethnicity can influence the opportunities and constraints that shape social relationships and determine their significance for health. A number of studies have therefore focused attention on the social distribution of different types of support to assess their contribution to social inequalities in health (e.g. Matthews et al. 1999). Some of these are outlined below in relation to gender and ethnicity.

i) Gender, social support and health

Research suggests that there are gender differences in both the structural and functional characteristics of social support. Women have fewer ties to non-kin than men, but report greater contact with family members (Moore, 1990) leading to the suggestion that women rely more on family support (Leavy, 1983). A general finding is that women are more likely to report a close confidante other than their spouse, whilst men report fewer emotionally intimate relationships (Fuhrer et al. 1999). Matthews et al. (1999) found women had greater perceived social support than men based on a number of different indicators. The greater tendency of women to report intimate, emotional and self-disclosing relationships with others can be contrasted with more task-oriented or activity lead relationships for men (Stansfeld, 1999). Women may also be able to provide and receive support more readily than men and be better able to mobilise support when needed, although women also report more negative aspects of social relationships, including inadequate support from close network members (Fuhrer et al. 1999).

Many authors attribute gender differences in social support to earlier child development and socialisation. It is argued that socialisation experiences from early infancy render women more nurturing, supportive and affective than men and these tendencies are inextricably tied to the development, composition and function of social networks in adulthood (Flaherty & Richman, 1989). An alternative structural perspective argues that the greater provision of support by women partly reflects gendered features of the social environment. This includes the division of labour and
societal expectations for women with respect to child-rearing, informal caring and caring occupations.

Research investigating the influence of social support on the reported morbidity of men and women has produced inconsistent results. The association between social support and physical health is often weaker for women than for men, but the reverse is often reported in studies of mental health and well-being (Shumaker & Hill, 1991).

An analysis of Canadian survey data showed a social support index based on perceived emotional support was a significant determinant of health for men and women (Denton & Walters, 1999). The relative contribution of social support to self-rated health was more than twice as large for women than for men, leading the authors to suggest that this kind of social support is a more important determinant of subjective health for women. This conclusion is supported by an analysis of the British Health and Lifestyle Survey (1984/5) where the quality of family support was more strongly related to poor mental health among women than men after controlling for other risk factors for health (Cranmer, 1991). A British study that analysed the relationship between social support and self-rated health separately for men and women found a measure of perceived social support from friends and relatives was associated with general health and limiting longstanding illness (Cooper et al. 1999). Poor health was most likely to be reported when a lack of close friends and/or relatives was perceived and this relationship did not differ by gender.

ii) Ethnicity, social support and health

American research by Pugliesi and Shook (1998) found modest ethnic differences in structural social support using a measure of social network size based on the number of close relationships with relatives, friends and neighbours. An additional support measure assessed interaction within the social network using reports of talking to or visiting friends, relatives and neighbours. African Americans had less frequent contact with members of their social networks than other ethnic groups (including European-Americans, Hispanic and Asian adults).
Experience of migration is considered to have detrimental effects on the availability of social support to minority ethnic groups, contributing to the breakdown of family ties (Silveira & Ebrahim, 1998). A qualitative study of British minority ethnic groups found that a high proportion of Black Caribbean, Indian, Pakistani and Bangladeshi groups had close family members living overseas (Beishon et al. 1998). Approximately two-thirds of Black Caribbean adults were dissatisfied with the amount and type of contact with their parents, which was often limited by financial constraints. However, this study also highlighted the 'familyism' of Asian groups; all had regular telephone contact with family abroad and perceived their families to be more cohesive and close knit than white families. Bangladeshis in particular often had family members living in very close proximity. A study of white and Asian groups living in the West Midlands reported that Asian-born parents had a larger social network than their young adult children or white counterparts and were least likely to express dissatisfaction with social support (Stopes-Roe & Cochrane, 1990).

A number of studies have examined how family structure affects the quantity and perception of social support. Within extended family units, most commonly found in Asian cultures, the presence of family members may provide greater social support. The traditional Asian family is often portrayed as affectionate and protective towards its members and likely to buffer against stress (Songua-Barke & Mistry, 2000). However, attention has also been given to the 'negative' aspects of living in a multi-family household, such as perceived intrusive involvement from others, inter-generational conflict or over-crowding (Stopes-Roe & Cochrane, 1990; Songua-Barke & Mistry, 2000).

Migration, multi-generational households and the lack of available support are all thought to contribute to the incidence of mental health problems in some minority ethnic groups in the UK. A study of older Somali and Bengali immigrants living in Tower Hamlets found that a lack of perceived social support from friends and family was correlated with poorer mental health, along with other indicators of social deprivation (Silveira & Ebrahim, 1998). Other research suggests that within South Asian groups, women have particularly poor mental health. Williams et al. (1997)
suggest that Asian women experience an extended range of stresses, including a lack of confidantes and close family living nearby. These sources of psychological stress may be under-estimated in responses to the standardised General Health Questionnaire (GHQ). Mental health problems among Asian women have also been attributed to social isolation arising from their traditional roles within the home and low employment participation.

Pugliesi and Shook (1998) argue that lack of social support may be conceived as a risk factor for health inequality associated with gender and ethnicity;

‘Gender or ethnic differences in the prevalence of particular health problems may be, in part, explained by differences in network characteristics and the experience of social support’ (Pugliesi & Shook, 1998: 234).

It is notable, however, that studies of social support and health for minority ethnic groups are dominated by a concern with mental health outcomes rather than physical ill-health or self-rated health. This is despite the markedly higher morbidity of minority ethnic groups on the latter health measures (Cooper et al. 1999; Nazroo, 1997).

The research outlined here shows gender and ethnic variation consistent with both the differential availability of social support and its salience for reported health. In common with the preceding discussion on social capital, there is some question about whether the health of women and minority ethnic groups benefits from close familial relationships as a source of social support, or whether the demands and expectations associated with such relationships can incur a health cost.

3.4. SOCIAL EMBEDDEDNESS AND HEALTH

The aim of the analysis in this thesis differs from many of the health studies outlined above. Rather than attempting to ‘control out’ the effects on health of individual characteristics such as gender and ethnic group to establish the ‘net’ effect of social
support relationships, the concept of social embeddedness will be used to focus on the extent to which these contribute to the pattern of gender and ethnic inequalities in health.

The term ‘embeddedness’ aims to capture the differential meaning of neighbourhood and community, patterns of social interaction and access to resources or relationships that are important for health. These encompass the sense in which people are located within social relations and networks, but are themselves productive of these arrangements through the active investment of time, money and resources. This is a key point of departure from notions of social capital allied to Putnam where health benefits are more diffuse and available to all members of a population living in a specific area, regardless of their level of community engagement. It has more in common with Bourdieu’s focus on the accumulation of social capital through the strategic investment and maintenance of social connections with others.

A review of existing studies in this chapter has suggested that a subjective measure of general health is likely to be a sensitive measure with which to detect any such differences, which may be positive or negative. The aim is to explore the utility of this concept in relation to health inequalities associated with gender and ethnicity. Whilst the preceding discussion suggested that women are ‘embedded’ in their neighbourhoods or communities to a greater degree than men, what currently remains unexplored is the extent to which this gender difference is modified by ethnic group. Among women, for example, marked differences in labour force participation are such that Pakistani and Bangladeshi women are likely to spend a greater amount of time in the home or community and have greater reliance on informal social networks within the local area than women from other ethnic groups whose level of economic activity is higher. Moore (1990) reported that working full-time negatively affected the number of non-kin ties reported by women, but that employment status did not have the same impact on men’s social networks.

This approach builds on previous research using a derived measure of ‘neighbourhood social capital’, based on individuals’ satisfaction with an area, the provision of local
facilities and perceived safety (Cooper et al. 1999). This measure was related separately to men and women’s reported health to assess gender differences in the nature of the relationship. Women with the most positive appraisal of their neighbourhood reported significantly better general health and less limiting longstanding illness than those who had more negative perceptions. For men, the relationship with general health was weaker and non-existent when limiting longstanding illness was used as a health outcome measure. Thus, perceptions of neighbourhood environment captured by this measure were most relevant to understanding women’s health. However, the same study showed the health benefits associated with neighbourhood, community participation and social networks were outweighed by socio-demographic and socio-economic characteristics; the former relationships largely disappeared after taking into account age and material living conditions.

Figure 3.1 presents the concept of social embeddedness and the ways it can be measured using the health survey data in this thesis. It is proposed that there are three domains which interact with each other and together comprise social embeddedness:

- Subjective perceptions of neighbourhood, family and friends;
- Reported Associational activity, both quasi-formal and informal;
- The Experiential domain, derived from actual reported incidents of crime or problem neighbours in the last year.

The rationale underlying each domain is discussed here with reference to the relevant literature but their measurement is described fully in the methodology chapter (Chapter 5).

Figure 3.1 illustrates that each of the three domains comprising social embeddedness are bounded by socio-economic factors. Thus, each domain is subject to the constraints and opportunities afforded by socio-economic position. From a structural perspective, the social location and roles of individuals creates the context in which social relationships can be developed or denied. Moore (1990) found that an
Figure 3.1: The concept of Social Embeddedness

Area-level factors

Socio-economic

Gender & Ethnic Groups

Social Embeddedness

SUBJECTIVE PERCEPTIONS

Quality of Neighbourhood (safety, facilities)

Close friends & relatives

REPORTED ASSOCIATIONAL ACTIVITY

Quasi-Formal
1. Community activity in last 2 weeks

Informal
1. Number of different contact with friends in last 2 weeks
2. Number of different contacts with relatives in last 2 weeks

EXPERIENTIAL

Crime in last year (theft, interpersonal)

Problems with neighbours in last year

Area-level factors
employed status increased the opportunities for support from non-family members relative to the non-employed. This finding is particularly relevant to some groups of minority ethnic women whose low employment participation and often greater domestic roles and responsibilities may limit their opportunities for social support from non-family ties, such as co-workers and friends. Structural opportunities for associational activity may exist in terms of high income or paid employment, both of which were found to be positively associated with a large social network and a greater number of non-kin ties (Moore, 1990). Socio-economic factors may directly impact on social participation if, for example, individuals are unable to afford child-care, and indirectly the same individuals will be denied access to social networks conditional on that participation.

3.4.1 **Subjective perceptions**

A key marker of social embeddedness is derived from subjective perceptions about a neighbourhood, along with the appraisal of relationships with family and friends.

  
  
  **i) Quality of neighbourhood**

Unlike many of the studies described in this chapter, 'neighbourhood' does not refer to a specific (measurable) locality, but rather the respondents' *subjective perception* of what neighbourhood constitutes. These perceptions are subject to much variation for example, local neighbourhoods are not always perceived as circular in shape and the extent of their coverage may depend on factors such as car ownership (Earthy et al. 2000). However, this variation does not negate the importance of investigating how subjective perceptions about neighbourhood or activity within a community are related to health because they draw upon respondents' own referents and therefore may capture what is most salient to their health. Thus, a measure relating to the perceived quality of neighbourhood is classified in the subjective perceptions domain in Figure 3.1. The components of this measure are based on questions relating to personal safety and facilities for children, transport and leisure.
Macintyre et al. (1993) argue that these characteristics of neighbourhoods may themselves be health promoting or health damaging. The provision of public transport, for example, may contribute to problems of pollution and noise, but could also facilitate associational activity by providing easier access to community-based groups or friends and family. Subjective perceptions of neighbourhood are likely to be strongly influenced by area-level characteristics, such as deprivation, an issue that is expanded on later in this chapter.

Subjective perceptions included in this quality of neighbourhood measure are also likely to be associated with the characteristics, experiences and life-course stage of respondents. Whether or not respondents have children will influence the salience of the question about the provision of facilities for children and how they are appraised. Primary users of child-care facilities are likely to be women, who may differ from men in their exposure to and experience of using neighbourhood facilities, as well as in their assessment of personal safety. Language, communication and the provision of facilities suitable for members of a multi-ethnic community may shape the subjective perceptions of minority ethnic men and women about their neighbourhood. Thus demands, expectations and experiences related to neighbourhood facilities may co-vary by gender and ethnicity.

\textit{ii) Close friends and relatives}

This measure is based on a subjective appraisal of the extent to which an individual feels they have close friends and relatives. It is therefore similar to a measure of perceived social support described earlier in that it is likely to be sensitive to the quality of these relationships. As reported above, it is commonly claimed that women's health benefits from a greater number of close, confiding relationships than is the case for men, although this is also likely to increase women's exposure to the negative aspects of social relationships (Rook, 1984; Stansfeld, 1999).

There are a number of reasons why gender differences in reported close friends and relatives may be relevant to their health. Firstly, men's greater reliance on a single close confidante (e.g. their partner) may make them more vulnerable to the negative
effects of social isolation on health. However, whilst women’s health may benefit from a greater number of close confiding relationships than men, dense social networks may also increase their exposure to the negative aspects of social relationships, including conflict. Rook (1984) found that ‘network strain’ was more strongly related to poor mental health than lack of social support. Finally, the health of women may suffer disproportionately from them being the providers of social support to friends and relatives. As discussed earlier in relation to social capital, if women bear the health costs of becoming emotionally involved in other people’s problems, of providing advice or assistance, these may outweigh the health benefits of high received support from others. However, it remains important to elaborate these relationships by ethnicity, particularly owing to the differential structural location of gender and ethnic groups described in Chapter 2.

3.4.2 Reported Associational Activity

Associational activity is grouped together as a separate domain of social embeddedness, although Figure 3.1 makes clear that it can interact with both subjective perceptions and experiences.

i) Quasi-Formal

Community activity reported in the two weeks preceding interview is used as a marker of quasi-formal associational activity. ‘Quasi-formal’ reflects voluntary group membership in recognised religious or community based organisations. Such measures formed the core of Putnam’s notion of ‘civic engagement’, although studies in the UK have suggested that group membership is very low (Campbell et al. 1999). The measure used in this study captures whether or not any activity was reported and does not contain detail about an individual’s responsibility within that group, the regularity or commitment with which they attend or the characteristics of other members. However, it can be used to distinguish the health of those who participated in some organised form of social activity compared with those who did not. However, the interpretation of such a measure is limited by the cross-sectional design.
of the survey data used in this analysis; community activity may be inhibited by the prior presence of ill-health.

ii) Informal

An informal measure of associational activity focuses on reported contacts with friends and with relatives. These are based on the number of different contacts reported with each of these groups over a two-week period, e.g. by telephone, letter or face-to-face visits. This measure may therefore provide a proxy for the density or structural aspects of social support. A greater number of different contacts over a two week period may be indicative of greater integration or 'embeddedness' within a social network of friends or relatives. Importantly, this measure is derived separately for friends and relatives and is therefore sensitive to possible differences in the experience and meaning of these distinct types of attachments. An earlier analysis using this measure found that social contact with friends was of greater importance for subjective health than contact with relatives, suggesting that these sources of support may differ in their subjective meaning or be differentially motivated (Cooper et al. 1999).

In common with the quasi-formal measure of associational activity, it may be problematic to interpret any causal relation between this measure of informal associational activity and health owing to the cross-sectional design of the survey data used here. Findings from a longitudinal survey of London civil servants found no long-term effect of structural social support (based on frequency and number of contacts with friends and relatives) on mental health for men and women aged 35-55 (Stansfeld et al. 1998). The authors suggest mental illness leads to smaller social networks and fewer social contacts with friends and relatives, and that the perceived quality of support from significant others is more important for health in the long-term. For both sexes, negative interaction or inadequate support was directly related to poor mental health after adjusting for health status, employment grade and marital status at baseline.
3.4.3 Experiential

Measures classified in the experiential domain focus on reported experiences in the last year; of crime and of problem neighbours. Both represent key 'environmental problems' associated with a locality. Of key importance is the potential of these experiences to interact with other domains. An experience of attack, for example, may alter the subjective way in which neighbourhood is perceived. The inclusion of a reported incidence of crime measure is not therefore limited in its interpretation to the direct effects of crime or trauma on well-being, rather crime is likely to be a metaphor for more diffuse processes linked to how people think about place and differentially appraise their actions within it.

3.4.4 A contextual effect

Previous research would suggest that minority ethnic health benefits from social relationships and resources found in areas of high minority ethnic concentration (Ecob & Williams, 1991), although the previous discussion highlighted the potential downsides of living in a closely knit community that may be damaging to health, e.g. members must conform to expected norms of behaviour. The health effects of social embeddedness may also be balanced or countered by the physical or socio-economic characteristics of urban, inner city areas in which a high proportion of minority ethnic populations are situated.

Figure 3.2 illustrates how ethnic residential concentration - namely the disproportionate number of minority ethnic groups located in urban, inner city areas of the UK - may function in a way that influences patterns of reported health among minority ethnic groups. Although it is obviously impossible to validate this model, it does suggest possible counter-posing effects which are represented by the crossed arrows in the model.
A positive connection is proposed to link areas of high minority ethnic concentration with social embeddedness. That is, a member of a minority ethnic group may have greater opportunity for social activity and civic engagement if located in an area where other non-white groups are also resident, e.g. family members. As some studies have suggested, the increased availability of these social networks and resources within an area of high concentration may ultimately bring about health benefits (Halpern, 1993; Ecob & Williams, 1991). However, this is unlikely to be the case if such networks are perceived to be restrictive or conflictual, hence Figure 3.2 allows for both positive and negative influence of high social embeddedness on health. A negative connection is shown to indicate a possible connection between
those urban, inner city areas in which minority ethnic groups are over-represented, and socio-economic deprivation. The negative health effects of socio-economic deprivation within an area have been well documented (e.g. Sloggett & Joshi, 1994). However, the contextual effect of area deprivation on health may be moderated within areas of high minority ethnic concentration if characterised by a high degree of social embeddedness.

3.4.5 Summary
This chapter introduced social embeddedness as an umbrella concept with which to investigate the association between social relationships and health among gender and ethnic groups. As a multi-dimensional concept, social embeddedness is comprised of three inter-related domains: subjective perceptions; reported associational activity and experiences of crime and problem neighbours. Each draw on elements of social capital and social support where similar measures have been utilised, but social embeddedness can be recognised as distinct in the following ways;

i) Greater emphasis is given to the potential for inequality and exclusion underlying access to social resources, as well as to any health benefits.

ii) It confers action on the part of individuals to acquire and maintain the social relations and networks in which they are located.

iii) Within each domain, the potential diversity associated with gender and ethnicity is recognised.

The following chapter draws further on these arguments in relation to cigarette smoking.
Introduction

The health-damaging effects of cigarette smoking are unequivocal. The addictive consumption of nicotine is linked to the development of chronic diseases and cigarette smoking is reportedly the biggest cause of premature death in the UK (HEA, 1999; DoH, 1998a). A measure of cigarette smoking is therefore used in this study to assess the association of health-related behaviour with gender and ethnic health inequalities. There are of course a number of other health-related behaviours known to impact on health, among them diet, physical activity and alcohol consumption (Cooper et al. 1999). However, whereas reported smoking status is relatively easy to quantify (although it may be subject to reporting bias), it is more problematic to define the parameters of a ‘healthy diet’ or an ‘acceptable’ level of alcohol consumption - particularly in relation to diverse gender and ethnic groups.

This chapter reviews the literature on smoking, paying particular attention to gender and ethnic differences. The prevalence of smoking is first examined, then arguments that differences in smoking behaviour reflect the differential culture or socialisation of gender and ethnic groups are discussed. It is then proposed that an uncritical acceptance of what is often referred to as ‘cultural differences’ in health promotion behaviour risks pathologising or stereotyping difference and neglecting wider social constraints. The finding of consistent social differences in smoking behaviour has fuelled considerable debate about the extent to which choices made about smoking are truly volitional or shaped by the historical, economic, political and cultural context in which people live (Lynch et al. 1997). The social patterning of smoking in relation to gender and ethnic groups is thus a main focus of this chapter, which examines how this behaviour is related to socio-economic position and those social relations and subjective experiences constitutive of social embeddedness as discussed in the previous chapter. The ensuing discussion considers how Bourdieu’s concepts of
habitus and field can inform our understanding of social differences in smoking behaviour and finally the links between smoking and self-rated health are reviewed.

4.1. PREVALENCE OF CIGARETTE SMOKING

Many British surveys ask respondents about their current smoking behaviour and it is from these surveys that it is possible to discern trends in smoking by gender and ethnic group over time. The British General Household Survey (GHS) shows a decline in the proportion of adults who smoke cigarettes since 1972, although this decrease had slowed and begun to 'level out' by the late 1990s (Matheson & Pullinger, 1999). Over this period, patterns of smoking among the sexes converged; 28 percent of men and 27 percent of women aged 16 and above were current smokers in the 1998 Health Survey for England (DoH, 1999a) whereas smoking was more commonly associated with men in the 1970's. Figures suggest that the narrowing gender difference in smoking results from an increase in the number of women smokers between 1994 and 1996, particularly in the 25-34 age group (Thomas et al. 1998). Conversely, a fall in cigarette consumption is reported for men over the last two decades, but no such trend is found for women who smoke.

Whilst large-scale surveys routinely analyse smoking separately for men and women, comparison of smoking trends among different ethnic groups is still in its infancy. In one of the first such studies using the 1978 and 1980 GHS, Balarajan & Yuen (1986) estimated that smoking among whites was two-times higher than for African Caribbean adults and whites were two and a half times more likely to be smokers than Asian groups. More recent surveys of minority populations in the UK generally report that cigarette smoking is lower than the UK average (Rudat, 1994) or less common than for white adults (Nazroo, 1997). However, marked variation in smoking has been found among Asian groups; only 10 percent of Indian adults reported smoking in the 1992 HEA survey of Black and Minority Ethnic Groups, but this was higher at 15 percent for Pakistanis and close to the national average of 29 percent for Bangladeshis (Rudat, 1994).
These ethnic differences in smoking conceal marked gender differences in smoking within minority ethnic groups. The finding of lower smoking among women than men is most evident for South Asian groups (Nazroo, 1997; McKeigue et al. 1985). This gender difference is more marked for Bangladeshis than for Indians or Pakistanis after standardising for age; only 1 percent of Bangladeshi women aged 16 and over were current smokers in the 1999 HSE compared with 47 percent of Bangladeshi men (Erens et al. 2000). Whilst a greater proportion of Black Caribbean men than women report smoking, the gender gap is narrower because Black Caribbean women are more likely to be smokers than other minority ethnic women (Nazroo, 1997; Erens et al. 2001).

Unlike minority ethnic groups, it is notable that the prevalence of cigarette smoking is comparable for white men and women (HEA, 1999). Results from the 1994 Fourth National Survey showed that white women were much more likely to be current smokers than minority ethnic women, whilst only smoking among Bangladeshi men exceeded that of white men (Nazroo, 1997). Studies further suggest that average daily cigarette consumption is higher for white adults who smoke than for many minority ethnic smokers (HEA, 1999; Erens et al. 2000). Nazroo (1997) reports that Bangladeshis are the exception, with around one-third classified as heavy smokers (20+ cigs/day). However, Nazroo’s analysis did not adjust for age or sex variation in smoking among Bangladeshis.

This discussion highlights that the prevalence of cigarette smoking varies widely by gender and by ethnic group. Estimates of smoking prevalence for the general adult population are therefore likely to obscure how gender and ethnicity interact in relation to current smoking behaviour. Cigarette smoking among minority ethnic groups is not uniform, rather there are variations between different Black and Asian groups and within these ethnic groups according to gender. It is therefore essential that, wherever possible, an analysis of smoking and its impact on health, considers both gender and ethnic differences. The following section considers arguments of socialisation and culture that have been invoked to account for behavioural differences
existing among the sexes and ethnic groups and how these have been construed as explanations for health inequalities.

4.2. SOCIO-CULTURAL EXPLANATIONS

Socio-cultural explanations tend to focus on how individual health beliefs and choices made about behaviour affect health. Studies suggest that beliefs about health and preventative behaviour are complex and diverse (Davison et al. 1991) but that individuals are likely to acquire a good deal of health-related information from lay sources.

The gendered roles of men and women that stem from differences in their socialisation, cultural norms and societal expectations are argued to fundamentally determine perceptions of health and patterns of health-related behaviour (Kaplan & Marks, 1995; Waldron, 1991) which are reinforced over the lifecourse (Dean et al. 1995: Umberson, 1992). The health beliefs of women are thought to be more conducive to a healthy lifestyle because women are socialised to be more health conscious and aware of health risks than men, whose gendered identity is associated with poor health practices (Dean, 1989; Kaplan & Marks, 1995). Umberson (1992) argues that the socialisation of women is consistent with greater awareness and monitoring of their spouses health behaviour, thus accounting for the healthier lifestyle of married than non-married men. Although historically smoking was judged less 'socially acceptable' for women than men (Waldron, 1991), recent decades have witnessed a change in the roles of women, in terms of their labour force participation, social and legal status, and a general liberalisation of societal attitudes about women and smoking (Amos, 1996; Waldron, 1991). As discussed in the previous section, there was little difference in smoking among the sexes in the late 1990's.

Ethnic group is a term often used to imply a shared cultural heritage among its members (Mason, 2000). Adherence to complex belief systems, norms and values associated with a culture are thought to have a collective influence on health-related
attitudes and behaviour among ethnic groups (Shatenstein & Ghadirian, 1998). Although religious affiliation is not co-terminus with ethnic group, religious taboos are often regarded as an important cultural component that can influence individuals' norms of health-related behaviour (Ahmad et al. 1990). One example is the prohibition of smoking in the Sikh religion, values that Drury (1991) found were internalised and adhered to by the majority of young Sikh women.

Bedi (1996) further draws attention to gendered norms associated with tobacco use among Bangladeshis; there was widespread acceptance of cigarette smoking among men but only 5 percent condoned cigarette smoking among women. The opposite was found in relation to tobacco chewing, where social pressure was often the reason young Bangladeshi women began this practice. However critics argue against a static or essentialist representation of culture, emphasising that cultural values are continually being negotiated and acted on over time (Ahmad, 1993b).

Investigation of culture in the appraisal and lifestyle management of diabetes among Bangladeshis found more similarities than differences with white and African Caribbean respondents. The authors suggest that this is of greater relevance to understanding the management of this disease than assumed cultural differences in behaviour (Greenhalgh et al. 1998). Explanations that are focused on cultural differences in health beliefs are often criticised for an undue emphasis on individual free-choice and responsibility for maintaining good health through a healthy lifestyle. Dean (1989) argues that whilst socialisation and cultural values are likely to have an important role in shaping health-related behaviours, they also interact with specific life situations. Previous chapters have discussed how 'life-situations' in terms of socio-economic position (chapter 2) and social embeddedness (chapter 3) vary according to gender and ethnic group. It is argued that beliefs and values associated with health-related behaviour are rooted in familial, economic and social structures, therefore patterns of health-behaviour are not simply the consequence of 'deviant' culturally-informed choices but are located within a wider social context. This argument is supported by the finding that health-behaviour is not a simple matter of informed choice among socially disadvantaged groups, who may be able to justify
their smoking despite an awareness of the health risks (Davison et al. 1991; Pill & Stott, 1982).

It is often the case that aspects of a culture are understood in terms of a particular practice associated with an ethnic group (Smaje, 2000). This practice is then negatively portrayed as a cause of poor health among its members. One example is of assumed deficiencies in the Asian diet that increase the incidence of rickets in children (Rocherson, 1988). However, whilst cigarette smoking is a major behavioural risk factor for health, this review has shown that the prevalence of smoking is generally lower among ethnic minority groups (particularly women) than for whites. Bhopal et al. (1999) reported that a greater risk of coronary heart disease (CHD) among British Asians than for Europeans co-existed with low smoking for Asian women and Indian men and drew attention to the widespread experience of poverty among Asian groups as a risk factor for CHD rather than behavioural differences per se.

The discussion in the next section centres on how smoking as a behaviour may be understood in relation to the wider social environment in which gender and ethnic groups are situated. A disadvantaged social environment may restrict choices made about smoking or else smoking may represent a 'coping mechanism' in the face of material hardship or stress (Graham, 1993). Emphasis is given to socio-economic position and markers of social embeddedness, both of which are investigated in this analysis for their relative contribution to smoking and health. It is, however, impossible to establish the causal sequencing of social position, smoking behaviour and health from cross-sectional data (Lynch et al. 1997). Whilst socio-economic position and social embeddedness may contribute to gender and ethnic health inequality directly or indirectly via health-related behaviours such as smoking, health status may bring about changes in smoking behaviour and the financial cost of buying cigarettes may add to the disadvantaged situation of low socio-economic groups (Dorsett & Marsh, 1998).
4.3. SOCIAL PATTERNING OF CIGARETTE SMOKING

A commonly reported finding is that an individual's propensity to smoke cigarettes is related to a number of social characteristics. Of particular concern is that social differences in cigarette smoking are reportedly widening and may represent a key way in which health inequality is perpetuated. Previous studies of smoking that relate to socio-economic position and social embeddedness are reviewed below.

(i) Socio-economic position

During a period when cigarette smoking has become less common in the general adult British population, socio-economic differences in smoking have widened. The absence of social class differences in smoking in the 1950's contrasts with the finding of marked class gradients in this health behaviour in the 1990's (Graham, 1994). Results from the 1998 Health Survey for England show that men in social class V were 2.5 times more likely than men in social class I to smoke, with comparable findings reported for women (DoH, 1999). This survey and others also find smoking is related to other socio-economic measures, including educational level (Laheima et al. 1997; Cavelaars et al. 2000), material living circumstances (Jarvis & Wardle, 1999; Jarvis, 1997) and parental class (Lynch et al. 1997).

Socio-economic gradients in smoking have been reported for both sexes (Cavelaars et al 2000; Thomas et al. 1998). However, issues raised in Chapter 2 about how the measurement of women's socio-economic position can influence the nature of socio-economic differences in health, are also of concern in relation to socio-economic differences in their smoking behaviour. Graham & Hunt (1998) reported that a manual social class was associated with smoking among working-age women, based on both the conventional and individualistic method of assigning occupational class position. However, the class gradient was inconsistent when women's own occupation was used because there was a high prevalence of smoking among women working in managerial occupations. This finding, which has also been reported elsewhere (Blaxter, 1990), was related to a disparity between an 'advantaged' class position but relative disadvantage in terms of education and housing. Graham & Hunt (1998)
suggest that this occupational group of women is a diverse one that includes women from relatively disadvantaged socio-economic backgrounds who may not share the ‘lifestyle norm’ of their social class.

An analysis of the General Household Survey by Burrows and Nettleton (1995) also highlighted social variation in smoking among adults from ‘middle-class’ households aged 18-60. The correlates of smoking were gendered; a low level of education was associated with smoking for women, whereas social class was the most important predictor of smoking for men. Whilst this work suggests there are structural constraints on behaviour even among more ‘advantaged’ social groups, the main focus of attention has been on smoking among lower socio-economic groups. Graham (1994) has examined in more detail how smoking relates to the poor material living circumstances of women from working-class households, the vast majority of whom were white women. Within her sample, the propensity to smoke was related to heavy domestic and caring responsibilities and lone mothers with dependent children were particularly likely to smoke, a finding supported by other studies (Marsh & McKay, 1994; Dorsett & Marsh, 1998). Conversely, a healthy lifestyle among working-class women (based on an index of health-related behaviours) has been associated with a high level of education and owner-occupied housing (Pill, Peters & Robling, 1993). Together, these studies reveal how the living circumstances of women in disadvantaged socio-economic groups relate to patterns of health-related behaviour. Although the same links between socio-economic disadvantage and smoking are found among men, there is comparatively less investigation of how smoking is related to their domestic circumstances and working life. Laurier et al. (2000) provide one exception where men were included in a study relating smoking to everyday life. Although this study did not distinguish different socio-economic groups, results suggested that smoking was closely linked to work practices and social activities, with men reporting the sociable aspects of smoking and how smoking aided concentration at work.

The association between socio-economic circumstances and smoking may be particularly relevant to ethnic differences in smoking, as Chapter 2 reported that many
minority groups are disproportionately represented in positions of socio-economic disadvantage. However, surveys of smoking among minority ethnic populations do not always analyse socio-economic patterning in this behaviour in any detail, rather there is greater focus on the prevalence of smoking and the health beliefs of these groups (HEA, 1999; HEA, 1994). Results from the 1994 Fourth National Survey show that the likelihood of being a current regular smoker is related to household social class and housing tenure for each ethnic group; smoking was greater in manual or renter households than among non-manual households or those living in owner-occupied housing, although this was less marked for South Asian groups (Nazroo, 1997). These results were, however, standardised for age and sex, therefore gender differences in the nature of these relationships were not reported. Similarly, an analysis of the 1994 HEA survey of Black and Minority Ethnic Groups did not report class differences in smoking separately for men and women in each ethnic group, although a key finding was of large age and sex differences in tobacco use among minority ethnic populations (HEA, 1999). Low smoking prevalence among some minority ethnic groups, especially for women, is undoubtedly part of the reason why these studies do not present separate results for men and women from different ethnic groups.

Analysis of the 1999 HSE is one exception where a booster sample of minority ethnic groups permitted separate analysis of socio-economic differences in current smoking for men and women belonging to different minority ethnic groups (Erens et al. 2001). The socio-economic measures used were the social class of the head of household (HoH) and equivalised household income. Socio-economic variation in current smoking was more marked for Black Caribbean men and Bangladeshi men than for men who were Indian or Pakistani. By contrast, socio-economic differences in smoking were absent for Black Caribbean women and the socio-economic gradient in smoking for Asian women was in the opposite direction to that expected using class of HoH. These results illustrate that the nature and magnitude of socio-economic differences in smoking vary with gender for different ethnic groups and according to the measure used to represent household socio-economic position. Thus, it underlines
the importance of examining how gender and ethnicity intersect with socio-economic position for this health-related behaviour.

(ii) Social Embeddedness

In parallel with current interest in the role that social relationships play in health are studies, which consider the impact of these social relations, networks and neighbourhoods on health-related behaviour. The literature on social capital and social support both view health-related behaviour as a key mediator of their effects on health. It is argued that access to a large social network and good quality social support can enhance individuals' feelings of self-worth and esteem, so lessening their tendency for self-neglect and health-damaging behaviour (Campbell et al. 1999). Neighbourhoods may embody cultural or normative standards of behaviour that provide the context in which individuals make decisions about their own behaviour. Smoking in public places may be subject to informal sanctions, such as peer pressure, or be prohibited by law, thus the 'considerate smoker' must comply with these behavioural expectations and demands or face appropriate sanctions (Poland, 2000). Greater access to health-related information, peer influence, formal sanctions on 'deviant' behaviour or internalisation of health-related norms and values are all ways in which associational activity may reduce smoking behaviour or influence smoking-related attitudes (Ross & Taylor, 1998; Umberson, 1992).

The following discussion briefly outlines existing research that investigates links between smoking and the three domains of social embeddedness introduced in chapter 3.

- Subjective perceptions

Prior analysis of the 1992 Health and Lifestyles Survey for all adults aged 16 and above showed that subjective perceptions of neighbourhood correlated with current smoking behaviour (Cooper et al. 1999). Appraisals of neighbourhood in terms of facilities and safety were scored and these were consistently associated with reported smoking among adult women. Only 20 percent of women with a high score, representing the most positive perceptions of neighbourhood, were smokers whereas
this was greater at 40 percent when neighbourhood was negatively perceived. No such difference was found when this measure was related to men's smoking behaviour.

Evidence linking subjective perceptions about the availability or 'closeness' of friends and relatives to smoking behaviour is equivocal. Using British survey data, Graham (1994) found a measure of perceived social support from friends and family to be unrelated to smoking status among women from lower socio-economic groups and concluded that material circumstances were more important for this health-related behaviour. In contrast, an analysis of the Health Survey for England for 1993 to 1995 found that a perceived lack of social support from friends and relatives was independently associated with greater smoking among men and women. However, the contribution of social support to smoking was outweighed by socio-economic factors, including material deprivation (Cooper et al. 1999).

- Associational activity

A number of studies report that involvement in community activity, e.g. voluntary group membership, is associated with lower smoking after adjusting for possible confounding factors such as age, ethnicity, socio-economic position and health status. Broman (1993) found that this positive relationship was amplified when individuals belonged to a number of different voluntary organisations.

A general finding is that informal associational activity related to friends and/or relatives is positively related to healthier behaviour. Hartel et al. (1988) derived an 'index of close contacts' utilising information about friends and relatives, as well as marital status1. This index was associated with smoking for adults aged 24-64, although this relationship was less marked for women than for men. A positive relationship between social support and smoking less than 5 cigarettes a day was independent of the age, sex and education of respondents. An analysis of American survey data further showed that the reported absence of friends was a more important correlate of adult smoking behaviour than the number of friends in an individuals'...

---

1 Marital status was rejected in this study as a proxy for social support.
social network (Broman, 1993). The use of panel data in Broman's study showed that the loss of a friendship led to poorer health behaviour whilst cigarette consumption decreased when a new friendship was gained.

Dean (1989) specified social networks and social support as 'social situational' variables that potentially mediate the relationship between gender and health-related behaviour. Among Danish adults aged 45 and above, a large social network size was positively associated with health-promoting behaviour for men, whereas social support was an important buffer against the negative effects of stress leading to smoking for women. The author suggests that social isolation and loneliness may be key factors for men's health behaviour, particularly as the socialisation of men places less emphasis on self-care practices than is the case for women.

It is, however, important to stress that whilst informal associational activities may make available social support, this may not always serve to encourage or sustain health-promoting behaviour. Smoking for example, may be one way in which individuals can 'fit in' or affirm their identity as a group member whose values are not shared by mainstream society (Campbell et al. 1999). Family members may discourage attempts to change behaviour, particularly if they themselves are smokers, whilst contact with friends and family may also conceal conflict or stress that are thought to trigger health-damaging behaviours such as smoking.

- Experiential

The experiential domain of social embeddedness focuses on how actual experiences within a locality may impact on smoking behaviour. Within this study, such experiences are centred on reported crime and problems with neighbours over the last year. Both experiences are likely to be sources of stress, although their relationships with smoking are anticipated to be more subtle, reflecting reappraisals and chronic environmental stressors rather than the short-term impact of a stressful event. However, a study by Steptoe and Feldman (2001) found no association between the number of neighbourhood problems reported on a 10-item questionnaire scale and smoking, whereas responses did correlate with self-rated health.
4.3.1 Contextual effects on smoking

Ross (2000) links normative standards of behaviour within a neighbourhood to its relative prosperity or disadvantage, arguing that prevailing attitudes in a deprived neighbourhood will be more conducive to risky health behaviour because residents perceive limited opportunities and resources for the future. Research on smoking and neighbourhoods has tended to concentrate on area-level variation using multi-level analysis techniques (Duncan et al. 1993). This analytic approach has been used to examine whether the social and physical characteristics of areas have an effect on smoking in addition to individual socio-demographic characteristics (Reijneveld, 1998; Duncan et al. 1999). The general finding is that living in a deprived area has some influence on smoking behaviour over and above individual characteristics such as class, gender and age (Kleinschmidt et al., 1995; Ellaway & Macintyre, 1996). Results from a Dutch survey suggested a greater impact of area-level deprivation on smoking behaviour than on self-reported health, with morbidity largely accounted for by individual social characteristics (Rejuineveld, 1998). However, a recent American study which controlled for the ethnic composition of the area, found that individual characteristics including sex, ethnicity and socio-economic position, were of far greater importance for smoking behaviour than neighbourhood deprivation, particularly for women (Ross, 2000). Neighbourhood deprivation had a greater contextual effect on the extent of walking, for which fears about safety, lack of facilities and amenities in poor areas are likely to be structural constraints on this behaviour.

4.4. SMOKING AND HABITUS

This chapter has highlighted that patterns of smoking behaviour among gender and ethnic groups may be conceived as a choice influenced by explicit belief systems or culture and sustained by societal norms and expectations. However, another view supported by ample research shows that the likelihood of being a smoker is strongly and consistently related to position in a social hierarchy, as well as access to resources such as social support.
Bourdieu's concept of habitus can be both individual or collective, shared by members of a class or social group who share similar conditions of existence (Bourdieu, 1984). In his work, *Distinction*, Bourdieu (1984) uses an example of what he describes as 'tastes'; the capacity of the habitus to differentiate and appreciate practices and products. Shared tastes unite people together into social groupings, whereas dissimilar tastes serve to differentiate between groupings. The resultant pattern of tastes represents 'lifestyle'; a system of classified and classifying practices which are the product of applying schemes of perception borne out of conditions of existence. Struggles over what bodily practices are acceptable or unacceptable take place within the field, in accordance with preferences and dispositions contained in the habitus. The dominant class are able to frame social acceptability to reflect distinctions of upper middle-class tastes which may change over time. Smoking may therefore be viewed as a practice to be managed by groups in their struggle to accumulate capital, of which cultural capital represents a key way social groups cohere. Whilst once the reserve of the affluent, cigarette smoking is no longer a practice limited to 'advantaged' groups in society, rather it has become most prevalent among socially disadvantaged groups.

Bourdieu's conception of lifestyle, which may include health-related behaviours such as smoking, opposes the view that health-behaviours are rationally and purposively followed by individuals or adhered to by social groups as an outward expression of group identity or a culture of common norms and values. For Bourdieu, the system of classificatory schemes that comprises tastes may only 'very partially' become conscious. Behaviours such as smoking are practices that are systematic products of the habitus where preferences and 'choices' are to be found within bounds of its very creation. The 'less than conscious' workings of the habitus are supported empirically by studies detailing the everyday, habitual quality of smoking. Smokers report that having a cigarette can help alleviate stress arising from domestic work, employment or material disadvantage and promote relaxation or well-being (Graham, 1994). The way in which smoking is bound into everyday routines is one of the reasons which makes giving up smoking difficult, not only a lack of motivation or health-related knowledge (Jarvis & Wardle, 1999; Calnan & Williams, 1991).
There is ample evidence that smoking is a major risk factor for disease and premature mortality (DoH, 1998a). The concentration of smokers in socially disadvantaged groups is argued to have a substantial impact on social inequalities in health, particularly for smoking related conditions (Cavelaars et al. 2000; DoH, 1999; HEA, 1999). However, there is comparatively little investigation of the relationship between smoking and self-rated health, particularly the measure of general health that is the focus of this thesis.

Results from Swedish data showed that smoking was consistently related to self-reported general health; those who had never smoked reported the best health and the highest morbidity was among current smokers (Manderbacka et al. 1999). British men and women who report smoking have also been shown to have higher reported morbidity than non-smokers across a number of different measures of health (Blaxter, 1990; Kind et al. 1998).

Manderbacka et al. (1999) suggest that consistent relationships found between health-related behaviour and health may partly reflect the tendency of respondents to use their own behaviour as a criterion to assess their overall state of health. In-depth interviews with lay respondents have found that health behaviour is considered to be a major factor contributing to poor health (Blaxter, 1997). It does not therefore follow that an association between smoking and reported poor health is wholly attributable to the actual experience of ill-health. It may also be problematic to infer the direction of causation between smoking and general health using cross-sectional data because current smoking status may be influenced by health, particularly the presence of limiting conditions (Blaxter, 1990). Finally, where smoking is prohibited by religion or cultural norms, as is the case for some minority ethnic groups, there may be an increased likelihood of reporting bias (Ahmad et al. 1990).

A further issue concerns the relative contribution of smoking to general health, given that the research literature reviewed earlier in this chapter has shown that smoking and
health are associated to some extent with socio-economic position and social embeddedness. An analysis of the 1984/5 Health and Lifestyle Survey suggested that healthy behaviour did not uniformly benefit adult health, rather that the main beneficiaries were men and women in non-manual social classes who already had good health relative to those in manual social classes (Blaxter, 1990). A Canadian study found significant interactions between smoking and socio-economic position for self-assessed health (Birch et al. 2000). Being a smoker was associated with poor health for all socio-economic groups, but the health disadvantage of smokers relative to non-smokers in the same socio-economic group was much greater for disadvantaged social groups after controlling for age and gender, but not for ethnic groups.

A Swedish study estimated that the contribution of lifestyle factors (including smoking) to self-rated health was only 3 percent for men and 5 percent for women after age, education and employment status were taken into account; (Ericsson, 1997). Stronks et al. (1996) examined how the poor health of a low socio-economic group was related to their structural conditions and health-related behaviour. Using survey data from the Netherlands, they studied ‘structural conditions’ which included overcrowding, physical housing conditions, neighbourhood problems such as vandalism and noise, employment and physical working conditions. Smoking, alcohol consumption, exercise and BMI were the health-behaviours included in the analysis of men and women aged 15-74. The results showed that general health was significantly associated with both health behaviour and structural conditions. Approximately 37 percent of the health risk associated with the lowest socio-economic group was due to behavioural factors, but only 14 percent of this was independent of structural conditions. The remainder was attributed to the indirect effect of structural conditions on health through health-related behaviours. This suggests that a substantial part of the association between unhealthy behaviour and poor health is due to the structural living conditions of low socio-economic groups. Structural conditions alone further accounted for one-third of the increased health risk found for the lowest socio-economic group, thus Stronks et al. (1996) conclude that inequalities in health are due in large part to the direct and indirect effects of structural
factors. Separate analysis by gender showed that structural conditions were of particular importance for the health of men in the lowest socio-economic group, whereas structural and behavioural factors contributed equally to poor health among women in this socio-economic group.

Gender differences in the social determinants of health were examined in more detail by Denton and Walters (1999) who considered the relative importance of structural and behavioural factors for the general health of Canadian men and women. In their analysis, structural determinants of health were defined as age, family structure, socio-economic position, employment status and a measure of social support. Ethnicity was not included as a variable in their analysis. These structural measures accounted for 19 percent of the variance in health for men and women, whereas health-related behaviour (smoking, drinking, physical activity and BMI) could explain 15 percent of the variance in men's health and only 11 percent in women's health. When the relative importance of structural and behavioural factors were examined by comparing the percentage of variance added by each set of predicators net of the other, the results showed that structural factors were more important predictors of poor health than health behaviours. However, there were marked gender differences in the relation between smoking and poor health; smoking was more strongly associated with poor health for men whereas BMI was the strongest behavioural predictor of health for women.

4.6. KEY ISSUES

The studies reviewed in this chapter suggest that smoking is a powerful mediator of socio-economic disadvantage on health and that omitting socio-economic and other 'structural' measures from analyses is likely to over-state the contribution of an individual's health-related behaviour to morbidity. An integrated approach is valuable in identifying and quantifying the extent to which the behavioural contribution to health is socially mediated. However, whereas Stronks et al. (1996) and Denton and Walters (1999) grouped together diverse social indicators under the rubric of 'structural conditions', the analysis in this thesis makes conceptual distinctions
between measures of social embeddedness and socio-economic position, to assess the relative contribution of each to smoking and to health.

A number of studies have found that the social correlates of health were gendered (Stronks et al. 1996; Denton & Walters, 1999), highlighting the need to analyse health separately for men and women, rather than include gender as a control variable. However, ethnicity was not included in any of the studies reported above. This chapter has highlighted the importance of examining ethnic differences, as well as gender, in analyses of smoking and health for the following reasons: firstly, smoking prevalence is strongly related to ethnic group and within minority ethnic groups the likelihood of being a smoker varies markedly according to gender. Secondly, relatively little is known about the social patterning of smoking among different ethnic groups and the way in which social disadvantage and poor living conditions are directly related to the health of ethnic groups or indirectly mediated by their smoking behaviour. There is a priori reason to suggest that these relationships may differ since smoking prevalence is generally low among members of the minority ethnic population, particularly among Asian women, but many minority ethnic groups are disproportionately represented in socially disadvantaged positions typically associated with high smoking. Examining ethnic differences in health-behaviour along with other social determinants of health addresses the structured social contexts that constrain choices about behaviour for men and women, rather than placing undue emphasis on 'deviant' cultures or individual responsibility for health.

The following chapter details the methodology used in this thesis and includes discussion of the ways in which each of the variables used in this analysis were measured in the surveys.
Chapter 5: Methodology

Introduction
The focus of this research study is on inequalities in cigarette smoking and health associated with gender and ethnicity. The literature review highlighted social 'risk factors' for adult health, including low social class or lack of associational activity in the community or with significant others such as friends and family. However, the potential inter-relationships between these social circumstances, gender and ethnicity require further investigation. The unequal relations of gender and ethnicity may be such that women and members of minority groups have a disproportionate likelihood of occupying those social positions commonly associated with poor health and health-related behaviour. The extent to which the social or material environment in which gender and ethnic groups are situated can account for variations in their health, either directly or indirectly through smoking behaviour, is the subject under investigation in this thesis.

This research question is most amenable to secondary analysis because it allows the social patterning of health across different sub-groups of the population to be addressed. Only a large-scale social survey can achieve a sufficient number of interviews with men and women from different ethnic groups and produce a depth of information on their social circumstances, ranging from employment to community participation and social networks, that can be analysed in some detail.

The use of national data in this analysis will permit generalisations about the nature of social inequalities in health for white and minority ethnic men and women living in Britain. This is important because many studies, particularly those concerned with ethnicity and health, are based on localised surveys and/or focus on only one minority ethnic population.
The survey data used in this thesis is of high quality and survey questions have often undergone a process of validation before inclusion in the questionnaire. Many measures, such as social class for example, are used in a range of studies and therefore facilitate comparison with other health research. However, a number of caveats should be added about the method of secondary analysis.

By definition, the data used here was not originally intended or designed for the specific purposes of this research study. As such, the analysis must proceed within the confines and restrictions of the data available. In the context of this study, this refers to the absence of certain relevant questions, small sample sizes for some population sub-groups and different question wording between surveys or within successive years of the same survey. These issues are referred to where appropriate throughout this chapter.

The type of data-set selected for secondary analysis determines whether or not a causal relationship between social phenomena can be ascertained. The research question in this thesis implies causal relationships between social circumstances and health for gender and ethnic groups. However inferring the direction of causation can be problematic because poor health may itself bring about a change in social or material living conditions. The surveys analysed in this thesis provide a cross-sectional picture of individuals at one time-point, whereas to infer causality, longitudinal data is required that collects data on the same individuals over time. Only then is it possible to examine the extent of ‘reverse causation’, for example, how a change in health may impact on working life, material living conditions or social activity. A key source of longitudinal data in the UK is the British Household Panel Survey (BHPS) that has re-interviewed the same individuals each year since 1991 (Taylor, 2001). However, the BHPS was considered unsuitable for this analysis because there are insufficient numbers of men and women from minority ethnic groups and, until recently, this survey did not ask respondents about aspects of their community involvement and social relationships.
The final point is an epistemological one. Quantitative analysis is traditionally linked with a positivist research tradition, although this is contested. Strong arguments have been made against the use of validated survey instruments that claim to 'measure' social phenomena or characteristics, including health. A critical appraisal of survey questions is an important aspect of this study, but the social categories represented in this thesis are considered to be meaningful ones. This issue is returned to later in this chapter when key concepts in the analysis are discussed in more detail.

Less controversial is the claim that quantitative analysis cannot capture the 'richness' of social experience that is epitomised by qualitative techniques. For example, whilst this analysis may demonstrate an association between class and smoking, the subjective meaning of class position and the significance of smoking in the everyday life of the individual concerned cannot be easily quantified. However, whilst secondary analysis may be limited in its ability to illuminate 'processes' underlying social inequality in health, the use of large-scale survey data can show how the wider social organisation of society places some groups at a health disadvantage, and in doing so can challenge explanations that arguably 'blame the victim' for their poor health.

5.1 SURVEY DATA USED IN THIS ANALYSIS

This research study required large-scale British survey data that included a sufficient number of men and women from different ethnic groups to permit an investigation of social inequalities in their health.

Three British surveys were chosen that best fitted these requirements, since each could make an independent contribution to the overall analysis. These were the Health Survey for England (HSE) and two HEA Surveys; the survey of Black and Minority Ethnic Groups (BMEG) and the Health and Lifestyle Survey (HALS). All of these surveys are cross-sectional in design. The following section briefly describes these surveys, outlines why each was chosen to address the research aims at the start of the analysis in 1998, and how the data-sets complement each other.
(i) **Health Survey for England (HSE)**

The HSE is a relatively new annual survey that began in 1991 (White et al. 1991). Each year includes a representative sample of individuals aged 16+ living in private households in England based on a multi-stage stratified probabilistic sample design. The sampling frame used was the small user Postcode Address File (PAF) and the primary sampling units were postcode sectors (Prescott-Clarke & Primatesta, 1998). In 1994, the number of postcode sectors was increased from 504 to 720 and year-on-year improvements are made to the stratification of the sample by analysing results in conjunction with Census information. In the 1996 survey, five stratification levels were used:

1. The 'old' 14 Regional Health Authorities
2. % of the population aged 16 and over who have a limiting long-term illness
3. % of households with household head in non-manual occupation (SEGs 1-6,13)
4. % of households with no car
5. % of population who are non-white.

Stratification was achieved by making a systematic selection from the complete list of postal sectors ordered in accordance with the above scheme. Each postcode sector was given a probability of selection proportional to its total number of 'delivery points' (addresses). The sample was designed so that fieldwork conducted in each quarter of the year was carried out with a fully representative sub-set of the total sample.

The continuous design of this survey since the early 1990's means that several years of data can be combined to increase the sample size of small sub-groups, such as minority ethnic populations. Four years of HSE data, from 1993 to 1996 were identified as most recently available for the purposes of this analysis. In each of these years, HSE data was collected at the level of the household and for all adults aged 16+ who lived there. At each co-operating address, the Head of Household (or their partner) completed a household interview and then an individual interview was carried out with all adults aged 16+ at that address. This analysis uses information from the household and individual sections of the survey but excludes physiological.
measurements taken on a subsequent nurse visit to participating households. Proxy interviews were not included.

Individual response rates to the interview section of this survey were 71 percent in 1993 and for 1994, 95 and 96 this was 72, 63 and 75 percent respectively (Bennett et al, 1995; Colhoun & Prescott-Clarke, 1996; Prescott-Clarke & Primatesta, 1997; 1998). Women had a higher response rate than men and minority ethnic respondents were less likely to complete the interview stage than white adults. (Results from the 1999 HSE, which included a booster sample for minority ethnic groups, reported that response rates were higher for women than men in all minority ethnic groups, with the largest difference among Black Caribbeans). It was acknowledged in the 1996 survey report that language problems were likely to be partly responsible for ethnic differences in response rates as all interviews were conducted in English (Prescott-Clarke & Primatesta, 1998).

Questions in the HSE relate not only to health but also to health-related behaviours, socio-demographic background and socio-economic position. The HSE does, however, lack detailed questions about family structure/children within the household, and questions relating to support networks and quality of neighbourhood (‘social capital’) were not introduced into the HSE until 2000. Although combining four years of HSE data (from 1993 to 1996) increased the number of minority ethnic respondents in the sample, this number was still below that of surveys designed specifically for minority ethnic populations1. For this reason, the Health Survey for England was complemented by the survey of Black and Minority Ethnic Groups (BMEG) conducted by the Health Education Authority in 1992.

(ii) The HEA BMEG survey

Conducted in 1992, the HEA survey of Black and Minority Ethnic Groups focused on the health of four main minority ethnic groups living in areas of high minority ethnic

---

1 The 1999 HSE included an ethnic booster sample but was unavailable at the time this analysis commenced. However, results from this survey are referred to in the literature review of this thesis as preliminary findings were made available on-line in June 2000.
concentration in England (HEA, 1994); African Caribbean, Indian, Pakistani and Bangladeshi adults aged between 16 and 74 were interviewed for this survey. The overall sample size of 3,330 for minority ethnic adults aged 16-74 exceeds that of the HSE for 1993-96 where there were 2,201 adults aged 16 and above in the same minority ethnic groups.

Questions in the BMEG survey on health, socio-economic position and smoking complement those of the HSE. Additionally, the BMEG survey includes different types of questions relating to social support and the local neighbourhood that represent the concept of 'social embeddedness' in this analysis. This HEA survey was repeated in 1994 but was slightly different in design and notably excluded the aforementioned questions relating to the local area (HEA, 1999). The analysis presented in this thesis is therefore limited to the 1992 BMEG survey only.

The BMEG survey did not, however, include white adults in its sample. Because this thesis aims to examine the health of a number of ethnic groups (including 'whites') and investigate how patterns of health inequality across white and minority ethnic groups are differentiated by gender and wider social circumstances, a comparison sample of 'white' adults was added to the BMEG data-set. This sample was taken from another HEA survey conducted in the same year and detailed below.

(iii) The HEA Health and Lifestyles Survey (HALS)
The HEA HALS included many of the same questions on health and social circumstances as the BMEG survey. This data was collected for adults aged 16-74 living in private households in England in 1992, the same year as the HEA BMEG survey above (HEA, 1995).

For the purposes of this analysis, the ethnicity question in this survey was used to select health-related information for white adults. Key variables in this dataset were then merged with the BMEG data file to give a combined sample of white and minority ethnic groups. This combined dataset is herein referred to as the HEA surveys. The analysis focused on those questions that the HEA surveys had in
common, but because the two samples were selected separately and used different sampling procedures (see next section), they could not be used to draw conclusions about the population as a whole. Both HEA surveys were also limited to an age limit of 16 to 74, unlike the HSE where all adults aged 16 and over were interviewed.

Perhaps the most established national surveys of British ethnic groups are those undertaken by the Policy Studies Institute, the fourth of which was conducted in 1994. It is therefore important to clarify why the HEA data was given preference over the Fourth National Survey (FNS) for this analysis. Although the FNS has a larger sample size than the BMEG survey, samples wards of high, medium and low ethnic concentration and includes a comparison white sample, the complex design of this survey means that not all respondents are asked the same questions (Smith & Prior, 1997). Some questions are asked to minority ethnic adults, but not to whites. An effort to restrict the length of the questionnaire also meant that other questions were only asked to a randomly selected half of the sample. A further consideration was that data from the FNS has been extensively analysed and published (e.g. Modood et al. 1997; Nazroo, 1997; Beishon et al. 1998; Metcalf, 1996) whereas the HEA surveys represent a very under-utilised source of information but one where the resulting analysis could be compared with the FNS.

5.2. COMPARING THE HSE AND HEA SURVEYS

The advantage of using more than one survey in this analysis is that it is possible to make some comparisons between surveys, in order to verify results. However, it is important to be aware how differences in the sampling design, population coverage and question wording of these surveys may explain any variation in results.

(i) Sampling strategies

A key issue concerns the different sampling strategies used for the HSE and HEA surveys. Whereas the Health Survey for England is based on a nationally representative sample of all areas, the BMEG survey only sampled Enumeration
Districts where at least 10 percent of households were headed by a minority ethnic adult in the 1981 Census. Minority ethnic groups in the UK are highly spatially concentrated in urban and inner-city areas (Owen, 1992) and these may be disproportionately deprived in comparison with urban or suburban areas where the proportion of ethnic minorities is lower. If this is the case, then the exclusion of low-concentration areas from the BMEG sample is likely to over-state social disadvantage experienced by minority ethnic groups living in England. As a result, the socio-economic and health profile of the BMEG sample of minority ethnic adults may be poorer than for the same ethnic groups in the HSE sample who are drawn from areas of high, medium and low ethnic concentration. This sampling issue is also relevant to social embeddedness, since subjective perceptions, along with access to social networks and experience of environmental problems such as crime, may be influenced by the ethnic composition and degree of social deprivation characteristic of an area.

With regard to concept of social embeddedness discussed in Chapter 3, it remains important to clarify a key feature of the HEA survey used for this part of the analysis. Because the health data for minority ethnic groups (but not for whites) is based on sampled enumeration districts of high minority concentration, this adds an important contextual dimension to the analysis. As discussed in Chapter 3, minority populations are highly localised in urban, inner city areas (Nazroo, 1999) whose characteristics are likely to differ from other types of location. The implication is that a comparison of minority ethnic groups and whites is likely to partly reflect the characteristics of the environment in which they are situated. Of particular note is that high minority ethnic concentration may itself give rise to patterns of social interaction, associational activity and subjective perceptions that are absent or markedly different in areas where the proportion belonging to a minority is low.

A different sampling strategy was used for white adults sampled in the HEA HALS and this has implications for comparing the health of white and minority ethnic groups in the combined HEA data-set. The HEA HALS data-set sampled Enumeration Districts within Regional Health Authorities in England with probability proportional to the number of households. Within each Enumeration District, households were
selected systematically but the probability of selection was greater for households containing adults in both the 16-54 and 55-74 age groups. There was, however, no regional or ethnic bias in household selection. A likely consequence of this difference is that white adults in the HEA dataset have a more advantaged socio-economic profile than minority ethnic adults.

A further difference between the HSE and HEA surveys concerns sample size. Minority ethnic men and women aged 20 to 60 comprise only 4.5 percent of the total sample in the HSE data for 1993-6. The number of Bangladeshi respondents is very small, particularly when broken down by gender and other social characteristics (see Table 5.1). The small sample size of minority ethnic adults (but not whites) in this survey will therefore increase the standard error when considering particular minority ethnic groups and the likelihood that variation in health does not reach statistical significance (P>0.05). Results based on small sample sizes must therefore be interpreted with caution, although trends in the HSE data can be compared with results from the larger sample of minority groups in the HEA BMEG survey. The BMEG survey, for example, interviewed nearly five-times more Bangladeshi adults than the HSE.

(ii) Weighting

Both HEA surveys in this analysis originally weighted responses. Weights were applied to correct for the fact that only one adult per household was interviewed, thus lessening the chances of selection for adults in larger households. Each respondent received a weight proportional to the number of adults in their household aged between 16 and 74.

The HEA surveys were also weighted by age and sex within regions, in line with population projections. For the BMEG survey, this was achieved using information from the 1991 Census for Greater London and the rest of Great Britain. For the HALS, these weights were calculated for regional health authorities (RHA's) in England based on OPCS population projections for 1992. Unlike the HEA surveys,
no weights were used for the HSE (1993-6) because the samples were considered to adequately represent population characteristics (Prescott-Clarke & Primatesa, 1997).

In view of the different procedures adopted by these surveys, and that the aim of this thesis is to examine patterns of health among different subgroups of samples rather than making population estimates, only unweighted data was used in these analysis.

(iii) Differential non-response

Non-response to survey questions will introduce sample bias if the proportion and characteristics of responders differs from non-responders. Differential non-response is an issue for all surveys, including the HEA surveys and HSE that obtain a high overall response rate. A key difference between the HEA and the HSE surveys concerning non-response is the language in which interviews were conducted for minority ethnic groups.

In the HEA BMEG survey, Asian respondents could request an interview in Punjabi, Urdu, Gujerati or Bengali/Sylheti. Nearly one-third of interviews with Indian respondents were conducted in one of these languages, whilst this was greater at 50 percent for Pakistanis and 70 percent for Bangladeshis. This undoubtedly contributed to a high response rate among Asian groups; successful interviews were completed with 77 percent of Indians, 80 percent of Pakistanis and 91 percent of Bangladeshis (HEA, 1994).

The high proportion of Asian respondents who requested a non-English interview stresses that language difficulties are likely to impede participation in surveys only conducted in English. Interviews and self-completion for the Health Survey for England were only carried out in the English language. The 1996 HSE report confirms that non-responders were more likely to belong to a minority ethnic group than responders and estimates that language difficulties could account for 1 percent of overall non-response (Prescott-Clarke & Primatesa, 1998).
5.3 KEY CONCEPTS IN THE HSE AND HEA SURVEYS

5.3.1 Age

Chronological age is associated with 'life-course stage' and is often key to understanding health and social circumstances. Age is therefore an important component of analyses of social inequality in health. Although survey data was available for individuals age 16+ in the Health Survey for England and for adults aged between 16 and 74 in the HEA surveys, this analysis concentrates only on those aged 20 to 60 - the main 'working age' group. There were a number of reasons why younger adults aged 16 to 19 and older people over the age of 60 were excluded from this analysis of gender and ethnic inequalities in health.

The first reason relates to the differing age structure of minority ethnic groups compared to whites. The more 'youthful' age profile of minority ethnic groups primarily reflects the pattern and timing of migration to the UK. As a result, 'older' whites over retirement age far outnumber minority ethnic elders, particularly for women who tended to migrate at a later date than men (Cooper et al. 2000).

Secondly, focusing on 20-60 year olds was considered to limit the possibility of reverse causation between social circumstances and health; namely that poor health precedes a change in health-related behaviour or living conditions. Surveys commonly find an age-related increase in reported morbidity and disability (Bridgwood et al. 2000) which are concentrated among older women in particular (Arber & Cooper, 1999).

Although reverse causation for health is much less likely among young adults (16-19 years) than for older age groups, this stage of the life-course – often referred to as 'youth' – represents a period of great social change. Many in this age group remain in full-time education or have recently entered the labour market for the first time. This raises issues about how best to capture their socio-economic position – studies using young people's own occupation often report that class gradients for health are absent at this stage of the lifecourse (West, 1997). The apparent 'equalisation' of inequalities
in health found during youth suggests that the correlates of health differ in some way to older adults. As well as concern about using parental occupation to represent the socio-economic position of youth, it is also during this period of the life-course that studies suggest patterns of health-related behaviour (particularly cigarette smoking) are still becoming established. It is therefore unlikely that any ill-effects of smoking will be reflected in the health of youth, unlike for older adults.

The 20-60 age group focused upon in this analysis is considered to represent the main years of working life. This age band is, however, a broad one and it remains important to control for the effects of age on health. For this reason, many figures and tables in this thesis adjust for age using a method of direct age-standardisation in 10-year age groups (where the standard population represents the number of adults in the HSE or HEA surveys). Multivariate logistic regression tables all include age (in 5-year age groups) as a control variable.

5.3.2 Ethnicity and gender

In this analysis, ethnic group is based on the self-classification of respondents. This is considered a better measure of ethnic affiliation than interviewer observation, since the latter assigns ethnic group only on the basis of visible characteristics.

The self-classification ethnicity question is, however, based on fixed-choice categories and only permits respondents to give a free description when they do not consider themselves to belong to any of the specified ethnic groups. The categories most widely used to represent ethnic group were first included in the 1991 Census (Peach, 1996). These Census categories are included in the HSE and comprise the following 8 pre-coded categories, with additional categories for individuals who respond with 'none'. A follow-up question with four pre-coded responses is included for adults answering 'Black-Other' or 'None' to the ethnicity question

(HSE) 'To which of the groups on this card do you consider you belong?'

a) White
b) Black Caribbean
c) Black African
d) Black Other*
e) Indian
f) Pakistani
g) Bangladeshi
h) Chinese
i) None*

* How would you describe the racial or ethnic group you belong to?
j) Sri Lankan
k) Other Asian
l) Mixed Race
m) Other NEC

The HEA surveys did not use the Census categories given above. The BMEG survey first screened households for minority ethnic members before eligible respondents were asked whether they would describe their race or ethnic origin as;
a) African Caribbean
b) Indian
c) Pakistani
or d) Bangladeshi

The classification of white respondents in the HEA HALS distinguished between those who identified as white-British and white-European (only the former were included in the HEA data-set being used here). The ethnic category of ‘African-Caribbean’ is used in the HEA BMEG survey to describe respondents with recent family origins in the West Indies and more distant family origins in Africa. To facilitate comparisons between the HSE and HEA surveys, the categories of ‘Black-Caribbean’ and ‘Black-African’ in the HSE ethnicity question were combined and henceforth this ethnic group is referred to as ‘African Caribbean’ in both surveys.
The social categorisation of ethnic groups in this way has been the source of much debate and contention. It is argued that the ethnic labels used conflate skin-colour and country of origin. Studies show a poor correspondence between responses to the 1991 Census ethnic question and individuals' free description of their ethnic group (Rankin & Bhopal, 1999). Approximately one-fifth of respondents in the 1993 HSE used the 'other' category in the ethnic question (Bennett et al. 1995), therefore it is important to be aware that fixed choices can not wholly account for the diversity of ethnic identities.

This analysis focuses on those who identified as white, African Caribbean, Indian, Pakistani and Bangladeshi. It is not uncommon for other research to collapse these groups into broader ethnic categories. For example, the HSE reports make a distinction between white and 'non-white' groups. Whilst this can be justified on the grounds that all of the aforementioned minorities share a common colour disadvantage in a white society, racial discrimination is not synonymous with colour discrimination. Such an approach can imply that 'white' as an ethnic category is an unproblematic one, ignoring the social disadvantage faced by white migrant groups, such as the Irish. The use of a single 'minority ethnic' category is also undermined by studies showing considerable diversity among different minority populations. This applies strongly to Indians, Pakistanis and Bangladeshis who are sometimes classed together as a single 'South Asian' group. The vast majority of analyses presented in this thesis retain five ethnic groups and categories are only combined where absolutely necessary because of small sample sizes. These five ethnic group categories represent the largest minority populations in the UK and smaller ethnic groups, such as the Chinese, are excluded. The analysis of ethnicity and health presented in this study is not therefore inclusive of all minority populations living in the UK.

Many analyses of ethnicity and health standardise for gender because of small sample sizes or the view that the effects of gender on ethnic inequality in health can be 'controlled out'. However, gender in this analysis is considered as a major axis of social inequality that intersects with ethnic group. The health of men and women
aged 20-60 is analysed separately to permit investigation of gender and ethnic differences in the social determinants of health. Table 5.1 shows the number of men and women from the five ethnic groups in this analysis from the HEA surveys and the HSE. As expected, there was a much smaller minority ethnic population in the 4-year HSE sample than in the HEA surveys, particularly for Bangladeshis. There are however, instances where the number of minority ethnic adults in the HSE exceeds the HEA - African Caribbean men being one example.

Table 5.1: Number of men and women aged 20-60 from different ethnic groups in the HSE and HEA surveys

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEN</td>
<td>WOMEN</td>
</tr>
<tr>
<td>White (HALS)</td>
<td>1614</td>
<td>2108</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>191</td>
<td>376</td>
</tr>
<tr>
<td>Indian</td>
<td>408</td>
<td>447</td>
</tr>
<tr>
<td>Pakistani</td>
<td>367</td>
<td>406</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>238</td>
<td>288</td>
</tr>
<tr>
<td>All Minority Ethnic</td>
<td>1204</td>
<td>1517</td>
</tr>
<tr>
<td>groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total N=</td>
<td>2818</td>
<td>3625</td>
</tr>
</tbody>
</table>

5.3.3 Health
What constitutes 'good' or 'bad' health can be variously defined in terms of ability to carry out everyday tasks, fitness, feelings of well-being or the absence of ill-health (Manderbacka, 1998; Blaxter, 1990). It therefore follows that a variety of measures can be used to measure health status. The one chosen for this analysis is a commonly utilised measure of self-reported general health. This measure has been shown to be a good predictor of mortality (Idler & Benyamini, 1997) and has good test re-test
reliability for men and women (Lundberg & Manderbacka, 1996). Interviews with survey respondents show when asked to rate their health, some think about specific health problems, whereas others think in terms of either general physical functioning or health behaviours (Krause & Jay, 1994). Manderbacka et al. (1998) reported that factors associated with reported general health status are similar for men and women after taking into account their socio-demographic background. A recent study using data on from the Health Survey for England and the Fourth National Survey of Ethnic Minorities did not find any systematic ethnic differences in the reporting of self-rated health or its relationship with more 'objective' measures of morbidity (Chandola & Jenkinson, 2000).

The wording of the general health question differs for the HSE and HEA surveys. The HSE asks adults;

'How is your health in general? Would you say it was... very good, good, fair, bad or very bad?'

Responses of 'fair', 'bad' or 'very bad' were combined to indicate 'less than good' health or morbidity reported by men and women from different ethnic groups.

In the HEA surveys, respondents were asked to assess their general health in relation to others of the same age. The analysis distinguished between those who reported

1. Very good or fairly good general health
2. Fairly poor or very poor general health.

The differing question wording and response categories used to represent reported morbidity in these surveys are discussed in subsequent chapters when interpreting the findings of this analysis.

5.3.4 Cigarette smoking

Investigation of cigarette smoking is based on self-reports of current or past smoking behaviour. A distinction is made in both surveys between those who report currently smoking and those who do not (where this category includes ex-smokers and never smokers).
In the HSE, this is based on the question; 

'Have you ever smoked cigarettes?' (yes/no) 'Do you smoke cigarettes at all nowadays?' (yes/no).

Individuals in the HEA surveys were grouped according to whether or not they reported currently smoking cigarettes. Data on cigarette consumption were used for some analyses of the HEA surveys, based on the average number smoked daily. An additional category was added to represent those who smoked, but for whom information on level of consumption was missing. The cigarette consumption categories were as follows;

0= Non Smoker
1-9 cigs/day= Light smoker
10-19 cigs/day= Moderate smoker
20+ cigs/day= Heavy smoker
Not known= Smoker, amount unknown.

Self-reported smoking status is subject to reporting bias. To estimate the effect of mis-reporting, samples of serum cotinine, (a metabolite of nicotine) in the blood, were analysed by age and sex, but not ethnic group, in the 1994 HSE report (Colhoun & Prescott-Clarke, 1996). Although men were more likely than women to under-report smoking, differences between physiological and reported measures were modest.

5.3.5 Socio-economic position

(i) Employment status and Occupational class
The HSE measure of employment status is derived from information about employment status in the last week (a comparable measure is derived using available information from the HEA surveys).

• Employed: in paid employment or self employed
  Based on the number of hours worked per week, the employed are classified as;
  (a) Full-time (30 or more hrs/week) (b) Part-time (<30 hrs/week).
• *Unemployed*: looking for work; waiting to start a job;
• *Non-employed*: retired, permanently unable to work, looking after family or in full-time education or 'other' economically inactive adults who have previously been employed.
• *Never employed*: all economically inactive groups who stated that they had never been in paid employment or self employment.

For all adults who report currently or previously having a paid job, occupational information is asked about the following
• Job title, work hours, kind of work, qualifications required
• Employee status, e.g. manager (including size of establishment and number of employees).

This information is used to derive a measure of *socio-economic group* (SEG). This commonly used class measure was collapsed into three broad categories to represent the occupational class position of respondents.

1. *Non-manual occupations*


2. *Manual occupations*


3. *Never employed*

Groups excluded were those with inadequately described occupations and the armed forces.

The HEA surveys also contained a measure of occupational class, but unlike the HSE, this was based on the *Registrar Generals' classification* (RGSC). Information was obtained about current occupation and about last occupation for the short-term
unemployed and retired. The Registrar Generals' social classes were collapsed into the categories of:

5. Non-manual (RGSC: I/II/IIINM)

No occupational information was obtained from the long-term unemployed (6+ months), sick/disabled or those looking after the home. For this reason, these groups were combined into an 'excluded' category in the analysis.

Thus, although the same labels were used to represent manual and non-manual occupational groups in the HEA and HSE surveys, the composition of these categories will differ because (i) the class schema used is different (ii) some non-employed groups in the HEA surveys are excluded from the measure of RGSC, but not from the measure of socio-economic group (SEG) in the HSE. The implications of these differences for interpreting and comparing results from these surveys are discussed later in this chapter.

(ii) Education

In all the surveys, respondents were asked to state their highest educational qualification. Responses were re-grouped to represent three broad categories of educational attainment for gender and ethnic groups that correspond with i) Further/Higher Educational qualifications; ii) Secondary or vocational qualifications; iii) No qualifications.

- A Levels (or equivalent, e.g. Scottish Highers) and above (e.g. degree or professional qualification).
- GCSE (or equivalent, e.g. O'Levels) and 'Other' qualifications (e.g. vocational, City & Guilds).
- No qualifications

The larger sample size for multivariate analyses meant that it was possible to distinguish degree holders from adults with A' Level (or equivalent) qualifications, and GCSE (or equivalent) holders from those with 'other' or 'no' qualifications.
(iii) Material Deprivation

Information on material circumstances is taken from the household section of the HSE questionnaire. A material deprivation score was calculated, based on the following that applied, scoring +1 for each of the following:

- Home not owned;
- Household has no central heating (2 or more rooms heated from a central source);
- Household has no telephone accessible to all household members;
- A car or van is not normally available for use by any household member;
- Income Support is received by anyone living in the household.

This gave a minimum deprivation score of 0 and a maximum of 5. Those with a material deprivation score of 3 or more, which represents a high level of deprivation, were grouped together and compared with those who were not materially deprived on this measure (score zero), or who had a score of 1 or 2. The same index of material deprivation was constructed from the HEA surveys, but this did not include central heating as a constituent item.

5.6.1. Social Embeddedness

Measures relating to the concept of social embeddedness were only available in the HEA surveys, not in the HSE. These are detailed below according to the three domains discussed in Chapter 3.

(i) Subjective perceptions of neighbourhood, family and friends

- Neighbourhood perception score

This measure was based on responses to the following four items in the HEA surveys;

'Is [your neighbourhood] a place where you personally feel safe?
- Has it good facilities for young children or not?
- Has it good local transport or not?
- Has it good leisure facilities for people like yourself or not?'
For each question, a score of +1 was given if the answer was 'yes' and -1 if the answer 'no' was given. A 'don't know' response was given a neutral score of zero. This gave a minimum score or -4 and a maximum of 4. Based on the distribution of responses, these were re-grouped as follows:

- Score -4 to 0: Low neighbourhood perception score
- Score 1-2: Medium
- Score 3-4: High

A low score represents those with the most negative appraisal of their local area, whilst a high score represents the most positive perceptions.

- Perceived close friends and relatives

Both the BMEG and HALS asked individuals whether they had any friends or relatives that they saw or spoke to regularly. It is important to note that the HALS question (for white adults) specified 'close friend/relative', whereas for minority ethnic groups in the BMEG survey, the term 'regular' was used as a proxy for close contact with friends or relatives outside the family. Due to the large proportion of individuals who perceived close (regular) contact with both friends and relatives, a two-category variable was used to represent those who perceived:

1. Close friends and relatives
2. No close friends and/or relatives

(ii) Associational activity

- Quasi-formal associational activity was based on whether respondents reported involvement in any of the following community based activities in the last fortnight:
  - Attended an adult education or night class course
  - Participated in a voluntary group or local community group.
  - Participated in religious or community activities.
These responses were counted (score +1 if 'yes', score 0 if 'no') to give a scale ranging form 0 (no community activity) to 3 (maximum community activity). Due to the low frequency of reported activity, this was then collapsed into a two category variable;

1. Community active in last two weeks
2. Not community active in last two weeks

- Measures of informal associational activity in the HEA surveys were based on reported contact with friends and relatives. To assess how the density of social contacts was related to health and health-related behaviour, a measure of social involvement was derived separately for friends and for relatives based on the following reported contacts in the last two weeks.
  - Visited friends (or relatives)
  - Had friends (or relatives) visit them
  - Gone out with friends (or relatives)
  - Spoken to friends (or relatives) on the phone

The number of contacts was counted to give a total ranging from 0 (no involvement) to 4 when respondents answered 'yes' to all of the above for friends and a separate score of 0 to 4 for contact with relatives. The scale was combined into three categories to represent:

1. 4 contacts ('high' social involvement);
2. 2-3 contacts ('medium' social involvement);
3. 0-1 contact ('low social involvement').

(iii) Experiential

The experiential domain includes measures of reported crime and reported problems with neighbours over the year preceding interview.
Crime
To examine experience of crime for white and minority ethnic groups, a distinction was made between those who reported a racial attack (physical and/or verbal) and those who had been the victims of theft, mugging or another crime in the last year. However, due to the low reported frequency of crime or other attack, a two-category variable is used for many of these analyses;
1. No experience of crime or racial attack
2. Victim of a crime and/or racial attack

Reported problem neighbours
HEA respondents were asked to report whether or not they had experienced any problems with neighbours over the last year. This item was included in some analyses as a two-category variable representing 'yes/no' responses.

5.4 LOGISTIC REGRESSION
The multivariate analysis presented in this thesis is based on logistic regression. This technique is most suited to investigating the effect of two or more independent variables on a two-category (binary) outcome variable. In Part I of this analysis, current smoking is the outcome variable, and for Part II, the variable is reported poor health.

Logistic regression models the log 'odds' of a binary outcome variable. The 'odds' of an outcome is the ratio of the probability of its occurring to the probability of its not occurring. The parameter estimates obtained from a logistic regression model are presented as odds ratios and reported along with statistical significance levels if P<0.05. It is customary to use -2 times the log likelihood as an estimate of how well the model fits the data. To assess the change between different models, sets of variables are added in stages. The difference between the -2LL for two models, with the difference in degrees of freedom (which is equal to the difference between the number of parameters for the two models) has a chi-square distribution and so the significance of the change is derived from a chi-square table. For some logistic
regression models, the ‘best fit’ model is calculated using a method of forward selection whereby variables are selected into the model only if P<0.05. The Nagelkerke R-Square statistic is used to assess the strength of association for models and can vary from 0 to 1 (Nagelkerke, 1991). However, this statistic not reported for logistic models of small sample size (e.g. computed for separate ethnic groups) because in such instances Nagelkerke R-squared may be misleadingly high.

5.5. SOCIAL CHARACTERISTICS OF THE SURVEY SAMPLE

This section examines gender and ethnic variation in relation to key measures used in the analysis in this thesis, including socio-economic position and social embeddedness. It is important to consider how social position is itself cross-cut by gender and ethnic group before assessing social inequalities in the health or health-related behaviour of these groups. Many studies have reported that the chances of occupying a certain social position are unequal according to the characteristics of gender and ethnicity, with many women and minority ethnic groups over-represented in social positions associated with health disadvantage. Thus, some gender and ethnic groups are likely to be disproportionately exposed to a certain set of social conditions that may ultimately be health-promoting or health-damaging. Where appropriate, the figures and tables presented in this chapter compare HEA data with the HSE to highlight differences that may arise from the sampling strategies, coverage and question design of these surveys.

(i) Age, gender and ethnicity (HEA and HSE)

Figure 5.1 shows differences in the age profile of ethnic groups in the HSE and HEA surveys (Figures 5.1a and 5.1b respectively). Results are presented separately for men and women aged 20-60 – the working age range included in this analysis.

In the HSE, the percentage of white adults is broadly comparable for each 10-year age group, with a slightly greater proportion of men and women aged 30-39. The HEA (HALS) survey of white adults also contained a greater percentage of men and women in their 30’s than in any other working-age group, although age variation among
whites was more marked in the HEA compared with the HSE. This suggests that the HEA data is less representative by age owing to the sampling strategy described earlier.

The age profile of minority ethnic adults in each survey is likely to broadly reflect age and gender differences in the pattern and timing of migration; namely that men tended to migrate earlier than women and at a younger average age (Blakemore & Boneham, 1994). A greater percentage of Black Caribbean men than women in the HSE are in the oldest working-age group (50-60) although this is less evident in the HEA survey of African Caribbean adults. South Asian ethnic groups in the HSE have a markedly younger age profile compared to whites, a finding that may partially reflect a language barrier for older Asian adults participating in the survey. This is more evident for Pakistani and Bangladeshi women than for men; only 5 percent are aged 50-60 compared with nearly one-quarter of white women. Similarly, the majority of South Asian men are under 40 years of age.

A slightly different pattern emerges in the HEA data where there is a greater percentage of minority ethnic men, and particularly minority ethnic women in older age groups. In the HEA (BMEG) survey, one-quarter of Bangladeshi men were aged 50-60 compared with only 21 percent in HSE, and for Bangladeshi women this difference was greater at 15 percent in the HEA survey and 5 percent in the HSE. Possible explanations for the higher proportion of 'older' working-age adults from minority ethnic groups is that the HEA survey focused on areas of high minority ethnic concentration, likely to include inner-city, urban areas, where there may be a greater likelihood of sampling a household containing an adult in this age group. Non-response may also be greater in the HSE for 'older' working-age adults from minority ethnic groups owing to language difficulties.
However, both surveys show differences in the age profile of ethnic groups which may contribute to ethnic differences in health, along with labour force participation and living conditions. This is the main reason why the method of age standardisation described earlier is used in tables and figures. In analyses where results are not presented separately for men and women and the sample sizes allow, this standardisation takes into account sex as well as age variation for ethnic groups.

(ii) Employment status (HSE)

Table 5.2 shows the employment status of gender and ethnic groups in the HSE. Although employment status is not used directly in these analyses to represent socio-economic position, it is important to examine ethnic differences in labour force participation that may affect occupational class position.

After standardising for 10-year age groups, the table shows marked differences in labour force participation between the sexes. White men were more likely to be in paid work and to work full-time than white women. Nearly 30 percent of white working-age women were classified as 'non-employed' – an employment status that is likely to reflect child-rearing for working-age women in all ethnic groups.

Unemployment was more common for white men but never being employed was rare for white men and women of working-age.

For African Caribbean adults, there was little gender difference in paid employment, owing to the lower economic activity of African Caribbean men relative to white men. In contrast, white and African Caribbean women had similar levels of paid employment; 66 percent and 61 percent respectively. African Caribbean women were more likely than white women to work full-time but were also more likely to be unemployed. Unemployment was however, mainly associated with African Caribbean men; at 23 percent, they had the highest level of unemployment.
<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani or Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>In paid employment</td>
<td>81</td>
<td>66</td>
<td>63</td>
<td>61</td>
</tr>
<tr>
<td>Full-Time</td>
<td>78</td>
<td>39</td>
<td>59</td>
<td>47</td>
</tr>
<tr>
<td>Part-Time</td>
<td>3</td>
<td>27</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Unemployed</td>
<td>8</td>
<td>3</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Non-employed*</td>
<td>9</td>
<td>29</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>Never employed</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>N=</td>
<td>19336</td>
<td>22242</td>
<td>207</td>
<td>312</td>
</tr>
</tbody>
</table>

* This category includes any full-time students, sick/disabled, retired and those looking after the home, who have previously had a paid job.

Source: Health Survey for England, 1993-6
Economic activity was also relatively high for Indian women, over half of whom were in paid employment. Equivalent proportions of Indian and white women worked full-time and unemployment for women in these ethnic groups was low at only 3 percent. Indian men also showed more similarities than differences in employment and unemployment relative to white men, the main difference being that Indians of both sexes were more likely than whites to report never having had a paid job.

In contrast to Indians, there was a sizeable gender difference in paid employment for Pakistanis and Bangladeshis (shown together in Table 5.2 due to the small size of these ethnic groups in the HSE). Only 15 percent of Pakistani and Bangladeshi women were in paid work and, at 57 percent, men in these ethnic groups were less likely than other men to be employed. The apparent reasons for not being in paid employment were also gendered; over half of Pakistani and Bangladeshi women had never been employed - a figure that far exceeds that of women from other ethnic groups, who were most likely to be 'non-employed' (includes those looking after the home, retired or long-term sick). A large proportion of Pakistani and Bangladeshi men were unemployed (22 percent) or had a non-employed status which could suggest ill-health or disability which precluded paid work. Only 3 percent of Pakistani and Bangladeshi men had never had a paid job; a figure comparable with that for men from other minority ethnic groups.

(iii) Occupational social class

Table 5.3 examines the occupational class position of gender and ethnic groups in the HSE, dividing those working-age adults who were currently in paid work or who previously had a paid job into manual and non-manual occupations based on their socio-economic group (SEG).

There was an equal proportion of working-age white men in manual and non-manual social classes (50 percent) whilst white women were more likely to be classified in non-manual occupations.
Table 5.3  **Occupational social class* of gender and ethnic groups aged 20-60:**

<table>
<thead>
<tr>
<th></th>
<th>White Men</th>
<th>White Women</th>
<th>African Caribbean Men</th>
<th>African Caribbean Women</th>
<th>Indian Men</th>
<th>Indian Women</th>
<th>Pakistani or Bangladeshi Men</th>
<th>Pakistani or Bangladeshi Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Manual</td>
<td>50</td>
<td>65</td>
<td>34</td>
<td>67</td>
<td>52</td>
<td>55</td>
<td>34</td>
<td>56</td>
</tr>
<tr>
<td>Manual</td>
<td>50</td>
<td>35</td>
<td>67</td>
<td>33</td>
<td>48</td>
<td>45</td>
<td>66</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>N</td>
<td>18938</td>
<td>21712</td>
<td>197</td>
<td>298</td>
<td>411</td>
<td>392</td>
<td>267</td>
<td>119</td>
</tr>
</tbody>
</table>

* For adults who currently or previously had a paid job.

**Source:** Health Survey for England, 1993-96

Table 5.4  **Occupational social class of gender and ethnic groups aged 20-60:**

<table>
<thead>
<tr>
<th></th>
<th>White Men</th>
<th>White Women</th>
<th>African Caribbean Men</th>
<th>African Caribbean Women</th>
<th>Indian Men</th>
<th>Indian Women</th>
<th>Pakistani or Bangladeshi Men</th>
<th>Pakistani or Bangladeshi Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Manual</td>
<td>50</td>
<td>71</td>
<td>29</td>
<td>61</td>
<td>37</td>
<td>42</td>
<td>28</td>
<td>46</td>
</tr>
<tr>
<td>Manual</td>
<td>49</td>
<td>29</td>
<td>72</td>
<td>39</td>
<td>62</td>
<td>57</td>
<td>72</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>N</td>
<td>1323</td>
<td>1358</td>
<td>98</td>
<td>191</td>
<td>257</td>
<td>179</td>
<td>305</td>
<td>48</td>
</tr>
</tbody>
</table>

**Source:** HIEA BMEG and HALS surveys, 1992
The greater concentration of women than men in the non-manual class was clearly evident for African Caribbean adults; over 60 percent of women were in this class group compared with approximately one-third of men. There was less gender difference in the class profile of Indian adults with more than half of currently or previously employed men and women in non-manual occupations. In contrast, the proportion of Pakistani and Bangladeshi men occupying non-manual class positions was comparable to Black Caribbean men at only 34 percent. For Pakistanis and Bangladeshis, the results suggest women are somewhat more advantaged in the labour market than men. However, this is misleading because the class profile of Pakistani and Bangladeshi women is based on the small proportion (46 percent) who currently or previously had a paid job and excludes the remainder who have never been employed.

The apparent class 'advantage' of women – particularly African Caribbean women – may be misleading because the non-manual class is a very broad one and heterogenous one in which it is men who are disproportionately located in the higher professional and managerial occupations. Other authors have suggested that the class position of minority ethnic women in particular is likely to conceal their disadvantaged position in terms of pay, unemployment (Elam, McMunn & Nazroo, 2001) and material circumstances (Blackburn, Dale & Jarman, 1997).

The same class comparisons are made in Table 5.4 based on HEA surveys. The class measure used in the HEA dataset differs from the HSE measure in several important respects:

- In the HSE, all adults not currently working who had previously had a paid job were asked further details about the nature of that work and relevant skills. This occupational information was used to determine their class grouping. In the HEA BMEG survey, no further occupational information was obtained from long-term unemployed adults (defined as 6 months or more), the sick/disabled or those looking after home/family or on a government training scheme. Thus, the HEA BMEG class measure excludes significant non-
employed groups, a disproportionate number of whom will be from minority ethnic groups, (a high percentage of working-age Pakistani and Bangladeshi women are, for example, defined as looking after the home).

- The HEA class measure excludes significant non-employed groups, e.g. the long-term unemployed and never worked. It is therefore less inclusive than the HSE measure of class and may distort the magnitude of class inequalities in health associated with gender and ethnic group.

Table 5.4 which uses the HEA class measure, does however, show a number of similarities with the HSE data. A common finding is that women in each ethnic group are more likely to be classified in non-manual occupations, and this is more pronounced in the HEA survey than the HSE data. This gender difference was most marked for African Caribbean adults in the HEA survey and least evident for Indian men and women.

In the HSE and HEA surveys, the most disadvantaged class profiles were found for African Caribbean men and Pakistani/Bangladeshi men. Again, this was most marked in the HEA survey where less than 30 percent were classified as non-manual.

(iv) Material Deprivation

Table 5.5 uses a measure of material deprivation to examine the socio-economic profiles of gender and ethnic groups in the HSE and suggests a different pattern of inequality to that found using occupational class (Table 5.3).
Table 5.5 Material deprivation score* of gender and ethnic groups aged 20-60

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th></th>
<th>African Caribbean</th>
<th></th>
<th>Indian</th>
<th></th>
<th>Pakistani</th>
<th></th>
<th>Bangladeshi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>0</td>
<td>60</td>
<td>58</td>
<td>40</td>
<td>35</td>
<td>56</td>
<td>55</td>
<td>28</td>
<td>30</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>1-2</td>
<td>33</td>
<td>30</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>38</td>
<td>49</td>
<td>54</td>
<td>55</td>
<td>35</td>
</tr>
<tr>
<td>3+</td>
<td>9</td>
<td>11</td>
<td>21</td>
<td>26</td>
<td>6</td>
<td>7</td>
<td>23</td>
<td>16</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>N=</td>
<td>18,835</td>
<td>21,682</td>
<td>202</td>
<td>304</td>
<td>418</td>
<td>460</td>
<td>208</td>
<td>210</td>
<td>66</td>
<td>50</td>
</tr>
</tbody>
</table>

* based on home ownership, access to central heating, a car, telephone and receipt of Income Support
On this measure, score 0= No material deprivation; Score 3-5=maximum material deprivation.

Source: Health Survey for England, 1993-96
In Table 5.3, women in each ethnic group had an apparent 'class advantage', being more likely than men to be in the non-manual class. In relation to material disadvantage, this finding was not replicated for white and African Caribbean ethnic groups; men were more likely than women to have a zero score on the derived material deprivation scale, representing 'material advantage'. It is notable that this finding applied to African Caribbean adults of working-age, even though men in this ethnic group were much more likely than women to be currently or previously employed in a manual occupation. Over one-quarter of African Caribbean women were in the most materially deprived group (score of 3 or more). The material deprivation profiles of Indian men and women were very similar and compared favourably with that of whites; only 6.7 percent of Indians were in the most materially deprived group compared with one-tenth of whites. For Pakistani and Bangladeshi groups, the proportion in the most materially deprived group was much greater, far exceeding that found for white and Indian adults. Less than one-third of Pakistani and Bangladeshi men and women had no material deprivation (score zero) on this measure.

(v) Social embeddedness

Measures of social embeddedness were derived from the HEA surveys only. Table 5.6 presents three key measures, one from each domain, that together comprise this concept. These are:

- **Subjective perceptions** - quality of neighbourhood,

  Quality of neighbourhood relates to how the local area is appraised in terms of its facilities and safety. As detailed in section 5.4.6, a series of four questions in the HEA surveys were scored in order to represent a 'high', 'medium' or 'low' perceived quality of neighbourhood score. A high score (3-4) represents the most positive perceptions about the locality, the psychosocial benefits of which may conceivably relate to good health.
Table 5.6 *Key Social Embeddedness measures in the HEA surveys for gender and ethnic groups aged 20-60*

<table>
<thead>
<tr>
<th>Social Embeddedness</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subjective Perceptions domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% with high (positive) perceptions of neighbourhood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>26</td>
<td>32</td>
<td>37</td>
<td>37</td>
<td>32</td>
</tr>
<tr>
<td>Women</td>
<td>24</td>
<td>21</td>
<td>41</td>
<td>39</td>
<td>31</td>
</tr>
<tr>
<td><strong>Reported Associational Activity domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% active in quasi-formal community groups over last 2 wks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>17</td>
<td>14</td>
<td>34</td>
<td>28</td>
<td>26</td>
</tr>
<tr>
<td>Women</td>
<td>25</td>
<td>31</td>
<td>23</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td><strong>Experiential domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% experiencing problem neighbours in last year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Women</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Minimum Base Numbers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1614</td>
<td>191</td>
<td>408</td>
<td>367</td>
<td>238</td>
</tr>
<tr>
<td>Women</td>
<td>2108</td>
<td>376</td>
<td>447</td>
<td>406</td>
<td>288</td>
</tr>
</tbody>
</table>

*Source:* HEA BMEG and HALS surveys, 1992
Approximately one-quarter of white men and women had a high neighbourhood perception score but this was generally lower than for minority ethnic groups. Indians and Pakistanis, particularly women, were more likely to perceive the quality of their neighbourhood in positive terms, whilst African Caribbean women were least likely to do so.

- **Associational activity** - reported community activity in the last two weeks

Reported involvement in community activity (section 5.3.6) in the last two weeks represents a quasi-formal measure of associational activity. The variation in community activity among gender and ethnic groups suggests that it is primarily associated with women who were white or African Caribbean. Associational activity of this type was substantially lower for Pakistani and Bangladeshi women (11 percent) than for men in these ethnic groups.

- **Experience** - of problem neighbours in the last year.

Reported problem neighbours (section 5.3.6) is one measure within the experiential domain of social embeddedness. Table 5.6 shows that white and African Caribbean women are more likely than men in these ethnic groups to report such problems, but this gender difference is modest. By comparison, the proportion of Indian, Pakistani or Bangladeshi men and women groups who reported problems with neighbours was somewhat lower and there were no clear gender differences.

Gender and ethnic variations in measures of social embeddedness reported here do not suggest that women or minority ethnic groups are disproportionately ‘disadvantaged’ in the same way as for socio-economic position. Rather, some South Asian groups appear to have a greater degree of ‘social embeddedness’ than whites, despite their poorer than average socio-economic profile and likely concentration in urban inner city areas.

5.6. **SUMMARY**

This chapter has detailed the secondary analysis method used to conduct this analysis of health inequality associated with gender and ethnic group. Two datasets are used;
the Health Survey for England (combined for 1993 to 1996) and 1992 HEA surveys from the Health and Lifestyles survey (HALS) and the survey of Black and Minority Ethnic groups (BMEG). These datasets were chosen as complementary sources from which to compare and contrast gender and ethnic differences in health and smoking. The relative advantages and disadvantages of each dataset were discussed. The HSE contains relatively small sample sizes for some gender and ethnic groups, but it does provide a nationally representative sample. The HEA surveys contain a greater number of interviews with some minority ethnic populations, along with questions relating to social embeddedness that are absent in the HSE, but the sample is limited to areas of high minority ethnic concentration only.

Profiling gender and ethnic groups by key measures to be used in the forthcoming analysis of inequality in their smoking behaviour and health suggested two main conclusions. Firstly, it highlighted the diversity between ethnic groups and within ethnic groups according to gender. It showed that it is potentially misleading to consider that minority ethnic groups are universally disadvantaged in all social spheres. There were broad similarities, for example, in the socio-economic profile of Indian and white adults and the former were less likely to be living in conditions of high material disadvantage. Differences were also apparent depending on the socio-economic measure used to represent the same gender and ethnic group; results for African Caribbean women suggested a considerable disparity between their class position and material circumstances. Secondly, gender and ethnic variation in socio-economic position was not the same as that associated with key measures of social embeddedness, representing the experiential domain, subjective perceptions and associational activity domain. Whilst many men and women from minority ethnic groups were disproportionately located in positions of socio-economic disadvantage relative to whites, there was less evidence that this disadvantage extended to social embeddedness.
Introduction

Cigarette smoking is a leading cause of chronic ill-health and morbidity in the UK. As discussed in Chapter 4, this health-related behaviour has been cited as a major contributor to social inequalities in health. The likelihood of being a cigarette smoker is related to gender and to ethnic group. Smoking prevalence among men and women has changed over the last fifty years. In the 1940s and 1950s, smoking was more common for men than for women, but in the 1990s these gender differences had converged and the percentage of current smokers was comparable for men and women in Britain (Thomas et al. 1998).

Surveys which have focused on minority ethnic populations in the UK generally find lower than average levels of cigarette smoking (Rudat, 1994) and lower smoking among minority ethnic women than for men in the same ethnic group. However, whilst gender has been shown to differentiate smoking within and across ethnic groups, explanations underlying these differences in smoking prevalence require further investigation.

Research attention has focused on the relationship between socio-economic position and cigarette smoking (e.g. Cavelaars et al. 2000; Bennett et al. 1996; Graham, 1994). Based on self-reported measures of current smoking behaviour and cigarette consumption, a linear relationship between social class and smoking is often found, with the likelihood of being a smoker greatest for manual class groups. However, relatively few studies have investigated possible gender and ethnic differences in the nature of these relationships.

A key concern of this chapter is to discern the relationship between socio-economic position and smoking for different gender and ethnic groups. Although research shows gender and ethnicity are independently associated with both smoking and
socio-economic circumstances, it is comparatively rare to relate the health-related behaviour of minority ethnic men and women to their social and economic circumstances. However, this is important if debate is to move away from wholly cultural explanations for differences in health-behaviour and the poor health of minority ethnic groups in the UK and address how smoking may be situated in a broader social context.

Existing studies of socio-economic inequality and smoking typically classify individuals according to their occupational social class. However, studies show that deprived material circumstances, low income and domestic and caring responsibilities are related to smoking after taking into account class differences (Marsh & McKay, 1994; Graham, 1994). Investigation of socio-economic inequality and smoking for gender and ethnic groups in this thesis therefore includes measures of educational level and material deprivation, in addition to occupational social class, which chapter 1 argued might differ in meaning for different gender and ethnic groups. A further advantage of this approach is that it may help overcome measurement difficulties associated with occupational position for women and minority ethnic groups which may present a misleading picture of socio-economic inequality in smoking behaviour. By relating different measures of socio-economic position to variation in smoking within and across gender and ethnic groups, the analysis will assess their relative and overall contribution to this health-related behaviour. It will then be possible to assess the extent to which patterns of current smoking among men and women from different ethnic groups have a socio-economic basis. This chapter uses data from the Health Survey for England, a nationally representative sample of white and minority ethnic groups.

6.1. GENDER AND ETHNIC VARIATION IN CIGARETTE SMOKING

Before investigating socio-economic differences in cigarette smoking, the analysis first focuses on gender and ethnic differences in smoking prevalence for adults aged 20-60. Two self-reported measures from the Health Survey for England are used; the
first is based on whether individuals' report ever having smoked cigarettes - a measure termed 'lifetime smoking'; the second focuses on current cigarette smoking only.

Surveys have shown that the likelihood of being a smoker is inversely related to age, with lower smoking among older adults aged 50 and above compared to those in their 20s and 30s (Cooper et al. 1999; Thomas et al. 1998). For this reason, all analyses present age-standardised percentages of smoking prevalence. Results for lifetime and current smoking shown in Table 6.1 also report 95 percent confidence intervals for each gender and ethnic group. Due to the small number of Bangladeshi women in the HSE sample, the figures and tables in this chapter report a combined percentage for Pakistani and Bangladeshi women. This decision was justified on the grounds that both Pakistani and Bangladeshi women showed similarly low levels of cigarette smoking and combining these ethnic groups together is likely to increase the reliability of findings for these women. However, to highlight any differences in the socio-economic correlates of smoking for Pakistani and Bangladeshi women, they were included separately in multivariate logistic regression models.

(i) **Lifetime cigarette smoking ('ever smoked')**

Table 6.1 (a) shows that 69 percent of white adults reported ever having smoked cigarettes and this was significantly higher than for African Caribbean, Indian and Pakistani adults. After taking into account age-related differences by age standardisation, more than half of Bangladeshis had ever smoked cigarettes which was substantially higher than for other South Asian groups. Only 27 percent of Indians and 36 percent of Pakistanis of working age reported ever having smoked, figures that were significantly lower compared to white, African Caribbean and Bangladeshi adults. Thus there were considerable ethnic differences in this measure of lifetime smoking and the results highlight variation among different minority ethnic groups, particularly those commonly classified as South Asian.
Table 6.1: **Age standardised prevalence of cigarette smoking by ethnic group and gender (HSE)**

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(a) Lifetime smoking ('ever smoked')</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>72 (71.4-72.7)</td>
<td>73 (67.1-79.4)</td>
<td>43 (37.9-47.3)</td>
<td>56 (50-63.5)</td>
<td>73 (62.5-83.1)</td>
</tr>
<tr>
<td>Women</td>
<td>66 (65.7-66.9)</td>
<td>46 (40.2-51.2)</td>
<td>12 (8.5-14.6)</td>
<td>10.3 (5.7-14.7)</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>69 (68.5-69.4)</td>
<td>55 (50.8-59.6)</td>
<td>27 (23.5-29.5)</td>
<td>36 (30.7-40.6)</td>
<td>53 (44.6-61.5)</td>
</tr>
<tr>
<td><strong>(b) Current smoking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>33 (32.2-33.5)</td>
<td>35 (28.8-41.7)</td>
<td>23 (18.7-26.6)</td>
<td>29 (23.2-35.6)</td>
<td>53 (40.5-64.7)</td>
</tr>
<tr>
<td>Women</td>
<td>32 (31-32.2)</td>
<td>25 (20.4-29.4)</td>
<td>5 (2.9-6.8)</td>
<td>6 (2.4-10.2)</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>32 (31.8-32.7)</td>
<td>29 (25.4-32.9)</td>
<td>13 (11.1-15.6)</td>
<td>18 (14.2-22.2)</td>
<td>35 (26.2-44.1)</td>
</tr>
<tr>
<td><strong>Base Numbers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>19310</td>
<td>207</td>
<td>430</td>
<td>214</td>
<td>66</td>
</tr>
<tr>
<td>Women</td>
<td>22223</td>
<td>312</td>
<td>469</td>
<td>215</td>
<td>50</td>
</tr>
<tr>
<td>All</td>
<td>41533</td>
<td>519</td>
<td>899</td>
<td>429</td>
<td>116</td>
</tr>
</tbody>
</table>

**Source:** Health Survey for England, 1993-96
However, this ethnic variation concealed marked gender differences in smoking, both within and across ethnic groups. In all ethnic groups, women were less likely than men to report ever having smoked. However, the magnitude of this gender difference was greater for all minority ethnic groups than for whites. Nearly three-quarters of Bangladeshi men, over half of Pakistani men and 43 percent of Indian men had ever smoked, compared with only approximately one-tenth of women in these ethnic groups. There was a significant difference in the prevalence of lifetime smoking for African Caribbean men and women, and the more modest gender gap for white adults still showed a significantly lower proportion of women than men had ever smoked.

There were substantial ethnic differences in the proportion of men and women who had ever smoked cigarettes. Approximately 73 percent of white, African Caribbean and Bangladeshi men reported having smoked cigarettes, but this was significantly lower for Pakistani and Indian men. Ethnic differences in lifetime smoking were, however, more marked for women than for men. At 66 percent, white women were substantially more likely to report ever having smoked cigarettes than minority ethnic women. The proportion of Indian and Pakistani/Bangladeshi women who had ever smoked was only 12 percent and 10 percent respectively. Whilst African Caribbean women were four-times more likely to report having ever smoked than Pakistani/Bangladeshi women, the prevalence of smoking for these women was very low in comparison to white women.

(ii) Current cigarette smoking

As expected, the prevalence of current smoking was much lower than for lifetime smoking in Table 6.1 (b), reflecting the proportion of adults who had quit smoking. Over one-third of white adults were ex-smokers, as smoking prevalence decreased from 69 percent for lifetime smoking to 32 percent for current smoking. The percentage of current smokers in each ethnic group was about half that of lifetime smokers.
As found using the measure of lifetime smoking, there were substantial differences in current smoking according to gender. The pattern of current smoking among men differed from lifetime smoking. Table 6.1 (b) shows that more than half of Bangladeshi men were current smokers, a percentage far greater than for men from other ethnic groups. Among Bangladeshi men, the proportion of current smokers was approximately one-third less than when a measure of lifetime smoking was used, but the level of smoking cessation suggested by this difference was lower than for other ethnic groups, including white and African Caribbean adults. Current smoking was much less prevalent among Indian and Pakistani men compared to Bangladeshi men, whilst the proportion of smokers was approximately one-third for white and African Caribbean men.

Consistent with the findings for lifetime smoking, Table 6.1 (b) shows that current smoking was most prevalent among white women at approximately one-third. However, similar to white men, the results for white women showed that only approximately half of lifetime smokers reported currently smoking cigarettes. The proportion of smokers was lower at 25 percent for African Caribbean women and less than 10 percent of Indian and Pakistani/Bangladeshi women were current smokers.

Unlike for the white population, there was no evidence that smoking prevalence was becoming a less gendered practice for men and women within minority ethnic groups. Minority ethnic women were less likely than men to report current smoking. These gender differences were statistically significant for Indians and Pakistanis/Bangladeshis where the very low prevalence of smoking among women contrasted with much higher rates of current smoking reported by men - particularly Bangladeshi men.

6.1.1. Summary
These results show that the prevalence of cigarette smoking is related to gender and ethnicity for working age adults. Minority ethnic adults of both sexes were less likely to be lifetime smokers or current smokers, with the notable exception of Bangladeshi men. Gender differences in smoking were substantial for minority ethnic groups,
with very low levels of current smoking found among women, particularly those from South Asian ethnic groups. By contrast, gender differences in current smoking were absent for white adults where smoking prevalence was comparable for men and women. The analysis now examines how three different measures of socio-economic position relate to gender and ethnic inequality in smoking behaviour.

6.2. SOCIO-ECONOMIC POSITION AND CURRENT SMOKING

In this part of the analysis, socio-economic differences in current smoking are examined for men and women from each ethnic group. Three commonly used indicators of socio-economic position are used to assess the socio-economic basis of smoking; highest educational qualification, occupational class of the individual and the individuals' access to material resources within the household. A key concern is to compare and contrast the efficacy of these socio-economic measures to differentiate smoking within gender and ethnic groups. Differences in the nature of these relationships might suggest that some socio-economic measures are more sensitive discriminators of current smoking than others for certain gender and ethnic groups. For example, it might be expected that social class will be a poor indicator of socio-economic differences in smoking for some minority ethnic women because its reliance on previous occupation means that it will exclude those who have never been in formal employment.

(i) Educational qualifications and current smoking

Figure 6.1 shows the age-standardised prevalence of current smoking for men and women from each ethnic group by highest educational qualification. Among men, results for all ethnic groups showed that smoking was consistently related to level of educational qualification, after taking age-related differences into account. A comparable education gradient in smoking was found for white and African Caribbean men; approximately half of those without qualifications were current smokers and this was substantially lower at 20 percent for men with A'Level qualifications or above.
Figure 6.1 Age standardised prevalence of cigarette smoking for gender and ethnic groups by educational qualifications

[base numbers in brackets]

Men aged 20-60

A linear relationship between educational level and current smoking was also found for Indian and Pakistani men, but there was less difference in smoking prevalence between the unqualified group and those with GCSE or other qualifications than was the case for white and African Caribbean men. The high prevalence of smoking among unqualified Bangladeshi men can be clearly seen from Figure 6.1; nearly 70 percent in this group were current cigarette smokers and this was substantially lower at 40 percent and 8 percent for Bangladeshi who had GCSE/other qualifications and A’Level or higher qualifications respectively.

There was a clear education gradient in current smoking for white women; approximately 50 percent of those without qualifications were current smokers compared to only 20 percent with qualifications at A’Level or above. These differences were very similar in magnitude to the education gradient found for white men. Differences in smoking associated with education were, by contrast, less consistent for minority ethnic women. For African Caribbean women, having educational qualifications was associated with lower smoking. However, these differences were much more modest than for white women and largely result from the much lower prevalence of smoking among African Caribbean women without any educational qualifications (31 percent) compared with approximately half of white women. The results suggest a slight education gradient in current smoking for Pakistani and Bangladeshi women, although the very low prevalence of smoking, coupled with the small sample size, means that these differences should be interpreted with caution. There was very little variation in current smoking for Indian women according to educational level and possibly a reverse gradient.

The relationship between educational qualifications and smoking was very similar in magnitude for white men and women. However, for each minority ethnic group educational differences in current smoking were more marked men than for women. Modest education differences in smoking for African Caribbean women contrasted with a marked education gradient in smoking for African Caribbean men that mirrored that found for white men. Inequality in smoking for Indian, Pakistani and Bangladeshi men was consistent with greater smoking among educationally disadvantaged groups,
whereas these were weaker for women in these ethnic groups, and for Indian women, suggested a reverse gradient.

(ii) **Occupational social class and current smoking**

Figure 6.2 uses a measure of own occupational social class to distinguish current smoking among gender and ethnic groups. A 'never employed' group for women represents those who are excluded from this class measure based on current or previous occupation. The never employed category is omitted for working-age men because only a very small proportion of men in each ethnic group were not currently or previously in paid employment (see Chapter 5, Table 5.2). There was a clear social class difference in current smoking for white men; approximately 40 percent in the manual class were smokers and this was lower at 24 percent for non-manual white men. A comparison across minority ethnic groups showed that class differences were most marked for African Caribbean and Bangladeshi men. The percentage of current smokers in the manual social class was 42 and 62 for these respective ethnic groups and was lower by approximately half for non-manual African Caribbean men and by about one-third for non-manual Bangladeshi men. The results for Indian and Pakistani men were consistent with greater smoking among those currently or previously employed in manual occupations, but class differences in smoking were much more modest than for men from other ethnic groups and contrast with the marked differences in smoking found using educational qualifications.

There was a clear association between manual social class position and current smoking for white women; approximately 40 percent in this group were smokers compared with one-quarter of white women in the non-manual social class. A clear finding was the absence expected class differences in current smoking among women belonging to South Asian groups.

Although the overall prevalence of smoking was low for Indian women, those classified as non-manual were slightly more likely to smoke (6 percent) compared to manual or never employed women (3 percent).
Figure 6.2  Age standardised prevalence of cigarette smoking for gender and ethnic groups by occupational social class
[base numbers in brackets]

Men aged 20-60

![Graph showing the age standardised prevalence of cigarette smoking for men aged 20-60 by gender, ethnicity, and occupational social class.]

Women aged 20-60

![Graph showing the age standardised prevalence of cigarette smoking for women aged 20-60 by gender, ethnicity, and occupation.]

Source: Health Survey for England, 1993-96
Among the small proportion of Pakistani and Bangladeshi women who smoked, there was no class variation, with smoking prevalence broadly comparable at 6 percent for both social classes and the never employed.

Class differences in smoking for African Caribbean women were evident in the expected direction. However, with smoking at 27 percent for African Caribbean women in the manual social class compared with 25 percent for non-manual workers, this difference was slight and much less marked than for white women. It is notable that smoking prevalence among minority ethnic women who had never been employed was low whereas smoking among white never employed women was comparable with the manual social class.

A comparison of social class inequality in smoking for men and women in the same ethnic group shows no differences for white men and women where those in the manual social class were more likely to smoke than the non-manual class. This was not the case for minority ethnic groups where stronger and more consistent class differences are found for men than women. Only within the African Caribbean group was social class associated with smoking in the same way for men and women, but the magnitude of the class difference was very weak for African Caribbean women. The finding of higher smoking among Indian, Pakistani and Bangladeshi men classified in manual occupations was not replicated for women. Non-manual Indian women were slightly more likely to report smoking and there was an overall lack of class variation in smoking for Pakistani and Bangladeshi women.

(iii) Material deprivation and current smoking

The relationships between material circumstances and smoking for gender and ethnic groups are shown in Figure 6.3 using a derived material deprivation score (see Chapter 5, section 5.3.5). After standardising for age, the results show a linear gradient in smoking for white men according to their level of household material deprivation. Maximum deprivation (a score of 3-5) was associated with the highest smoking prevalence for this group at over 60 percent. By comparison, reported
smoking was markedly lower for white men who experienced a lesser degree of material deprivation (score 1-2), whilst those who were not materially deprived on this measure were least likely to be smokers (23 percent).

For minority ethnic men, the nature of the relationship between material deprivation and smoking showed more similarities than differences with white men. Figure 6.3 shows a clear material deprivation gradient in smoking for African Caribbean men that is comparable in magnitude to white men. The current smoking behaviour of Bangladeshi men was also strongly differentiated by material circumstances; more than 60 percent of Bangladeshis living in the most materially deprived circumstances (score 3-5) were smokers compared to about 55 percent with a deprivation score of 2-3 and only two-tenths of Bangladeshis who were not materially disadvantaged reported smoking. In contrast to Bangladeshi men, there was a weaker relationship between material deprivation and smoking for Indian and Pakistani men. The prevalence of smoking was comparable for Pakistani men who were most materially advantaged (score 0) or who had some degree of material deprivation (score 1-2).

The likelihood of being a smoker was, however, far greater for the most materially deprived Pakistani men, over 50 percent of whom were smokers. There was no evidence that smoking was concentrated among the most materially deprived Indian men; the prevalence of smoking was highest for Indian men with a score of 1 or 2. These results therefore show a different relationship between material deprivation and smoking behaviour for Indian men compared to men from other ethnic groups.

Level of material deprivation clearly differentiated the smoking behaviour of white women. Nearly 60 percent of white women in the most materially deprived group were smokers compared to 40 percent with a deprivation score of 1 or 2 and just over 20 percent of materially advantaged white women reported smoking.

In contrast, there was no consistent relationship between material deprivation and smoking for Indian women with approximately 5 percent of smokers in each material deprivation category.
Figure 6.3  *Age standardised prevalence of cigarette smoking for gender and ethnic groups by material deprivation score*¹

[base numbers in brackets]

**Men aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for men aged 20-60 by gender, ethnic group, and material deprivation score.](image)

**Women aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for women aged 20-60 by gender, ethnic group, and material deprivation score.](image)

¹ Score 3-5 = Maximum material deprivation

*Source:* Health Survey for England, 1993-96
This contrasts with measures of education and social class for which there was suggestion of a reverse gradient in smoking for Indian women. The experience of any material deprivation was associated with current smoking for Pakistani and Bangladeshi women; smoking prevalence was greater for all those with a deprivation score higher than zero. However, these differences were modest, and largely due to the low proportion of smokers among materially advantaged Pakistani and Bangladeshi women.

In contrast to South Asian women, the smoking behaviour of African Caribbean women was strongly and consistently related to their level of material deprivation. Approximately 15 percent of materially advantaged African Caribbean women were smokers compared to one-quarter with a deprivation score of 1-2 and nearly 40 percent of African Caribbean women with a high level of material disadvantage (score 3-5) reported smoking. Thus, the relationship between material deprivation and smoking for African Caribbean women was more similar to that of white women than to other minority ethnic women.

When results for men and women within ethnic groups are compared, a linear relationship between material deprivation and smoking that is of similar magnitude is found for white men and women. This extends to African Caribbean adults, where the likelihood of smoking becomes consistently greater with a higher level of deprivation for both men and women. The absence of any consistent association between material deprivation and smoking applies to Indian men and to Indian women. Although the results suggested slightly greater smoking among Pakistani and Bangladeshi women who experienced any degree of material deprivation, these differences were much more modest than for Pakistani and Bangladeshi men - among whom the prevalence of smoking was substantially greater for the most materially deprived.

6.2.1 Comparing measures of socio-economic inequality in smoking

The results show that measures of educational qualifications, occupational class and material deprivation used to represent socio-economic position are related to current
Socio-economic differences in smoking behaviour were most consistent for white adults of working age. A gradient in current smoking was found using all three measures of education, occupational class and material deprivation and the magnitude of these socio-economic differences were very similar for white men and women. Thus, not only do white men and women have comparable levels of current smoking but their smoking behaviour is differentiated by socio-economic position in the same way regardless of whether this is represented by education, class or material deprivation.

Socio-economic inequality in smoking behaviour was similar to that found among whites for several minority ethnic groups, namely higher smoking among disadvantaged education, class and material deprivation groups. However, a key difference was that the association between socio-economic disadvantage and current smoking was generally more consistent for men than for women in each minority ethnic group. This was the case for each socio-economic measure, although there was considerable variation in the strength of these relationships among different groups of minority ethnic women. Differences in smoking associated with education, social class and material deprivation were more marked and consistent for African Caribbean women than for the smaller proportion of South Asian women who smoked.

The finding of socio-economic differences in smoking for Pakistani and Bangladeshi women was limited to greater smoking among those with low educational attainment and those with some or high material deprivation. Although these differences were relatively modest compared to Pakistani and Bangladeshi men and white women, it was using social class that variation in current smoking was absent for Pakistani and Bangladeshi women. Thus, own occupational class may be a more insensitive measure to differentiate smoking for Pakistani and Bangladeshi women because of their low
economic activity and the large proportion who are outside the labour market. Even where class differences were apparent for minority ethnic women, as was found for African Caribbean women, class differences were still weaker than socio-economic differences found using education or material deprivation.

One group where the expected socio-economic differences in smoking were not found was Indian women. All three socio-economic measures lacked discriminatory power, with little variation in smoking associated with education, occupational class or material deprivation. Material deprivation did however differ in that it was the only socio-economic measure not to suggest an association relationship between socio-economic ‘advantage’ and smoking. In contrast to other gender and ethnic groups, smoking prevalence was slightly greater for highly educated and non-manual Indian women, although smoking was comparatively rare among Indian women as a whole. There was no relationship between material deprivation and current smoking for Indian adults of both sexes.

6.3. MULTIVARIATE ANALYSIS OF CURRENT SMOKING

In this part of the analysis, logistic regression is used to examine the relationship between socio-economic position and smoking for men and women from different ethnic groups. Using this method, it is possible to examine both the relative contribution of education, occupational class and material deprivation to ethnic differences in smoking for men and women and to assess the overall contribution of socio-economic position. Due to the small sample size of some minority ethnic groups in the Health Survey for England, it was not possible to present separate models for each gender and ethnic group. As an alternative, the logistic regression table shows separate models for men and women and includes ethnic group along with socio-economic measures as independent variables in the model. This is to show ethnic and socio-economic differences in the current smoking reported by men and women aged 20-60, but it is not intended that ethnic group be interpreted as a potential causative factor in smoking in the same way as socio-economic position.
It is anticipated that the socio-economic measures used in this analysis are inter-correlated – for example, educational attainment has been shown to be a powerful precursor of occupational position in adulthood (Wadworth, 1991) that in turn is likely to determine access to material resources (Berkman & Macintyre, 1997). For this reason, educational qualifications, followed by occupational class and material deprivation, are added sequentially to a logistic regression model that controls for the main effects of these variables on the dependent variable – current smoking status. The direct association between socio-economic position and smoking is examined for each measure and the discussion focuses on how including multiple measures of socio-economic position modifies the contribution of any single socio-economic factor. All logistic models control for age in 5-year groups. As expected, the first model in Table 6.2 shows that current smoking was significantly associated with age for men and women aged 20-60.

For both sexes, there were highly statistically significant ethnic differences in current smoking. However, these differences were not the same for men and women. Among women, whites were most likely to be current smokers; the odds of smoking were substantially reduced by 87 percent for Indian and Pakistani women and 91 percent for Bangladeshi women by comparison. By contrast, there was no statistically significant difference between white women and African Caribbean women in the likelihood of being a current smoker. As found for women, the odds for men show substantially lower smoking among Indians and Pakistanis relative to white men. However, Bangladeshi men had odds of smoking more than two-times higher than white men. This difference was statistically significant and contrasts with the very low odds ratio of smoking reported for Bangladeshi women (OR. 0.09). Current smoking was comparable for African Caribbean and white men with no significant difference in odds ratios. Overall these results show that whilst smoking prevalence is broadly comparable for African Caribbean and white adults of both sexes, Indians, Pakistanis and Bangladeshis have substantially lower smoking relative to white men and women.
<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 4</td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 4</td>
</tr>
<tr>
<td>Age (in 5-year groups)</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Ethnic Group</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>White</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>1.04</td>
<td>0.85</td>
<td>0.83</td>
<td>0.75</td>
<td>0.89</td>
<td>0.86</td>
<td>0.86</td>
<td>0.66</td>
</tr>
<tr>
<td>Indian</td>
<td>0.53 ***</td>
<td>0.49 ***</td>
<td>0.49 ***</td>
<td>0.54 ***</td>
<td>0.13 ***</td>
<td>0.09 ***</td>
<td>0.09 ***</td>
<td>0.11 ***</td>
</tr>
<tr>
<td>Pakistani</td>
<td>0.69 *</td>
<td>0.55 ***</td>
<td>0.52 ***</td>
<td>0.49 ***</td>
<td>0.13 ***</td>
<td>0.08 ***</td>
<td>0.08 ***</td>
<td>0.09 ***</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>2.15 **</td>
<td>1.45 *</td>
<td>1.41 *</td>
<td>1.23</td>
<td>0.09 ***</td>
<td>0.05 ***</td>
<td>0.05 ***</td>
<td>0.05 ***</td>
</tr>
<tr>
<td>Educational Level</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Higher qualifications</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>A Level or equiv</td>
<td>1.65 ***</td>
<td>1.46 ***</td>
<td>1.49 ***</td>
<td>1.49 ***</td>
<td>1.26 **</td>
<td>1.29 ***</td>
<td>1.33 ***</td>
<td>1.33 ***</td>
</tr>
<tr>
<td>GCSE/O Level or equiv</td>
<td>2.09 ***</td>
<td>1.75 ***</td>
<td>1.72 ***</td>
<td>1.72 ***</td>
<td>1.70 ***</td>
<td>1.75 ***</td>
<td>1.70 ***</td>
<td>1.70 ***</td>
</tr>
<tr>
<td>Other qualifications</td>
<td>2.80 ***</td>
<td>2.19 ***</td>
<td>2.07 ***</td>
<td>2.07 ***</td>
<td>2.26 ***</td>
<td>2.30 ***</td>
<td>2.09 ***</td>
<td>2.09 ***</td>
</tr>
<tr>
<td>No qualifications</td>
<td>4.11 ***</td>
<td>3.04 ***</td>
<td>2.52 ***</td>
<td>2.52 ***</td>
<td>4.03 ***</td>
<td>3.73 ***</td>
<td>2.95 ***</td>
<td>2.95 ***</td>
</tr>
<tr>
<td>Socio-economic Group (SEG)</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Professional or managerial</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Routine non-manual</td>
<td>1.11</td>
<td>1.05</td>
<td>1.05</td>
<td>1.05</td>
<td>0.82</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
</tr>
<tr>
<td>Skilled manual</td>
<td>1.46 ***</td>
<td>1.32 ***</td>
<td>1.32 ***</td>
<td>1.32 ***</td>
<td>1.15 *</td>
<td>1.06</td>
<td>1.06</td>
<td>0.98</td>
</tr>
<tr>
<td>Semi or unskilled manual</td>
<td>1.73 ***</td>
<td>1.31 ***</td>
<td>1.31 ***</td>
<td>1.31 ***</td>
<td>1.20 ***</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
</tr>
<tr>
<td>Never employed</td>
<td>1.16</td>
<td>0.76</td>
<td>0.76</td>
<td>0.76</td>
<td>0.96</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
</tr>
<tr>
<td>Material deprivation score</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero (none)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>1.91 ***</td>
<td></td>
<td></td>
<td></td>
<td>1.97 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>3.68 ***</td>
<td></td>
<td></td>
<td></td>
<td>3.55 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N= 20047
Δ LLR (Δ df) 260.3 (13) 958.6 (4) 143.5 (4) 679.2 (2) 518.9 (12) 1052.8 (4) 110.3 (4) 795.7 (2)

++Significance of variable in the model; + P<0.05; ++P<0.001; +++P<0.001. ** Significance of difference from the reference category;
* P<0.05; **P<0.01; ***P<0.001.

Source: Health Survey for England, 1993-6
(i) **Educational qualifications**

A measure of educational level was added in model 2 (Table 6.2) for men and women. The odds ratios for both sexes show a marked education gradient in smoking; the odds of being a current smoker became consistently greater with less educational qualification. Men and women without any qualifications had odds of smoking more than four-times higher than the most educationally advantaged group.

Ethnic group remained highly statistically significant in the model for men and women after controlling for educational qualifications. However, adding educational level to the model changed the odds ratios of current smoking for minority ethnic men and women. This was most evident for Bangladeshi men. Before education was included in the model, the odds ratio of smoking for Bangladeshi men was 2.15, but was substantially lower at 1.45 after taking differences in education into account. Although the difference in smoking between Bangladeshi men and white men remained statistically significant, the decreased odds for Bangladeshi men suggests that educational disadvantage makes a sizeable contribution to the higher prevalence of smoking among this group. Controlling for educational level also reduced the odds of smoking for men from other minority ethnic groups compared to white men, but to a lesser extent than for Bangladeshi men. The reduction in odds ratios of current smoking that occurred after taking educational qualifications into account served to make wider the differences in smoking for African Caribbean, Indian and Pakistani men relative to white men, whereas by adjusting for education, the odds of smoking for Bangladeshi men became more similar to white men.

Adding education to the model had a similar impact on the odds ratios of smoking for minority ethnic women as it had for men. The very low odds ratios of smoking found for Indian, Pakistani and Bangladeshi women in Model 1 became even lower in Model 2. For Bangladeshi women, the odds ratio of smoking was almost halved, reduced from 0.13 to 0.08 when educational qualifications were taken into account. By comparison, the odds ratio for African Caribbean women was largely unchanged by adding education to the model.
(ii) **Occupational social class**

Model 3 (Table 6.2) shows that a measure of occupational social class was significantly associated with smoking for working age men and women. However, for both sexes, class variation in the model was less marked than educational differences. The odds ratios of smoking for men and women classified in the routine non-manual class were not significantly different from the reference category of professional or managerial occupations. However, individuals who were currently or previously employed in skilled manual, semi-skilled or unskilled occupations had significantly higher odds ratios of smoking. As expected, these class differences were more marked for men than for women. The odds of smoking for men in the semi-skilled/unskilled class were 73 percent higher than the reference category of professional/managerial occupations, but only 20 percent higher for semi-skilled/unskilled women. These results show that a manual occupational class is a stronger correlate of current smoking behaviour for men than for women.

For both sexes, there was some evidence to suggest that educational differences in smoking can be attributed, in part, to occupational class position; the odds ratios for educational groups were reduced when class was added to the model but education gradients in smoking remained highly statistically significant for men and women in model 3. Ethnic variation in smoking was modified very little by controlling for social class. This was particularly the case for women, where the odds ratios of smoking for African Caribbean, Indian, Pakistani and Bangladeshi women were unaltered by including class in the model. With the exception of Indian men, there was a very slight reduction in the odds ratios of smoking for minority ethnic men after adjusting for class. However this was very modest indeed compared with the change in odds ratios associated with educational qualifications. This suggests that, after taking educational qualifications into account, occupational social class makes very little independent contribution to ethnic differences in smoking.

(iii) **Material deprivation**

In the final model, a measure of material deprivation was included. Unlike social class, a strong and comparable association between material deprivation and smoking
was found for both sexes. Men and women in the most materially disadvantaged group (score 3-5) had odds of smoking which were more than three times higher than for the materially advantaged (score zero). The odds of smoking were also significantly greater for adults with a deprivation of score of 1 or 2 in comparison to this advantaged group.

Adding material deprivation to the model removed the significant association between being in a manual occupational class and smoking for women. The odds of smoking for women classified in skilled manual, semi-skilled or unskilled manual classes became comparable to the reference category of professional and managerial women. Whilst there was some reduction in the odds ratios of smoking for men in manual social classes, class differences in smoking remained statistically significant. Thus, class differences in smoking appear more robust for working age men than for women. In contrast to social class, there was a linear relationship between educational level and smoking for both sexes after controlling for material deprivation. These findings suggest that differences in smoking associated with education are largely independent of material circumstances. However, a reduction in the odds ratios of smoking for those without any formal qualifications in model 4 suggests that men and women in this educational group also experience a high level of material disadvantage that is associated with smoking.

Controlling for differences in material living conditions had a significant impact on ethnic differences in smoking for men and women. This was most striking for Bangladeshi men. The odds ratio of smoking for Bangladeshi men was no longer significantly different from white men after controlling for material deprivation (OR. 1.23). Whilst the significant difference in the likelihood of being a current smoker had been removed for white and Bangladeshi men, modest decreases in the odds of smoking for African Caribbean and Pakistani men after controlling for this socio-economic measure only serve to emphasise their lower smoking relative to white men. The results suggest that smoking among African Caribbean women is strongly related to poor material circumstances, as shown by a significantly lower odds ratio of current smoking in the final model. It is notable that adjusting for material conditions did not
have the same effect on the odds ratios of smoking for Indian men and women, which slightly increase in the final model. This supports the finding in Figure 6.3 that for Indian men and women, material circumstances do not share the same linear relationship with smoking found for many other gender and ethnic groups.

6.3.1 Summary
To summarise the relative contribution of each socio-economic measure to ethnic differences in smoking among men and women, changes in the odds ratios reported from Table 6.2 are presented in graphical form in Figure 6.4.

This figure for women clearly shows lower odds of smoking for all minority ethnic women than for white women, particularly those belonging to South Asian groups. Overall, socio-economic position had very little impact on the pattern of current smoking among Indian, Pakistani and Bangladeshi women relative to white women. There is more evidence that the smoking behaviour of African Caribbean women is related to their socio-economic position, but this is largely limited to current material circumstances that form a more important influence on smoking than educational level or social class. Adjusting for material deprivation markedly reduced the odds ratios of smoking for African Caribbean women, making it significantly lower than for white women.

Bangladeshi men were most likely to be current smokers and Figure 6.4 shows that their behaviour was strongly linked to their overall disadvantaged socio-economic position. The odds ratio of being a smoker was reduced by more than half by controlling for education, suggesting that disadvantage associated with education makes a sizeable contribution to the high prevalence of smoking among Bangladeshi men. Occupational social class made little independent contribution to smoking after allowing for educational differences, but there was a notable decrease in the odds ratio of smoking when material deprivation was taken into account. These results suggest that both education and material living conditions have a greater role in understanding the smoking behaviour of Bangladeshi men than occupational class position.
Figure 6.4 **Odds ratios from a logistic regression model of ethnic differences in smoking for men and women, controlling for socio-economic position**

Men

![Odds ratio chart for men](chart)

Women

![Odds ratio chart for women](chart)

Reference category (1.00) = white men and white women.

The overall effect of socio-economic factors on smoking among Bangladeshi men was substantial; after taking into account their disadvantaged socio-economic position, there was no significant difference in current smoking between Bangladeshi and white men. Indian and Pakistani men were much less likely than white men to be current smokers, but Figure 6.4 shows that their smoking behaviour was partly related to socio-economic position. This was, however, a very minor contribution compared to Bangladeshi men. For these minority ethnic men, educational qualifications emerged as more salient for current smoking than class or material deprivation. Figure 6.4 shows a consistent decrease in the odds of smoking for African Caribbean men relative to white men with the addition of each socio-economic measure. Compared to other socio-economic measures, controlling for occupational class had only a slight impact on the odds of current smoking for African Caribbean men relative to white men.

6.4. DISCUSSION

This chapter has shown that cigarette smoking is a practice associated with gender and ethnic group. Low smoking prevalence was found among many minority ethnic groups relative to whites but within minority ethnic groups, smoking was more common among men than women. This gender difference was most striking for South Asian ethnic groups, particularly for Bangladeshis where high smoking was found among men. By contrast, there was no gender difference in current smoking among whites of working age. Whilst the latter finding for whites supports recent figures showing that patterns smoking have converged for the sexes (Thomas et al. 1998), this must be refuted for minority ethnic groups.

The finding of consistent and linear socio-economic differences in current smoking is supported by other research (Cavelaars et al. 2000; DoH, 1998a). That similar socio-economic differences were found for whites and for some minority ethnic groups is important because it suggests that this health-related behaviour does have a structural basis and is not solely informed by cultural choices, for example. Importantly, socio-economic differences in current smoking were not limited to social class as
educational qualifications and material deprivation also had a strong linear relationship with smoking.

A number of differences in the relationship between socio-economic position and smoking can be discerned for gender and ethnic groups. Firstly, socio-economic differences in smoking were weaker and more inconsistent for minority ethnic women than for white women. Among the small proportion of South Asian women who reported smoking, this behaviour was not socially patterned by measures of socio-economic position in same way as for other ethnic groups. There was some suggestion that Indian women smokers were likely to belong to higher educational and class groups. Secondly, not only were socio-economic differences in smoking not limited to social class, social class was a poorer discriminator of current smoking within minority ethnic groups than education and material deprivation. This was most clearly evident for minority ethnic women for whom very little class variation in smoking was apparent. Occupational class was most suited to smoking differences among white adults of both sexes and for African Caribbean men. This finding has implications, not only in terms of the potential measurement difficulties associated with class for minority ethnic women, but also because it suggests that different dimensions of socio-economic experience are more important for understanding smoking among minority populations. Thus, it would be potentially limiting to base investigation of social differences in this health-related behaviour exclusively on class position.

The concept of habitus provides a way in which to interpret these social differences in smoking. Rather than a deterministic focus on socio-economic position and smoking, habitus can conceptualise position in the social structure whilst incorporating notions of agentive practice (Bourdieu, 1990). Cigarette smoking may be construed as one such practice. Social differences in smoking found for gender and ethnic groups are revealing of, and involved in, the reproduction of certain conditions of existence which, when taken together, construe Bourdieu's notion of social class. What the analysis presented in this chapter suggests is that education and material deprivation each capture something different to class, that they may embody different 'conditions
of existence' that contribute to the production of habitus. A qualitative study found that material circumstances were an additional axis of difference among working class women who smoked (Graham, 1994). The findings of the analysis detailed in this chapter support those of Graham (1994) showing that material deprivation may relate more directly to the management of everyday routines and stresses in which smoking becomes a habitual practice. For Bourdieu, education both embodies and reproduces cultural capital and is therefore involved in the ongoing production of social inequalities (Bourdieu & Passeron, 1990).
Chapter 7: Social Embeddedness and cigarette smoking

Introduction
The previous chapter showed how different measures of socio-economic position were associated with smoking within and across gender and ethnic groups. In this chapter, attention turns to the concept of social embeddedness introduced in Chapter 3. In Chapter 4, a review of the literature relating social capital and social support to cigarette smoking identified how involvement in community activity and contact with friends and family, for example, may mediate differences in this health-related behaviour. A most consistent finding is that supportive relationships with significant others can buffer individuals against negative feelings of social isolation, psychosocial stress or anxiety that may trigger poor health-related behaviours, such as smoking (Langlie, 1977; Gottlieb & Green, 1984). By the same token, affiliation with groups in the wider social community may have an impact on an individual's smoking status by providing norms for appropriate behaviour or an impetus for behavioural change (Campbell et al. 1999).

In this study, these research findings are drawn upon and incorporated into the three domains of social embeddedness identified in Chapter 3, namely; subjective perceptions; associational activity and the experiential domain. What sets the concept of social embeddedness apart from social capital or social support is the assertion that gender and ethnicity are key social divisions that differentially situate people within communities, neighbourhoods and social networks in ways that may give rise to inequalities in their health and health-related behaviour. This differs from the formulation of social capital in ways that often imply that the characteristics of a population are generalisable. Such an approach has the potential to detract from social differences in smoking behaviour such as the differential meaning of, and access to, social resources by gender and ethnic groups. That this is important is supported by British research where the changing ethnic composition of neighbourhoods and roles of men and women were found to be salient for individuals interviewed about perceptions of their local community (Campbell et al. 1999).
Indicators for each domain of social embeddedness based around subjective perceptions, associational activity and reported experiences of crime and problem neighbours are derived from the HEA data only (the HSE surveys analysed in this thesis did not include questions relating to individual perceptions of neighbourhood, community involvement or crime). The key aim of this chapter is therefore to examine how these different dimensions of social embeddedness intersect with the current smoking status of gender and ethnic groups aged 20-60.

The analysis proceeds in three stages. The first examines patterns of current smoking by gender and ethnicity and compares these findings using the HEA data with the previous chapter based on HSE data. Comparing results from different data-sets in this way can help validate findings or highlight differences that may arise from the varying design and sampling procedures of the HSE and HEA data (see Chapter 5, section 5.2). The second part of the chapter examines how key measures of social embeddedness are associated with smoking for different gender and ethnic groups. This analysis will examine the nature of these relationships and discuss what this may signal about the relative importance of the three social embeddedness domains for this health-related behaviour. Multivariate logistic regression analysis is used to assess how social embeddedness is associated with current smoking for men and women from white and minority ethnic groups. The logistic models then take into account socio-economic differences in current smoking identified in Chapter 6 in order to examine the relative contribution of social embeddedness to this health-related behaviour.

7.1. GENDER AND ETHNIC VARIATION IN CIGARETTE SMOKING

Table 7.1 presents age-standardised percentages of current cigarette smoking for men and women from different ethnic groups. As in the previous chapter, these results are shown together with 95 percent confidence intervals for working age adults in the 20-60 age group.
Table 7.1: **Age standardised prevalence of cigarette smoking by ethnic group and gender: age 20-60 (HEA)**

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Currently smoke cigarettes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>35 (32.5-37.1)</td>
<td>41 (32.6-48.4)</td>
<td>26 (21.3-29.9)</td>
<td>35 (30.2-40)</td>
<td>49 (42.1-55.4)</td>
</tr>
<tr>
<td>Women</td>
<td>36 (34.2-38.3)</td>
<td>25 (20.8-29)</td>
<td>3 (1.2-4.2)</td>
<td>4 (2.4-5.6)</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>36 (26.2-33.8)</td>
<td>30 (26.2-33.8)</td>
<td>13 (11.2-15.8)</td>
<td>18 (15.4-21)</td>
<td>25 (21.5-28.8)</td>
</tr>
</tbody>
</table>

**Base Numbers**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>1609</td>
<td>188</td>
<td>399</td>
<td>363</td>
<td>233</td>
</tr>
<tr>
<td>Women</td>
<td>2099</td>
<td>374</td>
<td>445</td>
<td>401</td>
<td>279</td>
</tr>
<tr>
<td>All</td>
<td>3708</td>
<td>562</td>
<td>844</td>
<td>764</td>
<td>512</td>
</tr>
</tbody>
</table>

**Source:** HEA BMEG and HALS surveys, 1992
The table shows that 36 percent of white adults reported being a smoker and this was significantly higher than for Indians and Pakistanis at only 13 percent and 18 percent respectively. By comparison, the prevalence of smoking among African Caribbean and Bangladeshi adults was more comparable to whites; one quarter of Bangladeshis and 30 percent of African Caribbean adults were current smokers.

Gender differences in smoking were, however, clearly evident for minority ethnic groups. The prevalence of smoking among Pakistani/Bangladeshi women was very low at only 4 percent, whereas nearly half of Bangladeshi men and 35 percent of Pakistani men reported smoking. Cigarette smoking was also higher among Indian men, approximately one-quarter of whom were smokers in comparison to 3 percent of Indian women. In common with these South Asian groups, higher smoking for men than women was found for African Caribbean adults where 41 percent of men and 25 percent of women smoked. For all minority ethnic groups, these gender differences in smoking behaviour were statistically significant. This finding contrasts with comparable levels of smoking for white men and women at approximately 35 percent.

Smoking prevalence varied significantly among men and women according to ethnic group. Among men, Bangladeshis were significantly more likely to be current smokers than white, Indian or Pakistani men. Age standardised smoking prevalence was also higher for African Caribbean men than for white men, but this was not a statistically significant difference. Smoking was comparable for white and Pakistani men at 35 percent and significantly higher than for Indian men, one-quarter of whom were current smokers. The proportion of current smokers was significantly greater among white women than for any group of minority ethnic women. However, African Caribbean women were more than six-times as likely to report smoking than Indian or Pakistani/Bangladeshi women. Consistent with the analysis of smoking using the HSE (Chapter 6), these results confirm marked differences in smoking prevalence among men and women from different ethnic groups.
Table 7.2  **Age standardised prevalence of cigarette smoking: comparing HSE and HEA data**

<table>
<thead>
<tr>
<th></th>
<th><strong>Health Survey for England (HSE)</strong></th>
<th></th>
<th><strong>HEA BMEG and HALS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African Caribbean</td>
<td>Indian</td>
</tr>
<tr>
<td>Men</td>
<td>33</td>
<td>35</td>
<td>23</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.00</td>
<td>1.06</td>
<td>0.69</td>
</tr>
<tr>
<td>Women</td>
<td>32</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Ratio</td>
<td>0.97</td>
<td>0.76</td>
<td>0.15</td>
</tr>
</tbody>
</table>

1 Smoking ratio relative to white men in each survey
The HEA and HSE surveys are compared in Table 7.2 which reports a smoking ratio (based on the age-standardised percentages) for each gender and ethnic group relative to white men (ratio=1.00) in each survey. The results from the HEA surveys are similar to those reported from the HSE in three key respects. Firstly, both surveys showed that smoking was more common for white women than minority ethnic women. Secondly, smoking prevalence was markedly lower for women than for men from minority ethnic groups but no such gender difference was evident for white adults. Thirdly, smoking prevalence was high for Bangladeshi men in both surveys after adjusting for age, shown by a smoking ratio compared to white men of 1.61 in the HSE and 1.40 in the HEA survey.

As well as these broad similarities, differences in smoking prevalence were found between these two health surveys. With the exception of Bangladeshis, smoking prevalence was somewhat higher for minority ethnic men in the HEA survey than in the Health Survey for England (for women, little difference was found between the surveys). This was most notable for Pakistani men who had a comparable level of smoking to white men in the HEA survey but lower smoking in the HSE. The higher prevalence of smoking among these groups of minority ethnic men sampled in the HEA survey meant that gender differences in current smoking for minority ethnic groups were more pronounced in the HEA survey than in the Health Survey for England. Sampling and design differences between the HEA and HSE surveys may contribute to this variation between the two surveys, although they do so only for men. For example, only the HEA BMEG survey sampled areas of high minority ethnic concentration which is likely to over-represent urban inner-city areas in the sample. It is notable that the gender gap in current smoking for white adults was comparable in both the HEA HALS and the HSE where random sampling procedures were used.

7.2. MEASURES OF SOCIAL EMBEDDEDNESS AND CIGARETTE SMOKING

In this part of the analysis, selected measures of social embeddedness are related to current smoking for men and women in each ethnic group. Similarities and differences in the nature of these relationships are examined before the relative
contribution of social embeddedness to gender and ethnic differences in smoking behaviour is assessed. Derived from the HEA surveys, measures of social embeddedness are grouped together into the separate domains introduced in Chapter 3. Thus, the following discussion is based on indicators selected from the following domains in turn: i) subjective perceptions domain; ii) associational activity domain and; iii) the experiential domain.

7.2.1 Subjective perceptions domain

A key measure of social embeddedness within the subjective perceptions domain relates to the perceived quality of the neighbourhood. Responses to a series of questions about neighbourhood leisure, transport and child facilities, along with feelings of safety, were scored and then divided into high, medium and low scoring groups (see Chapter 5, section 5.3.6). A high 'neighbourhood perception score' is indicative of the most positive responses made about neighbourhood whilst a low score reflects the most negative appraisal of the neighbourhood.

Figure 7.1 shows the age standardised prevalence of current smoking for men and women from each ethnic group according to perceptions of neighbourhood. For white men, a low quality of neighbourhood score was associated with the highest smoking prevalence at nearly 40 percent. Cigarette smoking was lower at approximately 30 percent for white men with a medium or high score. In contrast to white men, there was no evidence that a low quality of neighbourhood score was associated with higher smoking for any group of minority ethnic men. However, Indian men with the most positive perceptions of neighbourhood (a high score) were least likely to be current smokers. The results for Pakistani and Bangladeshi men suggested the opposite relationship between subjective perceptions of neighbourhood and smoking, namely that smoking was most commonly reported by those who had a high quality of neighbourhood score. For African Caribbean men, current smoking was approximately 40 percent when quality of neighbourhood score was high or low, thus indicating no relationship between this measure of social embeddedness and current smoking among African Caribbean men.
Age standardised prevalence of cigarette smoking for gender and ethnic groups by quality of neighbourhood perception score
[base numbers in brackets]

Men aged 20-60

Women aged 20-60

Source: HEA BMEG and HALS surveys, 1992
The relationship between perceived quality of neighbourhood and current smoking was more marked for white women than for white men (Figure 7.1). Approximately 28 percent of white women who perceived their neighbourhood most favourably (a high score) were current smokers compared with 34 percent who had a 'medium' score and over 40 percent with a low score. This consistent relationship strongly suggests that subjective appraisals of neighbourhood are important for the smoking behaviour of white women. Smoking prevalence among African Caribbean women who had a low neighbourhood perception score was far higher than for those with more positive perceptions of neighbourhood (a medium or high score). In comparison to African Caribbean and white women, there was no relationship between neighbourhood perceptions and current smoking for women who were Indian or Pakistani/Bangladeshi.

Comparing the results for men and women within ethnic groups suggests that subjective perceptions of neighbourhood facilities and safety better discriminate current smoking for white and African Caribbean women: those with a low quality of neighbourhood score, reflecting the most negative appraisals, are most likely to be current smokers. This was not the case for Indian, Pakistani and Bangladeshi groups where quality of neighbourhood score showed no clear relationship with current smoking for men or women. Only for Indian men were positive perceptions of neighbourhood associated with low smoking prevalence.

7.2.2 Associational Activity

A body of existing research suggests that associations with other people or organisations may be important for understanding differences in health-related behaviour, through the provision of social support for example. This section examines measures of quasi-formal involvement in community-based groups and informal participation in networks of friends and family.
Figure 7.2  

**Age standardised prevalence of cigarette smoking for gender and ethnic groups by reported community activity in the last two weeks**

[base numbers in brackets]

**Men aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for men aged 20-60 by gender, ethnicity, and community activity.](chart1)

**Women aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for women aged 20-60 by gender, ethnicity, and community activity.](chart2)

**Source:** HEA BMEG and HALS surveys, 1992
For white men, current smoking was much less likely when involvement in community activity was reported (21 percent) compared with men who were inactive over the two-week reference period (38 percent). A positive association between community activity and lower smoking was also evident for all groups of minority ethnic men, although the magnitude of this difference was greater for African Caribbean men than for men from South Asian groups.

The absence of any community involvement over a two-week period was related to higher smoking among white women; approximately 40 percent of inactive women reported smoking compared with just over 20 percent who did participate in the community. A similar and marked association between community activity and smoking was found for African Caribbean women. However, for Indian and Pakistani/Bangladeshi women, current smoking was more commonly reported by those who did report community activity. Although the magnitude of this difference was not large, and only a small number of Indian and Pakistani/Bangladeshi women reported involvement in this type of quasi-formal associational activity, the results do suggest that the smoking behaviour of South Asian women participating in community groups outside the home is different from those who report no such activity. Indeed, the relationship between community activity and current smoking for Indian, Pakistani and Bangladeshi women is the opposite to that found for men in these ethnic groups where smoking prevalence was lower among those active in the community. This is contrary to the finding for other ethnic groups and could suggest that the meaning or significance of community involvement is qualitatively different for men and women in these ethnic groups.
Measures of informal associational activity are based on the number of different types of contact reported with friends or with relatives over the two weeks preceding interview; this includes contact by telephone, letter, or face-to-face visits. As detailed in Chapter 5 (section 5.3.6), these measures therefore distinguish between a high level of social involvement (a maximum of 4 contacts with friends), medium involvement (2-3 contacts) and low involvement (0-1 contact). The quantity or density of this type of associational activity may be relevant to smoking behaviour because it determines opportunities for social support. However, it can be problematic to assume the presence of social support since dense social ties of this type may conceal relationships with others that are stressful or in conflict.

**Friends**

The relationship between contacts with friends and smoking is examined in Figure 7.3 for men and women from different ethnic groups. The results for white men show that the number of contacts reported with friends was consistently associated with current smoking. White men who were highly integrated into friendship networks (4 contacts) were least likely to be smokers (32 percent) and smoking was more commonly reported by those with 2-3 contacts and 0-1 contact at 34 percent and 40 percent respectively. A linear relationship between contact with friends and smoking, similar to that reported for white men, was only evident for African Caribbean and Pakistani men. However, these differences were relatively modest, particularly for Pakistani men. For Indian and Bangladeshi men, reported associational activity with friends had no clear relationship with smoking, although Bangladeshi men who had the highest number of contacts with friends were least likely to be current smokers.

The results for white women in Figure 7.3 indicate only a very slight increase in the percentage of smokers as the number of different contacts with friends becomes lower, in contrast to the gradient in smoking found for white men using this measure of associational activity. For each group of minority ethnic women, the results did not support lower smoking among those who reported greater associational activity with friends over the last two weeks. Indeed, for Indian, Pakistani and Bangladeshi
women, current smoking was more likely among those who reported greatest social involvement with friends.

- Relatives

Figure 7.4 uses a comparable derived measure of informal associational activity based on reported contact with relatives rather than friends. White men who had 4 different social contacts with family members over the two-week period were least likely to be smokers and this was higher at approximately 36 percent when a medium or low number of different contacts were reported.

At approximately one-quarter, smoking prevalence was markedly lower when African Caribbean men had maximal contact with family members compared to approximately 40 percent when a medium or low level of contact was reported. A linear relationship between reported contact with relatives and current smoking was found for Indian and Bangladeshi men, smoking being most likely among those who reported 0 or 1 contact over the two-week reference period. Although no consistent gradient was evident for Pakistani men, a high number of family contacts were associated with the lowest reported smoking. These results for minority ethnic men are more consistent than those found using a measure of associational activity based on contacts with friends.

For white women, the likelihood of smoking was greatest when 0 or 1 contact with relatives was reported over the two-week period (41 percent). Unlike for white men, contact with relatives had a clear linear relationship with smoking for white women. This linear relationship was absent for African Caribbean women, whose pattern of smoking was very similar to that of African Caribbean men using this measure of associational activity. The results for Indian women were suggestive of higher smoking when the number of different family contacts was low, but unlike for Indian men, there was no gradient in current smoking based on this type of associational activity. In contrast to all other gender and ethnic groups, Pakistani and Bangladeshi women were more likely to be current smokers when a maximum number of 4 contacts was reported with family members.
Figure 7.3  **Age standardised prevalence of cigarette smoking for gender and ethnic groups by informal associational activity with friends**  
[base numbers in brackets]

**Men aged 20-60**

**Women aged 20-60**

*Source: HEA BMEG and HALS surveys, 1992*
Figure 7.4  **Age standardised prevalence of cigarette smoking for gender and ethnic groups by informal associational activity with relatives**  
[Base numbers in brackets]

**Men aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for men aged 20-60 by ethnic group and associational activity level.](chart)

**Women aged 20-60**

![Bar chart showing age-standardised prevalence of cigarette smoking for women aged 20-60 by ethnic group and associational activity level.](chart)

**Source:** HEA BMEG and HALS surveys, 1992
Comparing contact with friends and relatives

In many, but not all, gender and ethnic groups, being highly integrated into networks of friends and relatives was associated with lower smoking. One interpretation is that this reflects access to or opportunities for social support, whereby family or friends encourage and support behavioural change for example. However, for some gender and ethnic groups, particularly Indian, Pakistani and Bangladeshi women, differences in smoking associated with associational activity were inconsistent and relatively modest, suggesting that the measures are weak discriminators of this health-related behaviour.

The nature of the relationship between informal associational activity and smoking behaviour partly depended on whether contact was with friends or with family. These differences in smoking are compared in Table 7.3, which presents percentages standardised for age. For white adults, contact with friends was more strongly related to men’s smoking whereas contact with family members better discriminate smoking among women. Only contact with family had a linear relationship with current smoking for Bangladeshi men, and this measure of associational activity also emerged more strongly for current smoking among African Caribbean men and women.

7.2.3 Experiential

Table 7.4 focuses on how the experience of crime is associated with gender and ethnic variation in current smoking. Although not explicitly related to the area in which respondents live, being the victim of crime or attack (including both interpersonal and property crime) in the last year may have a profound influence on the way in which gender and ethnic groups come to perceive their surrounding environment. Experience of crime or verbal attack may be associated with greater cigarette smoking, mediated for example by greater stress, anxiety and feelings of powerlessness and vulnerability. Included in this measure of reported crime are racially motivated attacks, both physical and verbal. Within each minority ethnic group, a very small number reported any crime, therefore the results in Table 7.4 combine together all minority ethnic men and women and compare the relationship between reported crime and smoking with that among white adults.
<table>
<thead>
<tr>
<th></th>
<th>FRIENDSHIP NETWORKS</th>
<th>FAMILY NETWORKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1 contact</td>
<td>2-3 contact</td>
</tr>
<tr>
<td><strong>Men aged 20-60</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>42</td>
<td>38</td>
</tr>
<tr>
<td>Indian</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Pakistani</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td><strong>Women aged 20-60</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>Indian</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Pakistani/ Bangladeshi</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

(Base numbers shown on Figures 7.3 and 7.4)

**Source:** HEA BMEG and HALS surveys, 1992
Table 7.4  Age standardised prevalence of cigarette smoking for gender and ethnic 
groups by experience of crime in the last year

<table>
<thead>
<tr>
<th>Whether or not victim of crime</th>
<th>Men</th>
<th>Women</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age standardised percentages (with 95% Confidence Intervals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White adults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>36 (29.4-41.7)</td>
<td>38 (32-44.2)</td>
<td>37 (32.5-41.2)</td>
</tr>
<tr>
<td>No</td>
<td>35 (32.2-37.3)</td>
<td>36 (33.8-38.1)</td>
<td>35 (33.8-37.1)</td>
</tr>
<tr>
<td>Minority ethnic adults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32 (25-39.4)</td>
<td>16 (10.8-20.9)</td>
<td>20 (18.4-21.6)</td>
</tr>
<tr>
<td>No</td>
<td>36 (33.1-39.1)</td>
<td>8 (6.2-8.9)</td>
<td>24 (19.3-28.2)</td>
</tr>
<tr>
<td><strong>Base numbers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total white (n reporting crime)</td>
<td>1609 (246)</td>
<td>2099 (241)</td>
<td>3708 (487)</td>
</tr>
<tr>
<td>Total minority ethnic (n reporting crime)</td>
<td>1183 (181)</td>
<td>1499 (181)</td>
<td>2682 (362)</td>
</tr>
</tbody>
</table>

*Source:* HEA BMEG and HALS surveys, 1992
Smoking prevalence was broadly comparable for white adults regardless of whether or not they reported experiencing any crime or attack over the last year. For white men and women, the proportion of current smokers was only marginally higher when a crime was reported than for those who did not report any crime. For minority ethnic adults, the results suggested smoking was less likely for those who had been a victim of a crime (20 percent) compared to those who had not (24 percent) but this difference was not statistically significant. For minority ethnic groups, smoking was lower when any crime had been reported over the last year, but this was much more marked for women than for men.

7.2.4. Summary

Thus far, the analysis of social embeddedness has found that associational activity and subjective perceptions about the quality of neighbourhood are tied to variations in current smoking among many gender and ethnic groups, but tend to be strongest for white adults. The nature of these relationships vary; greater social involvement with friends and family, along with engagement in community based groups, were generally associated with lower smoking, but an opposite or absent trend was suggested for South Asian women.

7.3. MULTIVARIATE ANALYSIS OF CURRENT SMOKING

Logistic regression is used in this section to examine how all available measures of social embeddedness from each of the three domains; subjective perceptions, associational activity and experiential, modify ethnic differences in current smoking for men and women in the HEA surveys. The contribution of social embeddedness to current smoking is assessed both before and after adjusting for socio-economic differences in this behaviour identified in Chapter 6 using data from the HSE. This approach will show the relative importance of social embeddedness and socio-economic measures to smoking. It is important to do this, not only because the previous chapter showed that educational level, social class and material deprivation were each strongly associated with smoking for men and women aged 20-60, but also
because socio-economic position is likely to enable or constrain patterns of social activity and area of residence (see Chapter 3).

The logistic regression model presented in Table 7.5 for men and women uses HEA data but is presented in a similar way to the analysis in Chapter 6 using the Health Survey for England. The first model in Table 7.5 presents the odds ratios of being a current smoker when age (in 5-year groups) and ethnic group were included in the models for men and women.

For both sexes, ethnic differences in smoking were highly statistically significant. The odds of being a current smoker were approximately two-times higher for Bangladeshi men relative to white men. By contrast, Indian men had a significantly lower odds ratio of smoking, and smoking for Pakistani men was comparable to white men. The results show that, although higher by about one-third, the odds of smoking for African Caribbean men were not significantly different from white men. Ethnic patterning in cigarette smoking was different for women than for men because the prevalence of smoking was substantially lower for minority ethnic women than for white women. The odds of being a smoker were reduced by more than 90 percent for Indian, Pakistani and Bangladeshi women relative to white women and by 36 percent for African Caribbean women.

(i) Controlling for measures of social embeddedness

The second models for men and women in Table 7.5 include all measures of social embeddedness available in the HEA surveys. These are grouped according to the whether they represent the subjective perceptions domain, associational activity or experiential domain. Thus, the relationships between social embeddedness and smoking can be discerned separately for men and women of working age and it is possible to assess the extent to which controlling social embeddedness modifies the substantial ethnic variation found in current smoking for both sexes.
### Table 7.5 Odds ratios for current cigarette smoking for men and women aged 20-60 years

<table>
<thead>
<tr>
<th></th>
<th><strong>Men</strong></th>
<th></th>
<th><strong>Women</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 1</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>n.s</td>
<td>n.s</td>
<td>n.s</td>
<td>+++</td>
</tr>
<tr>
<td><strong>Ethnic group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>1.32</td>
<td>1.33</td>
<td>0.78</td>
<td>0.64***</td>
</tr>
<tr>
<td>Indian</td>
<td>0.66**</td>
<td>0.74*</td>
<td>0.50***</td>
<td>0.05***</td>
</tr>
<tr>
<td>Pakistani</td>
<td>1.05</td>
<td>1.13</td>
<td>0.65***</td>
<td>0.03***</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>2.01***</td>
<td>2.13***</td>
<td>0.99</td>
<td>0.09***</td>
</tr>
<tr>
<td><strong>(1) Subjective Perceptions Domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbourhood perception score</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>High (+ve)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Medium</td>
<td>1.06</td>
<td>1.26</td>
<td></td>
<td>1.37***</td>
</tr>
<tr>
<td>Low</td>
<td>1.25*</td>
<td>1.73***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived close friends and relatives</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>n.s</td>
</tr>
<tr>
<td>Close friends and relatives</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td>No close friends and/or relatives</td>
<td>1.16</td>
<td>1.12</td>
<td></td>
<td>1.03</td>
</tr>
<tr>
<td><strong>(2) Associational activity Domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community activity (quasi-formal)</td>
<td>+++</td>
<td>+++</td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>Yes</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>1.80***</td>
<td>1.55***</td>
<td></td>
<td>2.26***</td>
</tr>
<tr>
<td>Informal associational activity with friends</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>n.s</td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>0.99</td>
<td>1.02</td>
<td></td>
<td>1.03</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>1.12</td>
<td>1.14</td>
<td></td>
<td>1.03</td>
</tr>
<tr>
<td>Informal associational activity with relatives</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>n.s</td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>1.19</td>
<td>1.21</td>
<td></td>
<td>1.28</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>1.14</td>
<td>1.14</td>
<td></td>
<td>1.28</td>
</tr>
<tr>
<td><strong>(3) Experiential Domain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victim of any crime in last year</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>n.s</td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>0.98</td>
<td>1.27</td>
<td></td>
<td>1.46**</td>
</tr>
<tr>
<td>Problem neighbours in last year</td>
<td>n.s</td>
<td>n.s</td>
<td></td>
<td>n.s</td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>1.37</td>
<td>1.96</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

N= 2732  
Δ-2LLR (Δ df)= 414.11 (11), 94.6 (19), 248.9 (27)  
3518  
513.9 (11), 674.7 (19), 781.3 (27)  
+++ Significance of variable in the model, +P<0.05, ++P<0.01, +++P<0.001. Significance of difference from reference category. *P<0.05  
**P<0.01, ***P<0.001. 1 SES variables=educational level, social class and material deprivation score  
Source: HEA BMEG and HALS surveys, 1992
For the subjective perceptions domain, perceived quality of neighbourhood was significantly associated with smoking for both sexes although the results show that this was stronger for women than for men. For women, the odds of smoking were 73 percent higher for those with a low neighbourhood perception score compared with a lesser 25 percent for men. For both sexes, no significant difference was found in the odds of current smoking between the reference category (high score) and a medium neighbourhood perception score. Unlike neighbourhood perceptions, appraisal of close friends and/or relatives was not associated with current smoking; those who perceived a lack of close friends and/or relatives had odds of current smoking that were comparable with the reference category - particularly women.

Associational activity, based on reported involvement in community based groups was strongly associated with lower smoking for both sexes. The odds of being a current smoker were more than two-times higher for women who were not involved in any community-based groups in the last two-weeks, compared with a statistically significant increase of 80 percent for men. Hence, the relationship between associational activity and current smoking was of greatest magnitude for women aged 20-60. In contrast, informal measures of associational activity, based on the reported number of different contacts with friends or with relatives over a two-week period, did not show any significant association with the smoking status of men or women. However, very modest trends are suggested by the pattern of odds ratios shown in Table 7.5 and these are briefly commented upon here because they suggest gender differences in the relationship between social contacts and smoking. A very slight increase in the odds ratio of smoking was suggested for men, but not women, who reported least social involvement with friends (OR. 1.12). Conversely, the consistent increase in the likelihood of being a smoker, found as the number of different contacts reported with relatives became lower, was more marked for women. This suggests that contact with relatives is more important than contact with friends for understanding the smoking behaviour of women, but overall, the associations between smoking and these measures of social embeddedness were very weak and non-significant in the models for both sexes.
The results in Table 7.5 show that measures of crime and problem neighbours in the experiential domain were not significantly related to current smoking for either sex. For women only, the odds ratio for those who had experienced a crime in the last year was consistent with greater smoking, but this was a modest difference from the reference category of women who reported no such experience. Men and women who reported problems with neighbours over the last year were more likely to be current smokers than those who did not, but these were not statistically significant differences.

Ethnic group remained highly statistically significant in the model after controlling for measures of social embeddedness and the odds ratios of current smoking for minority ethnic men and women were only slightly modified. Although slight, these changes were more evident for men than for women despite the earlier finding that social embeddedness measures were related most strongly to women’s smoking behaviour. This suggests that, whilst social embeddedness is important for all women, it does not contribute to ethnic inequality in current smoking behaviour, namely the markedly lower smoking of minority ethnic women relative to white women.

After controlling for measures of social embeddedness, the odds of current smoking for many minority ethnic men relative to white men became higher. For Bangladeshi men, the odds ratio of being a smoker increased from 2.01 in Model 1 to 2.13 in Model 2 and there was a modest increase in the odds ratio of smoking for Pakistani men, amplifying the difference from white men. The odds of current smoking also increased for Indian men, but in so doing became closer to the reference category of white men. However, Indian men remained significantly less likely than white men to smoke after taking into account perceptions of neighbourhood, community activity and contact with friends and family. Unlike for South Asian groups, controlling for social embeddedness measures had no effect on the odds of smoking for African Caribbean men.

The substantial ethnic differences in cigarette smoking found for women remained robust after taking into account social embeddedness. The odds of smoking for
African Caribbean women relative to white women were slightly reduced from 0.64 to only 0.60 once social embeddedness was taken into account but for other minority ethnic women remained unchanged. Thus, social embeddedness appears to have no effect on ethnic differences in smoking among women.

(i) Adjusting for socio-economic variation in smoking
The final models in Table 7.5 control for the three socio-economic measures that were identified as correlates of smoking in the previous chapter, namely educational level, occupational social class and material deprivation. The relationships between socio-economic measures and smoking were statistically significant for men and women and, because comparable to those reported in Chapter 6, are not shown in Table 7.5. However, the finding in both data-sets that current smoking has a strong socio-economic basis underlies the important contribution of socio-economic disadvantage to smoking behaviour. The discussion here centres on how socio-economic position modifies the relationships between ethnicity and smoking for men and women compared with social embeddedness.

The results in model 3 show a striking decrease in the odds of smoking for Bangladeshi men when socio-economic differences are taken into account, from an odds ratio of 2.13 in Model 2 to OR 0.99 in Model 3 (Table 7.5). The likelihood of being a smoker was therefore no longer significantly higher for Bangladeshi men than for white men. A sizeable decrease in the odds of being a current smoker was also evident for Pakistani men who became significantly less likely to smoke than white men after controlling for socio-economic characteristics. This decrease was more modest for African Caribbean men, but reduced the odds ratio of current smoking to 0.78. After including socio-economic measures in the model, the odds of smoking for Indian men were further reduced to half that of white men. These changes strongly suggest that socio-economic disadvantage makes a large contribution to ethnic differences in smoking behaviour. Poor socio-economic conditions could fully explain the higher prevalence of smoking among Bangladeshi men relative to white men. The significant difference in smoking between white men and Indian or Pakistani men became more pronounced after controlling for socio-economic position.
Men in these minority ethnic groups suffer greater socio-economic disadvantage than white men and, despite the lower overall prevalence of smoking among Indian and Pakistani groups, current smoking behaviour is linked to poor socio-economic position.

The same finding was evident for groups of South Asian women; the odds ratio of smoking was halved for Bangladeshi women after taking into account socio-economic inequality. The association between being white and current smoking becomes even stronger for women after adjusting for socio-economic position along with social embeddedness. For African Caribbean women, controlling for socio-economic position reduced the odds ratio of smoking by about half, from 0.60 to 0.33. Thus, ethnic differences in smoking for women become greater when socio-economic factors were taken into account because, despite being less likely than whites to smoke, minority ethnic women are more likely to occupy disadvantaged positions associated with greater smoking.

When socio-economic measures were included in the model, some of the relationships between social embeddedness measures and smoking for men and women were modified. The association between negative perceptions of neighbourhood and smoking for men was not independent of socio-economic factors; the odds ratio for those with a low neighbourhood perception score became comparable to the reference category. This was not the case for women where, although weakened, the odds of smoking for those with poor perceptions of neighbourhood were still significantly increased by 46 percent. As the largest ethnic group in the logistic model is white, this is likely to primarily reflect the finding in Figure 7.1 that perceptions of neighbourhood are better discriminators of smoking for white women than for white men.

Reported activity in community based groups, but not contact with friends or relatives, continued to be associated with significantly lower smoking for men and women after controlling for socio-economic differences. With the exception of South Asian
women, this measure of social embeddedness was found earlier to be the most consistently related to smoking for different ethnic groups (Figure 7.2).

Unlike reported problems with neighbours in the last year, controlling for socio-economic position meant that experience of crime became significantly associated with higher smoking among women (OR. 1.46). No such change was evident for men, for whom both experiential measures of social embeddedness remained unrelated to current smoking. This could suggest that being the victim of a crime has a greatest relative impact on women’s smoking behaviour (as shown in Table 7.4), although it can be problematic to infer a causal relationship between a reported incident of crime and smoking.

7.4. DISCUSSION

This chapter has shown that subjective perceptions of neighbourhood, forms of associational activity and experience of crime or attack were generally weak correlates of smoking within minority ethnic groups. There was some evidence to suggest that social embeddedness may have a role in promoting healthier behaviour, but this could not be generalised across all gender and ethnic groups. Pakistani and Bangladeshi women who were active in the community or who had a high level associational activity, were more likely to be smokers than those who did not.

The relationship between social embeddedness and smoking was inconsistent for different gender and ethnic groups and dependent to some degree on the measure used. Subjective perceptions of neighbourhood were most consistently related to smoking for white adults, particularly women, but positive appraisals of neighbourhood were not associated with healthier behaviour for Pakistani and Bangladeshi groups. A general finding was that participation in community based groups was positively associated with lower smoking across different gender and ethnic groups, with the notable exception of Pakistani and Bangladeshi women. By contrast, informal associational activity, shown by contact with friends or relatives, produced only
modest differences in smoking, which disappeared after socio-economic position was taken into account.

Social embeddedness did not emerge as a key explanation for inequality in smoking among working age men and women, nor did it modify ethnic differences in this behaviour. This is in marked contrast to socio-economic differences found in smoking. The likelihood of being a smoker was consistently associated with disadvantaged socio-economic position for men and women and could fully account for the high prevalence of smoking among Bangladeshi men relative to white men.
Chapter 8: Socio-economic position and Health

Introduction

Studies concerned with social inequality and health have been dominated by investigation of social class differences in health beliefs (Pill & Stott, 1985), health status (Townsend & Davidson, 1982) and health service use (Benzeval, Judge & Smaje, 1995) - all of which may contribute to the consistent finding of the poorest health among adults located in the lower social classes (Blaxter, 1990; Blane, 1997). However, the limitations of class-based analyses of health inequality are increasingly recognised at both a theoretical and conceptual level. Critics argue that the concept of social class itself remains under-theorised and is limited in its ability to capture the complexity of modern social life (Higgs & Scambler, 1998). Attention has increasingly focused on other structures of social inequality, including gender and ethnicity, and how these may intersect with class-based divisions (Bradley, 1997). As well as better understanding the linkages between class and health for different social groups, such an approach also highlights the conceptual difficulties of using class to represent the socio-economic position of women and minority ethnic groups in particular. As discussed in Chapter 2, reliance on occupational social class raises issues about the classification of non-employed groups (Arber, 1997b), the never worked and the occupationally mobile. As a consequence, it is often unclear to what extent social class gradients in health reflect factors intrinsic to occupation, other socio-economic factors such as material living conditions or the lifestyle of different socio-economic groups.

The analysis of health inequality presented in this chapter seeks to address how social class inequality in health intersects with inequality associated with divisions of gender and ethnicity. The significance of occupational class for the health of different gender and ethnic groups is assessed relative to other measures of socio-economic position, namely material deprivation and educational level. This is
achieved using data on socio-economic position and self reported general health from the 1993-1996 Health Survey for England.

Reported morbidity increases with advancing age (Yuen et al. 1990) and age cohorts differ in their socio-economic position (Berkman & Macintyre, 1997), perceptions of neighbourhood (Cooper et al. 1999) and smoking behaviour (Bennett et al. 1995), hence all of the analyses standardise for age in 10-year age groups. Age standardisation also allows for variation in the age profile of white and minority ethnic populations, namely the more 'youthful' age profile of minority groups arising from patterns of migration and fertility (Haskey, 1997).

The analysis presented in this chapter first investigates the relationships between gender and health and then uses measures of educational level, occupational class and material deprivation to analyse the nature of socio-economic inequality in health for men and women. It is therefore possible to assess the relative importance of social class for the health of men and women compared to other socio-economic indicators.

Having examined the socio-economic correlates of health for both sexes, it is then argued that a consideration of ethnic inequality in health highlights new patterns of health inequality between the sexes that are otherwise obscured. In particular, the analysis draws attention to ethnic variation in health among men and women, as well as gender differences in reported health within white and minority ethnic groups. This gender and ethnic patterning in health is then related to each socio-economic measure to assess the extent to which different measures of socio-economic disadvantage underlie the health of these groups.

8.1. GENDER AND HEALTH

The finding of poorer self-assessed health among women than men (e.g. Verbrugge, 1983) prompted many studies investigating whether this female 'excess' of poor health can be attributed to the disadvantaged social position of...
women relative to men (Popay et al. 1993; Macran et al. 1996; Arber & Cooper, 1999a). A number of studies have found socio-economic gradients in reported health for women, but the magnitude of these differences often varies according to the measure used to represent their socio-economic position. Aside from the debate about whether married women should be assigned a class position based on their own occupation or that of their husband (Arber, 1997a), educational qualifications and material circumstances offer alternative and potentially more sensitive socio-economic discriminators of health. It is therefore important to include different socio-economic measures in analyses and to critically assess their utility in differentiating women's health.

Table 8.1 shows that a higher percentage of women than men reported 'less than good' health within 10-year age groups. However, these gender differences were modest and only reached statistical significance at ages 20-29 and 40-49. For both sexes, the likelihood of poor health was greater in older age groups, thus highlighting the importance of standardising for age differences in health in these analyses. The standardised percentages shown in Table 8.1 were 17.6 percent for men and 19.1 percent for women. Although there was only a 1.5 percent gender difference in reported health, the confidence intervals show that this was a statistically significant one, owing to the large sample size in the HSE. This finding of only a modest gender difference in self-assessed health appears to support the conclusion of Macintyre et al. (1996) that the health of men and women in the UK has converged in the 1990s.

The analysis now compares the socio-economic correlates of health for men and women and considers whether gender inequality in educational qualifications, occupational class position and material living conditions may contribute to the slightly poorer health found for women.
Table 8.1  Gender differences in reported 'less than good' health

<table>
<thead>
<tr>
<th>Age</th>
<th>Men</th>
<th>Women</th>
<th>Sex Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
</tr>
<tr>
<td>20-29</td>
<td>13</td>
<td>4906</td>
<td>15</td>
</tr>
<tr>
<td>30-39</td>
<td>14</td>
<td>5883</td>
<td>15</td>
</tr>
<tr>
<td>40-49</td>
<td>18</td>
<td>5351</td>
<td>21</td>
</tr>
<tr>
<td>50-60</td>
<td>27</td>
<td>4653</td>
<td>28</td>
</tr>
<tr>
<td>Age standardised %</td>
<td>17.6</td>
<td>19.1</td>
<td>1.06 **</td>
</tr>
<tr>
<td>CI (95 percent)</td>
<td>(17.1-18.1)</td>
<td>(18.6-19.6)</td>
<td></td>
</tr>
</tbody>
</table>

* Statistical significance of gender difference in health; **P<0.01.
Age standardised in 10-year age groups

Figure 8.1  Age standardised prevalence of 'less than good' health by educational level: men and women aged 20-60.  
[base numbers in brackets]

Source: Health Survey for England, 1993-96
Figure 8.2 Age standardised prevalence of 'less than good' health by socio-economic group (SEG): men and women aged 20-60.
[base numbers in brackets]

(i) Educational qualifications

Inequalities in health based on highest educational qualification are shown in Figure 8.1. When results are presented separately by gender, it can be seen that the relationship between level of education and health does not differ for men and women aged 20-60. Adults without educational qualifications were most likely to report poor health and reported morbidity became lower for those with a higher level of educational attainment. Overall, these differences between educational groups were very similar for men and women, with approximately 30 percent of the unqualified group reporting poor health. For both sexes, the reported health of those with A’ Level or GCSE level qualifications was comparable after standardising for age, thus level of secondary educational attainment did not differentiate health. However, women with a higher level of qualification were slightly more likely than men in the same educational category to report poor health. However, morbidity for both sexes was lower than for any other educational group.

(ii) Occupational social class

Figure 8.2 uses a measure of occupational social class to assess inequalities in health for men and women. A separate category has been added to represent the never employed, a group that includes a disproportionate number of women. For both sexes, class position is based on the classification of their current or last main occupation into a socio-economic group (SEG). The results in Figure 8.2 show that this measure of individual class position is associated with marked inequality in health for both sexes, despite debate about the ability of this measure to adequately represent women’s socio-economic position (Annandale & Hunt, 1999).

Women classified in professional or managerial occupations had the lowest reported morbidity (13 percent) and this was slightly higher at 15 percent for women in the routine non-manual class. The percentage reporting poor health became consistently greater for women in the skilled manual class (21 percent),
semi-skilled or unskilled class (27 percent). Thus, there was a consistent class gradient in women's health based on their current or last main occupation.

The same relationship between occupational class and health was found for men. Approximately one-tenth of professional or managerial men reported poor health compared with 15 percent of men in the routine non-manual class, 21 percent in skilled manual occupations and over one-quarter in the semi-skilled or unskilled class.

Reported morbidity was comparable for men and women in the manual social classes, but women whose occupational class was professional or managerial were slightly more likely to report 'less than good' health than men in this socio-economic group. Gender segregation within the labour market means that men are over-represented in professional or managerial occupations; 39 percent of working-age men and only 27 percent of working-age women in the HSE were in this class. Within this 'advantaged' social class, gender inequality in working conditions or pay, for example, may place women at a disadvantage relative to men. For both sexes, poor health was particularly likely among the small proportion of working-age adults who had never had a paid job. However, a higher percentage of never employed women than men reported 'less than good' health. (To interpret this finding, it is important to recognise that 3.5 percent of working-age women in the HSE were never employed compared with only 1.5 percent of working-age men). The reasons for never having had a paid job are also likely to be gendered. In the HSE sample of never employed men aged 20-60, approximately one-third reported a longstanding illness which could mean these men are excluded from the labour force due to ill-health or disability. By contrast, never employed women are more likely than men to report looking after the home and family (73 percent compared with 2.4 percent of never employed men). Previous studies suggest that the association between never employment and health for women can only be partly explained by health selection out of the labour market (Macran et al. 1996).
<table>
<thead>
<tr>
<th>Material Resources</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>CI (95%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Home Owned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>(13.9-14.9)</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>(28.5-31.2)</td>
</tr>
<tr>
<td><strong>Central Heating in household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>(15.8-16.8)</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>(22.9-25.9)</td>
</tr>
<tr>
<td><strong>Telephone in household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>(15.8-16.9)</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>(31.6-36.5)</td>
</tr>
<tr>
<td><strong>Car in household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>(14.8-15.8)</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>(31.1-34.6)</td>
</tr>
<tr>
<td><strong>Anyone in household receives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>(14.3-15.4)</td>
</tr>
<tr>
<td>Yes</td>
<td>35</td>
<td>(33.6-37.1)</td>
</tr>
</tbody>
</table>

**Source:** Health Survey for England, 1993-1996
(iii) Material deprivation

Table 8.2 examines how the availability of material resources within the household is associated with the health of men and women. The results show that a lack of any one of the household material resources listed in this table was associated with poorer health for men and women. Thus home ownership, access to central heating, a car or telephone and non-reliance on Income Support, were each associated with better health.

Although the nature of these relationships did not differ by gender, the results were consistent with higher morbidity among women than men who had access to the same material resource. Women who had access to central heating or a telephone reported significantly poorer health than men living in the same material circumstances.

Figure 8.3 combines the items in Table 8.2 into a material deprivation score. A high material deprivation score (3+) indicates maximum material deprivation on these measures, and a score of zero reflects the most materially advantaged group. The results show a clear linear relationship between material deprivation score and health for both sexes. Approximately 40 percent of men and women who were most materially deprived (score 3+) on this measure reported ‘less than good’ health and reported morbidity became consistently lower for more materially advantaged groups. At each level of material deprivation, the percentage reporting poor health was comparable for men and women, therefore there was very little gender difference in the relationship between material deprivation score and health.
Figure 8.3  **Age standardised prevalence of 'less than good' health by material deprivation score: men and women aged 20-60.**  
[base numbers in brackets]

8.1.1 Summary of gender differences in health

Using reports of ‘less than good’ health as an indicator of morbidity, the results showed only modest gender differences in health. This finding is supported by other recent studies using measures of general health (Matthews et al. 1999) and chronic illness (Macintyre et al. 1996).

For both sexes, there was striking evidence of socio-economic inequalities in health after standardising for age differences. There were gradients in self-assessed health based on educational qualifications, social class and material deprivation. The pattern of these inequalities was very similar for men and women; disadvantage on any one socio-economic measure was associated with poor health. Unlike some other studies, there was no evidence that social class gradients in health based on individual occupation were weaker for women than for men. This supports research where similar patterns of educational and class inequality in health has been found for men and women of working age (Matthews et al. 1999).

It is important however to acknowledge that modest differences in reported health were found for men and women within the same socio-economic group which suggest that these positions may be differentially experienced by women and men (Popay et al. 1993). A small ‘excess’ in morbidity was evident for women in the professional and managerial class. Women who were never employed, or highly educated were also more likely to report poor health than men in these groups, but the opposite gender difference was found for adults with ‘other’ qualifications. In contrast to class and education, it is notable that a measure of material deprivation was least subject to gender variation in its relation with poor health.

8.2. CONNECTING GENDER WITH ETHNICITY

Compared with gender and class, there has been much less investigation of ethnic inequality in health. However, large-scale British surveys that compare self-assessed health across ethnic groups have found that minority ethnic groups
generally report poorer health than the majority white population (Nazroo, 1997; Rudat, 1994). Differences in health between minority ethnic groups highlights diversity; Pakistanis and Bangladeshis often have the highest levels of morbidity, with Indian and African Caribbean adults reporting better health in comparison. The analysis here is concerned, firstly, to investigate the extent of ethnic inequality in self-assessed health using the HSE and secondly, to focus on how this intersects with gender based inequality in health reported earlier.

Table 8.3 shows the percentage of white, African Caribbean, Indian, Pakistani and Bangladeshi adults who reported ‘less than good’ health within 10-year age groups. With the exception of the youngest age group (20-29), the likelihood of reporting poor health was greater for minority ethnic adults. There were, however, notable differences in health among minority ethnic groups, with poor health most commonly reported by Pakistani and Bangladeshi adults. The results for 50-60 year olds show that more than half of African Caribbeans, Pakistanis and Bangladeshis reported poor health compared with 41 percent of Indians and only 27 percent of whites. These results suggest that ethnic inequality in health is most marked for older age groups and show that the likelihood of reporting poor health generally increases faster with advancing age for adults from all ethnic groups. After standardising for these age-related differences, marked ethnic inequality in health was still evident. The best health was found for white adults with morbidity significantly higher for all minority ethnic groups by comparison. Morbidity was greater for Pakistani and Bangladeshi adults, of whom 38 percent rated their health as ‘less than good’, than for African Caribbean and Indian adults at 30 percent and 27 percent respectively.

Table 8.4 summarises these ethnic inequalities in health using ratios of health disadvantage. These ratios show the higher reported morbidity of each minority ethnic group relative to whites of the same age. Ethnic inequality in health was less marked for adults in their 20’s than for older age groups. All minority ethnic adults aged 30-39 had significantly poorer health than whites of the same age.
<table>
<thead>
<tr>
<th>Age Group</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
<th>P (Sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>14</td>
<td>18</td>
<td>16</td>
<td>23</td>
<td>12</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>N=</td>
<td>9870</td>
<td>152</td>
<td>235</td>
<td>176</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>14</td>
<td>23</td>
<td>22</td>
<td>32</td>
<td>40</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>11634</td>
<td>188</td>
<td>304</td>
<td>128</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>19</td>
<td>30</td>
<td>30</td>
<td>41</td>
<td>30</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>10623</td>
<td>86</td>
<td>235</td>
<td>78</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>50-60</td>
<td>27</td>
<td>53</td>
<td>41</td>
<td>60</td>
<td>75</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>9436</td>
<td>92</td>
<td>126</td>
<td>48</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Age standardised %  
CI (95%)  
N=

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
<th>P (Sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>18</td>
<td>30</td>
<td>27</td>
<td>38</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(17.4-18.2)</td>
<td>(26.4-34.5)</td>
<td>(23.9-29.8)</td>
<td>(33.3-43.2)</td>
<td>(29.9-46.8)</td>
<td></td>
</tr>
<tr>
<td>N=</td>
<td>41563</td>
<td>518</td>
<td>900</td>
<td>430</td>
<td>116</td>
<td></td>
</tr>
</tbody>
</table>

Table 8.4  Ratios\(^1\) of 'less than good' health for minority ethnic groups relative to whites by age

<table>
<thead>
<tr>
<th>Age</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>14 (1.00)</td>
<td>1.29</td>
<td>1.14</td>
<td>1.64 ***</td>
<td>0.86</td>
</tr>
<tr>
<td>30-39</td>
<td>14 (1.00)</td>
<td>1.64 ***</td>
<td>1.57 ***</td>
<td>2.29 ***</td>
<td>2.86 ***</td>
</tr>
<tr>
<td>40-49</td>
<td>19 (1.00)</td>
<td>1.58 **</td>
<td>1.58 **</td>
<td>2.16 ***</td>
<td>1.57</td>
</tr>
<tr>
<td>50-60</td>
<td>27 (1.00)</td>
<td>1.96 ***</td>
<td>1.52 ***</td>
<td>2.22 ***</td>
<td>2.77 ***</td>
</tr>
</tbody>
</table>

Age standardised %  18 (1.00) | 1.66       | 1.50       | 2.11       | 2.11

\* Statistical significance of difference from whites in the same age group; **P<0.01; ***P<0.001.

\(^1\) Ratio of poor health for minority ethnic adults relative to whites in each age group

The health disadvantage of Pakistanis and Bangladeshis in this age group is clearly evident from the ratios in Table 8.4; these were 2.29 for Pakistanis and 2.86 for Bangladeshis compared with 1.64 and 1.57 for African Caribbean and Indian adults respectively. Significant differences in health between white and minority ethnic groups were found for the 40-49 and 50-60 age groups where the ratios were substantially higher for all minority ethnic groups relative to whites. The ratio of health disadvantage was more than two times higher for Pakistanis and Bangladeshis aged between 50 and 60 than for older white adults. When standardised for age, the ratios of health disadvantage compared to whites were 2.11 for Pakistanis and Bangladeshis, 1.66 for African Caribbean adults and 1.50 for Indians. Whilst these results confirm other surveys showing marked ethnic patterning in health (Nazroo, 1997; Rudat, 1994), they potentially obscure gender differences in the relationship between ethnic group and health. These relationships are shown in Table 8.5 where age standardised reported 'less than good' health is shown for men and women from each ethnic group. A sex ratio of health disadvantage (women/men) is given for each ethnic group.

After standardising for age-related differences, there was only a 1 percent gender difference in the reported health of white adults; 17 percent of white men and 18 percent of white women rated their health as 'less than good'. In contrast, the poorer health of African Caribbean women than men was clearly evident and statistically significant; 23.5 percent of men reported poor health compared with 36 percent of women. The ratio of health disadvantage for African Caribbean adults shows that morbidity among women was approximately one-third higher than for men. The substantial gender difference in health found for African Caribbean adults in this survey is consistent with other studies which have found that reported morbidity, anxiety and depressive neurosis are more common among African Caribbean women than men (Nazroo, 1997; Curtis & Lawson, 2000). There was a gender difference in self-assessed health for Indian adults; the sex ratio for this group shows that poor health among women was approximately one-quarter higher than for men. However, this difference was less marked than for African Caribbean adults and was not statistically significant.
Table 8.5  
Age standardised prevalence of 'less than good' health by gender and ethnic group

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>CI (95%)</td>
</tr>
<tr>
<td>White</td>
<td>17</td>
<td>(16.7-17.7)</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>23.5</td>
<td>(17.6-29.5)</td>
</tr>
<tr>
<td>Indian</td>
<td>24</td>
<td>(19.6-27.7)</td>
</tr>
<tr>
<td>Pakistani</td>
<td>40</td>
<td>(27.7-40.3)</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>36</td>
<td>(25.1-46.2)</td>
</tr>
</tbody>
</table>

¹ Sex ratio of poor health women/men

Table 8.6  Ethnic differences in health for men and women: age standardised  
ratios of 'less than good' health

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>17</td>
<td>23.5</td>
<td>24</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.00</td>
<td>1.38</td>
<td>1.41</td>
<td>2.35</td>
<td>2.13</td>
</tr>
<tr>
<td>Women</td>
<td>18</td>
<td>36</td>
<td>30</td>
<td>42</td>
<td>47</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.06</td>
<td>2.13</td>
<td>1.76</td>
<td>2.47</td>
<td>2.76</td>
</tr>
</tbody>
</table>

**Base numbers**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19330</td>
<td>22233</td>
</tr>
<tr>
<td>Men</td>
<td>206</td>
<td>431</td>
</tr>
<tr>
<td>Women</td>
<td>469</td>
<td>216</td>
</tr>
</tbody>
</table>

1 Ratio relative to white men

**Source:** Health Survey for England, 1993-1996
The results for Pakistanis and Bangladeshis were also consistent with poorer health among women than for men, although the gender difference was relatively modest for Pakistanis. Thirty-six percent of Bangladeshi men reported poor health compared with 47 percent of women. However, this difference did not reach statistical significance and this primarily reflects the small number of men and women in the HSE sample who were Bangladeshi.

Table 8.6 compares the health of white women and men and women from minority ethnic groups with that of white men (because white men had the lowest reported morbidity in Table 8.3). Results are presented in this way to show the extent and nature of health inequality among gender and ethnic groups, and it is not intended that the health of white men be interpreted as the 'norm' from which other gender and ethnic groups deviate. Ratios are used to show the relative health 'advantage' of white men compared to men and women from other ethnic groups after standardising for age.

The high morbidity of minority ethnic groups relative to whites is clearly evident, particularly for minority ethnic women. The ratios of poor health for Pakistani and Bangladeshi men were more than two-times higher relative to white men and higher for African Caribbean and Indian men at 1.38 and 1.41 respectively. The same ethnic pattern in health was evident for women; the lowest health ratio was for Indian women, followed by African Caribbean, Pakistani and Bangladeshi women. However, the health disadvantage of minority ethnic women relative to white men was substantial and the health ratios for women were greater than for men in each minority ethnic group. In contrast to minority ethnic groups, Table 8.6 shows comparable health ratios for white men and women, confirming the lack of gender difference in health for white adults.

These results show that the likelihood of reporting poor health is related to both gender and ethnic group. All minority ethnic adults were disadvantaged in their health relative to whites, but morbidity within minority groups was higher for women than for men. That this gender inequality occurs after standardising for
age is an important finding because gender differences in the timing of migration mean that minority ethnic women tend, on average, to be of a younger age than minority ethnic men and white adults (Blakemore & Boneham, 1994). As a consequence it might be expected that, after taking age into account, minority ethnic women would report better, not worse, health than minority ethnic or white men.

8.3 ETHNICITY, GENDER AND SOCIO-ECONOMIC INEQUALITY IN HEALTH

This part of the analysis examines the nature and magnitude of socio-economic inequality in health for men and women from different ethnic groups. This chapter has reported a strong association between socio-economic disadvantage and poor health for both sexes, but it is important to consider ethnic differences in these relationships firstly, because the labour market is segregated by ethnicity, as well as by gender. Surveys of UK minority ethnic populations - particularly Pakistanis and Bangladeshis - show that they are more likely than whites to occupy disadvantaged labour market positions (Modood et al. 1997). However, the economic activity and employment pattern of different ethnic groups is inextricably linked with gender and leads to differences in employment status, class position and material resources for men and women.

The use of multiple socio-economic indicators to assess inequalities in health can help overcome problems of capturing the socio-economic position of minority ethnic men and women by current or previous occupation. Analyses of the 1994 Fourth National Survey found that a derived ‘standard of living’ measure (not dissimilar to the material deprivation indicator used in this study) better discriminated minority ethnic health than social class (Nazroo, 1997; 1999). That socio-economic measures may differ in their ability to discriminate ethnic inequalities in health is particularly relevant to women’s health because a greater proportion of working-age minority women than men are non-employed or have never worked, particularly among Pakistanis and Bangladeshis.
The results in this chapter have shown broad similarities in the reported health of Pakistanis and Bangladeshis, who share a disadvantaged socio-economic profile relative to other ethnic groups (see Chapter 5). For this reason, and due to the small number of Pakistani and Bangladeshi men and women aged 20-60 in the HSE sample, these ethnic groups are combined for the purpose of further analysis. However, potential differences in the socio-economic correlates of health for men and women belonging to Pakistani or Bangladeshi ethnic groups will be investigated in the logistic regression analyses of health inequality.

(i) Educational level

Figure 8.4 shows gender and ethnic differences in reported health according to highest educational qualification. There was an education gradient in health for white men; 28.5 percent who had no qualifications reported poor health compared with 16.5 percent with GCSE/equivalent or other qualifications and only 11 percent who had an A’Level or higher qualification rated their health as ‘less than good’. A similar linear relationship between educational level and health was evident for Indian and Pakistani/Bangladeshi men where the highest morbidity was among the unqualified groups. This was not the case for African Caribbean men; 20 percent of unqualified men in this ethnic group reported poor health and this was lower than for those with an intermediate level of education (GCSE/equivalent or other). However, consistent with men from other ethnic groups, the lowest morbidity was found for African Caribbean men with A’ Level or higher qualifications.

There was clear evidence of socio-economic inequality in the reported health of white and minority ethnic women based on educational level. The percentage reporting poor health was substantially higher for white women without qualifications than for women with an intermediate or higher level of educational attainment. However, the health differential for white women with GCSE/equivalent or other qualifications and A’Level or higher qualifications was more modest than for minority ethnic women, but comparable to white men.
Figure 8.4  **Age standardised prevalence of 'less than good' health by educational level for gender and ethnic groups**  
[base numbers in brackets]

**Men**

![Chart showing age-standardised prevalence of 'less than good' health by educational level for men.](image)

**Women**

![Chart showing age-standardised prevalence of 'less than good' health by educational level for women.](image)

The education gradient in health was substantial for African Caribbean women; over half who had no qualifications reported poor health compared with 38 percent who had GCSE/equiv or other qualifications and approximately one-quarter of those with a higher level of education. The relationship between education and health was the same for Indian and Pakistani/Bangladeshi women, with markedly higher morbidity for the unqualified at 40 percent and 52 percent respectively.

The results suggest that educational differences in reported health are greater for minority ethnic women than for minority ethnic men. This was particularly the case for African Caribbean adults, where a linear education gradient in health was only found for women. There was a steeper education gradient in reported health for Indian and Pakistani/Bangladeshi women compared to men in these ethnic groups. In contrast, the magnitude of educational inequality in health was comparable for white men and women, with approximately one-tenth in the highest educational group reporting 'less than good' health compared with nearly 30 percent of the unqualified.

These results suggest more similarities than differences in the relationship between educational qualifications and poor health for different gender and ethnic groups. With the exception of African Caribbean men, there was an education gradient in health for all gender and ethnic groups, with poorest health for unqualified groups. However, the magnitude of this gradient varied by gender for all minority ethnic groups, suggesting that educational qualifications are a more sensitive discriminator of poor health reported by minority ethnic women.

(ii) Occupational social class

A measure of social class, based on current or last main occupation, is used in Figure 8.5 to examine inequalities in the health of white and minority ethnic men and women.
Figure 8.5: Age standardised prevalence of 'less than good' health by occupational class for gender and ethnic groups [base numbers in brackets]

**Men**

![Bar chart for men showing 'less than good' health by occupational class and ethnic group]

**Women**

![Bar chart for women showing 'less than good' health by occupational class and ethnic group]

An additional category is added to represent never employed women in each ethnic group, since this represents a sizeable proportion of working-age South Asian women who would otherwise be excluded from this class analysis. Never employed men are, however, omitted from this figure because they constitute only a small proportion of working-age men and this percentage does not vary markedly by ethnicity.

The same class difference in reported health was found for men in all ethnic groups. Reported morbidity was markedly higher for men classified in the manual social class than for those currently or previously employed in non-manual occupations. Class inequality in health was greatest for African Caribbean men; 12 percent in the non-manual group rated their health as ‘less than good’ compared with 28 percent of the manual socio-economic group. The association between social class and health was the same for Pakistani/Bangladeshi men as for other men, but within each class Pakistanis and Bangladeshis had the highest reported morbidity. Over one-quarter of non-manual Pakistani and Bangladeshi men reported poor health compared with only 11 percent of white non-manual men and 12 percent of African Caribbean men.

A health disadvantage was evident for white and minority ethnic women classified in the manual social class in Figure 8.5. Despite the measurement difficulties associated with using an individual measure of occupational class for women and minority ethnic groups, class differences in health were no weaker for minority ethnic women than for white women of working-age. Pakistani/Bangladeshi women who were currently or previously employed in manual occupations had substantially higher morbidity (55 percent) than the non-manual class (31 percent), and a class difference of similar magnitude was found for Indian and African Caribbean women. However, the proportion of working-age women who have never been employed women varies markedly by ethnic group; only 2 percent of white women and 4 percent of African Caribbean women are in this category compared with 16 percent of Indian women and the majority of Pakistani/Bangladeshi women (55 percent). Having never been employed was
associated with the highest morbidity for white women at 41 percent. In contrast, the health of never employed African Caribbean women was comparable with the non-manual class, but the small base number for African Caribbean women in the HSE who had never had a paid job is likely to reduce the reliability of this result. For never employed Indian and Pakistani/Bangladeshi women, reported health was better than for the manual social class, but considerably poorer than for the non-manual socio-economic group. Since the never employed comprise the majority of working-age Pakistani and Bangladeshi women, excluding this group from class analyses of women's health, based on current or previous occupation, is likely to obscure and under-estimate their high morbidity.

Comparing men and women in each ethnic group shows no gender difference in the relationship between occupational class and poor health. For all gender and ethnic groups, higher morbidity was consistently associated with being in a manual social class.

(iii) Material deprivation

Inequalities in health associated with material deprivation are shown in Figure 8.6 for men and women in each ethnic group. There was a substantial material deprivation gradient in reported health for white men and women; approximately 40 percent in the most deprived group (score 3+) reported poor health compared with 22 percent with a score of 1-2 and only 12 percent in the most materially advantaged group. Figure 8.6 shows a similar relationship between material deprivation and poor health for each group of minority ethnic men, albeit of lesser overall magnitude than for white men. A linear relationship was found for African Caribbean and Pakistani/Bangladeshi men, with morbidity concentrated among the most materially disadvantaged. The results for Indian men were consistent with better health among the materially advantaged, but the reported health of Indians with a high material deprivation score (3+) was broadly comparable to those with a lower score of 1 or 2.
Figure 8.6: **Age standardised prevalence of 'less than good' health by material deprivation score for gender and ethnic groups**

[base numbers in brackets]

**Men**

![Graph showing age standardised prevalence of 'less than good' health by material deprivation score for men.]

**Women**

![Graph showing age standardised prevalence of 'less than good' health by material deprivation score for women.]

**Source:** Health Survey for England, 1993-1996
The results for women were consistent with poorer health among the materially deprived. For all ethnic groups, there was a material deprivation gradient in reported health. Approximately half of African Caribbean and Pakistani/Bangladeshi women living in the most materially disadvantaged conditions reported 'less than good' health compared with about one-third in the most materially advantaged group. Inequalities in health associated with material circumstances were also marked for white women; 40 percent who had a high material deprivation score (3+) reported poor health and this became consistently lower as the material deprivation score decreased. The results for women show the same relationship between material deprivation and health for all ethnic groups, although the gradient for Indian women was slightly more modest than for other ethnic groups owing to less difference in the reported health of those with a material deprivation score of 1-2 (36 percent) and 3 or more (38 percent).

There were more similarities than differences in the association between material deprivation and poor health for men and women in each ethnic group, suggesting that the meaning and significance of this socio-economic measure for ethnic inequalities in health does not vary by gender. Only for Indian adults, whose socio-economic profile has more in common with white adults than with other Asian groups, did material deprivation appear to be a poorer discriminator of health than occupational class for both sexes.

8.4 MULTIVARIATE ANALYSIS

This section uses logistic regression analysis, firstly to examine gender and ethnic differences in self-assessed health, and secondly, to assess the extent to which inequality in health across gender and ethnic groups can be accounted for by their differential socio-economic position. To achieve this, models in Table 8.7 explore the relationships between gender, ethnicity and health for working-age adults. The first model examines the gender difference in health after controlling for age in 5-year age groups, the second focuses on the association between ethnicity and health and the third model represents the interaction between gender and ethnicity as a single independent variable in the logistic model.
### Table 8.7
Logistic regression of 'less than good' health by gender and ethnic group

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>44716</td>
<td></td>
</tr>
<tr>
<td>ΔLLR (Δdf)</td>
<td>17.8 (1)</td>
<td>199.2 (9)</td>
</tr>
<tr>
<td>ΔLLR (Δdf)</td>
<td>175.3 (4)</td>
<td></td>
</tr>
<tr>
<td><strong>Statistical significance of variable in the model:</strong></td>
<td>++ P&lt;0.01</td>
<td><strong>Statistical significance of difference from reference category:</strong></td>
</tr>
<tr>
<td><strong>Statistical significance of difference from reference category:</strong></td>
<td><strong>+ P&lt;0.05</strong></td>
<td><em><strong>P&lt;0.001</strong></em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (in 5-year groups)</th>
<th><strong>+++</strong></th>
<th><strong>+++</strong></th>
<th><strong>+++</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender and ethnic group</td>
<td><strong>+++</strong></td>
<td><strong>+++</strong></td>
<td><strong>+++</strong></td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.09***</td>
<td>1.09***</td>
<td>1.09***</td>
</tr>
<tr>
<td>African Caribbean men</td>
<td>1.70***</td>
<td>1.70***</td>
<td>1.70***</td>
</tr>
<tr>
<td>African Caribbean women</td>
<td>2.63***</td>
<td>2.63***</td>
<td>2.63***</td>
</tr>
<tr>
<td>Indian men</td>
<td>2.53***</td>
<td>2.53***</td>
<td>2.53***</td>
</tr>
<tr>
<td>Indian women</td>
<td>3.22***</td>
<td>3.22***</td>
<td>3.22***</td>
</tr>
<tr>
<td>Pakistani men</td>
<td>2.34***</td>
<td>2.34***</td>
<td>2.34***</td>
</tr>
<tr>
<td>Pakistani women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladeshi men</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladeshi women</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Health Survey for England, 1993-1996
Each socio-economic measure is then added sequentially in Table 8.8. The purpose is to assess their independent association with reported 'less than good' health and to judge the relative contribution of each socio-economic measure to gender and ethnic inequality in health by the way in which the odds ratios of poor health are modified for different gender and ethnic groups. In addition to measures of educational level, occupational class and material deprivation, a measure of employment status is included as a structural variable for this part of the analysis. This is because it is important to assess the extent to which the contribution of class to gender and ethnic inequality in health is independent of marked gender and ethnic differences in labour market participation.

Model 1 (Table 8.7) shows significant gender inequality in reported 'less than good' health after controlling for age. The odds of poor health were significantly higher for women relative to men, although the magnitude of this gender difference was modest (OR. 1.10). Ethnic group was strongly correlated with health after adjusting for age differences in Model 2. There were high odds of 'less than good' health for all minority ethnic groups and these were significantly different from the reference category of white adults. Compared to whites, the odds of poor health were more than two-times higher for African Caribbean, Pakistani and Bangladeshi adults and increased by 70 percent for Indians. A combined measure of gender and ethnicity was included in the third model. Comparison of the change in Loglikelihood Ratio (LLR) showed that this measure could account for more of the variation in health than gender or ethnicity included singly. Being white and male was associated with the best health. White women and all minority ethnic men and women had significantly higher odds of poor health relative to white men. In particular, the odds ratios were more than two-times higher for African Caribbean and Indian women and increased three-fold for Pakistani women. The results show that African Caribbean, Indian and Pakistani women had higher odds ratios of poor health than men in each of these ethnic groups, but minority ethnic men were clearly disadvantaged in their health compared to white men. This was most clearly evident for Bangladeshi men whose odds ratio of poor health was higher than for Bangladeshi women. These
substantial gender and ethnic differences in health were all highly statistically significant in the model.

The following four models (4 to 7 in Table 8.8) consider to what extent the high morbidity of minority ethnic adults is mediated by their poor socio-economic circumstances by examining how the odds ratios of poor health are modified by the addition of education, employment status, occupational class and material deprivation.

(i) Educational qualifications
Model 4 includes educational level and this shows a consistent relationship with health. Adults with the highest level of education were least likely to report 'less than good' health; the odds of poor health became consistently greater for those with a lower level of educational qualification and were over 3.4 for those with no qualifications compared to those with a degree or above.

African Caribbean men no longer had a significantly higher odds ratio of morbidity when education was included in model 4, but African Caribbean women continued to have poorer health than white men (OR. 2.46). Educational level made little difference to the odds ratio of poor health for Indian men, and although the odds were reduced for Indian women, their health remained significantly poorer than that of white men. For Pakistanis, the odds of poor health were substantially reduced for both sexes once education was added to the model. A similarly large reduction in the odds ratio of poor health was found for Bangladeshi men, but the greatest change was for Bangladeshi women where the odds of poor health were no longer significantly different from white men.

After controlling for education, there was no gender difference in health for white adults, but women who were African Caribbean, Indian or Pakistani continued to have higher odds ratios of poor health than men from the same ethnic group. The exception was a higher odds ratio for Bangladeshi men than for Bangladeshi women.
Table 8.8 Logistic regression of 'less than good' health with addition of socio-economic measures

<table>
<thead>
<tr>
<th></th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (in 5-year groups)</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td><strong>Gender and ethnic group</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.08***</td>
<td>0.99</td>
<td>0.89**</td>
<td>0.97</td>
<td>0.99</td>
</tr>
<tr>
<td>African Caribbean men</td>
<td>1.61**</td>
<td>1.39</td>
<td>1.25</td>
<td>1.22</td>
<td>1.15</td>
</tr>
<tr>
<td>African Caribbean women</td>
<td>2.55***</td>
<td>2.46***</td>
<td>2.09***</td>
<td>2.26***</td>
<td>1.98***</td>
</tr>
<tr>
<td>Indian men</td>
<td>1.46**</td>
<td>1.47**</td>
<td>1.42**</td>
<td>1.43***</td>
<td>1.50**</td>
</tr>
<tr>
<td>Indian women</td>
<td>2.07***</td>
<td>1.81***</td>
<td>1.47**</td>
<td>1.53**</td>
<td>1.70***</td>
</tr>
<tr>
<td>Pakistani men</td>
<td>2.31***</td>
<td>1.97***</td>
<td>1.61**</td>
<td>1.57**</td>
<td>1.52*</td>
</tr>
<tr>
<td>Pakistani women</td>
<td>3.24***</td>
<td>2.38***</td>
<td>1.43*</td>
<td>1.53**</td>
<td>1.68**</td>
</tr>
<tr>
<td>Bangladeshi men</td>
<td>2.75***</td>
<td>1.94*</td>
<td>1.62</td>
<td>1.66</td>
<td>1.56</td>
</tr>
<tr>
<td>Bangladeshi women</td>
<td>2.31***</td>
<td>1.57</td>
<td>0.93</td>
<td>1.03</td>
<td>1.05</td>
</tr>
<tr>
<td><strong>Educational Qualifications</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Higher</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>A'Level or equiv</td>
<td>1.45***</td>
<td>1.35***</td>
<td>1.23***</td>
<td>1.23***</td>
<td></td>
</tr>
<tr>
<td>GCSE/ O'Level or equiv</td>
<td>1.55***</td>
<td>1.53***</td>
<td>1.34***</td>
<td>1.31***</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.01***</td>
<td>1.90***</td>
<td>1.59***</td>
<td>1.50***</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3.57***</td>
<td>3.04***</td>
<td>2.34***</td>
<td>2.03***</td>
<td></td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Employed full-time (30+ hrs/week)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Employed part-time (&lt;30 hrs/week)</td>
<td>1.22***</td>
<td>1.16**</td>
<td>1.13**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>2.12***</td>
<td>2.01***</td>
<td>1.48***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking after the home</td>
<td>1.92***</td>
<td>1.83***</td>
<td>1.51***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other non-employed</td>
<td>7.24***</td>
<td>7.00***</td>
<td>5.77***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never been employed</td>
<td>2.97***</td>
<td>3.78***</td>
<td>2.74***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socio-economic Group (SEG)</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Professional or managerial</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine non-manual</td>
<td>1.03</td>
<td>1.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled manual</td>
<td>1.49***</td>
<td>1.42***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi or unskilled manual</td>
<td>1.60***</td>
<td>1.42***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Material deprivation score</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Zero (none)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.34***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.77***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3+</td>
<td>2.26***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ LLR (Δ df)</td>
<td>1023 (16)</td>
<td>1219 (4)</td>
<td>2404 (5)</td>
<td>192 (3)</td>
<td>363 (3)</td>
</tr>
<tr>
<td>N</td>
<td>42202</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

++ Statistical significance of variable in the model; +P<0.05; ++P<0.01; ***P<0.001.

** Statistical significance of difference from the reference category; * P<0.05; **P<0.01; ***P<0.001.

Source: Health Survey for England, 1993-6
The differential impact of education on the health of gender and ethnic groups suggests that educational disadvantage is a major factor in accounting for the higher morbidity of white women, African Caribbean and Bangladeshi men relative to white men, and to some extent contributes to the poor health of Pakistanis, Indian and Bangladeshi women. However, adjusting for education does little to alter gender differences in self-assessed health found within minority ethnic groups.

(ii) Employment status and occupational class

One way in which education may influence health is through labour market position. Model 5 shows that both education and employment status had strong and independent relationships with health. Adults of working-age who were employed full-time had the best health, with the odds significantly higher for part-time workers in comparison. Being unemployed or looking after the home were both associated with higher reported morbidity, with odds approximately twice as high compared to the full-time employed. It is, however, impossible here to assess the extent to which poor health precedes job loss or economic inactivity. The highest odds ratio of poor health was for other non-employed groups, which is expected as this category includes the long-term sick and disabled. Adults of working age who have never been employed have three times higher odds of poor health relative to full-time workers.

As shown in Chapter 5 (Table 5.2), a large proportion of Pakistani and Bangladeshi women are classified as never employed. The odds of poor health for Bangladeshi women relative to white men were substantially reduced to less than 1.00 by controlling for employment status. Decreases in the odds of poor health were more than one-third for African Caribbean and Indian women along with Pakistani men after taking into account differences in employment status. With the exception of Indian men, whose employment profile was comparable to white men in Chapter 5 (Table 5.2), these results strongly suggest that the poor position of minority ethnic men and women in the labour market is associated with disadvantaged health.
The odds of poor health for white women were significantly lower than for white men once employment status was included in the model. Thus, controlling for both education and employment status reversed the gender difference in health for white adults found in Model 1. An interaction between gender, work-hours and health may be one explanation for this finding; significant variation has been reported in women's health, for example, depending on whether work hours are part-time, full-time or women are at home (Sacker et al. 2001). Employment status in this study could account for a greater proportion of the poor health reported by Pakistani and Indian women than for men in these respective ethnic groups, thus the gender gap was narrowed for Indians and reversed for Pakistanis. By contrast, marked gender differences in health remained for African Caribbean and Bangladeshi adults.

Model 6 considers how the occupational class of all those currently or previously employed is related to health (the never employed are not excluded from this model and the odds ratios for poor health are reported as a category of the employment status variable). The odds of poor health were increased by 49 percent for the skilled manual class and 60 percent for those classified in semi-skilled or unskilled manual occupations compared to the professional/managerial class, but the health of the routine non-manual class was not significantly different to this group. It is notable that the class gradients in reported health for all working age adults are less marked than those found using educational qualifications to represent socio-economic position.

Controlling for occupational class made little difference to the pattern of health inequality across gender and ethnic groups; the odds of poor reported health remained significantly higher for Indians, Pakistanis and African Caribbean women compared to white men. Prior to adding occupational class, white women reported significantly better health than white men. Controlling for class in Model 6 removed this gender difference for whites but did not alter gender differences in health for minority ethnic groups.
(iii) Material deprivation

The index of material deprivation is the final socio-economic measure added in Model 7. There was a highly statistically significant material deprivation gradient in health; the best health was found for materially advantaged adults on this measure (score zero), rising to an odds ratio of 2.26 for those with a score of 3 or more on the material deprivation index. It is notable that material living conditions appear to reduce the reported health disadvantage for African Caribbean women to a greater extent than either education or occupational class, although African Caribbean women continue to have a significantly higher odds ratio of poor health. This could suggest that education and, particularly occupational class, poorly represent the socio-economic position of these women, if as some authors have suggested, there is a disparity between educational qualifications, occupation and material living conditions (Bruegel, 1994; Krieger et al. 1994).

The results did not suggest that the material living conditions of Indian men and women contributed to their high morbidity, and this is likely to reflect the smaller proportion of Indians than white men and women living in the most materially disadvantaged conditions (see Chapter 5, Table 5.5). There was higher morbidity among Indian and Pakistani women than men after controlling for the measure of material deprivation, but the odds of poor health were significantly greater for both sexes than for white men.

8.4.1 The role of socio-economic disadvantage

The overall contribution of socio-economic position to gender and ethnic inequality in health is shown in Figure 8.7 where odds ratios adjusted only for age are compared with odds ratios when education, employment status, occupational class and material deprivation are taken into account. A key finding is that socio-economic characteristics substantially reduce the magnitude of ethnic inequality in health, especially for African Caribbean, Pakistani and Bangladeshi adults, but taking into account socio-economic inequality cannot account for gender differences in health within all minority ethnic groups.
Figure 8.7: Odds ratios of 'less than good' health for gender and ethnic groups: figures adjusted for age and socio-economic position

Odds ratios from Table 8.8, models 3 and 7.

* Educational level, employment status, occupational class and material deprivation

** Statistical significance of difference of adjusted odds from reference category (white men): ***P<0.001; **P<0.01; *P<0.05

Source: Health Survey for England, 1993-6
Socio-economic disadvantage makes most contribution to the poor health reported by Bangladeshis, and this was more marked for women than for men. Morbidity reported by Pakistanis can also be largely attributed to poor socio-economic circumstances and non-employment, particularly for women. Measures of socio-economic position made less overall contribution to the poor self-assessed health of Indian adults, most notably men, whose socio-economic position was most comparable to white men. A sizeable gender difference in morbidity remained for African Caribbean adults; only women in this ethnic group had a significantly higher odds ratio of poor health after controlling for all the variables in the model.

8.5. DISCUSSION

The finding of little overall gender difference in self-assessed health for white adults of working age contrasts with substantial inequality in health between men and women from different ethnic groups where women consistently report poorer health than men, except among Bangladeshis. Consistent with other studies, reported morbidity was greater for minority ethnic groups than for whites of both sexes, with the greatest health disadvantage found for Pakistanis and Bangladeshis. An additional finding of this study was of marked gender differences in health within minority ethnic groups after standardising for age. It suggests that minority ethnic women report particularly poor health after taking into account their younger average age profile.

Despite the problems associated with the use of socio-economic measures for certain gender and ethnic groups, these accounted for a substantial proportion of inequality in their health. Adjusting for educational qualifications substantially reduced the likelihood of poor health for African Caribbean men, Pakistanis and Bangladeshi women. Being in paid employment was positively associated with good health, and controlling for employment status reduced the odds of poor health for working-age Pakistani and Bangladeshi women — a substantial proportion of whom were non-employed. As expected, occupational class made less contribution to patterns of gender and ethnic inequality in health than
education or employment status, and will be a less inclusive socio-economic measure for some minority ethnic women because of its reliance on current or previous occupation. Material deprivation was independently associated with health and the results suggest that this measure can better account for high morbidity among African Caribbean women than other socio-economic measures.

Whilst socio-economic disadvantage can explain in large part why many minority ethnic adults report poorer health than white men, significant ethnic inequality in health remained after adjusting for socio-economic position, particularly for minority ethnic women. This suggests that socio-economic measures are important, but cannot 'fully' explain gender and ethnic inequality in health for the following reasons; firstly, this analysis does not represent a 'complete' adjustment for social and economic living conditions, or the economic and emotional health consequences of discrimination. There are likely to be measures other than education, class and material deprivation that are perhaps better suited to such an investigation and explanations of health differences associated with ethnicity and gender. After adjusting for socio-economic position, many minority ethnic women had a higher odds ratio of morbidity than men in the same ethnic group. This gender difference was most marked for African Caribbean women, who, unlike African Caribbean men, continued to have significantly higher odds of poor health relative to white men. Part of the explanation may concern a disparity between educational qualifications and class position - where studies suggest African Caribbean women are more 'advantaged' than African Caribbean men - and actual living conditions that are relevant to health (Blackburn et al. 1996).

Secondly, it is recognised that ethnicity is not simply 'reducible' to socio-economic position (Nazroo, 1998). The findings from this study show considerable diversity among ethnic groups who cannot be characterised as uniformly disadvantaged relative to whites. The poor health reported by Indian men, for example, was not due to their socio-economic disadvantage relative to white men, since Chapter 5 showed more similarities than differences in socio-economic position for men in these ethnic groups. However, for other minority
ethnic groups, it is important to show that poor socio-economic conditions have a sizeable impact on health because this detracts from an undue emphasis on individual or cultural explanations that risk stereotyping assumed differences from the white population.

Socio-economic position is only one of many possible determinants of health - the following chapters investigate how socio-economic disadvantage in combination with social embeddedness is related to gender and ethnic inequality in health using the HEA data (Chapter 9) before attention turns to the relative contribution of cigarette smoking (Chapter 10). It is important to examine, for example, to what extent the high level of smoking reported by Bangladeshi men (see Chapters 6 and 7) makes an independent contribution to their poor health and how socio-economic disadvantage experienced by some gender and ethnic groups intersects with subjective perceptions of neighbourhood facilities and safety or patterns of associational activity.
Introduction
The previous chapter showed socio-economic disadvantage could account for much of the high morbidity of minority ethnic groups, particularly Pakistanis and Bangladeshis, but there remained significant ethnic variation in the reported health of some groups of men and women after adjusting for their socio-economic position.

In this chapter, the concept of social embeddedness is investigated for its contribution to the health status of men and women from different ethnic groups. Chapter 3 reviewed research that has focused on the availability and benefits to accrue from social capital within neighbourhoods or communities, but argued that the aggregate approach often in such studies is likely to neglect differences associated with ethnicity and gender that are relevant for understanding inequalities in health. Gender and ethnic inequalities found in the quantity and quality of social support lend support to such an argument (Pugliesi & Shook, 1998). Social embeddedness, derived from a number of different questions in the HEA surveys, aims to capture the sense in which gender and ethnic groups are differentially situated in neighbourhoods and communities in ways that impact upon their subjective perceptions, experiences and associational activity. Previous analyses of the HEA HALS survey for all adults aged 16 and above showed that perceptions of neighbourhood relating to the quality of facilities and safety were more strongly associated with the self reported health of women than men (Cooper et al. 1999). This suggests that the meaning or significance of these kind of measures may be gendered in relation to health, perhaps relating to the differences in the amount of time men and women spend in the local neighbourhood or their participation in social networks built around the care of children and other family members. That ethnicity may further cross-cut gender differences was suggested in Chapter 5 (Table 5.5) for subjective perceptions of neighbourhood and associational activity.
Social embeddedness can be conceptualised as one potential mechanism for inequality among different gender and ethnic groups that may impact upon health. Several authors utilising the concepts of social capital or social support note that strong community networks and normative values may benefit some groups in society but be used to dominate or exclude others, such as those belonging to an ethnic group with minority status (Harriss & De Renzio, 1997; Kawachi, 2000). Far from alleviating health inequality, the nature of social relationships may accentuate health differences if, for example, the benefits associated with community participation are not inclusive and extend across gender and ethnic boundaries. However, to adequately assess the contribution of social embeddedness to inequality in health, it is necessary to control for the differential socio-economic position of gender and ethnic groups. This is because poor socio-economic circumstances are strongly related to poor health and may also crosscut domains of social embeddedness.

The analysis presented in this chapter therefore addresses:

- How the three different domains of social embeddedness: (i) subjective perceptions of neighbourhood, family and friends (ii) associational activity and (iii) experiences of crime and problem neighbours are associated with the reported 'fairly poor' or 'very poor' health of ethnic groups.
- The ways in which gender modifies the nature of these relationships
- The contribution of social embeddedness to gender and ethnic health inequality compared with the contribution of socio-economic inequality.

9.1 ETHNIC AND GENDER INEQUALITY IN HEALTH

Only the HEA surveys included questions relating to social embeddedness, hence it is first necessary to examine the pattern of ethnic and gender inequalities in reported health using this dataset to see how they compare with the HSE analysis in Chapter 8. As discussed in Chapter 5, this is important because the response categories used to represent reported morbidity in these surveys are different. Table 9.1 based on the HEA surveys therefore shows ethnic differences in reported 'fairly poor' or 'very poor' health and not 'less than good' health as reported for the HSE (responses of
‘fair’, ‘bad’ or ‘very bad’ combined). Presenting ethnic patterning in reported poor health for 10-year age groups, Table 9.1 shows a similar positive relationship between increasing age and poor health, with the highest morbidity for the 50-60 age group. Within each age group, the results show a clear health disadvantage for minority ethnic adults compared to whites that increases with age. White adults were less likely to rate their health as ‘fairly poor’ or ‘very poor’ than minority ethnic adults of the same age. Only 4 percent of whites in their 20s reported poor health and this was greater at 6 percent for African Caribbean and Indian adults, 10 percent of Pakistanis and 13 percent of Bangladeshis. Ethnic group was significantly associated with this health measure for each age group, but ethnic inequality in health was particularly marked for adults aged 40-49 and 50-60. In these two older age groups, over 50 percent of Bangladeshis reported poor health and this level of reported morbidity was substantially greater than other ethnic groups. Age standardised percentages of morbidity are reported for each ethnic group at the base of the table. These show the same ethnic pattern in reported health; one-third of Bangladeshis and over 20 percent of Pakistanis reported poor health compared with only 6 percent of whites. Compared to Bangladeshis, morbidity was much lower at 11 percent and 15 percent for African Caribbean and Indian adults respectively, but still substantially higher than for whites. The confidence intervals calculated for each of these standardised percentages confirms that the higher prevalence of poor health among minority ethnic groups relative to white adults is significantly different.

These results are presented as ratios in Table 9.2 to highlight the magnitude of health inequality between white and minority ethnic adults in each age group. The health ratio was significantly higher for Pakistanis and Bangladeshis, demonstrating very high morbidity in these ethnic groups relative to whites at all ages. Indians had significantly higher ratios of poor health, but this difference was less marked than for other South Asian groups and was not statistically significant at age 20-29. In contrast to other minority ethnic groups, the only significant difference in the health of white and African Caribbean adults was found in the oldest age group (50-60) where the ratio was 2.04.
Table 9.1  **Ethnic differences in reported 'fairly poor' or 'very poor' health by age**

<table>
<thead>
<tr>
<th>Age standardised percentages</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
<th>P (Sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>13</td>
<td>10</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>N=</td>
<td>986</td>
<td>200</td>
<td>243</td>
<td>245</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>20</td>
<td>23</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>1149</td>
<td>161</td>
<td>299</td>
<td>283</td>
<td>171</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>7</td>
<td>13</td>
<td>19</td>
<td>19</td>
<td>57</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>900</td>
<td>64</td>
<td>161</td>
<td>131</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>50-60</td>
<td>13</td>
<td>27</td>
<td>39</td>
<td>46</td>
<td>61</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>N=</td>
<td>669</td>
<td>140</td>
<td>142</td>
<td>95</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Age std %</td>
<td>6.3</td>
<td>11.4</td>
<td>15.2</td>
<td>22.5</td>
<td>33.3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>5.6-7.1</td>
<td>8.8-14.1</td>
<td>12.9-17.6</td>
<td>19.5-25.5</td>
<td>29.7-36.9</td>
<td></td>
</tr>
<tr>
<td>N=</td>
<td>3704</td>
<td>565</td>
<td>845</td>
<td>754</td>
<td>525</td>
<td></td>
</tr>
</tbody>
</table>

*Source:* HEA BMEG and HALS surveys, 1992

Table 9.2  **Ratios of 'fairly poor' or 'very poor' health for minority ethnic groups relative to whites by age**

<table>
<thead>
<tr>
<th>Age</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>1.00</td>
<td>1.50</td>
<td>1.50</td>
<td>3.25 ***</td>
<td>2.50 **</td>
</tr>
<tr>
<td>30-39</td>
<td>1.00</td>
<td>1.75</td>
<td>2.00 **</td>
<td>5.00 ***</td>
<td>5.75 ***</td>
</tr>
<tr>
<td>40-49</td>
<td>1.00</td>
<td>1.86</td>
<td>2.71 ***</td>
<td>2.71 ***</td>
<td>8.14 ***</td>
</tr>
<tr>
<td>50-60</td>
<td>1.00</td>
<td>2.08 ***</td>
<td>3.00 ***</td>
<td>3.54 ***</td>
<td>4.69 ***</td>
</tr>
</tbody>
</table>

* Statistical significance of difference from whites in same age group; ** P<0.01; ***P<0.001.

** Ratio of poor health for minority ethnic adults relative to whites in each age group.

*Source:* HEA BMEG and HALS surveys, 1992
These tables show that the health profile of all minority ethnic groups is poorer than for whites, but that there are differences between minority groups in the magnitude of their health disadvantage. Pakistanis and Bangladeshis had very high morbidity, with a lower percentage of African Caribbean and Indian adults rating their health as 'fairly poor' or 'very poor' in comparison. The same overall pattern of reported health was found for ethnic groups in the HSE (see Table 8.3 in previous chapter), but the magnitude of health inequalities are greater for many minority groups in the combined HEA survey because morbidity reported by white adults is low in comparison. Here sampling differences must be recalled between the HEA survey for white adults, based on a representative national sample, and that for minority ethnic groups based only on areas of high minority concentration. If people living in high concentration areas are disproportionately disadvantaged in terms of their health relative to those in other areas, this would serve to amplify health inequality between minority ethnic groups in this survey and white adults who live in all areas.

In Table 9.3, health inequality is examined for men and women in each ethnic group. The age-standardised percentages show that women in each ethnic group were more likely than men to report poor health. Reported morbidity was 7 percent for white women compared with 5 percent of white men. Although this gender difference in health for whites reached statistical significance, gender inequality in reported health appeared more marked for some minority ethnic groups. Poor health was more likely to be reported by Pakistani and Bangladeshi women than for men in these ethnic groups, but the confidence intervals were wide and the sex ratios of poor health did not reach statistical significance. The finding of poorer health among African Caribbean women than men was more modest than the gender inequality suggested for Pakistanis and Bangladeshis and was not significantly different. There was no gender variation in reported health for Indian adults; the percentage reporting 'fairly poor' or 'very poor' health was comparable for men and women after standardising for age.
<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Men</th>
<th></th>
<th>Women</th>
<th></th>
<th>Sex Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age std %</td>
<td>CI (95%)</td>
<td>N</td>
<td>Age std %</td>
<td>CI (95%)</td>
</tr>
<tr>
<td>White</td>
<td>5</td>
<td>(4.1-6.2)</td>
<td>1609</td>
<td>7</td>
<td>(5.9-8.1)</td>
</tr>
<tr>
<td>African Caribbean</td>
<td>9</td>
<td>(4.9-13.2)</td>
<td>190</td>
<td>12</td>
<td>(9.0-15.8)</td>
</tr>
<tr>
<td>Indian</td>
<td>15</td>
<td>(11.7-18.2)</td>
<td>403</td>
<td>16</td>
<td>(12.4-18.9)</td>
</tr>
<tr>
<td>Pakistani</td>
<td>18</td>
<td>(14.6-22.3)</td>
<td>362</td>
<td>26</td>
<td>(21.9-30.8)</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td>27</td>
<td>(21.9-32.7)</td>
<td>238</td>
<td>38</td>
<td>(32.9-43.1)</td>
</tr>
</tbody>
</table>

Source: HEA BMEG and HALS surveys, 1992
With the exception of Indian adults, these results show that reported morbidity among minority ethnic women is approximately one-third higher than for men in the same ethnic group. The finding of poorer health among women than men was also evident for many minority groups in the HSE (see Chapter 8, Table 8.5), although for Pakistanis and Bangladeshis these gender differences were more modest than the HEA survey. The following section examines the relationship between measures of social embeddedness and health for different ethnic groups and further considers whether they are differentiated by gender.

9.2. SOCIAL EMBEDDEDNESS AND HEALTH

Exploration of the relationships between social embeddedness and health focuses in turn on the subjective perceptions domain, associational activity and experiential domain. In this way, different types of measure are related to the reported ‘fairly poor’ or ‘very poor’ health of gender and ethnic groups after standardising for age in 10-year age groups.

9.3.1 Subjective perceptions Domain

(i) Neighbourhood perception score

A key measure of social embeddedness derived from the HEA datasets relates to perceptions about the quality of neighbourhood facilities and safety. Responses to a series of questions about neighbourhood facilities and feelings of safety were scored and then divided into high, medium and low scoring groups (see Chapter 5, section 5.3.6). A high neighbourhood perception score is indicative of positive responses about neighbourhood whilst a low score reflects negative perceptions of the local area.

Figure 9.1 shows how perceptions of neighbourhood are associated with reported ‘fairly poor’ or ‘very poor’ health for men and women in each ethnic group. For African Caribbean men and women, there was a consistent relationship between neighbourhood perception score and reported health; negative appraisals of the local area (a low score) were associated with the poorest health.
Figure 9.1: **Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by quality of neighbourhood perception score**

[base numbers in brackets]

**Men**

- **High (+ve)**
- **Medium**
- **Low**

![Graph showing age standardised prevalence for men](image)

**Women**

- **High (+ve)**
- **Medium**
- **Low**

![Graph showing age standardised prevalence for women](image)

*Source:* HEA BMEG and HALS surveys, 1992
Thus, for African Caribbean adults, the relationship between neighbourhood perceptions and health was not modified by gender. However, this was not the case for other ethnic groups. A gradient in reported health according to neighbourhood perception score was evident for white women but not for white men. At 5 percent, reported morbidity for white women with a high neighbourhood perception score was nearly half that found for white women with a low score or negative appraisals of neighbourhood. White men with a medium or low score on this measure had a comparable level of reported morbidity, but consistent with white women, the best health was for those with the most positive perceptions of their neighbourhood. Similar to white and African Caribbean women, neighbourhood perceptions had a linear relationship with the health of Pakistani women. Approximately 30 percent who had negative perception of neighbourhood (a low score) reported poor health and this was markedly lower for those with a high score on this measure (17 percent). Whilst reported morbidity was lowest for Pakistani men when appraisals of neighbourhood were most positive, there was no gradient in their health according to their neighbourhood perception score. There were no consistent relationships between neighbourhood perceptions and health for Indian and Bangladeshi women, unlike women from other ethnic groups. Bangladeshi women with a high score reflecting positive perceptions of neighbourhood were most likely to report poor health; morbidity was over 40 percent for this group compared with 35 percent for those with a low score. This suggests the opposite relationship to that found for women from many other ethnic groups. Indeed, for Bangladeshis and Indians, the association between this measure of social embeddedness and health was more linear for men than for women.

These results show that subjective perceptions of neighbourhood are associated with health for many ethnic groups, but that the magnitude of these differences is often influenced by gender. Perceptions about the local neighbourhood assessed in this measure include local facilities and safety and the finding of consistent differences in health suggest that dissatisfaction with an area may have an impact on health. As discussed earlier, this is likely to include a disproportionate number of inner city,
Figure 9.2: Age adjusted prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by perceived close friends and relatives [base numbers in brackets]

Men

![Graph showing age adjusted prevalence of health for men by perceived close friends and relatives]

Women

![Graph showing age adjusted prevalence of health for women by perceived close friends and relatives]

Source: HEA BMEG and HALS surveys, 1992
urban areas in which disadvantages in terms of local facilities may be at odds with the level of social support individuals can benefit from.

(ii) **Perceived close contact with friends and relatives**

Figure 9.2 shows that perceived close friends and relatives was associated with better health for all gender and ethnic groups than when any contact was lacking with either friends and/or relatives. This was most evident for Bangladeshi men where nearly 40 who did not perceive close friends and relatives reported poor health compared with less than one-quarter who did. Although this measure of social embeddedness was not modified by gender in the same way as subjective perceptions of neighbourhood, results show much less variation in the health of African Caribbean men than for African Caribbean women using this measure.

9.3.2 **Associational Activity Domain**

Within the associational activity domain of social embeddedness, two types of activity are discerned. The first concerns 'quasi-formal' activity organised into community based groups, voluntary or religious organisations. The second centres on informal activity with friends and family.

(i) **Quasi-formal**

Figure 9.3 shows that reported involvement in community activity in the last two-weeks was associated with good health for white and minority ethnic men. African Caribbean and Pakistani men who reported any community activity had approximately half the level of reported morbidity of non-active men in these ethnic groups. The same kind of relationship was found for women in these ethnic groups – the high morbidity of white, African Caribbean, Pakistani and Bangladeshi women who did not participate in community activity is clearly evident in Figure 9.3. However, the small number of Pakistani and Bangladeshi women who reported being involved in any community activity is likely to reduce the reliability of these findings. A clear relationship between community activity and health was found for Indian men; approximately 7 percent of those who were community active reported poor
Figure 9.3: **Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by reported community activity in the last two weeks**

[base numbers in brackets]

**Men**

![Graph showing age standardised prevalence of 'fairly poor' or 'very poor' health for men by reported community activity.]

**Women**

![Graph showing age standardised prevalence of 'fairly poor' or 'very poor' health for women by reported community activity.]

**Source:** HEA BMEG and HALS surveys, 1992
Table 9.4  Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by informal associational activity with relatives

<table>
<thead>
<tr>
<th>Involvement with relatives</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) All</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>5</td>
<td>13</td>
<td>13</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>7</td>
<td>13</td>
<td>15</td>
<td>21</td>
<td>34</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>7</td>
<td>12</td>
<td>14</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>b) Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>2</td>
<td>11</td>
<td>8</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>6</td>
<td>17</td>
<td>14</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>6</td>
<td>9</td>
<td>18</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>c) Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>5</td>
<td>12</td>
<td>10</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>7</td>
<td>11</td>
<td>16</td>
<td>22</td>
<td>38</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>9</td>
<td>14</td>
<td>15</td>
<td>27</td>
<td>41</td>
</tr>
</tbody>
</table>

**Base Numbers**

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>846</td>
<td>72</td>
<td>175</td>
<td>142</td>
<td>43</td>
</tr>
<tr>
<td>Medium</td>
<td>1841</td>
<td>221</td>
<td>392</td>
<td>348</td>
<td>207</td>
</tr>
<tr>
<td>Low</td>
<td>1017</td>
<td>272</td>
<td>278</td>
<td>264</td>
<td>225</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>335</td>
<td>20</td>
<td>96</td>
<td>77</td>
<td>39</td>
</tr>
<tr>
<td>Medium</td>
<td>740</td>
<td>70</td>
<td>184</td>
<td>156</td>
<td>92</td>
</tr>
<tr>
<td>Low</td>
<td>534</td>
<td>100</td>
<td>123</td>
<td>129</td>
<td>107</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>511</td>
<td>52</td>
<td>79</td>
<td>65</td>
<td>54</td>
</tr>
<tr>
<td>Medium</td>
<td>1101</td>
<td>151</td>
<td>208</td>
<td>192</td>
<td>115</td>
</tr>
<tr>
<td>Low</td>
<td>483</td>
<td>172</td>
<td>155</td>
<td>135</td>
<td>118</td>
</tr>
<tr>
<td>Total</td>
<td>3704</td>
<td>565</td>
<td>845</td>
<td>754</td>
<td>525</td>
</tr>
</tbody>
</table>

**Source:** HEA BMEG and HALS surveys, 1992
health compared with 15 percent who were not involved in community-based activity. This finding did not extend to Indian women where approximately 14 percent reported morbidity regardless of community activity status. Thus, for Indians there was a clear interaction between community activity and gender in its relation to health.

(ii) Informal

The HEA surveys contain alternative measures of associational activity derived from the reported number of different contacts reported with friends or relatives over a two-week period. This contact extends beyond face-to-face visits to friends and family and includes telephone calls and letter writing over this period. The maximum number of different contacts on this measure is four — termed 'high involvement' and this is grouped separately from 2-3 contacts and 0-1 contact or 'low involvement'.

- Relatives

Table 9.4 compares the relationships between involvement with relatives and reported health for men and women in each ethnic group. The results show that a relationship between involvement with relatives and health exists for Pakistani and Bangladeshi men but is stronger for women. The percentage of Bangladeshi women reporting poor health was substantially greater when three or fewer contacts with relatives were reported (approximately 40 percent) than when there was a maximum of four contacts (11 percent). A greater proportion of Indian men reported poor health when reported associational activity with relatives became lower; 8 percent with 4 contacts rated their health as poor compared with 18 percent who had 0 or 1 contact. Indian women also reported better health when the number of contacts was high, but this relationship was less strong than for men. The results for white adults show only a modest gradient in reported health for women according to social contacts with relatives; 9 percent with 0-1 contact reported poor health compared with 5 percent who had 4 contacts but there was no health gradient for white men using this measure. There was no clear relationship between contact with relatives and reported health for African Caribbean men or women. Men in this ethnic group who had the lowest social involvement with relatives (0-1 contact) were least likely to report poor health,

240
whereas the results for women were consistent with other ethnic groups in finding higher morbidity for those with a fewer social contacts with relatives.

- **Friends**

The same measure derived from the reported number of different contacts with friends over a two-week period is related to health in Table 9.5. By examining integration in friendship networks separately from family-based contacts, it is possible to compare and contrast their relationship to health for different gender and ethnic groups. Table 9.5 shows that integration into friendship networks was related to the reported health of men and women in each ethnic group. However, these differences were modest for white men and women and contrasted with the finding of a gradient in reported health for Indian women, and particularly Indian men, based on reported contact with friends. The results for Pakistani men and women were consistent with higher morbidity when social contacts with friends was low, but there was no gradient in reported health using this measure. The reported health of African Caribbean and Bangladeshi men was not consistently related to the number of different contacts reported with friends over a two-week period. This contrasts with marked gradients in reported health for African Caribbean and Bangladeshi women. Approximately 40 percent of Bangladeshi women whose social involvement with friends was classified as low reported poor health and this was lower at 35 percent and 30 percent for those with 2-3 contacts or 4 contacts respectively. Figures for African Caribbean women ranged from 15 percent reporting morbidity when social contacts with friends numbered 0 or 1 to 12 percent and 9 percent when the number of different contacts increased to 2-3 or 4. These results suggest that associational activity with friends is associated with better health, particularly for women from minority ethnic groups and Indian men.
Table 9.5 *Age standardised prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by informal associational activity with friends*

<table>
<thead>
<tr>
<th>Involvement with friends</th>
<th>White</th>
<th>African</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) All</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>5</td>
<td>11</td>
<td>14</td>
<td>16</td>
<td>31</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>9</td>
<td>15</td>
<td>17</td>
<td>25</td>
<td>37</td>
</tr>
<tr>
<td>b) Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>5</td>
<td>14</td>
<td>10</td>
<td>19</td>
<td>34</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>5</td>
<td>9</td>
<td>13</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>6</td>
<td>12</td>
<td>20</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>c) Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>5</td>
<td>9</td>
<td>11</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>5</td>
<td>12</td>
<td>14</td>
<td>20</td>
<td>37</td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>7</td>
<td>16</td>
<td>15</td>
<td>26</td>
<td>40</td>
</tr>
</tbody>
</table>

**Base Numbers**

<table>
<thead>
<tr>
<th>All</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1148</td>
<td>110</td>
<td>149</td>
<td>107</td>
<td>92</td>
</tr>
<tr>
<td>Medium</td>
<td>1461</td>
<td>253</td>
<td>289</td>
<td>252</td>
<td>152</td>
</tr>
<tr>
<td>Low</td>
<td>1095</td>
<td>202</td>
<td>407</td>
<td>395</td>
<td>281</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>504</td>
<td>38</td>
<td>98</td>
<td>78</td>
<td>47</td>
</tr>
<tr>
<td>Medium</td>
<td>584</td>
<td>76</td>
<td>144</td>
<td>145</td>
<td>76</td>
</tr>
<tr>
<td>Low</td>
<td>521</td>
<td>76</td>
<td>161</td>
<td>139</td>
<td>115</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>644</td>
<td>72</td>
<td>51</td>
<td>29</td>
<td>45</td>
</tr>
<tr>
<td>Medium</td>
<td>877</td>
<td>177</td>
<td>145</td>
<td>107</td>
<td>76</td>
</tr>
<tr>
<td>Low</td>
<td>574</td>
<td>126</td>
<td>246</td>
<td>256</td>
<td>166</td>
</tr>
</tbody>
</table>

**Total**

|       | 3704  | 565   | 845   | 754       | 525         |

**Source:** HEA BMEG and HALS surveys, 1992
Table 9.6  Age adjusted prevalence of 'fairly poor' or 'very poor' health for gender and ethnic groups by experience of crime and problem neighbours in the last year  [base numbers in brackets]

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Racist abuse or attack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>12</td>
<td>15</td>
<td>21</td>
<td>45</td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
<td>16</td>
<td>3</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>b) Theft or other crime</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>17</td>
<td>12</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>c) Problems with neighbours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>12</td>
<td>15</td>
<td>21</td>
<td>51</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>14</td>
<td>19</td>
<td>23</td>
<td>46</td>
</tr>
</tbody>
</table>

Base Numbers

<table>
<thead>
<tr>
<th></th>
<th>Racist abuse or attack</th>
<th>Theft or other crime</th>
<th>Problems with neighbours</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>3672</td>
<td>32</td>
<td>3239</td>
</tr>
<tr>
<td>Yes</td>
<td>530</td>
<td>35</td>
<td>497</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>795</td>
<td>704</td>
<td>505</td>
</tr>
<tr>
<td>Yes</td>
<td>754</td>
<td>693</td>
<td>411</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>816</td>
<td>715</td>
<td>506</td>
</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>39</td>
<td>19</td>
</tr>
</tbody>
</table>

* denotes a statistically significant CI(95%)

Source:  HEA BMEG and HALS surveys, 1992
9.3.3 Experiential Domain

The HEA surveys include questions about an individuals' experience of crime, racism (defined as either racial abuse and/or attack associated with race) and problems with neighbours over the previous one-year period. As indicators of social embeddedness, these measures are likely to be limited because they are not restricted to local area of residence, although experience of crime may have a more diffuse impact upon perceptions of neighbourhood and associational activity. Due to the small number of in each gender and ethnic group who reported any incident related to crime or problem neighbours over the preceding 12-months, the results for ethnic groups are not further elaborated by gender.

(i) Reported crime in the last year

The results in Table 9.6a show poorer health for white, African Caribbean and Pakistani adults who experienced racial abuse or attack in the last year compared with those who did not report any such incident. However, the association between racial abuse/attack and reported morbidity was not statistically significant for these ethnic groups. The only exception was for Indian adults, but for this ethnic group the reported experience of racial abuse/attack was associated with significantly lower morbidity (3 percent) compared with those who did not share this experience (15 percent). The findings for Bangladeshis were also consistent with poorer health among those experiencing no racist incident over the last year, but this was not statistically significant.

Reported experience of crime in the last year was more consistently related to health across ethnic groups; victims of crime had the poorest reported health with the exception of Indian adults (Table 9.6b). Thirty percent of Pakistanis reporting crime rated their health as poor compared with 20 percent who did not, but this difference did not reach statistical significance. The negative association between crime and poor health for white, African Caribbean and Bangladeshi adults appeared to be more modest than for Pakistanis, but similarly these were not statistically significant. Thus, whilst it appears that experience of crime has a weak negative association with
reported health, this measure of social embeddedness produces only very modest
differences in health within ethnic groups.

(ii) Reported problems with neighbours over the last year
Table 9.6c shows that a greater percentage of white, African Caribbean, Indian and
Pakistani adults who had problems with neighbours over the last year reported poor
health compared to those who did not. The results for Bangladeshis using this
measure did not suggest the same relationship but for all other ethnic groups, there
was no statistically significant variation in health associated with problem neighbours.
Similar to measures of racial attack and reported crime, only a small proportion in
each ethnic group reported this problem arising over the last year.

From the findings in Table 9.6, it can be concluded that the experiential domain of
social embeddedness does not have a consistent relationship with health. It is
important, however, to consider the possibility of a health selection effect that cannot
be investigated with cross-sectional data. Such an effect would arise from adults with
poor health restricting their outdoors activity in a way that limits their likely exposure
to these environmental problems.

9.3 MULTIVARIATE ANALYSIS

In this section, logistic regression analysis is first used to examine in more detail the
relationships between ethnicity, gender and health using the HEA survey data (Table
9.7). The contribution of social embeddedness measures to gender and ethnic
inequalities in health is assessed by selecting statistically significant variables
(P<0.05) into the model using the method of forward selection. The final model is
computed in two further stages, adding measures of (i) social embeddedness and (ii)
socio-economic position. At each stage of forward selection, the model tested for
interactions after including the main effects of the relevant variables. This is to assess
how associations with health at any one stage of the model are modified by
controlling for additional measures. Of key concern is to examine how relationships
between social embeddedness and reported health change after taking into account
socio-economic position and to establish the relative contribution of social embeddedness compared with socio-economic position to the pattern of gender and ethnic inequalities in health.

To investigate the finding of higher morbidity among women than men in many ethnic groups, Table 9.8 reports the odds ratios from a second set of logistic regression analyses performed separately for each ethnic group. This presents the odds ratios of poor health for women relative to men in each ethnic group and reports the change in this relationship with the addition of social embeddedness and then socio-economic variables. Table 9.8 therefore shows the extent to which gender inequality in health within each ethnic group is modified by the addition of these different measures. Both sets of logistic models control for age in 5-year groups.

9.3.1 Inequality in health among gender and ethnic groups

Table 9.7 presents odds ratios of reported ‘fairly poor’ or ‘very poor’ health for all adults aged 20-60. Age and sex are included in model 1 which shows that women are significantly more likely to report poor health than men (OR. 1.27). When ethnic group was added in model 2, the higher morbidity of minority ethnic adults relative to whites was clearly evident. The odds of poor health were more than five-times higher for Pakistanis and over eight times greater for Bangladeshis relative to whites after controlling for age and sex. However, the inclusion of ethnicity in the model increased the magnitude of gender inequality in health; the odds of poor health were increased by approximately 40 percent for women relative to men. In model 3, a single variable is used to represent the interaction between gender and ethnic group. The odds show that white men had the best reported health, with significantly higher morbidity for all other gender and ethnic groups in comparison. There was significant gender inequality in health for whites; the odds were increased by 48 percent for white women relative to men. The same gender difference was evident for African Caribbean adults, although both men and women had odds of poor health more than two-times higher than the reference category of white men. Gender inequality in health was more substantial for Pakistanis and Bangladeshis than for other ethnic groups. The odds ratio was 13.2 for Bangladeshi women and 7.74 for
| Table 9.7 | Logistic regression of 'fairly poor' or 'very poor' health by gender and ethnic group |
| --- | --- | --- | --- |
| **Model 1** | **Model 2** | **Model 3** |
| **Age (5-year groups)** | **Age** | **Age** | **Age** |
| ++ | +++ | +++ | +++ |
| **Sex** | ++ | Ethnic Group | ++ | Ethnic group and gender |
| **Male** | 1.00 | White | 1.00 | White men |
| **Female** | 1.27 ** | African Caribbean | 1.97 *** | White women |
| | | Indian | 2.89 *** | African Caribbean men |
| | | Pakistani | 5.04 *** | African Caribbean women |
| | | Bangladeshi | 8.53 *** | Indian men |
| | | | | Indian women |
| | | | | Pakistani men |
| | | | | Pakistani women |
| | | | | Bangladeshi men |
| | | | | Bangladeshi women |
| **-2LLR** | 4416.5 | | |
| **Δ -2LLR from base model (age)** | 9.1 | 386.8 | 407.1 |
| **Δ df** | 1 | 4 | 9 |
| **Nagelkerke R² Statistic** | 0.07 | 0.18 | 0.19 |

* Statistical significance of difference from the reference category; ** P<0.01; *** P<0.001
++ Statistical significance of variable in the model; ++ P<0.01; +++ P<0.001.

**Source:** HEA BMEG and HALS surveys, 1992
Table 9.8 **Logistic regression of 'fairly poor' or 'very poor' health with addition of different measures of social embeddedness and socio-economic position**

<table>
<thead>
<tr>
<th></th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (5-year groups)</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Ethnic group and gender</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.48 ***</td>
<td>1.61 ***</td>
<td>1.13</td>
</tr>
<tr>
<td>3-4</td>
<td></td>
<td>1.78 ***</td>
<td></td>
</tr>
<tr>
<td>Crime/racial attack*Material deprivation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No crime, material advantage</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report crime, score 1-2</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report crime, score 3-4</td>
<td>2.46 *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Δ LLR (Δ df) from base model (age) 407.1 *** (9) 430.3 *** (16) 536.1 *** (24)

Δ -2LLR (Δ df) from previous model - 80.1 *** (7) 105.7 *** (8)

Nagelkerke R² statistic 0.19 0.21 0.24

* Statistical significance of difference from the reference category; *P<0.05; **P<0.01; ***P<0.001
++ Statistical significance of variable in the model; +P<0.05; ++P<0.01; +++P<0.001.

Variables excluded from model (P>0.05); problems with neighbours, informal associational activity with relatives, RG social class, employment status. No other interaction terms were statistically significant.

**Source:** HEA BMEG and HALS surveys, 1992
PAGE NUMBERING AS ORIGINAL
Table 9.8     Logistic regression of 'fairly poor' or 'very poor' health with addition of different measures of social embeddedness and socio-economic position

<table>
<thead>
<tr>
<th></th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (5-year groups)</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td><strong>Ethnic group and gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.48 **</td>
<td>1.61 **</td>
<td>1.19</td>
</tr>
<tr>
<td>African Caribbean men</td>
<td>2.19 **</td>
<td>2.26 **</td>
<td>1.23 *</td>
</tr>
<tr>
<td>African Caribbean women</td>
<td>2.78 ***</td>
<td>3.01 ***</td>
<td>1.56 ***</td>
</tr>
<tr>
<td>Indian men</td>
<td>3.58 ***</td>
<td>4.13 ***</td>
<td>2.39 ***</td>
</tr>
<tr>
<td>Indian women</td>
<td>3.58 ***</td>
<td>3.84 ***</td>
<td>2.22 ***</td>
</tr>
<tr>
<td>Pakistani men</td>
<td>4.86 ***</td>
<td>5.50 ***</td>
<td>2.70 ***</td>
</tr>
<tr>
<td>Pakistani women</td>
<td>7.74 ***</td>
<td>7.55 ***</td>
<td>3.58 ***</td>
</tr>
<tr>
<td>Bangladeshi men</td>
<td>8.10 ***</td>
<td>8.88 ***</td>
<td>3.90 ***</td>
</tr>
<tr>
<td>Bangladeshi women</td>
<td>13.2 ***</td>
<td>13.2 ***</td>
<td>5.87 ***</td>
</tr>
<tr>
<td><strong>Social Embeddedness measures:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subjective perceptions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbourhood perception score</td>
<td>+++</td>
<td>+++</td>
<td></td>
</tr>
<tr>
<td>High (+ve)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>1.36 **</td>
<td>1.37 **</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.61 ***</td>
<td>1.60 ***</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived close friends and relatives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close friends and relatives</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>No close friends and/or relatives</td>
<td>1.45 ***</td>
<td>1.46 ***</td>
<td></td>
</tr>
<tr>
<td><strong>Associational Activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community activity (Quasi-formal)</td>
<td>+++</td>
<td>n.s</td>
<td></td>
</tr>
<tr>
<td>Community active in last two weeks</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Not community active in last two weeks</td>
<td>1.46 ***</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td><strong>Informal associational activity with friends</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (4 contacts)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Medium (2-3 contacts)</td>
<td>0.98</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Low (0-1 contact)</td>
<td>1.36 *</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td><strong>Experiential</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victim of any crime in the last year</td>
<td>+</td>
<td>n.s</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.37 *</td>
<td>1.07</td>
<td></td>
</tr>
<tr>
<td><strong>Socio-economic measures:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Level</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A'Level or equiv</td>
<td>1.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O'Level or equiv</td>
<td>2.24 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.45 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3.36 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Deprivation score</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>1.71 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>1.78 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime/racial attack * Material deprivation</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No crime, material advantage</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report crime, score 1-2</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report crime, score 3-4</td>
<td>2.46 *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
\Delta \text{LLR (A df)} \text{ from base model (age)} = 407.1 ***(9)\]
\[
\Delta \text{-2LLR (A df)} \text{ from previous model} = 430.3 ***(16) \quad 536.1 ***(24)\]
\[
\text{Nagelkerke } R^2 \text{ statistic} = 0.19 \quad 0.21 \quad 0.24\]

* Statistical significance of difference from the reference category; **P<0.05, ***P<0.01, ****P<0.001
++ Statistical significance of variable in the model; +P<0.05, ++P<0.01, +++P<0.001

Variables excluded from model (P>0.05); problems with neighbours, informal associational activity with relatives, RG social class, employment status. No other interaction terms were statistically significant.

Source: HEA BMEG and HALS surveys, 1992
Pakistani women compared with 8.10 and 4.86 for men in these respective ethnic groups. Thus, whilst poor health is concentrated among men and women who are Pakistani or Bangladeshi, women in these ethnic groups are most disadvantaged in their health. The only exception to the pattern of higher morbidity among women than men was found for Indian adults. In this ethnic group, the odds of reporting poor health were identical for men and women, although at more than three-times the value of the reference category, this shows a marked health disadvantage for Indians.

(i) The contribution of social embeddedness

Models 4 and 5 presented in Table 9.8 add measures of social embeddedness and socio-economic position respectively to examine their relative contribution to the pattern of gender and ethnic inequality in health described above. Social embeddedness measures selected into the model 4, using a method of forward selection, included both measures from the subjective perceptions domain, namely perceived quality of neighbourhood and perceived close friends and relatives. Two associational activity measures were also included and these were community activity and informal contacts with friends (but not relatives) over a two week period. Finally, reported experience of crime and/or racial attack in the last year made a statistically significant contribution to the model, whereas reported problems with neighbours did not. The significance of each domain for gender and ethnic health inequality is discussed below.

- Subjective Perceptions Domain

The odds ratios for all adults show that perceptions of neighbourhood safety and facilities had a linear relationship with health. The odds ratios of poor health were significantly increased by 36 percent for those with a medium score on this measure and by 61 percent for those with a low score, which represents the most negative perceptions of neighbourhood. Thus, working-age adults who perceived their neighbourhood most favourably (as shown by a high quality of neighbourhood score) had the best health.
In addition, adults who perceived a lack of close friends and/or relatives were significantly more likely to report poor health than those who did not. The odds ratio of poor health was increased by 45 percent when close friends or relatives were perceived as lacking. The inclusion of both social embeddedness measures in this domain suggests that the appraisal of general health is sensitive to subjective perceptions about neighbourhood and significant others.

- Associational activity domain

Participating in any community activity in the last two-weeks was independently associated with good health in Table 9.8. Adults who reported no such activity had odds of reporting poor health increased by nearly 50 percent. As well as quasi-formal associational activity, reported informal activity with friends was selected as statistically significant in the model. A reported lack of social contact with friends (0 or 1 contact) over a two-week period increased the likelihood of poor health by just over one-third, but there was little difference in the odds of poor health for adults who had 2-3 contacts or 4 contacts. The same measure of associational activity, based on reported contacts with relatives over the same period, was not statistically significant in the model and so was excluded.

- Experiential Domain

Adults who reported an incidence of crime or attack over the last year were more likely to rate their health as 'fairly poor' or 'very poor' than those who did not after taking into account all of the other social embeddedness measures included in the model. However, reported problems with neighbours was unrelated to reported health and excluded from the model.

When measures of social embeddedness from the three domains were included in the model, this served to increase the odds of reporting poor health for many gender and ethnic groups relative to white men. This change was evident for men and women who were African Caribbean, but did not remove gender inequality in the reported health of these ethnic groups. African Caribbean women continued to have higher odds ratios of poor health than African Caribbean men. The significant gender
difference in reported health for whites in model 3 became greater in magnitude because controlling for social embeddedness increased the odds of poor health for women relative to men. There was no gender difference in reported poor health of Indian adults in model 3, but adjusting for social embeddedness resulted in a greater increase in the odds ratio of poor health for men than for women. As a result, the odds of poor health relative to white men were higher for Indian men (OR 4.13) than for women (OR 3.84). This gender difference in health for Indians was the opposite to that found for other ethnic groups. For Bangladeshis, there was little change in the odds ratios of poor health for men when social embeddedness measures were included in the model and no change for women. Therefore, social embeddedness does not seem to be an explanation for the markedly higher morbidity reported by Bangladeshis compared to white men.

From these findings, there is no evidence that social embeddedness can provide an explanation for why minority ethnic groups, and women in particular, have poorer health than white men. This is despite earlier analyses in this chapter which suggested that some measures of social embeddedness - particularly in the domains of subjective perceptions and associational activity - are consistently associated with reported health within gender and ethnic groups. However, differences in social embeddedness do not provide an explanation for the substantial health inequality that exists across gender and ethnic groups, rather, taking social embeddedness into account serves to accentuate health disadvantage of many minority ethnic men and women relative to white men.

(i) Comparing social embeddedness and socio-economic position

The final logistic model in Table 9.8 includes the socio-economic measures of educational level and material deprivation (model 5). Consistent with the results of Chapter 8 using HSE data, the odds ratios in Table 9.8 show a statistically significant linear relationship between educational qualifications and health. There was a two-fold increase in the odds of poor health for adults with GCSE or O'Level qualifications relative to the highly qualified, whilst for the unqualified, the odds of poor health were more than three-times higher. For adults experiencing any degree
on material deprivation (score 1-2 or 3-4), the odds ratios were significantly increased by approximately 74 percent relative to the materially advantaged group (score zero). Social class was excluded because this measure did not reach statistical significance in the model of p<0.05.

One interaction term statistically significant at p<0.05 was selected, based on material deprivation and experience of crime in the last year. This showed that the association between experience of crime and poor health was much greater for the most materially deprived adults. The odds of reported morbidity were increased three-fold for adults reporting both crime and high material deprivation (score 3-4) relative to materially advantaged adults who did not report any incident of crime in the last year. When this interaction term was included in the model, the main effect of crime on health was no longer statistically significant.

Including socio-economic measures in model 5 altered some of the relationships between social embeddedness and health reported earlier, suggesting they are largely attributable to socio-economic disadvantage. This was most evident for social embeddedness measures in the associational activity domain; reported number of different contacts with friends and community activity in the last two-weeks both became non-significant in the model. The statistically significant association between reported crime and poor health was also removed by taking socio-economic position into account, although the model suggests that experience of crime combines with poor material circumstances to influence health. Both measures in the subjective perceptions domain continued to show clear relationships with reported health. After controlling for socio-economic position, there was a health gradient based on perceptions relating to the quality of neighbourhood. Similarly, adults who perceived any lack of close friends and/or relatives continued to have a significantly higher odds ratio of poor health. Thus, these subjective dimensions of social embeddedness show a more robust relationship with self-assessed health than do associational and experiential measures.
Table 9.8 shows clearly that socio-economic position had a substantial impact on the pattern of gender and ethnic inequality in health and that this was in marked contrast to social embeddedness. The odds ratio of poor health for white women decreased substantially after educational qualifications and material deprivation were added to the model with the result that there was no longer a statistically significant difference by gender in the health of white adults. The two-fold health disadvantage of African Caribbean men relative to white men in model 4 was also sizeably reduced in the final model to only OR 1.23, but this difference remained statistically significant at the p<0.05 level. A similar change was found for African Caribbean women by controlling for socio-economic position, but in the odds of poor health were still more than 50 percent higher than for white men. Thus, the contribution of socio-economic measures to health inequality between African Caribbean's and white men was greater for men than for women. For all South Asian groups, substantial inequality in health was still evident after taking into account socio-economic position and this included higher odds ratios of poor health for Pakistani and Bangladeshi women than for men. However, the magnitude of these differences was markedly reduced by taking into account the disadvantaged socio-economic position of men and women in these ethnic groups. Relative to white men, the poorest reported health was still found for Pakistanis and Bangladeshis, but adjusting for socio-economic position reduced the odds ratios by more than half. This strongly suggests that a large proportion of the poor health experienced by these ethnic groups is attributable to disadvantage associated with educational qualifications and material deprivation. Whilst the decrease in the odds ratios of poor health were found for men and women who were Pakistani or Bangladeshi, controlling for socio-economic position did not alter the pattern of gender inequality in their health. The odds ratios were nearly four-times higher for Pakistani women and nearly six-times higher for Bangladeshi women compared with OR. 2.70 for Pakistani men and OR. 3.90 for Bangladeshi men. For Indian adults of both sexes, the odds of poor health were more than two-times higher than for white men. Indian men had a slightly greater health disadvantage than Indian women once socio-economic position was taken into account.
Figure 9.4 Comparing the contribution of social embeddedness and socio-economic position to inequality in health for white women and minority ethnic men and women.

* All odds ratios are relative to the reference category of white men.
All models control for age in 5-year groups.

Source: HEA BMEG and HALS surveys, 1992
Table 9.9: Odds ratios of 'fairly poor' or 'very poor' health to show the contribution of social embeddedness and socio-economic position to gender inequality in health within ethnic groups

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR of poor health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for women relative to men</td>
<td>1.46 **</td>
<td>1.27</td>
<td>1.05</td>
<td>1.59 *</td>
<td>1.76 *</td>
</tr>
<tr>
<td>Adjusting for social embeddedness</td>
<td>1.46 *</td>
<td>1.17</td>
<td>1.05</td>
<td>1.57 *</td>
<td>1.63 *</td>
</tr>
<tr>
<td>Adjusting for socio-economic position</td>
<td>0.94</td>
<td>1.48</td>
<td>0.84</td>
<td>0.73</td>
<td>1.08</td>
</tr>
<tr>
<td>Base Numbers</td>
<td>3672</td>
<td>558</td>
<td>839</td>
<td>752</td>
<td>521</td>
</tr>
</tbody>
</table>

* Statistical significance of gender difference in health; * P<0.05

Note: All models control for age in 5-year age groups

Source: HEA BMEG and HALS surveys, 1992
To summarise the results from Table 9.8 to show the relative contribution of social embeddedness and socio-economic position, Figure 9.7 illustrates how the odds ratios of poor health for each gender and ethnic group were modified with the addition of these measures to the model. It can be seen that controlling for social embeddedness measures increased the odds ratios of poor health for gender and ethnic groups relative to white men. The exceptions were for Bangladeshi and Pakistani women, for whom social embeddedness measures had no impact on the odds ratio of poor health. Thus, the effect of social embeddedness was to accentuate the poor health of minority ethnic groups and white women relative to white men. It cannot therefore be viewed to 'level out' health inequality across gender and ethnic groups in the same way as socio-economic position. Figure 9.7 shows that socio-economic disadvantage is associated with a sizeable and universal reduction in the odds ratios of poor health for gender and ethnic groups compared to white men.

### 9.3.2 Gender inequality in health within ethnic groups

A key finding from Table 9.8 was of gender inequality in health within ethnic groups. For white, African Caribbean, Pakistani and Bangladeshi adults, reported health was significantly poorer for women than for men, whilst Indian men had a slightly higher odds ratio of morbidity than Indian women. Table 9.9 is based on separate logistic regression models calculated for each ethnic group in which gender was first included as an independent variable along with age in 5-year groups. The table then reports the change in the odds of morbidity for women relative to men when measures of (i) social embeddedness and (ii) socio-economic position were added.

Significant gender inequality in reported health was found for white, Pakistani and Bangladeshi adults. Pakistani and Bangladeshi women had odds ratios of poor health increased by 59 percent and 76 percent respectively compared with 46 percent for white women. The same gender difference was suggested for African Caribbean adults, but this did not reach statistical significance. Only for Indian adults was there no evidence of any gender inequality in health. When measures of social embeddedness were added to the logistic models for each ethnic group, there was very little change in the odds ratios of poor health for women. The slight change in odds
ratios suggested that social embeddedness has only a minor contribution to the reported health of white and minority ethnic women relative to men. The overall pattern of gender inequality within ethnic groups was unchanged. In contrast, the addition of socio-economic measures had a sizeable impact on the odds ratio of morbidity for women. Taking into account socio-economic disadvantage removed gender inequality in health for white adults; the odds ratio for white women was reduced from 1.46 to only 0.94. The same change was evident for Pakistanis and Bangladeshis where the odds of poor health for women were reduced by over half relative to men in these ethnic groups. As a result, there was no longer any statistically significant gender difference in the health of Pakistanis or Bangladeshis. These results suggest that the higher morbidity of women than men may arise because they are more likely to occupy positions of socio-economic disadvantage. This explanation was also consistent with the change in the odds of poor health for Indian women, which decreased relative to Indian men. However, the gender difference for Indians remained non-significant. The only exception to this pattern was found for African Caribbean adults where the odds ratio of poor health for women increased after controlling for socio-economic position. Thus, the morbidity reported by African Caribbean women was not related to their greater socio-economic disadvantage relative to African Caribbean men. This is consistent with the results of Chapter 5 which found that the socio-economic profile of African Caribbean women to be more, not less, advantaged than that of African Caribbean men.

9.4 DISCUSSION

This analysis of HEA survey data confirmed the marked pattern of gender and ethnic inequality in health found in Chapter 8 using data from the Health Survey for England. All minority ethnic groups reported substantially poorer health than whites, particularly Pakistanis and Bangladeshis. Within ethnic groups, women were often disadvantaged in their health relative to men.

Relationships between measures of social embeddedness and health were relatively modest within gender and ethnic groups. However, out of the three domains of social
embeddedness, it is possible to infer that subjective perceptions are more closely related to self-rated health than reported experiences of crime and problem neighbours. Although women's health in particular showed a linear relationship with quality of neighbourhood perception score, for some groups of South Asian men and women, these perceptions were unrelated to reported health. However, subjective perceptions per se were not unimportant for these groups as a measure based on perceived close friends and relatives was generally associated with better reported health.

Informal associational activity with friends and relatives and involvement in community based groups was positively related to good health for many gender and ethnic groups. However, measures from this domain of social embeddedness were not independently associated with poor health for working-age adults after taking socio-economic position into account. Thus, whilst involvement in networks of friends and relatives might provide opportunities to benefit from social support, it may also be sensitive to some extent on financial circumstances or material resources, such as the ownership of a car. These measures of associational activity are also likely to be limited in relation to health because of the possibility of reverse causation; namely that poor health brings about changes in these types of social activity. Experiential measures of social embeddedness had no strong relationship with health and analyses were restricted by the small number of incidents reported over a one-year time period for different gender and ethnic groups. However, an association between reported crime and poor health was amplified for adults living in the most materially deprived conditions, hence this experiential measure in combination with socio-economic disadvantage is related to significantly poorer health.

The main finding of this chapter, however, was that social embeddedness did not contribute to the marked health disadvantage of white women and minority ethnic groups, nor to the finding of higher morbidity among women than men in many ethnic groups. At best, controlling for social embeddedness only slightly moderated health inequality and at worst, served to accentuate health differences relative to white men. This is in contrast to socio-economic position, which makes a large contribution to
health inequality across gender and ethnic groups and to gender inequality in health within ethnic groups. After taking into account socio-economic position, poor health was not significantly greater among white women and African Caribbean men relative to white men in the HEA surveys. Socio-economic disadvantage could also account for about half of the morbidity reported by Pakistanis and Bangladeshis and the results suggested that women in these ethnic groups suffer disproportionately from the experience of poor socio-economic conditions.

Overall, socio-economic position, and not social embeddedness, emerges as a main explanation for gender and ethnic inequalities in health. It is notable that the distribution of social embeddedness among gender and ethnic groups did not follow the same pattern as socio-economic disadvantage; positive perceptions of neighbourhood (a 'high' neighbourhood perception score) were more common in many minority ethnic groups than for whites, for example. This suggests that social embeddedness cannot be construed as something that minority populations 'lack' or are disproportionately disadvantaged in compared to white adults.
Chapter 10: Cigarette smoking, social embeddedness, socio-economic position and health

Introduction
The analysis presented in Part I of this thesis showed lower cigarette smoking among many minority ethnic groups compared with white adults, particularly for women. Gender and ethnic differences in the reported prevalence of this health-related behaviour do not therefore appear to tally with the pattern of health inequality found among minority ethnic men and women in Chapters 8 and 9. This final chapter brings together the analysis on cigarette smoking and on health by investigating the relative contribution of cigarette smoking to the reported health of men and women from different ethnic groups.

It is important to investigate the utility of cigarette smoking as an explanation for health inequalities associated with ethnicity and gender because smoking is known to be a main cause of ill-health and premature mortality (DoH, 1998a). However, investigation of behavioural risk factors for the health of minority ethnic groups has been criticised for the way it can construe behavioural difference among non-white groups as somehow 'deviant' and responsible for their poor health status (Ahmad, 1993b). One way in which to detract from an undue emphasis on behaviour alone is to control for variation in smoking and health associated with socio-economic position and social embeddedness. Analyses of current cigarette smoking presented in chapters 6 and 7 of this thesis found evidence to suggest that both cigarette smoking and reported health were socially structured, although the contribution of socio-economic position outweighed the importance of social embeddedness within and across gender and ethnic groups.

A focus is first placed on how the nature of the relationship between measures of cigarette smoking status and health differ according to gender and ethnic group in both the HEA surveys and HSE. A Canadian study reported a correlation between smoking behaviour and self-rated health that was stronger for men than for women.
after adjusting for a range of structural and behavioural factors, although ethnic differences were not examined (Denton & Walters, 1999). To explore the relationship between smoking and health more fully by both gender and ethnic group, the measures used to capture smoking behaviour go beyond a simple distinction between current smokers and non-smokers:

- Some analyses distinguish between ex-smokers, current smokers and those who have never smoked cigarettes and compare findings from the HEA surveys and HSE. This measure of ‘lifetime smoking’ was found to vary with gender and ethnic group in chapter 6.

- For current smokers, a measure of average daily cigarette consumption is derived and classified as ‘high’ (20 or more cigarettes), ‘medium’ (10-19 cigarettes) or ‘low’ (0-9 cigarettes).

Coupled with a lifetime measure of smoking status, information about cigarette consumption may provide an indicator of exposure to the health-damaging effects of nicotine, although this interpretation is limited in a number of important respects. Firstly, it can be problematic to infer that increasing consumption of cigarettes is causally prior to self-reports of poor health because poor health itself is often cited as a main reason why individuals give up smoking. Thus, there is the possibility of reverse causation; that poor health status precedes a change in smoking behaviour. Secondly, an association between self-assessed health and smoking behaviour may reflect more than the poorer physical health status of smokers relative to non-smokers. Manderbacka et al. (1999) reported that an association between cigarette smoking and poor general health status was independent of chronic illness and physical disability. The authors suggest that individuals’ take their health behaviour or ‘lifestyle’ into account when appraising their overall health, regardless of any specific health problems.

Data from the HSE and HEA surveys are first used to examine the relationship between cigarette smoking and poor health within and across gender and ethnic
groups. All results are standardised for age (in 10-year groups), this is important because both smoking and health status are age-related and the age profile of men and women differs according to ethnic group. Chapters 6 and 7 showed that cigarette smoking is a gendered practice, particularly for minority ethnic groups where current smoking prevalence among women was much lower than for men. For this reason, where the survey samples sizes do not permit a separate investigation of smoking and health for men and women in each ethnic group, tables show age and sex standardised percentages for each ethnic group so that any association between smoking and poor health attributable to the unknown effects of gender is not misleading. To achieve this, it has been necessary to combine Pakistani and Bangladeshi ethnic groups in these tables, although men and women in these ethnic groups are examined separately in the logistic regression analyses presented later in this chapter for all adults aged 20-60.

10.1. LIFETIME SMOKING STATUS AND THE HEALTH OF ETHNIC GROUPS

This section examines ethnic differences in smoking using a measure of lifetime smoking status. Earlier analyses found this measure, which distinguishes adults who have never smoked from ex-smokers and current smokers, to be associated with ethnic group for men and women. The discussion here includes a comparison of these data-sets, but it is important to note that the general health measures in these surveys have different response categories indicative of morbidity; the HSE measure includes all those who reported ‘less than good’ health (responses of ‘fair’, ‘bad’ or ‘very bad’ combined), whilst respondents in the HEA BMEG and HALS report ‘fairly poor’ or ‘very poor’ health relative to others of the same age (see Chapter 5). The implications of these differences are noted in the interpretation that follows.

Table 10.1 presents percentages of reported morbidity for ethnic groups in the HEA surveys after adjusting for age and sex variation in lifetime smoking status and reported health. Consistent with previous chapters, these results are shown together with 95 percent confidence intervals.
<table>
<thead>
<tr>
<th></th>
<th>Age and sex adjusted prevalence of 'fairly poor' or 'very poor' health by ethnic group and lifetime cigarette smoking status:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HEA surveys</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Age and sex standardised percentages</strong></td>
</tr>
<tr>
<td></td>
<td>White</td>
</tr>
<tr>
<td>Never smoked</td>
<td>2.7</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(2.2-3.2)</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>5.6</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(4.8-6.3)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>9.1</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(8.1-10)</td>
</tr>
<tr>
<td>Smoking Ratio</td>
<td>3.37</td>
</tr>
<tr>
<td>(current/never)</td>
<td></td>
</tr>
<tr>
<td><strong>Base Numbers</strong></td>
<td></td>
</tr>
<tr>
<td>Never smoked</td>
<td>953</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>1437</td>
</tr>
<tr>
<td>Current smoker</td>
<td>1318</td>
</tr>
<tr>
<td>Total</td>
<td>3708</td>
</tr>
</tbody>
</table>

*Source:* HEA BMEG and HALS surveys, 1992
Table 10.1 also includes a ‘smoking ratio’ for each ethnic group which summarises the magnitude of difference in morbidity reported by current smokers relative to those who have never smoked.

For white adults, the percentage reporting poor health was greatest for current cigarette smokers at 9 percent. Ex-smokers were less likely to report poor health than current smokers, but their reported morbidity was significantly higher compared to white adults who had never smoked. Only approximately 3 percent of white never smokers reported poor health. Thus, for white adults the relationship between lifetime smoking status and health was linear after taking into account age and sex variation. A smoking ratio of 3.37 confirms that white current smokers were markedly more disadvantaged in their health relative to those who have never smoked. In common with whites, the poorest health was found for African Caribbean current smokers at approximately 13 percent. The likelihood of reporting poor health was lower for ex-smokers by comparison and lowest for African Caribbean adults who had never smoked. However, this consistent relationship between lifetime smoking and health for African Caribbean adults was more modest than for whites, as shown by the smoking ratio of 1.44 and the absence of statistically significant differences.

The results in Table 10.1 show that over 10 percent of Indian current smokers report ‘fairly poor’ or ‘very poor’ health, but that this percentage is comparable with Indians who have never smoked (12.9). No linear association is therefore found between this measure of smoking status and reported health for Indian adults after adjusting for age and sex variation. A smoking ratio of 0.91 shows Indian current smokers do not have a health disadvantage relative to never smokers. In common with Indian adults, there was no evidence that lifetime smoking status was consistently related to differences in reported poor health for Pakistanis and Bangladeshis. After taking into account marked gender differences in smoking behaviour within these ethnic groups (see Chapters 6 and 7), reported poor health was equivalent for never smokers and current smokers (smoking ratio = 0.99). There was therefore no evidence that current smoking was related to the poor health of Pakistanis and Bangladeshis, with ex-smokers more likely to rate their health as ‘fairly poor’ or ‘very poor’.

264
Comparison of smoking ratios for ethnic groups in the HEA surveys shows that morbidity among white current smokers was more than three times higher relative to never smokers. To a much lesser extent, the same relationship was evident for African Caribbean adults, but for Indian, Pakistani and Bangladeshis, current smokers were not disadvantaged in their health relative to those who had never smoked.

Table 10.2 presents the same analysis for lifetime smoking and health using data from the Health Survey for England (HSE). For all ethnic groups, the percentage of current, ex- or never smokers reporting morbidity was notably higher than in the HEA surveys after standardising for age and sex, and the inclusion of those with 'fair' health in the HSE measure of reported morbidity may partly account for this difference.

A smoking ratio of 1.95 for white adults in Table 10.2 confirms an association between current smoking and poor health. Although this is much less marked than in the HEA survey (Table 10.1), lifetime smoking status did show a linear and statistically significant relationship with reported 'less than good' health. African Caribbean adults who were current smokers were also most likely to report poor health: the smoking ratio shows morbidity approximately one-third higher for current smokers relative to those who reported never smoking cigarettes. The health of ex-smokers was between that of never and current smokers meaning that lifetime smoking had a consistent association with reported health. Although both the HEA and HSE surveys show the same relationship between lifetime smoking status and reported health for white and African Caribbean adults, a key point of departure is the finding of higher morbidity among Indian, Pakistani and Bangladeshi current smokers relative to those who have never smoked in the HSE. Taking into account age and sex variation, this association is relatively modest for Indian adults: the smoking ratio is 1.13 and none of the health differences are statistically significant. However, for Pakistanis and Bangladeshis, the standardised percentages show that, at 48 percent, reported poor health among current smokers is significantly greater than for ex-smokers or for those who have never smoked. This finding stands in marked contrast
Table 10.2

**Age and sex adjusted prevalence of 'less than good' health by ethnic group and cigarette smoking status: HSE 1993-6**

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani and Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smoked</td>
<td>13</td>
<td>26.5</td>
<td>26.6</td>
<td>33.1</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(12.7-13.4)</td>
<td>(22.8-30.2)</td>
<td>(23.7-29.5)</td>
<td>(28.5-37.8)</td>
</tr>
<tr>
<td>Ex smoker</td>
<td>14.8</td>
<td>30.1</td>
<td>25.4</td>
<td>32.9</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(14.5-15.1)</td>
<td>(26.5-33.8)</td>
<td>(22.4-28.3)</td>
<td>(29.8-36)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>25.3</td>
<td>35.6</td>
<td>30</td>
<td>48.3</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(24.9-25.8)</td>
<td>(31.4-39.7)</td>
<td>(27.1-33.1)</td>
<td>(44.6-52.0)</td>
</tr>
<tr>
<td>Smoking Ratio (current/never)</td>
<td>1.95</td>
<td>1.34</td>
<td>1.13</td>
<td>1.45</td>
</tr>
<tr>
<td><strong>Base Numbers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never smoked</td>
<td>11879</td>
<td>216</td>
<td>654</td>
<td>374</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>15342</td>
<td>129</td>
<td>113</td>
<td>91</td>
</tr>
<tr>
<td>Current smoker</td>
<td>13359</td>
<td>167</td>
<td>122</td>
<td>116</td>
</tr>
<tr>
<td>Total</td>
<td>41533</td>
<td>519</td>
<td>899</td>
<td>581</td>
</tr>
</tbody>
</table>

**Source:** Health Survey for England, 1993-95.
to the HEA survey (Table 10.1) where there was no relationship between current smoking and health for Pakistanis and Bangladeshis.

However, results from both the HSE and HEA surveys show that lifetime smoking status cannot account for ethnic variation in health: within each category of smoker, morbidity was substantially lower for white adults than for minority ethnic adults, with Pakistanis and Bangladeshis having the poorest health. Both surveys also suggest that lifetime smoking is more strongly and consistently associated with poor health reported by whites than for minority ethnic groups.

10.2 CURRENT SMOKING STATUS AND THE HEALTH OF GENDER AND ETHNIC GROUPS

The previous section found ethnic differences in the smoking/health relationship after standardising for age and sex. Here, gender differences in health are examined alongside ethnicity using the measure from Chapters 6 and 7 distinguishing current cigarette smokers from all non-smokers. Earlier analyses from these chapters showed how smoking prevalence is gendered within and across ethnic groups: minority ethnic women are less likely to be current smokers than men in the same ethnic group, whereas current smoking is comparable for white men and women. Current smoking among women was concentrated among whites, whilst high levels of smoking were found for white and Bangladeshi men aged 20-60. Figures 10.1 and 10.2 use the HEA and HSE data to examine how current smoking status is associated with reported morbidity for each ethnic group, focusing on men and women respectively. Because the number of current smokers was very small for Indian, Pakistani and Bangladeshi women, these ethnic groups are grouped together in a single ‘South Asian’ category for women in this analysis. Figure 10.1 shows how current smoking status was associated with reported morbidity for men in the HEA and HSE surveys. In the HEA surveys, there was a statistically significant relationship between current smoking and poor health for white men; 8 percent of current smokers rated their health as poor compared with only 3 percent of non-smokers. A similar statistically significant relationship was found for white men in the HSE, although the prevalence
Figure 10.1  Age adjusted prevalence of poor health by cigarette smoking status of Men in the HSE and HEA surveys (base numbers in brackets)

Men in the HEA BMEG and HALS Surveys, 1992

Men in the HSE, 1993-1996
Figure 10.2  **Age adjusted prevalence of poor health by cigarette smoking status of Women in the HSE and HEA surveys**  
[base numbers in brackets]

Women in the HEA BMEG and HALS surveys, 1992

Women in the HSE, 1993-1996
of poor health was higher for both smokers and non-smokers at 26 percent and 12 percent respectively.

For all groups of minority ethnic men, none of the relationships between current smoking status and reported health reached statistical significance. Despite this, results from both surveys were consistent with poorer health among current smokers compared with non-smokers. For African Caribbean men, this difference was of similar magnitude in the HSE and HEA surveys. In contrast, the high morbidity of current smokers was most marked for Indian men in the HEA survey and for Pakistanis in the HSE. A notable exception was for Bangladeshi men where both surveys showed little difference in the reported poor health of current smokers and non-smokers.

Comparing across ethnic groups of men, inequalities in health are clearly evident in both surveys for current and non-smokers and it is Bangladeshis who are most likely to report poor health. For example, Bangladeshi men who are not current smokers were approximately three times more likely to report 'less than good' health in the HSE compared with white non-smokers.

Figure 10.2 presents the same analysis for women. A statistically significant relationship between current smoking status and poor health was found for white women in both surveys. Similar to white men (Figure 10.1), the prevalence of poor reported health was higher for white women in the HSE compared with the HEA survey. The nature of the relationship between current smoking and poor health was the same for African Caribbean women in both surveys, although the percentage reporting poor health was greater in the HSE for smokers and non-smokers. In the combined 'South Asian' group of women (comprising Indians, Pakistanis and Bangladeshis), non-smokers in the HEA survey were slightly more likely than current smokers to report poor health (24 percent and 20 percent respectively). However, this was not a statistically significant difference and was not replicated in the HSE where current smoking was associated with the poorest reported health for South Asian women. This finding highlights the need to interpret the relationship between
smoking and poor health with caution. Firstly, because only a small number of South Asian women in both data-sets reported current smoking and secondly, combining three ethnic groups into a single 'South Asian' category may conceal any variation existing among Indian, Pakistani and Bangladeshi groups.

Overall, this analysis of current smoking and health finds the expected relationship for men and women in white and African Caribbean ethnic groups; namely, poorer health for current smokers than for non-smokers. By comparison, current smoking was less consistently associated with poor health for Indian, Pakistanis and Bangladeshis, particularly among women.

10.3 CIGARETTE CONSUMPTION AND THE HEALTH OF GENDER AND ETHNIC GROUPS

Cigarette consumption is another dimension of smoking behaviour that may be important for understanding differences in health if, for example, it is a proxy for exposure to the health-damaging effects of cigarettes. Investigation of how cigarette consumption is associated with health may also help to understand why the link between current smoking and poor health was weaker for some minority ethnic groups than for whites.

Table 10.3 uses the HEA surveys to examine ethnic differences in cigarette consumption among current smokers, based on the reported average number of cigarettes smoked daily. Reported cigarette consumption is classified as 'light' (0-9 cigs/day), 'moderate' (10-19 cigs/day) and 'heavy' (20+ cigs/day). Consistent with earlier analyses in this chapter, reported percentages for each ethnic group are standardised for age and sex.

The table shows that white adults were somewhat less likely to be light smokers than any minority ethnic group: approximately one-tenth smoked an average of 0-9 cigs/day compared with 23 percent of Indian smokers and over one-quarter of smokers who were African Caribbean or Pakistani/Bangladeshi. Minority ethnic
Table 10.3  Cigarette consumption\(^1\) of current smokers in the HEA surveys by ethnic group

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani and Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light smoker</td>
<td>9.7</td>
<td>28.0</td>
<td>23.0</td>
<td>30.5</td>
</tr>
<tr>
<td>&lt;10 cigs/day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate smoker</td>
<td>30.0</td>
<td>29.7</td>
<td>35.2</td>
<td>32.9</td>
</tr>
<tr>
<td>10-19 cigs/day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy smoker</td>
<td>41.9</td>
<td>18.1</td>
<td>16.1</td>
<td>15.7</td>
</tr>
<tr>
<td>20+ cigs/day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=</td>
<td>1318</td>
<td>176</td>
<td>113</td>
<td>137</td>
</tr>
</tbody>
</table>

\(^1\) Based on reported average number of cigarettes smoked daily.

Table excludes current smokers for whom information on cigarette consumption is missing.

Source: HEA BMEG and HALS surveys, 1992
smokers were most likely to have a moderate level of cigarette consumption (10-19 cigs/day) and, in comparison to whites, the percentage of heavy smokers (20+ cigs/day) in minority ethnic groups was very low. After taking into account age and sex, heavy smoking was over four times more likely among whites (41.9 percent) than light smoking (9.7 percent). These findings suggest that any increased risk of morbidity among smokers would be greater for whites than for minority ethnic smokers due to their greater propensity towards heavy cigarette consumption.

Figure 10.3 examines cigarette consumption by gender and ethnicity as a precursor to a logistic regression analysis relating consumption to the reported poor health of these groups. The percentages in Figure 10.3 are unstandardised for age due to the small numbers involved and must therefore be interpreted with some caution. (As in Figure 10.2, categories of Indian, Pakistani and Bangladeshi are combined into a single ‘South Asian’ group for women). The figure shows that African Caribbean women were less likely than men in this ethnic group to be current smokers and reported lower average cigarette consumption. Whereas the proportion of light smokers was comparable for men and women, there was a large gender difference in heavy smoking: only 3 percent of African Caribbean women compared with one-tenth of African Caribbean men. It is notable that information about cigarette consumption was missing for approximately 10 percent of African Caribbean men who were current smokers. The majority of Indian men who reported being a current smoker had ‘moderate’ cigarette consumption (approximately 13 percent), as did Pakistani and Bangladeshi men who were notably less likely to be heavy smokers than white men. The gender difference in current smoking and cigarette consumption was most marked for South Asian groups: whereas about 10 percent of Pakistani and Bangladeshi men were classified as heavy smokers, this was less than 0.5 percent of all South Asian women smokers.

Whilst these findings make clear the lower smoking prevalence and cigarette consumption among minority ethnic women compared to men, particularly for South Asian groups, very little gender difference was found for whites. The finding in
Figure 10.3: Cigarette consumption by gender and ethnic group
[unstandardised percentages]

Men aged 20-60

[Graph showing cigarette consumption by gender and ethnic group for men aged 20-60]

Women aged 20-60

[Graph showing cigarette consumption by gender and ethnic group for women aged 20-60]

Source: HEA BMEG and HALS Surveys, 1992
Table 10.3 that white smokers were most likely to have heavy cigarette consumption applies to both men and women in Figure 10.3.

At approximately 20 percent, heavy smoking among white women therefore far exceeds African Caribbean women at 5 percent and of South Asian women at less than 1 percent. Based on these results, it would seem unlikely that cigarette smoking or cigarette consumption can explain why minority ethnic groups, and South Asian women in particular, are more likely to report poor health than white adults.

10.4 SMOKING STATUS AND POOR HEALTH FOR ETHNIC GROUPS

The analysis so far has used three different measures of cigarette smoking: (i) lifetime smoking; (ii) current smoking and, (iii) cigarette consumption. Together these have shown that the relationship between smoking and poor health varies by ethnic group after taking into account age and sex variation. Current smoking was most consistently related to poor health for white and African Caribbean adults and was much weaker for South Asian groups, for whom reported average cigarette consumption was much lower. Logistic regression models are now presented separately by ethnic group to show the relative association of each of these smoking measures with reported ‘fairly poor’ or ‘very poor’ health in the HEA surveys. Table 10.4 presents models using a dichotomous variable for current smoking (Table 10.4a), then elaborates using information about lifetime smoking status (Table 10.4b) and finally includes data on cigarette consumption (Table 10.4c).

In calculating logistic models for each ethnic group, possible interactions between smoking status and sex were tested. However, most probably arising from the relatively small numbers in the survey, none of these interactions reached statistical significance (at P<0.05) therefore the base models control for sex along with age, but do not present results separately for men and women. To assess the efficacy of each smoking measure in discriminating the poor health reported by ethnic groups, the change in Log Likelihood Ratio is reported from a base model controlling for age (in 5-year groups) and sex.
Table 10.4  Odds ratios of 'fairly poor' or 'very poor' health for each ethnic group using different measures of cigarette smoking

<table>
<thead>
<tr>
<th>(a) Current smoking status</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not current cigarette smoker</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Current cigarette smoker</td>
<td>2.49 **</td>
<td>1.92 *</td>
<td>1.79</td>
<td>1.51</td>
<td>1.04</td>
</tr>
<tr>
<td>Δ -2LLR from base model (age and sex)</td>
<td>69.4 ***</td>
<td>4.1 *</td>
<td>2.6</td>
<td>2.0</td>
<td>0.07</td>
</tr>
<tr>
<td>Δ df</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(b) Lifetime smoking status</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smoked cigarettes</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Ex-cigarette smoker</td>
<td>1.96 **</td>
<td>1.46</td>
<td>1.07</td>
<td>1.64</td>
<td>1.11</td>
</tr>
<tr>
<td>Current cigarette smoker</td>
<td>3.93 ***</td>
<td>2.28 *</td>
<td>1.81</td>
<td>1.76</td>
<td>1.07</td>
</tr>
<tr>
<td>Δ -2 LLR from base model (age and sex)</td>
<td>55.3 ***</td>
<td>4.6</td>
<td>2.6</td>
<td>3.6</td>
<td>0.08</td>
</tr>
<tr>
<td>Δ df</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(c) Cigarette smoking status and average daily consumption</th>
<th>White</th>
<th>African Caribbean</th>
<th>Indian</th>
<th>Pakistani</th>
<th>Bangladeshi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smoked cigarettes</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Ex cigarette smoker</td>
<td>1.97 **</td>
<td>1.45</td>
<td>1.06</td>
<td>1.62</td>
<td>1.11</td>
</tr>
<tr>
<td>Current light smoker</td>
<td>2.89 **</td>
<td>2.33</td>
<td>3.73 *</td>
<td>3.34 *</td>
<td>0.96</td>
</tr>
<tr>
<td>Current moderate smoker</td>
<td>2.80 ***</td>
<td>1.91</td>
<td>1.58</td>
<td>1.64</td>
<td>0.89</td>
</tr>
<tr>
<td>Current heavy smoker</td>
<td>5.27 ***</td>
<td>0.84</td>
<td>1.34</td>
<td>0.96</td>
<td>1.27</td>
</tr>
<tr>
<td>Current smoker, age unknown</td>
<td>3.02 **</td>
<td>4.39 **</td>
<td>1.57</td>
<td>2.02</td>
<td>1.84</td>
</tr>
<tr>
<td>Δ -2LLR from base model (age and sex)</td>
<td>63.2 ***</td>
<td>8.8</td>
<td>4.2</td>
<td>6.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Δ df</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>N</td>
<td>3708</td>
<td>562</td>
<td>844</td>
<td>764</td>
<td>512</td>
</tr>
</tbody>
</table>

All models control for age in 5-year groups.  ** Statistical significance of variable in the model; +P=0.05; +++P=0.001.
** Statistical significance of difference from the reference category or Δ -2LLR; * P=0.05; **P=0.01; ***P=0.001.

Source:  HEA BMEG and HALS surveys, 1992
Table 10.4 (a) shows that current smoking status was significantly associated with poor health for white and African Caribbean ethnic groups only. This association was of greatest magnitude for white adults, for whom there was an approximate increase of 2.5 in the odds ratio of poor health for current smokers. For Indian and Pakistani adults, the results were consistent with poorer health among current smokers, but for Bangladeshis the odds of poor health did not vary with smoking status. This is confirmed by a change in LLR of only 0.07 for Bangladeshis when smoking was included in the model. Thus, the finding of no relationship between current smoking and poor health for Pakistanis and Bangladeshis in Table 10.1 applies only to Bangladeshis when these groups are examined separately.

Lifetime smoking status (Table 10.4b) had a statistically significant and linear association with health for whites. Ex-smokers had higher reported morbidity than those who had never smoked, but the odds ratio of poor health was nearly four times higher for white current smokers. The odds of poor health for current smokers were also substantially increased for African Caribbean adults relative to never smokers, although ex-smokers did not have significantly poorer health. The results for Indian and Pakistani adults were consistent with poorer health among current smokers after controlling for age and sex. However, these differences were not statistically significant and there was no variation in the odds of reported health for Indian adults who had never smoked or who were ex-smokers. In contrast to other ethnic groups, the results in Table 10.4b show that lifetime smoking status makes no contribution to the reported health of Bangladeshis.

The final measure of smoking status tested in the models for each ethnic group included information on the cigarette consumption of current smokers (Table 10.4c). The results for white adults clearly show that those who had never smoked cigarettes reported the best health. The odds ratios show that cigarette consumption is highly important for the self-rated health of white current smokers; heavy smokers had odds of poor health more than five times higher than those who had never smoked. For light or moderate white smokers, there was a statistically significant difference of nearly three times the reference category. For minority ethnic groups, the association
between cigarette consumption and health was less clear; African Caribbean heavy smokers did not have an increased odds ratio of poor health whereas this was suggested for light smokers. Figure 10.3 noted the sizeable proportion of African Caribbean men for whom information about cigarette consumption was missing and Table 10.4c shows that current smokers in this category had significantly poorer health than the reference category of those who had never smoked. For Indian and Pakistani groups, the poorest health was associated with light smoking and this was significantly different from the reference category of those who had never smoked. However, whereas the odds ratios of poor health were higher for all categories of Indian smokers and, to a lesser extent, Bangladeshi heavy smokers, this was not the case for Pakistanis. Despite the absence of any statistically significant variation in the odds of poor health for Bangladeshis associated with this measure of cigarette smoking, the odds ratios were consistent with a link between heavy smoking and poor health after adjusting for age and sex in the model.

Overall, the logistic regression analysis confirms that the association between measures of smoking status and health are generally weaker and less consistent for minority ethnic groups than for whites, particularly for Bangladeshis. However, the change in LLR for minority ethnic groups suggests that the smoking measure used in Table 10.4c can explain most variance in health after age and sex.

10.5 SMOKING STATUS AND GENDER AND ETHNIC HEALTH INEQUALITY

Having examined how different measures of smoking status are associated with health for ethnic groups, attention now focuses on the efficacy of these same measures to moderate inequality in reported health found across gender and ethnic groups. As shown in Chapter 9 using HEA survey data, minority ethnic groups - notably Pakistanis and Bangladeshis - have substantially poorer health than whites and, within ethnic groups, women are generally more likely to report poor health than men. If, for example, controlling for current smoking status reduced the high odds ratios of poor health found for minority ethnic men and women relative to white men, then this
Table 10.5  Logistic regression of 'fairly poor' or 'very poor' health by different measures of cigarette smoking

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in 5 year groups)</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Ethnicity and gender</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.48 **</td>
<td>1.47 **</td>
<td>1.49 **</td>
<td>1.52 **</td>
</tr>
<tr>
<td>African Caribbean men</td>
<td>2.19 **</td>
<td>2.11 **</td>
<td>2.14 **</td>
<td>2.20 **</td>
</tr>
<tr>
<td>African Caribbean women</td>
<td>2.78 ***</td>
<td>3.07 ***</td>
<td>3.29 ***</td>
<td>3.46 ***</td>
</tr>
<tr>
<td>Indian men</td>
<td>3.58 ***</td>
<td>3.79 ***</td>
<td>4.08 ***</td>
<td>4.29 ***</td>
</tr>
<tr>
<td>Indian women</td>
<td>3.58 ***</td>
<td>4.48 ***</td>
<td>5.13 ***</td>
<td>5.34 ***</td>
</tr>
<tr>
<td>Pakistani men</td>
<td>4.86 ***</td>
<td>5.00 ***</td>
<td>5.25 ***</td>
<td>5.53 ***</td>
</tr>
<tr>
<td>Pakistani women</td>
<td>7.74 ***</td>
<td>10.08 ***</td>
<td>11.50 ***</td>
<td>11.95 ***</td>
</tr>
<tr>
<td>Bangladeshi men</td>
<td>8.11 ***</td>
<td>7.47 ***</td>
<td>7.88 ***</td>
<td>8.42 ***</td>
</tr>
<tr>
<td>Bangladeshi women</td>
<td>13.21 ***</td>
<td>15.79 ***</td>
<td>18.01 ***</td>
<td>18.90 ***</td>
</tr>
<tr>
<td>Current smoking status</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not current smoker</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>1.93 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime smoking status</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never smoked</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>1.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>2.17 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarette consumption and smoking status</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never smoked</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>1.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current light smoker</td>
<td>2.03 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current moderate smoker</td>
<td>1.72 **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current heavy smoker</td>
<td>2.73 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker, consumption unknown</td>
<td>2.33 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N=6393

-2LLR in base model (age, ethnicity and gender) 4425.6
Δ -2LLR (Model Chi Square and statistical significance) 44.8 *** 47.6 *** 54.0 ***
Δ df 1 2 5
Nagelkerke R² statistic 0.20 0.20 0.20

+++ Statistical significance of variable in the model: +++ P<0.001.
** Statistical significance of difference from reference category or in Δ -2LLR; **P<0.01; ***P<

Source: HEA BMEG and HALS surveys, 1992
would be consistent with the interpretation that smoking behaviour is at least partly attributable to reported health.

Each measure of smoking status was added sequentially to Table 10.5: (i) current smoking; (ii) lifetime smoking; (iii) cigarette consumption. The change in LLR is used to show the independent contribution of each smoking measure to a model containing age (in 5-year groups), ethnicity and gender. In this model for all adults, the Nagelkerke statistic is also reported to demonstrate the strength of association between smoking and health in each model. The first model in Table 10.5 confirms the marked pattern of health inequalities associated with gender and ethnicity in the HEA surveys, against which models containing each smoking measure are to be compared.

Current smoking status is added in Model 2 of Table 10.5. The association between current smoking and poor health was statistically significant for all adults in the model including age, ethnicity and gender. Comparing the odds ratios of poor health for gender and ethnic groups with Model 1 shows that controlling for current smoking does not weaken the overall pattern of inequalities in health associated with gender and ethnic group. On the contrary, taking into account current smoking serves to accentuate inequality associated with gender for minority ethnic groups. The odds of poor health become greater for all groups of minority ethnic women thereby emphasising their health disadvantage relative to white men. Notably, this change was not evident for white women whose current smoking behaviour was found to be very similar to that of white men (Figures 10.1 and 10.2). For men, the odds ratios of poor health were only reduced for Bangladeshis and, to a much lesser extent African Caribbean men, by including current smoking in the model. For Pakistani and Indian men, whose reported smoking was lower than for men from other ethnic groups, the odds ratios of poor health slightly increased after controlling for current smoking. However, these changes for men were very minor and did not alter the finding of statistically significant health inequality for minority ethnic men relative to white men.
Lifetime smoking status in Model 3 shows that the odds of poor health for current smokers is more than two-times higher relative to adults who had never smoked but there is no statistically significant difference for ex-smokers. Including this measure of smoking in the model again widened the health differences between many minority ethnic groups and white men, but to a greater extent than in the previous model. This change was more evident for minority ethnic women than men, particularly for Indians, Pakistanis and Bangladeshis where smoking prevalence is low. In contrast, there was no real change in the odds of poor health for white women when this measure of smoking was included in the model.

When information about cigarette consumption was added in Model 4, the odds ratios confirm that being a heavy smoker (20+ cigs/day) is associated with the poorest health. Level of cigarette consumption was not, however, consistently related to reported health: light smokers (0-9 cigs/day) had odds of poor health more than two times higher than the reference category of those who had never smoked whereas for moderate smokers (10-19 cigs/day) there was a 72% increase.

The odds of poor health for all gender and ethnic groups relative to white men were increased by the addition of this smoking measure to a greater extent than models controlling for current smoking (Model 2) and lifetime smoking (Model 3): the change in LLR was 54.0 in Model 4. Whereas controlling for smoking in Models 2 and 3 slightly reduced the odds of poor health for Bangladeshi men, this was reversed when cigarette consumption was taken into account in the final model. It is white men who are most likely to be current smokers and, as shown in Figure 10.3, to smoke heavily. Thus, it is a paradox that white men have the best self-reported health, despite their greater propensity to engage in this health-damaging behaviour. Conversely, poor health remains concentrated among minority ethnic groups, despite the general finding that smoking and cigarette consumption is much lower than for white men. This is particularly the case for minority ethnic women, but does not apply to white women whose smoking profile is essentially similar to that of white men and hence smoking cannot account for a statistically significant gender difference in health among women.
The results above for cigarette smoking and health inequality across gender and ethnic groups appear to refute the suggestion that cigarette smoking in some way contributes to the poorer health found among minority ethnic men and women than for white men. However, it remains here to investigate how cigarette smoking compares with other correlates of reported health investigated in this thesis; namely social embeddedness and socio-economic position. This is important in two respects; firstly, earlier analyses in chapters 6 and 7 found that cigarette smoking was a socially patterned practice. Strong linear relationships between current smoking and socio-economic position were found within many gender and ethnic groups, whilst subjective perceptions relating to quality of neighbourhood were also linked to this health-related behaviour. Given these findings, it is possible that the overall contribution of smoking to poor health may be mediated by socio-economic or social embeddedness measures which, when taken into account, further impact on the pattern of gender and ethnic differences in health. Secondly, adding measures of smoking, social embeddedness and socio-economic position sequentially into a logistic model containing age, ethnicity and gender, then examining the change in the odds ratios of poor health for white women and minority ethnic adults of both sexes, is one way of investigating and comparing the relative contribution of these factors to health.

Such a logistic regression model is presented in Table 10.6 using HEA data. To a model that contains the measure of smoking used in Table 10.5 (model 4), along with age, ethnicity and gender, measures of social embeddedness are added (Model 5), followed by socio-economic measures (Model 6). The ordering of variables in this way is consistent with previous chapters where the final inclusion of socio-economic measures had a sizeable impact on gender and ethnic inequality in smoking (Chapter 7) and health (Chapter 9) whilst moderating the contribution of social embeddedness. A method of forward selection was used to derive the best fit logistic regression model presented in Table 10.6, therefore variables that were not statistically...
**Table 10.6** Logistic regression of 'fairly poor' or 'very poor' health by different measures of cigarette smoking, social embeddedness and socio-economic position

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (in 5 year groups)</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td><strong>Ethnicity and gender</strong></td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>White men</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>White women</td>
<td>1.52 **</td>
<td>1.40 *</td>
<td>1.22</td>
</tr>
<tr>
<td>African Caribbean men</td>
<td>2.20 **</td>
<td>1.92 *</td>
<td>1.17</td>
</tr>
<tr>
<td>African Caribbean women</td>
<td>3.46 ***</td>
<td>3.05 ***</td>
<td>1.97 **</td>
</tr>
<tr>
<td>Indian men</td>
<td>4.29 ***</td>
<td>4.39 ***</td>
<td>2.76 ***</td>
</tr>
<tr>
<td>Indian women</td>
<td>5.34 ***</td>
<td>4.99 ***</td>
<td>2.96 ***</td>
</tr>
<tr>
<td>Pakistani men</td>
<td>5.53 ***</td>
<td>4.95 ***</td>
<td>2.98 ***</td>
</tr>
<tr>
<td>Pakistani women</td>
<td>11.95 ***</td>
<td>9.73 ***</td>
<td>4.04 ***</td>
</tr>
<tr>
<td>Bangladeshi men</td>
<td>8.42 ***</td>
<td>7.90 ***</td>
<td>3.78 ***</td>
</tr>
<tr>
<td>Bangladeshi women</td>
<td>18.90 ***</td>
<td>16.03 ***</td>
<td>6.88 ***</td>
</tr>
</tbody>
</table>

**Smoking measure**

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cigarette consumption and smoking status</strong></td>
<td>+++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Never smoked</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>1.29</td>
<td>1.19</td>
<td>1.28</td>
</tr>
<tr>
<td>Current light smoker</td>
<td>2.03 ***</td>
<td>1.89 **</td>
<td>2.03 **</td>
</tr>
<tr>
<td>Current moderate smoker</td>
<td>1.72 **</td>
<td>1.53 *</td>
<td>1.38</td>
</tr>
<tr>
<td>Current heavy smoker</td>
<td>2.73 ***</td>
<td>2.23 ***</td>
<td>1.80 **</td>
</tr>
<tr>
<td>Current smoker, amount unknown</td>
<td>2.33 ***</td>
<td>1.92 **</td>
<td>1.74 *</td>
</tr>
</tbody>
</table>

**Social Embeddedness measures:**

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality of neighbourhood</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>High (+ve perceptions)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Medium</td>
<td>1.42 **</td>
<td>1.38 **</td>
<td>1.65 ***</td>
</tr>
<tr>
<td>Low</td>
<td>1.71 ***</td>
<td>1.49 ***</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived close friends and relatives</strong></td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Close friends and relatives</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>No close friends and/or relatives</td>
<td>1.58 ***</td>
<td>1.30 *</td>
<td>1.30 *</td>
</tr>
</tbody>
</table>

**Reported associational activity**

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community activity (quasi formal)</strong></td>
<td>++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Community active in last two weeks</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Not community active in last two weeks</td>
<td>1.39 **</td>
<td>1.30 *</td>
<td></td>
</tr>
</tbody>
</table>

**Socio-economic measures**

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educational Level</strong></td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Higher</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>A Level or equiv</td>
<td>1.15</td>
<td></td>
<td>2.28 **</td>
</tr>
<tr>
<td>O'L level or equiv</td>
<td></td>
<td>2.64 *</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3.35 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>11.42 ***</td>
<td></td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td>+++</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>In paid work</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2.49 ***</td>
<td>2.45 ***</td>
<td>11.42 ***</td>
</tr>
<tr>
<td>Looking after home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other non-employed groups</td>
<td>11.42 ***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material Deprivation score</strong></td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>0</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1-2</td>
<td>1.35 *</td>
<td>1.35 *</td>
<td>1.35 *</td>
</tr>
<tr>
<td>3-4</td>
<td>1.22</td>
<td>1.22</td>
<td>1.22</td>
</tr>
</tbody>
</table>

N=518

-2LLR in base model (age, gender and ethnicity) 4425.6

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ-2LLR (Δ df) from base model</td>
<td>54.0 *** (5)</td>
<td>104.9 *** (9)</td>
<td>450.2 *** (18)</td>
</tr>
<tr>
<td>Δ-2LLR (Δ df) from previous model</td>
<td>-</td>
<td>53.1 *** (4)</td>
<td>349.7 *** (9)</td>
</tr>
</tbody>
</table>

Nagelkerke R² statistic 0.20 (0.22 (0.32)

* = Statistical significance of variable in the model; +P<0.05; ++P<0.01; +++P<0.001

* = Statistical significance of difference from reference category or in Δ-2LLR. *P<0.05; **P<0.01; ***P<0.001.

Variables not selected into model: Experiential measures of social embeddedness (crime, problem neighbours), informal associational activity with friends and relatives, material deprivation. No interaction terms were statistically significant.

Source: HEA BMEG and HALS surveys, 1992
significant at the P<0.05 level were excluded. For each model in Table 10.6, two LogLikelihood Ratios are reported; the first indicates the change from a base model containing age, ethnicity and gender and the second the change from the previous model.

(i) Social Embeddedness

Model 4 in Table 10.6 presents the odds ratios of poor health for gender and ethnic groups after controlling for the measure of smoking status and cigarette consumption discussed earlier. Three measures of social embeddedness were selected into Model 5 and, of these, two related to the subjective perceptions domain; quality of neighbourhood and perceived close friends and relatives. The other was an associational measure based on reported involvement in community based groups. Together these showed that neighbourhoods perceived to be less than 'high' in quality, a perceived lack of close friends and/or relatives and non-involvement in community activity significantly increased the odds ratios of poor health for all adults in the model. It is notable that measures derived from the experiential domain, specifically reported crime or problem neighbours, were not selected into the model. Informal measures of associational activity, based on actual reported contact were also excluded, but perceptions about close relationships with family were more strongly and consistently related to reported health after taking into account the other variables in Model 5. This supports the conclusion in chapter 9 that a measure of reported general health is most sensitive to measures of social embeddedness based on subjective perceptions.

The social embeddedness measures selected into the model did slightly weaken the relationship between cigarette smoking and poor health found for all adults. Although this is consistent with the finding in chapter 7 that social embeddedness makes some contribution to the likelihood of being a smoker, all categories of current smoker continued to have odds of poor health significantly higher than the reference category (never smoked).
After taking into account measures of social embeddedness that were included in the model, health inequality for gender and ethnic groups (relative to white men) slightly reduced in magnitude. With the exception of Indian men, the odds ratios of reporting poor health became lower for all ethnic groups by controlling for these measures of social embeddedness along with smoking, although women in each ethnic group continued to have the highest odds ratios of poor health. Unlike the finding in Table 9.8 where health inequality across gender and ethnic groups became more pronounced after adjusting for a wider range of social embeddedness measures, the results in Table 10.6 suggest that subjective perceptions in particular may have a role in shaping unequal patterns of reported health. However, ethnicity and gender remained highly statistically significant in the model.

(ii) Socio-economic

When socio-economic measures were tested for inclusion in Model 6, employment status rather than occupational class was selected along with educational level and material deprivation. There was a linear education gradient in reported health for all adults after the inclusion of social embeddedness and smoking measures; adults with no qualifications had odds of poor health more than three times higher than the highly qualified. As a structural measure, current employment status was highly statistically significant in the model. Adults in paid employment had the best health relative to those who were unemployed or looking after the home, whilst the poorest health was among other non-employed groups (a category that includes the long-term sick or disabled). In addition to education and employment, material deprivation also had a significant association with health. However, unlike Table 9.8 in the previous chapter, this relationship was not linear; adults who were most materially deprived (score 3-4) did not have a significantly higher odds ratio of poor health, whereas this was the case for those with a lower score of 1 or 2.

Including these socio-economic measures and employment status in the final model served to alter the pattern of odds ratios evident for smoking and cigarette consumption. For current smokers who reported smoking moderately (10-19 cigs/day) or heavily (20+ cigs/day), odds ratios of poor health became lower by
adjusting for socio-economic position. For moderate smokers, this change meant that their health was no longer significantly poorer than that of adults who had never smoked. From this result it might be concluded that smoking moderately or heavily is associated with a disadvantaged socio-economic position. Socio-economic disadvantage is not, however, related to light smoking in the same way; the odds ratios of poor health increased for light smokers when socio-economic measures were added to the model. Thus, whilst the negative health effects of smoking moderately or heavily may partly be explicable in terms of poor socio-economic position, the association between light smoking and poor health is independent of socio-economic measures included in Model 6.

As expected, socio-economic position had a sizeable impact on gender and ethnic health inequality. Relative to white men, a substantial decrease in the odds ratios of poor health was evident for all other gender and ethnic groups. The magnitude of this change was greatest for women in each ethnic group who were more likely than men to rate their health as 'fairly poor' or 'very poor'. The significant gender difference in reported health for whites disappeared after taking socio-economic position into account and African Caribbean men (but not African Caribbean women) no longer had odds of poor health significantly higher than white men.

The contribution of socio-economic position far outweighed that of cigarette smoking and social embeddedness. This is illustrated in Figure 10.4 which shows how the odds ratios of poor health for men and women in each ethnic group changed when measures of smoking, social embeddedness and socio-economic position were added to the logistic regression model in Table 10.6. For many gender and ethnic groups in Figure 10.4, taking cigarette smoking into account increased the magnitude of health disadvantage relative to white men. This was most evident for South Asian ethnic groups who had the lowest smoking prevalence and cigarette consumption. However, the change in odds ratios of poor health was much more sizeable for Indian, Pakistani and Bangladeshi women than for men, and this is likely to reflect substantial gender differences in the likelihood of being a smoker for these ethnic groups. In comparison to smoking, it can be seen from Figure 10.4 that measures of social
The change in odds ratios of 'poor health' for gender and ethnic groups* by controlling for cigarette smoking, socio-economic position and social embeddedness

White

- Age adjusted odds relative to white men
- + smoking (stage 4)
- + SE (stage 5)
- + SEP (stage 6)

African Caribbean

- Age adjusted odds relative to white men
- + smoking (stage 4)
- + SE (stage 5)
- + SEP (stage 6)

Bangladeshi

- Age adjusted odds relative to white men
- + smoking (stage 4)
- + SE (stage 5)
- + SEP (stage 6)

Indian

- Age adjusted odds relative to white men
- + smoking (stage 4)
- + SE (stage 5)
- + SEP (stage 6)

Key: SE= Social Embeddedness
SEP= Socio-economic position

Source: HEA BMEG and HALS surveys, 1992
embeddedness slightly moderated the pattern of health inequality across gender and ethnic groups, as shown by a decrease in the odds of poor health relative to white men. However, these changes were modest when compared with socio-economic position. By controlling for socio-economic measures, the odds of poor health for all minority ethnic groups and for white women were markedly decreased. Thus, socio-economic disadvantage remains a primary explanation for the poorer reported health of minority ethnic men and women relative to white men and for gender inequality in health among white adults of working-age.

10.7 CURRENT SMOKING AND POOR HEALTH AMONG ETHNIC GROUPS: COMPARING SOCIAL EMBEDDEDNESS AND SOCIO-ECONOMIC POSITION

The analysis so far has shown that measures of reported cigarette smoking cannot explain why white men have significantly better health than white women or minority ethnic groups. Indeed, excluding Bangladeshi men, white men were more likely to be current smokers and to smoke heavily than minority ethnic groups. It would therefore be expected that the health effects of smoking would be most detrimental to white men’s health. Supporting this assertion is the finding of a stronger and more consistent relationship between smoking status and poor health for white men, and for white women, whose smoking profile was very similar. By contrast, smoking had a much weaker relationship with reported health for minority ethnic men and women, particularly for Bangladeshi men and South Asian women.

In the final part of this analysis, the nature of the relationship between current smoking and poor health is focused upon in more detail for each ethnic group by examining the relative impact of social embeddedness and socio-economic position. Figure 10.5 presents the odds of poor health for current smokers in each ethnic group relative to non-smokers, after controlling for age and sex in the model and then measures of: i) social embeddedness; ii) socio-economic position. Using this approach, it is possible to examine how the smoking and health relationship is modified by these characteristics.
Figure 10.5

Odds ratios of poor health for current smokers relative to non-smokers in each ethnic group: change in odds ratios with addition of social embeddedness and socio-economic measures

a) Whites

<table>
<thead>
<tr>
<th>OR of poor health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base model (age and sex)</td>
</tr>
<tr>
<td>+ SE</td>
</tr>
<tr>
<td>+ SEP</td>
</tr>
</tbody>
</table>

b) African Caribbean

<table>
<thead>
<tr>
<th>OR of poor health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base model (age and sex)</td>
</tr>
<tr>
<td>+ SE</td>
</tr>
<tr>
<td>+ SEP</td>
</tr>
</tbody>
</table>

c) Indian

<table>
<thead>
<tr>
<th>OR of poor health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base model (age and sex)</td>
</tr>
<tr>
<td>+ SE</td>
</tr>
<tr>
<td>+ SEP</td>
</tr>
</tbody>
</table>

d) Pakistani

<table>
<thead>
<tr>
<th>OR of poor health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base model (age and sex)</td>
</tr>
<tr>
<td>+ SE</td>
</tr>
<tr>
<td>+ SEP</td>
</tr>
</tbody>
</table>

e) Bangladeshi

<table>
<thead>
<tr>
<th>OR of poor health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base model (age and sex)</td>
</tr>
<tr>
<td>+ SE</td>
</tr>
<tr>
<td>+ SEP</td>
</tr>
</tbody>
</table>

Note: In all models, the reference category is 1.00=Non Smokers

** Statistical significance of difference from the reference category; *P<0.05; **P<0.01; ***P<0.001

Key: SE= Social Embeddedness; SEP= Socio-economic Position

Source: HEA BMEG and HALS surveys, 1992
Figure 10.5a. shows that white current smokers had significantly poorer health than non-smokers; after controlling for age and sex, the odds ratio for smokers was 2.38. By controlling for social embeddedness, this odds ratio becomes slightly lower but, at over two-times that of non-smokers, remains statistically significant. Although the way in which the smoking and health relationship for whites was modified by social embeddedness is consistent with the argument that subjective perceptions in particular are important for self-assessments of health, its overall impact was minor.

A far greater change was apparent after adjusting for the socio-economic position of white adults, although the odds ratio of poor health for current smokers was still significantly increased by 65 percent. Thus, whilst socio-economic disadvantage would appear to be a key mediator of the relationship between current smoking and poor health for whites, it is not a complete explanation.

For African Caribbean adults in Table 10.5b, the same relationship between current smoking and poor health was found, although this was of lesser magnitude than for whites. Once social embeddedness was taken into account, the odds of poor health for current smokers were decreased to the extent that the difference from non-smokers was no longer statistically significant. However, a greater overall change resulted after socio-economic measures were included in the model for African Caribbean adults; the odds ratio of poor health was only 54 percent higher for current smokers relative to non-smokers, compared with 76 percent in the previous model.

Unlike white and African Caribbean adults, there was little evidence that social embeddedness or the socio-economic circumstances of Indian adults modified the relationship between smoking and poor health (Table 10.5c.) Although the odds ratio of poor health for current smokers decreased and became non-significant once social embeddedness was taken into account, this change was a very minor one. Socio-economic position did not modify the smoking/health relationship in the same way for Indian adults as it did for white and African Caribbean adults. Rather than the odds ratios of poor health decreasing for current smokers once socio-economic position was included in the model, the health disadvantage of Indian current smokers relative
to non-smokers was accentuated. Although this finding did not reach statistical significance, it accords with findings in Chapter 6 that current smoking among Indians is not consistently linked to indicators of socio-economic disadvantage in the same way as for whites.

Pakistani current smokers were more likely to report poor health than non-smokers, but this association was relatively modest and did not reach statistical significance. The odds of poor health for current smokers relative to non-smokers did become lower after controlling for social embeddedness, but were still increased by 24 percent. Socio-economic position could account for the remainder of the health disadvantage suggested for Pakistani current smokers; the odds of poor health became comparable with the reference category once these measures were included in the model.

As noted earlier in this chapter, the association between current smoking and poor health was absent for Bangladeshi adults in the HEA surveys. This is shown in Figure 10.5e where odds of poor health for current smokers were only increased by 12 percent relative to non-smokers. Whereas social embeddedness had a minor impact upon the smoking/health relationship for other ethnic groups, the odds ratio of poor health for Bangladeshi adults was unchanged once these measures were taken into account. In common with Indian adults, controlling for socio-economic position increased the odds ratio of poor health for Bangladeshi current smokers. Although this change did not reach statistical significance, the odds ratios suggest that reported poor health is increased by approximately one-third for current smokers relative to non-smokers. This is perhaps a surprising finding considering that Bangladeshi men (but not women) had high smoking prevalence and that Bangladeshis of both sexes have high reported morbidity.

10.8 DISCUSSION

This chapter focused on the relative contribution of a single health-related behaviour, cigarette smoking, to gender and ethnic health inequality. The analysis presented in
this chapter found an association between cigarette smoking and reported poor health among working-age adults, not dissimilar to that found in other studies (Manderbacka et al. 1999; Kind et al. 1998). However, cigarette smoking was not consistently related to poorer health for all gender and ethnic groups, rather the health of white adults was most strongly related to current smoking status and had a linear relationship with reported cigarette consumption and lifetime smoking status. By contrast, these linear relationships with health were largely absent for minority ethnic adults, for whom reported smoking and cigarette consumption were generally much lower than for whites. Although smoking was associated with health in a similar way for white and African Caribbean adults, results for some South Asian groups suggested the poorest health for non-smokers or light smokers. Unlike other ethnic groups, there was no evidence that the relationship between current smoking and health for Indian and Bangladeshi adults was attributable in part to socio-economic position, hence the links between smoking and health, and the role of socio-economic disadvantage, cannot be assumed for these ethnic groups.

A key finding was that measures of smoking status, including information on cigarette consumption, did not moderate the pattern of health inequality across gender and ethnic groups. This would be expected if cigarette smoking could account for some, or all, of the health disadvantage for minority ethnic men and women relative to white men. In contrast, taking smoking into account only served to emphasise the poorer health of minority ethnic adults, particularly women, who were less likely to be current smokers and to smoke heavily than white men. Unlike minority ethnic groups, there were few gender differences in smoking for whites, and this health-related behaviour could not account for the significantly poorer health reported by white women relative to white men.

Measures of social embeddedness that were significantly associated with health centred on the subjective perceptions domain. Once these were taken into account, there were minor changes in the odds ratios of poor health for gender and ethnic groups consistent with the interpretation that subjective perceptions are important for general health. However, the key role of socio-economic disadvantage in reducing the
magnitude of health inequality across gender and ethnic groups, far outweighed that of social embeddedness. Thus, it must be concluded that socio-economic position, and not social embeddedness or cigarette smoking, are central to the explanations for gender and ethnic health inequality among working age adults.
This thesis investigated inequalities in health associated with gender and ethnicity. In doing so, attention centred on how gender and ethnicity interact with each other and give rise to inequalities in reported health among working age adults. Gender and ethnicity were conceptualised as social divisions, rather than as 'natural' and immutable constructs, hence the study is concerned with the meaning and significance these divisions acquire in structuring everyday beliefs and interactions in different spheres of social life. It was argued that, whilst comparatively rare, such an approach can bring to the forefront diversity and inequality neglected when ethnicity and gender are examined in isolation from each other or from other characteristics known to affect health. Hence, the analysis presented in this study examined how the nature of gender and ethnic inequalities in socio-economic position, social embeddedness and smoking accrue either advantages or disadvantages in terms of self-assessed health. These three areas were chosen for investigation because they represent major social explanations for health inequalities in the adult population, which are particularly under-investigated for minority ethnic groups. A number of conceptual issues are raised when such explanations are related to gender and ethnic divisions. Firstly, the unequal relations of gender and ethnicity may differentially structure the experience or meaning associated with a social position. Secondly, key concepts used to represent these social positions, such as social class, evolved primarily with (white) men in mind, hence may be ill-suited to capture such differences that are salient for the reported health of other gender and ethnic groups.

The empirical analysis presented in this thesis first investigated how a selected health-related behaviour, cigarette smoking, was associated with gender and ethnic group and how, within ethnic groups, the likelihood of smoking was related to measures of socio-economic position and social embeddedness. Thus, similarities and differences in the social patterning of cigarette smoking for gender and ethnic groups were made explicit before analysing the relationship between smoking and health. This is
important because the weight given to health-related behaviour or mechanisms such as socio-economic position or social embeddedness typically invoke different conceptual explanations about the meaning and analytical utility of gender and ethnicity. Class disadvantage, for example, is recognised as a mechanism of inequality for minority ethnic groups but less clear is how non-class relations, such as those encapsulated in the concept of social embeddedness, relate to patterns of gender and ethnic inequality in health and smoking.

These analytic aims were achieved by the secondary analysis of two complementary health data-sets; the Health Survey for England (1993-1996) and a combined data-set comprising the 1992 'Health and Lifestyle Survey' (HALS) and the 'survey of Black and Minority Ethnic Groups' (BMEG), conducted by the Health Education Authority in the same year. A key advantage of using two health surveys to inform the analysis was that it facilitated comparison of the health and smoking associated with gender and ethnic groups. This is important because where similarities across data-sets were found, this served to reinforce and support patterns of inequality - particularly when the analysis was based on small sub-groups in the survey. The analysis also exploited the different strengths of the HSE and HEA data, which differed in their sampling design and coverage.

The Health Survey for England is an established cross-sectional annual survey and, importantly for the aims of this analysis, is based on a nationally representative sample of gender and ethnic groups. The continuity of the HSE's design allowed four years of cross-sectional data to be combined, thus boosting the number of minority ethnic men and women contained in the sample. The strengths of the combined HEA data-set are that it included questions on neighbourhood and environmental problems, such as crime, that were absent in the HSE, as well as socio-economic and smoking questions that were similar to those in the aforementioned survey. The BMEG survey focused exclusively on minority ethnic groups and maximised response by conducting interviews in languages other than English. It also only sampled areas of high minority ethnic concentration (where at least 10 percent of households were headed
by a minority ethnic adult according to the 1981 Census), therefore it did not provide a representative sample of localities in which minority ethnic groups live. This adds an important contextual dimension to the interpretation of findings for minority ethnic adults (but not for white adults) in the HEA data-set because the characteristics of gender and ethnic groups living in high concentration areas may differ from areas of lesser minority ethnic concentration. One way in which high ethnic concentration may have a contextual impact upon health was suggested in relation to social embeddedness (Figure 3.2, Chapter 3). Although it is not possible to empirically test assumptions contained in this model, this is a recurrent theme and where possible some insight about the nature of these differences may be gained by comparing the profiles of minority ethnic groups in the HEA data with those in the nationally representative HSE sample.

This concluding chapter first reviews key findings from the analysis, comparing and contrasting socio-economic position, social embeddedness and smoking behaviour in relation to gender and ethnic health inequality. These empirical findings are then used as a basis from which to develop more theoretically-informed arguments about the nature of social divisions in contemporary society.

11.1 GENDER AND ETHNIC HEALTH INEQUALITY

A key finding was of marked health inequality associated with ethnic group using a measure of self-assessed general health. Both health surveys showed that minority ethnic adults of working age were less likely than white adults to rate their health as 'good'. In common with other surveys of British minority ethnic populations, there existed considerable diversity in the reported health of African Caribbean, Indian, Pakistani and Bangladeshi adults (Erens et al. 2001; HEA, 1999; Nazroo, 1997; Fenton et al. 1995). The poorest health was reported by Bangladeshis, followed by Pakistanis, African Caribbean and Indian adults.

Within minority ethnic groups, gender was a key dimension of health inequality. Findings from both health surveys were generally consistent with poorer health
among women than men after standardising for age. Importantly, gender was found to differentiate the health of minority ethnic groups to a much greater extent than for white adults, where reported morbidity was broadly comparable for men and women of working age. This difference suggests that the reported finding of little or no gender inequality in health may reflect the characteristics of an overwhelmingly white sample, rather than identify inequality in health among minority ethnic men and women. Only by connecting gender with ethnicity do patterns of health inequality become apparent.

Health inequality associated with ethnicity and gender was even more pronounced when examined in relation to white men. In both surveys, white men had the best health, followed by Indian and African Caribbean men, but Pakistani or Bangladeshi men reported the poorest health. Thus, ‘men’ are not universally advantaged in their health, rather clear ethnic divisions are evident that serve to problematise their health experience. A similar pattern of inequality was found when the health of minority ethnic women was compared to white men, but the health disadvantage of women was of greater magnitude than for men. Almost without exception, women in each ethnic group had higher reported morbidity than for men. This gender inequality extended to whites as well as minority groups, although this was not as pronounced.

These findings demonstrate that in combination, gender and ethnic group can reveal unequal patterns of reported health. In some instances, these can question findings of apparent health ‘equality’ between the sexes. When gender and health was examined in isolation from ethnicity in this analysis, the finding of only a slight gender difference appeared to lend support to the recent questioning of a female ‘excess’ in reported morbidity (Macintyre et al. 1996). Only when ethnic group was examined alongside gender did marked health inequalities emerge, most clearly for minority ethnic groups. These findings therefore add to a growing body of evidence that there are substantial differences in health between the main ethnic populations of the UK, but in addition draws attention to the existence of gendered differences. To try and elucidate why inequality in health is shaped in this way, the analysis focused on key social differences. One of these relates to the differential position of gender and
ethnic groups in the social structure and is examined using measures of socio-economic position.

11.2. SOCIO-ECONOMIC INEQUALITY

Investigation of socio-economic differences in health for gender and ethnic groups did not rely solely on a measure of social class, but included indicators of educational qualifications and material deprivation, as well as a structural measure of employment status. There were a number of reasons for adopting this multi-dimensional approach. Firstly, social class, whilst long established and central to the health inequalities debate, is likely to be of more limited utility in representing the position of women and of minority ethnic groups in the class structure than it is for white men. This is because the reliance of social class on current or previous occupational activity in the formal labour market will disproportionately exclude women and minority groups who have never had a paid job and struggle to represent the current socio-economic circumstances of non-employed adults who may have left the labour market many years earlier, e.g. to raise a family. Among the economically active, concerns have been expressed about the ability of social class schemas, arguably centred on employment characteristics typical of white males, to adequately represent the types of occupations in which women and minority ethnic groups are disproportionately situated. Secondly, there is a likelihood that alternative measures of socio-economic position differ in their meaning and equivalence across gender and ethnic groups and so ultimately in the nature of their relation with health. This ties into a third concern that class represents outmoded and outdated distinctions grounded in economic relations, such as job skill, that have lost explanatory power in contemporary society in favour of other forms of social differentiation (Bradley, 1997). An investigation of the relative salience of education, class and material deprivation for the health of gender and ethnic groups was facilitated by the fact that these socio-economic indicators were contained in both the HEA and HSE surveys.

A key overall finding of this thesis was that most, but not all, gender and ethnic health differences were explicable in terms of the socio-economic position of minority ethnic
adults of both sexes. Minority ethnic groups were disproportionately concentrated in positions associated with 'socio-economic disadvantage': no educational qualifications, deprived material living conditions or a manual social class. There was, however, considerable diversity in the socio-economic profiles of different minority groups during the main years of working life, such that it would be misleading to cast all minorities as subject to the same types and levels of disadvantage. Pakistanis and Bangladeshis were substantially more likely to experience socio-economic conditions associated with poor health than African Caribbean adults whilst the socio-economic profile of Indian adults was broadly similar to that of whites. However, socio-economic differences in health were generally weaker using social class than educational qualifications or material deprivation. This was particularly the case for minority ethnic women, supporting the earlier assertion that class is most suited to the occupational trajectories of white men.

The importance of gender as an axis of socio-economic difference within ethnic groups cannot, however, be underestimated. This in turn modified the relative impact of social class, education and material deprivation on the pattern of gender and ethnic inequalities in health. Gender differences in labour force participation, for example, were particularly marked for Pakistani and Bangladeshi groups owing to the low economic activity reported by working age women. When a measure of employment status was included as a structural variable in the analysis, the magnitude of gender inequality in health found for Pakistani and Bangladeshi groups was considerably reduced. This suggests that a 'non-employed' status makes a disproportionate contribution to the reported poor health of women in these ethnic groups. By contrast, the class position of Pakistanis and Bangladeshis was largely unrelated to gendered inequalities in their health. More evident was that Pakistanis and Bangladeshis have particularly poor health because men and women in these ethnic groups are much more likely to be educationally and materially disadvantaged than white men.

Although of much lesser magnitude than for minority ethnic groups, the socio-economic disadvantage of white women relative to white men contributed to significant gender inequality. However, where socio-economic differences were less
evident, as was the case for Indian adults, then taking into account socio-economic position did not moderate their health inequality relative to white men in the same way.

For African Caribbean adults, the relation between gender and socio-economic position appeared to differ from other ethnic groups, with resultant differences in the role of socio-economic position in reported health most clear for men. For African Caribbean men, differences associated with education, class and material deprivation were related to reported health. Despite the high rate of economic activity characteristic of African Caribbean women and their presence in non-manual occupations, neither educational qualifications nor occupational class showed a linear relationship with their reported health. Instead, material deprivation was most important for the health of African Caribbean women and this could partially explain their health disadvantage relative to white men. African Caribbean women did, however, continue to have significantly poorer health after adjusting for all socio-economic measures used in this analysis.

One interpretation of the gendered effect of occupational class and educational qualifications on patterns of reported health among African Caribbean adults is that ‘objective’ measures of social class and educational qualifications mis-represent or under-estimate conditions of living associated with what appears to be a relatively ‘advantaged’ socio-economic profile for women. An analysis of 1991 Census data by Blackburn, Dale & Jarman (1997) revealed a discrepancy between education, occupation and the material benefits associated with income, housing and everyday living conditions. Nazroo (1999) further draws attention to heterogeneity of experience within a social class that is associated with ethnic group. Whilst occupying social positions that themselves do not appear ‘disadvantaged’, African Caribbean women may still find themselves effectively marginalised or excluded in terms of their working conditions, pay and status. The material consequences of this inequality may be more sensitively detected by a measure of deprivation grounded in current conditions of living, than by education or class per se.
Overall there were similarities across gender and ethnic groups in the consistent and linear relationships between socio-economic position and health. One argument that follows is that attention should focus on the primary relationship between socio-economic inequality and health, rather than ethnicity and health. Applying this perspective to this analysis, minority ethnic groups and women in particular are construed in terms of structural disadvantage, criticised as a form of reductionist thinking which negates any sense of meaning associated with gender and ethnic divisions themselves (Smaje, 2000). What it is important to note is that significant gender and ethnic health inequality was independent of the measures used to represent socio-economic position in this study. Even acknowledging problems associated with the accurate measurement of socio-economic position for women and non-white groups, the consistency and robustness of this finding suggests that variation in health associated with gender and ethnic group can not be 'explained away' with recourse to socio-economic factors. Conceptualised in a different way, a key consequence of unequal gender and ethnic relations can be seen as socio-economic inequality and this inequality is powerfully associated with poor health.

11.2 SOCIAL EMBEDDEDNESS

In order to capture the sense in which the meaning of gender and ethnicity are differentially constructed, the concept of social embeddedness was introduced. This concept empirically represented and investigated whether the experience of neighbourhood, social activity and relationships with friends and family had a role in shaping patterns of reported health.

Whilst drawing upon the concepts of social capital and social support, which have highlighted the potential health benefits of associational activity and supportive relationships, social embeddedness is a more critical concept. It recognises the potential for social divisions and diversity within a community or neighbourhood sustained by the patterns of social interaction. This allows for the notion that gender and ethnic groups are differentially situated within a community or neighbourhood in ways that render unequal the benefits, meaning and experiences that accrue for health.
Three different domains of social embeddedness were proposed and operationalised using the combined HEA data-set. These domains represented; (i) subjective perceptions about neighbourhood, friends and family; (ii) associational activity and (iii) the experiential domain. Investigation of the relation between social embeddedness and health took into account the differential socio-economic position of gender and ethnic groups discussed earlier, and indirectly focused only on areas of high minority ethnic concentration.

- **Experiential**

The experiential domain contained indicators of reported interpersonal crime or attack and of problems with neighbours over the last year. Used on their own, these types of measures did not show any clear relationship with the reported health of working-age adults, but the effects of crime on poor health were magnified if associated with a materially deprived status. Thus, it may be only in combination with socio-economic disadvantage that the negative association between crime and health becomes apparent.

- **Subjective perceptions of neighbourhood and friends and family**

Out of all the social embeddedness measures, reported health was most consistently related to subjective perceptions. Perceived close contact with friends and relatives showed a modest association with health for many gender and ethnic groups consistent with the idea that perceptions of close relationships facilitates social support and feelings of wellbeing.

Appraisals of neighbourhood in terms of safety and facilities generally showed a linear relationship with health, with the highest morbidity among those who perceived their neighbourhood in the most negative way. The nature of this relationship did however vary according to gender and ethnicity and was notably absent for Indian adults. For Bangladeshi men and women, positive perceptions of neighbourhood were associated with the poorest health, a finding in direct contrast to many other gender and ethnic groups. Within white and Pakistani ethnic groups, the results suggested that subjective perceptions of neighbourhood were gendered within ethnic
groups, supporting arguments that the greater presence or involvement of women in the neighbourhood means that neighbourhood becomes more important for health. However, this argument does not extend to Indian or Bangladeshi women in this study, for whom no clear relationship between neighbourhood perceptions and health was found.

- **Associational activity**

Perhaps the clearest finding that could be generalised across gender and ethnic groups was that reported involvement in formal community activity over a two-week period was associated with good health. However, an interpretation linking this kind of quasi-formal associational activity to good health must be a cautious one because of the possibility of reverse causation for health.

The relationship between *informal* associational activity and reported health depended to some extent, not only on gender and ethnicity, but also on whether contact involved friends or family. The results suggested that integration into networks of friends (as shown by a high number of different contacts made over a two-week period) was more important for health than contact with family members for white and Indian adults of both sexes and for African Caribbean women. However, for Pakistanis and Bangladeshis, particularly women, assocational activity with friends and relatives was equally important, with low number of contacts associated with the highest reported morbidity.

These findings are open to a number of different interpretations. On the one hand they suggest that involvement in associational activity is generally to the benefit of health, although distinctions can perhaps be made between friends and family in terms of the meaning and motivations underlying these relationships. It is however important to note that the analysis suggested structural constraints on the 'density' of informal associational activity such that socio-economic disadvantage may preclude visits or telephone contact that incur financial expense or require private transport for example. An alternative interpretation of links between associational activity and health concerns the possibility of poor health bringing about changes in the pattern of social
activity. Poor health may prompt support networks to be mobilised, but long-term illness or disability are likely to constrain proactive involvement in quasi-formal and informal associational activity.

In summary, the analysis suggested that social embeddedness was related to reported health within ethnic groups and many similarities in the nature of these relationships were found, particularly using indicators based on subjective perceptions and associational activity. Differences associated with social embeddedness were, however, less robust than socio-economic health inequality among gender and ethnic groups.

A key finding was that taking into account differences in the social embeddedness of gender and ethnic groups did not moderate inequalities in their health, as found using socio-economic measures. In some cases, social embeddedness appeared to *accentuate* the health disadvantage of minority groups relative to white men and emphasised the particularly poor health of women. Even subjective perceptions and associational activity had little notable impact on health. This is an important finding because health promotion built around the social capital concept typically views investment in community social infrastructure as of uniform benefit to all members of a community. What these findings suggest is that there are quantitative and qualitative differences in how gender and ethnic groups are situated in the neighbourhoods of which they are a part. For this reason, markers of social embeddedness per se do not function as a ‘health leveller’ in this study. The analysis showed that these differences cannot be construed as a ‘lack’ of social embeddedness among minority ethnic groups and women in particular who have the poorest health. The distribution of social embeddedness, as operationalised in the HEA survey, would seem to suggest that subjective perceptions of neighbourhood and strength of informal associational activity favour some minority ethnic men and women more than white adults, but that this relative ‘advantage’ does not translate into overall health gains. The social networks, referents and resources that ‘non-white’ men and women are able to draw upon may not be those that are socially valued or dominant. Associational activity may therefore be associated with better health *within* a gender and ethnic group, but
cannot account for substantial inequality in health across gender and ethnic groups relative to white men, a substantial proportion of which arises from disadvantaged socio-economic position.

Anthias (2001) uses the term ‘differential inclusion and exclusion’ to capture the notion that gender and ethnic groups are not excluded per se from forms of social participation, but rather included under unequal conditions. Dominant gender and ethnic groups, e.g. white men, may have privileges in terms of accessing ‘dominant’ social networks that are most valued and important for health. Minority ethnic groups and minority women in particular may be excluded from such groups and marginalised into secondary networks of lesser health importance. It is important to note that any such effect may be amplified by the high ethnic concentration areas sampled for minority ethnic adults in the HEA BMEG survey which may facilitate community and social integration but at the same time marginalise and exclude from dominant networks productive for health.

11.3 CIGARETTE SMOKING

After having taken into account measures of socio-economic position and social embeddedness in the analysis, there remained statistically significant inequality in health associated with gender and ethnic group. This showed substantially poorer health among minority ethnic adults, particularly Pakistanis and Bangladeshis, and the higher morbidity of women.

The idea of ‘culture’ is often invoked as a mechanism to explain ‘residual’ inequality in health. Articulated most clearly in relation to ethnic inequality in health, culture may be understood as a particular set of practices associated with a racialised group, although the utility of this meaning and application is contested (Smaje, 2000; Nazroo, 1999; Ahmad, 1993b). These practices include health-related behaviours and to assess their relative contribution to gender and ethnic health inequality, one such behaviour - cigarette smoking - was analysed in detail. Cigarette smoking was chosen because the health-damaging effects of smoking are well established and
because it is relatively easy to quantify smoking status whereas it is more problematic to generalise indicators such as ‘quality of diet’ across gender and ethnic groups.

Both surveys used in this analysis showed that smoking status was patterned by ethnicity and gender. Current smoking was more prevalent among whites than minority ethnic groups, especially for women. Thus, smoking as a behaviour is most commonly associated with white adults. Not only was reported smoking higher for whites than for any other gender and ethnic group (with the exception of Bangladeshi men), but white adults of both sexes were most likely to have high cigarette consumption characteristic of heavy smokers.

An important finding in both surveys was that smoking among minority ethnic groups was a gendered activity, women were less likely to report being a current smoker than men. This gender difference was of greatest magnitude for South Asian groups, particularly Bangladeshis, where a high prevalence of smoking among men contrasted with very low reported smoking by women. This contrasted with little or no gender difference among whites of working-age and suggests that differences in smoking behaviour are more complex than simple mapping onto ethnic status; within minority groups, gender was an important dimension of behavioural difference.

Overall, patterns of smoking prevalence and cigarette consumption would implicate smoking as a practice associated with a white, not a minority ethnic status, particularly for women. This turns on its head problematised notions of minority ethnic lifestyle as ‘deviant’ and in some way contributing to the health disadvantage of minority groups relative to white adults. As might be expected from the distribution of smoking among gender and ethnic groups, its utility as a contributory mechanism for gender and ethnic health inequality was not supported in this analysis. Within ethnic groups, the linear association between smoking and poor self-assessed health found among white men and women was less evident for minority ethnic groups. This included Bangladeshi men, among whom smoking prevalence was high but cigarette consumption relatively low.
Controlling for smoking status did not therefore moderate inequalities in reported health across ethnic groups for the reason that minority ethnic groups, particularly women, with the poorest reported health tend to be those least likely to report smoking cigarettes. The analysis also shows very clearly that it is misleading to view smoking behaviour as comprising part of what are unspecified 'cultural differences' existing between white and minority ethnic men and women. When smoking status itself was the focus of investigation, it was found to be socially patterned in ways not dissimilar to reported health status.

Strong socio-economic differences in smoking behaviour were found, although these were more consistent for white adults than for minority ethnic groups, particularly minority ethnic women. Social embeddedness measures had weaker associations with smoking than socio-economic position but this depended to some extent on the type of measure used. In general, subjective perceptions of neighbourhood facilities as poor were better correlates of smoking for white and African Caribbean adults, particularly women, than for South Asian groups for whom appraisals of neighbourhood had little association with smoking behaviour. Reported involvement in quasi-formal associational activity (e.g. community based groups) was more consistently related to lower smoking than informal associational activity with friends or relatives, although the latter varied depending on whether such activity was reported with friends or relatives.

11.4 MAIN PATHWAYS FOR GENDER AND ETHNIC HEALTH INEQUALITY

In revealing new patterns of health inequality associated with the divisions of ethnicity and gender, the findings of this study call into question established relations between occupational class and health that are given primacy in much health inequalities research. This is because ethnicity and gender intersect not only with occupational class but also with other bases of inequality manifest in material resources or perceptions of neighbourhood, for example. Gender and ethnicity are themselves representative of important modes for the organisation, distribution and
consumption of resources, of which position in the occupational structure is not the only marker.

'to treat gender and ethnicity as operating to produce inequality ignores the fact that as social relations they are already constituted as parameters of stratification as well as differentiation, rather than operating a posteriori to produce inequalities in tandem with those of class' (Anthias, 2001: 838).

The argument follows that gender and ethnicity represent 'conditions of existence' (Bourdieu, 1989) that cannot be simply subsumed as the outcome of processes linked to occupational class. In seeking to explain the findings in this thesis, three main pathways can be identified. Pathways investigated in this analysis that may represent possible processes and mechanisms of exclusion bounded by gender and ethnicity are shown in Figure 11.1.

**Socio-economic pathway:** socio-economic inequality emerged as the most important pathway linking gender and ethnicity to variations in health and smoking; clear correlations were found between ethnicity, gender and socio-economic position. Although occupational class profiles differed markedly by gender within and between ethnic groups, occupational position was not the most important marker of socio-economic inequality in smoking or in health. This is an important finding because it shows that socio-economic inequality is manifest in material living conditions and educational attainment which are particularly good discriminators of health and smoking for non-white and for all groups of women.

**Social Embeddedness pathway:** In many ways this pathway can be viewed as having opposing effects on health and smoking compared to socio-economic inequality. Ethnicity and gender were both axes around which subjective perceptions of neighbourhood and associational activity varied, but unlike measures of socio-economic position, minority ethnic men and women could not be construed as 'disadvantaged' relative to whites in ways that contributed to their poorer health.
Figure 11.1: Pathways for gender and ethnic inequality in health
In questioning why the engagement of minority ethnic men and women in social networks does not accrue advantages for their health, one starting point may be divergence between these ‘objective’ indicators of social embeddedness and ‘hidden’ inequalities. The marginalisation of non-white groups from dominant social networks, as well as primary socio-economic disadvantages faced by many non-white groups, may contribute to inequalities in their health compared to white men.

*Cigarette smoking pathway*: this health-related behaviour had very little explanatory power in relation to the poor self-assessed health of minority ethnic men and women. For Bangladeshi men, whose smoking prevalence was high, smoking was not associated with poorer reported health, as it was for white men. Ethnic differences in cigarette consumption, namely the greater propensity of Bangladeshi smokers to be ‘light’ smokers, may partly explain why cigarette smoking was no explanation for the health disadvantage of Bangladeshi men relative to white men. Cigarette smoking was a practice strongly associated with whites, for whom the health-damaging effects attributable to cigarettes would be expected to far outweigh those for minority ethnic groups, particularly South Asian women. However, this analysis did not include the consumption of ‘smokeless tobacco’ by some minority ethnic groups (HEA, 1999). Nevertheless, the finding that cigarette smoking is powerfully structured according to socio-economic position and, to a far lesser extent, social embeddedness, problematises wholly cultural explanations for gender and ethnic differences in health-related behaviour.

11.5 **THE IMPLICATIONS FOR CONCEPTS OF SOCIAL CLASS**

The discussion so far has emphasised inequalities in health associated with ethnicity and gender and the ways in which these inequalities are mediated most strongly by socio-economic measures associated with material deprivation and educational qualifications. One argument is that class divisions have less explanatory power and have been superseded by other social divisions including gender and ethnic group (Bradley, 1997; Scambler & Higgs, 1998). This echoes contemporary theoretical writing concerning the fluidity of social divisions (Giddens, 1991; Bradley, 1997).
What this analysis has demonstrated is that if class is understood as a measure for mapping systems of unequal social relations, then in the context of contemporary society, it cannot be founded on a concept of economic disadvantage alone. It has been documented that inequalities based on gender and ethnic relations amplify and interact with inequalities stemming from economic factors. Furthermore, it has been shown that three different socio-economic measures (occupational class, educational qualifications and material deprivation) do not interact with ethnicity and gender in a uniform way.

Social class can, however, be conceptualised in a way which is not reliant solely on economic effects but which involves forms of social organisation, shared experience and cultural modes of expression. Rather than view class, ethnicity and gender as separate or additive in their effects on health (Anthias & Yuval-Davis, 1992), gender and ethnic relations can be posited as dimensions of a more 'social' conceptualisation of the nature of class and class relations rather than a wholly economic one.

Bourdieu suggests a model of class which is based on the accumulation and composition of capital over time through social space (Skeggs, 19xx). The structuring of this space results from four forms of capital; economic, cultural, social and symbolic. Individual actors are located within social groups and classes that struggle and compete to maintain and improve their standing in various fields in which these kinds of capital are at stake. Within a field, the dominant tendency of actors to pursue strategic interests and ends compatible with the habitus and with the capital they can draw upon, means that the structure of competing groups and classes is broadly conserved and reproduced through social institutions across generations. However, social structures themselves only persist in relation to the practical and creative actions of agents, therefore a strength of Bourdieu's framework is that it allows for the possibility of change both in the relative positions of different groups but also in the bases upon which systems of relations between classes are manifested.

There is some debate about the conceptualisation of gender and ethnic group in relation to habitus, typically referred to in relation to class. Bourdieu (1989) refers to
conditions of existence’ which prescribe certain freedoms, opportunities, impossibilities and necessities which, from early experience, produce the structure of the habitus which then forms the basis of dispositions and perceptions that are ‘objectively compatible’ with these conditions. The result is an ‘internalisation of externality’ (Bourdieu, 1990: 5) such that schemes of perception, thought and action made possible by the habitus are inherent to the conditions in which the habitus was produced.

The habitus is internalised, embodied and predicated on historical experience, hence subjective aspirations are not consciously rationalised with respect to a societal norm or anticipated outcome, but appear as natural or ‘second nature’. The limits of the habitus are “set by the historically and socially situated conditions of its production” (Bourdieu, 1990: 55), therefore the habitus tends only to generate reasonable common or ‘practical sense’ behaviour which is suited to the objective future anticipated by past experience. Individuals may have in common conditions of existence or identical histories, this results in collective or group habitus, where class is represented thus; “a class of identical or similar conditions of existence and conditionings is at the same time a class of biological individuals having the same habitus” (Bourdieu, 1989:x).

Whilst Bourdieu’s framework objectively recognises class by occupation or ‘position in the relations of production’, gender and ethnicity are construed in terms of;

"[a] whole set of subsidiary characteristics which may function, in the form of tacit requirements, as real principles of selection or exclusion without ever being formally stated (this is the case with ethnic origin and sex)” (Bourdieu, 1989: 102).

The choices and opportunities open to gender and ethnic groups, e.g. in the occupational sphere, may therefore be overtly or implicitly guided by official criteria by which they are marginalised or excluded. Class is constructed as the “structure of relations between all pertinent properties... and to the specific effects they exert on
practices" and "derives a major part of its effects from the secondary variables it governs" (Bourdieu, 1989: 112).

Bourdieu does not, however, elaborate on how the unequal relations of gender and ethnicity, construed as 'secondary variables', fit with habitus and class, although he acknowledges "a class is defined in an essential respect by the place and value it gives to the two sexes and to their socially constituted dispositions" (Bourdieu, 1989: 107). Gender, and particularly ethnicity, therefore appear to be neglected as Bourdieu does not allow for the ways in which the social location of individuals is subject to effectivities associated not only with class but also with ethnicity and gender (Anthias, 2001).

However, the concept of habitus can usefully be used to construe action in non-deterministic ways, as particular outcomes of social relations and processes produced through the interplay between agents in the field. Although gender and ethnicity do not themselves constitute capital, the ways in which gender and ethnicity can impose upon practice relates to the volume and composition of capital. Gender and ethnicity provide relations, that individuals are born into, in which capitals come to be organised and valued. For example, 'whiteness' may be seen as a valued and normalised form of cultural capital which can be exploited in the labour market (Anthias, 2001). A worker of minority ethnic status, whilst included in the labour market, may effectively be excluded from certain occupations or working conditions equal to that of whites and, for women, may be marginalised from male-dominated occupations (Bourdieu, 1989). Conversely, a minority ethnic status may be valued in an area of high minority ethnic concentration, but social capital derived therein may not be valid in relation to social networks dominated and legitimated by whites.

In conclusion, the results of this thesis support the movement of health inequalities research away from a narrow focus on occupational social class and health in order to incorporate other bases of inequality. Gender and ethnicity were shown to be primary social divisions around which patterns of reported health and a health-related behaviour - smoking - were organised. In examining the mechanisms for such
inequalities, similarities and differences were found among gender and ethnic groups. Importantly, whilst socio-economic disadvantage was similarly associated with poor health, taking into account social embeddedness and cigarette smoking amplified rather than diminished health inequality across ethnic groups, particularly for women. This has implications for current health promotion where a strong focus has been placed on building cohesive communities and on encouraging healthier behaviours. The results of this analysis would suggest that such a focus must be supplemented by an understanding of the different meanings attached to neighbourhood, for which the derived measures of social embeddedness used in this study were ill-suited. The importance of ethnicity and gender for health, whilst not rivalling that of class per se (socio-economic inequality was important) highlight that greater attention needs to be given to how gender and ethnicity constitute unequal social relations. Such work needs to progress beyond essentialist conceptualisations of gender and ethnicity as socio-economic disadvantage, for example, or unspecified and unsubstantiated notions of cultural difference.


Crawford, R. (1977) 'You are dangerous to your health: the ideology and politics of victim blaming'. *International journal of health services* 7, 663.


URL: http://www.doh.gov.uk/pdfs/healthrptfeasibafricansurvey.pdf


Fuhrer R, Stansfeld SA, Hudry-Chemali J, Shipley MJ. (1999) 'Gender, social relations and mental health: Prospective findings from an occupational cohort (Whitehall II Study)', Social Science & Medicine, 48:77-87.


URL: http://www.jrf.org.uk/knowledge/findings/socialpolicy/930.htm


322


URL: [www.epn.org/prospect/13/13putn.html](http://www.epn.org/prospect/13/13putn.html).


URL: [http://muse.jhu.edu/demo/journal_of_democracy/v006/putnam.html](http://muse.jhu.edu/demo/journal_of_democracy/v006/putnam.html)


Reijneveld, S.A. (1998) 'The impact of individual and area characteristics on urban

329


333


