A Review of Young People's Health and Health Behaviours in Scotland

Patrick West and Helen Sweeting

MRC Social & Public Health Sciences Unit
Occasional Paper No 10
October 2002

MRC Social & Public Health Sciences Unit,
University of Glasgow,
4 Llyubank Gardens,
Glasgow, G 12 8RZ.
Tel: 0141 357 3949
http://www.msoc-mrc.gla.ac.uk/
A Review of Young People's Health and Health Behaviours in Scotland

Table of Contents

Acknowledgements 1

Introduction 2

Table 1. Major sources - survey name, acronym, date(s) administered, ages and numbers of participants, mode (interview or self-completion questionnaire), and key references. 3

Physical Health 4

Mortality 4

Accidents 4

Disability 5

Self-Rated Health 7

Conditions 7

Asthma 8

Symptoms 9

Table 2. Scottish HBSC self-report symptoms (about every month in the last 6 months) by age and gender, 1994 and 1998. 10

Height, Weight and Body Mass Index 11

Dental Health 12

Summary 13

Mental Health 14

Level 1 - Symptoms 14

Level 2 - Syndromes 16

Psychological distress (the GHQ) 16

Depression and anxiety 18

Level 3 - Mental (Psychiatric) Disorder 19

Table 3. Prevalence of mental disorders among 11-15 year-olds in Scotland and England and Wales. 20

Table 4. Prevalence of major mental disorders by social class in Scotland and England and Wales – ages 11-15. 21

Self-harm, suicidal ideation, parasuicide and suicide 22

Figure 1. Suicide rates (per 100,000) by age group, Scotland versus England and Wales 23

Summary 24

Behaviours 25

Smoking 25

Figure 2. Prevalence of cigarette smoking among 12-15 year olds in Scotland 1982-2000 25
Drinking 29
Illicit Drugs 32
Diet 35
Physical Activity 37
Sexual Health 40

Influences 44
  Gender 44
  Social Class, Deprivation and Poverty 45
  Ethnicity and Religion 47
  Family 49
  School 52
  Peer Group and Lifestyles 53

Conclusion 57

References 59
Acknowledgements

The authors wish to thank the Office for National Statistics, Social Survey Division (the original depositors of the dataset ‘Mental Health of Children and Adolescents in Great Britain, 1999’ [Project No: PA 343]), the sponsors (the Department of Health, Scottish Executive and National Assembly for Wales), and the UK Data Archive for permission to utilise data from this survey. These data are reproduced as Crown copyright material by permission of the Controller of Her Majesty's Stationery Office. Neither the original data depositors, sponsors, nor the UK Data archive bear any responsibility for the accuracy of these data which are the responsibility of the authors alone. Crown copyright material is reproduced with the permission of the controller of HMSO and the Queen's Printer for Scotland.

We are particularly grateful to Tony Glendinning (results supplied based on Glendinning A, Hendry L, ‘Lifestyles, Health and Health Concerns of Rural Youth’, 1996-1998, funded by The Scottish Office, Department of Health, Grant K/OPR/2/2/D281), to Candace Currie and Joanna Todd, who provided hitherto unpublished material for this review, Steve Platt who provided updated figures on suicide. We are also most grateful to Jon Best of sportscotland who provided reports on sports participation, and the following individuals who, in response to a letter sent to all health promotion departments in Scotland, sent us reports of surveys and other materials conducted within their health boards: Paul Ballard, Harry Black, Steve Bell, Brian Chaplin, Carolyn Chalmers, Nicky Coia, David Gordon, Liz Holms, Lee Martin, David Pattison and Phil White. Other documents were provided by Annie Anderson, Joanne Barton, Graham Hart, Marion Henderson, Jo Inchley, Kevin Lowden, Steven McLeod, Steven McCluskey, Helen Minnes, Janet Powney, Edwin van Teijlingen and Rob Wrate, to whom our thanks are extended. We would also like to thank our colleagues Michael van Benium, Jacki Gordon, Nanette Mutrie, Katrina Turner, Danny Wight and Lisa Williamson who commented on drafts of various sections of the report. Finally, we wish to acknowledge Mary Robins who provided considerable help in accessing sources and John Gilchrist who produced the bar charts. The front cover photograph appears courtesy of Glasgow University Photographic Unit.

This review was commissioned by the Health Education Board for Scotland (http://www.hebs.com/research) as part of their young people’s programme. The opinions expressed in this publication are the authors’, not necessarily those of the Health Education Board for Scotland.
Introduction

It has traditionally been assumed that youth is the healthiest period in the life-course. This assumption, however, is under challenge as a succession of statistics has emerged leading to the portrayal of young people as anything but healthy. This view, which has received wide publicity in the media, extends to virtually all dimensions of health. Thus, concern is expressed about increasingly poor levels of physical health, particularly with regard to obesity, and to increasing levels of mental health problems among young people. With respect to health behaviours, which anticipate longer-term health problems, even more worry is expressed, fuelled in large measure by moral and legal considerations. Thus, in addition to concern about the ‘teenage diet’ and ‘armchair kids’, we are regularly warned that teenage smoking has increased, that alcohol consumption and illicit drug use are at record levels, and that young people are having sex at younger and younger ages, with the gravest consequences for their own and other’s health. This portrayal of the state of young people’s health, which stands in marked contrast to the assumption of youthful healthiness, has all the ingredients of a moral panic. It is, therefore, most timely to consider the evidence and develop the most comprehensive picture of the health of young people in Scotland as possible.

This review focuses on young people, defined according to contemporary criteria as that period between age 12 and 25 (WHO), the term ‘adolescence’ generally being used to refer to earlier periods in youth: (early to mid adolescence – 12 to 15, late adolescence – 16 to 19). We have adopted a very broad view of health that encompasses several dimensions of physical and mental health, as well as six health behaviours: smoking, drinking, drug-use, diet, physical activity and sexual health. Not every possible dimension of health is included. Most notably, we decided to exclude consideration of learning difficulties and a wide range of behavioural difficulties that would be considered by some to be aspects of health. However, their importance principally resides in relation to developmental norms which have greater relevance for younger children. In youth, consideration of behavioural difficulties shades into behavioural deviance (delinquency) which is outside the scope of this review. With the exception of asthma (the most common), we also pay very little attention to most specific physical conditions, focussing instead on more general measures of physical health, and we exclude reference to rare psychiatric disorders such as schizophrenia or autistic spectrum disorder. While acknowledging that many of these have particularly debilitating consequences for individuals and families, and make particularly large demands on services, they do not occupy more than a very small part in the overall health of young people.

The review is structured in a way that, as far as possible, within each dimension of health, consideration is given to the following issues: prevalence, age and gender trends, time trends, regional and national variations, and social class differences. Where evidence exists about other social or individual correlates, these are also noted. At the conclusion of the sections on health and health behaviours, we turn attention to the issue of influences, providing summaries of the evidence in relation to six major parameters: gender, social class, ethnicity, family, school, and finally peer group and lifestyles. Inevitably, the evidence base in relation to each of these is variable, which affects the confidence with which conclusions can be drawn. For example, the literature on smoking is much more extensive than that on either drinking or illicit drugs, and it is therefore featured more prominently, with the aim of illuminating issues that might apply across all three health behaviours. Similarly, there have been a huge number of studies conducted on the relationship between family life and young people’s health, a situation contrasting markedly with the poor evidence base in relation to school influences. In assessing the
relative importance of these influences, consideration should be given to the breadth of
the evidence base, for while this can be related to the strength of conclusions drawn it
does not mean that because there have only been a few studies in an area it is of less
potential importance. The school might be a good example of this.

We have drawn on a very large number of sources for this review. As far as possible,
the evidence is based on studies conducted in Scotland, but where data are not available
or where comparisons are of interest, we have drawn on studies in England and Wales.
The principal sources are shown in Table 1 (below), which provides basic details of
sample characteristics and sample sizes of each of the studies. In addition to published
papers and official publications, we have been able to access a number of reports of
surveys conducted by health promotion departments and/or departments of public health
for Scottish health boards. These have been especially useful in informing us about the
health of young people in rural and island areas. Finally, we have also been able to
include previously unpublished data from two of the principal Scottish studies (HBSC and
Rural Youth) and data on psychiatric disorder among Scottish 11-15 year-olds, which we
accessed via the ESRC data archive.

Table 1. Major sources - survey name, acronym, date(s) administered, ages and numbers
of participants, mode (interview or self-completion questionnaire), and key references.

<table>
<thead>
<tr>
<th>Survey/Measurements</th>
<th>Acronym</th>
<th>Date(s)</th>
<th>Ages</th>
<th>Numbers</th>
<th>Mode</th>
<th>Key references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scottish Health Survey</td>
<td>SHS</td>
<td>1998</td>
<td>2-15</td>
<td>3,892</td>
<td>Int</td>
<td>Shaw, 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16-74</td>
<td>9,074</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Health Survey(s)</td>
<td>HSE</td>
<td>1995-7</td>
<td>2-15</td>
<td>6,964 *</td>
<td>Int</td>
<td>Prescott-Clarke &amp; Primatesta, 1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16-24</td>
<td>8,582 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking, Drinking &amp; Drug Use Among Young People in Scotland #</td>
<td>SDD-S</td>
<td>2000</td>
<td>12-15</td>
<td>4,774</td>
<td>SC</td>
<td>Boreham &amp; Shaw, 2001a</td>
</tr>
<tr>
<td>Smoking, Drinking &amp; Drug Use Among Young People in England #</td>
<td>SDD-E</td>
<td>2000</td>
<td>7-15</td>
<td>7,089</td>
<td>SC</td>
<td>Boreham &amp; Shaw, 2001b</td>
</tr>
<tr>
<td>Health Behaviours of Scottish Schoolchildren</td>
<td>HBSC</td>
<td>1990</td>
<td>11, 13, 15</td>
<td>4,079</td>
<td>SC</td>
<td>Currie &amp; Todd, 1992;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Currie et al, 1993;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Currie et al, 1994;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Currie et al, 1997a;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Currie et al, 1997b;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Todd et al, 1999a;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Todd et al, 1999b;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Todd et al, 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Currie et al, 2000</td>
</tr>
<tr>
<td>West of Scotland Twenty-07 Study: Health in the Community (youth cohort)</td>
<td>Twenty-07</td>
<td>1987</td>
<td>15</td>
<td>1,009</td>
<td>Int</td>
<td>Macintyre et al, 1989;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1988</td>
<td>16</td>
<td>854</td>
<td>SC</td>
<td>Green et al, 1989;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1990</td>
<td>18</td>
<td>908</td>
<td>Int</td>
<td>West &amp; Sweeting, 1991;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1993</td>
<td>21</td>
<td>806</td>
<td>SC</td>
<td>West &amp; Sweeting, 1992;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1995-6</td>
<td>24-5</td>
<td>676</td>
<td>Int</td>
<td>Sweating &amp; West, 1995a</td>
</tr>
<tr>
<td>West of Scotland 11 to 16 Study: Teenage Health</td>
<td>11 to 16</td>
<td>1994-5</td>
<td>11</td>
<td>2,586</td>
<td>SC</td>
<td>West &amp; Sweeting, 1996a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1996</td>
<td>13</td>
<td>2,371</td>
<td>SC</td>
<td>Sweeting &amp; West, 1998a;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1999</td>
<td>15</td>
<td>2,196</td>
<td>SC</td>
<td>Speed et al, 1998;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Young et al, 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sweating &amp; West, 2000a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13-16</td>
<td>4,352 –</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17-20</td>
<td>1,728 –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyles, Health and Health Concerns of Rural Youth</td>
<td>Rural Youth</td>
<td>1996</td>
<td>11-12</td>
<td>765</td>
<td>SC</td>
<td>Hendry et al, 1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13-14</td>
<td>802</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15-16</td>
<td>877</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = numbers can vary because topic coverage differed somewhat between the (aggregated) years.
# = previously often referred to as the ONS/OPCS series.
~ = numbers at baseline – cohorts subsequently re-contacted and sub-sampled in different ways.
Physical Health

In this section we review evidence in respect of mortality, accidents, disability, self-rated health, conditions (with a focus on asthma), symptoms, height and weight, and dental health.

Mortality

It has been argued that mortality is not a good indicator of health in youth (Blane et al, 1994). Death among young people is rare, and a sizeable proportion, particularly among males, are due to accidents and violence, and as such, unlikely to have been preceded by poor health. In 2000, death rates per 1,000 for Scottish 10-14 and 15-24 year olds were 0.2 and 1.0 (males), 0.1 and 0.3 (females). Of the 49 deaths among 10-14 year olds, 16 (33%) were from unnatural causes, of these 10 (20%) were accidental, 8 being RTAs. Among 15-24 year olds there were a total of 415 deaths, 248 (60%) from unnatural causes, 81 (19%) accidental, 63 of these RTAs. Deaths from unnatural causes are more likely among males: among the younger age group, 57% of deaths in this category were male, rising to 75% in the older age group. Thus, among 15-24 year old males, the death rates per 100,000 population were 62 due to unnatural causes comprising 19 due to accidents, 28 intentional self-harm, 7 assault and 9 undetermined (Registrar General for Scotland, 2001).

Accidents

Unintentional injury is the leading cause of death and a major cause of impairment in children and young people. As noted above, around 20% of all current Scottish deaths in the age groups 10-14 and 15-24 are accidental, and the majority of these are RTAs. Deaths resulting from unintentional injury have a steeper social gradient than any other cause of death (Towner and Jarvis, 1997).

Death rates due both to all accidents and to RTAs have decreased: in 1999 the standardised death rate due to all accidents among 10-14 year olds was one third, and among adults half that of 1980 (ISD Scotland, 2001a). Unlike England and Wales where the decline in death rates has been smallest among those in lower social classes, thus widening the gradient (Roberts and Power, 1996), in Scotland similar proportional decreases were observed in all deprivation categories. One interpretation of this finding is that measures to prevent injury in children may be exerting an equal effect on all Scottish socio-economic groups (Morrison et al, 1999). The number of fatal and serious RTAs as a proportion of all RTAs involving injury in Scotland is, however 40% higher than in England and Wales. This has been attributed in part to differences in the road networks (SO CRU, 1997).

While RTAs cause most deaths, most emergency hospital admissions are caused by falls and ‘other’ accidents (ISD Scotland, 2001a). Accidents are gendered, particularly among young people. The 1998 SHS non-fatal (defined as ‘any accident about which advice was sought from a doctor, nurse or other health professional’ in the past 12 months) accident rates per 100 persons for the age groups 10-11, 14-15 and 16-24 were 24, 31 and 41 for males, 17, 16 and 22 for females (Laiho and Purdon, 2000). Males were also more likely to report two or more accidents in the past year. The most common injuries from such accidents are twists and swelling. For example 13% of 15 year olds reporting an accident in the ‘11 to 16’ Study (using a definition very similar to that of the SHS) reported a sprained knee, and 10% a sprained ankle (Young et al, 2000).
The main causes of non-fatal accidents in young people are falling, sports/recreation and another person (including attacks). Thus among SHS 16-24 year olds who had experienced an accident, falling was reported by 42% of males and 35% of females, sports/recreation by 17% males and 26% females, and another person (including attacks) by 13% males and 7% females. By far the strongest gender differences among 16-24 year olds relate to work-based accidents, with rates per 100 persons of 22 for males compared with 3 for females. Among adult males, work-based accidents were strongly related to age (highest in young men), and unlike non-work accidents, work-based accidents showed a class gradient, particularly for younger men (Laiho and Purdon, 2000).

In contrast with the overall adult picture, where there was no clear relationship with class, non-fatal accident rates in SHS 11-15 year olds did show a gradient, with rates per 100 persons of 26 compared with 35 for those from classes I-II and IV-V respectively. Other studies also suggest stronger gradients for non-fatal accidents among children than young people. For example, analysis of data from members of the National (UK) Child Development Survey (NCDS) cohort (born 1958) has shown that steeper class gradients at younger ages are mainly attributable to risks associated with the home environment which diminish for disadvantaged children relative to others by age 16 (Power, 1992); no relationship was found between social class and injuries occurring in this cohort between 15 and 17 (Bjur et al, 1991). Interestingly, among Scottish 11-15 year olds, while overall accidents did not differ by socio-economic status, certain types of accident did, for example higher status associated with increased risk of an RTA as a passenger, but decreased risk of being hit by a car (Williams et al, 1996). For 15 year old ‘11 to 16’ participants, sports accidents were the only type to differ according material circumstances, being more likely among the least deprived (Sweeting and West, 2000a).

NCDS evidence also suggests that children experiencing frequent accidents between 11 and 15 are at higher risk of later accidents (between 16 and 23). Accidents in early adulthood were also associated with recent life events such as separation, unemployment or abortion (Power, 1992).

Disability

Long-standing illness or disability in childhood is associated with increased risk of additional ill-health from other conditions, together with psychosocial problems such as poorer emotional well-being and greater social isolation both currently and in early adulthood (Power, 1992).

Because definitions of disability vary, it is difficult to compare findings from different sources (Riddell and Banks, 2001). The relevant question in most health surveys is the UK General Household Survey’s (GHS) ‘Do you have any long-standing illness, disability or infirmity? (By long-standing I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time)’, and if yes, then ‘Does this illness or disability limit your activities in any way?’. This is the definition of disability recommended by the Scottish Executive (Riddell and Banks, 2001), and in addition to the General and Scottish Household Surveys it has been used in the SHS and HSE, and in specific studies such as ‘Rural Youth’, ‘Twenty-07’ and ‘11 to 16’.

Results from these sources are generally consistent in categorising around 20% of younger and 23% of older young people as having a longstanding illness, both within Scotland and the UK overall (West et al, 1994). Thus in the most recent SHS, rates are
22% (M) and 18% (F) at 10-11 years, 28% (M) and 19% (F) at 14-15, and 21% (M) and 25% (F) at 16-24 (Calderwood and Park, 2000); 21% (M) and 18% (F) at age 11 and 22% (M) and 23% (F) at 15 within ‘11 to 16’; 24% for 13-15 year olds within ‘Rural Youth’; and finally, 23% at 15, 17% at 18 and 19% at 21 within ‘Twenty-07’. Rates of longstanding illness within the 2000 GHS (which employs much wider age bands) are broadly comparable: 23% (M) and 18% (F) for 5-15 year olds and 23% (M) and 22% (F) for 16-44 year olds (Walker et al, 2002). In contrast, those within the HSE appear somewhat higher for the younger groups: 26% (M) and 24% (F) at age 11, 32% (M) and 28% (F) at 15, and 20% (M) and 24% (F) at 21 (Boreham and Prior, 1998), a difference that receives comment in the SHS. (Very anomalous rates of 9% with ‘long-standing illness’ among 16-24 year olds in the Scottish Household Survey can be explained by the fact that the question used was ‘longstanding illness, health problem or disability that limits your daily activity or the kind of work that you do’).

Results also appear consistent in categorising around 9-10% of young people as having a limiting illness. For example, overall rates of around 9% at 10-11 years, and 8% at 16-24 within the SHS; of 8% at age 11 and 9% at 15 within ‘11 to 16’; of 11% for 13-15 year olds within the ‘Rural Youth’ study; and of 10% at 15, 11% at 18 and 9% at 21 within ‘Twenty-07’. For comparison, rates of longstanding illness within the GHS are 8% for 5-15 year olds and 11% for 16-44 year olds, those within the HSE 10% at age 11 and 13% at 21.

Turning to other definitions, around 19% of Scottish 16-19 year olds and 22% of 20-24 year olds fulfil the Labour Force Survey criterion of disability (‘Do you have any health problems or disabilities that you expect will last for more than a year?’), while 2% of 16-19 and 4% of 20-29 year olds have a long-term disability substantially affecting their day-to-day activities (the Disability Discrimination Act 1995 definition of disability). Finally, within the Scottish education system, 5% of all pupils have Special Educational Needs and 2% a Record of Needs (that is, a formal record of their special educational needs, along with a legally binding statement by the local authority of how they will be met). There are wide variations between authorities in the proportion of pupils categorised as SEN and RoN because lack of firm criteria have led to variations in local practice. Finally, within higher education, 5% of undergraduates disclosed a disability which might affect their studies on their admissions form. The largest category comprised unseen disabilities such as diabetes, epilepsy or asthma (Riddell and Banks, 2001).

The evidence shows that using the conventional (limiting) long-standing measure of disability, there is little or no class-based variation for young people (West, 1988; Foster et al, 1990; West et al, 1990; Macintyre and West, 1991; Glendinning et al, 1992; Power et al, 1997; West, 1997; Sweeting, 2000a). However, with more severe chronic illness, there is evidence of health inequalities, with rates rising with falling social class in most single age groups (10-19) and highest of all in those with no social class (West 1997). In respect of changes over time, the best source is the GHS which has data covering the past 30 years. The prevalence of long-standing and, although less marked, limiting illness increased over the first half of this period, since when it has remained fairly stable (overall rates of long-standing illness of 21% in 1972 compared with 30-35% since 1985 [32% in 2000] - analyses are not presented for separate age bands). Since reports of longstanding illness are based on self (or parental proxy) assessments, increases in prevalence may reflect increased expectations for health, as well as changes in the actual prevalence of illness (Walker et al, 2002).

Among younger young people (limiting) long-standing illness is more likely in males; in all datasets this male excess disappears or reverses with age (Sweeting, 1995). Within the school system, RoN pupils are more likely to be boys, the greatest gender differences
being in respect of social and emotional difficulties and autistic spectrum disorder. However within higher education females are more likely to disclose a disability (Riddell and Banks, 2001)

**Self-Rated Health**

A simple global question on self-rated health (SRH) not only provides a useful summary of how people perceive their overall health status, but also predicts clinical outcome and mortality (Fayers and Sprangers, 2002). The HSE found the best predictor of SRH was longstanding illness, however the measure has also been shown to be related to personal experience, life situation, fitness and health behaviour (Manderbacka, 1998). For example, analyses of inter-relations between health indicators and health behaviours within HBSC (1990) found that 11-15 year olds who considered themselves healthy were more likely to take exercise, not to smoke or be dieting and to experience fewer symptoms.

Unfortunately, there are many alternative phrasings of the global question, making it difficult to compare between studies. Both the ‘11 to 16’ and ‘Twenty-07’ Studies asked about health in the past 12 months (‘good’, ‘fairly good’, ‘not good’). ‘Good’ health was reported by 48%, 58% and 54% at 11, 13 and 15 (‘11 to 16’) and by 53%, 47% and 57% at 15, 18 and 21 (‘Twenty-07’). The very high rates of positive SRH among this age group are interesting, given that symptom reporting is also high. The proportion whose health was ‘not good’ at any age was small, but increased with age from 3% at 11 (‘11 to 16’), to 4% at 15 (both ‘11 to 16’ and ‘Twenty-07’) and 5% at 21 (‘Twenty-07’).

The SHS and HSE use a 5-point scale from ‘very good’ to ‘very bad’. Among young people, ‘very good’/‘good’ health reduced with age, being reported by 97% (M) and 95% of Scottish 10-11 year olds, 92% (M) and 93% (F) at 14-15 and 86% (M) and 89% (F) at 16-24. With the exception of 16-24 year old males, young people in Scotland were slightly more likely than those in England to endorse these positive ratings (Calderwood and Park, 2000). Comparisons between ‘Twenty-07’ (West of Scotland), YPLL (Scottish national) and GHS (British) respondents using the categories ‘fairly good’/‘not good’ showed poorer SRH in the former as compared with both the YPLL and GHS samples (which did not differ) at both 15 and 18, suggesting within-Scotland variation (West et al, 1994).

There is some evidence for a weak socio-economic gradient in SRH among young people: the HSE found associations with social class and income for 2-15 year olds, but these were weaker for 16-24 year olds (Boreham and Prior, 1998). Among 15 year old ‘Twenty-07’ respondents there was a class gradient for males (61% non-manual compared with 48% for classes IV-V backgrounds rated their health as ‘good’), but not females (West et al, 1990). In contrast, self-rated health was not differentiated by family affluence among 1998 Scottish HBSC respondents (Mullan and Currie, 2000). Although the consensus from most studies is that female SRH is slightly worse than that of males, particularly among younger adults (Fayers and Sprangers, 2002), within the SHS there is actually a female excess among those rating their health as ‘very good’ at ages 10-11 (63% [M], 66% [F]), 14-15 (48% [M], 52% [F]) and 16-24 (36%[M], 41% [F]). For comparison, 41% (M) and 36% (F) of 16-24 year olds used this rating in the HSE.

**Conditions**

Survey respondents who report a long-standing illness are generally asked the nature of the condition(s). Among young people, respiratory, nervous system, skin and
musculoskeletal complaints are most frequently mentioned. At the younger end of the age group respiratory complaints massively outweigh all other conditions, and although they continue to remain in first place, musculoskeletal complaints assume increasing importance with age. For example, the three most common conditions reported by 11-15 year olds within the SHS related to the respiratory system (rates per 1000 persons of 163 [M] and 112 [F]), nervous system (25 [M] and 31 [F]) and skin (19 [M] and 13 [F]). By ages 16-44 the top three reported conditions related to the respiratory (80 [M] and 84 [F]), musculoskeletal (96 [M] and 73 [F]) and nervous systems (33 [M] and 39 [F]) (Calderwood and Park, 2000). Similarly, within the HSE, the three most frequent complaints at ages 10-11 were respiratory (165 [M] and 134 [F]), skin (37 [M] and 48 [F]) and nervous system ([M] and 14 [F]); by 20-24 years they were respiratory (99 [M] and 126 [F]), musculoskeletal (67 [M] and 63 [F]) and skin (26 [M] and 36 [F]) (Boreham and Prior, 1998). Exact (Scottish Vs English) comparisons between the surveys are difficult because the data is presented in respect of different age bands.

The above rates are based on those who responded positively to the long-standing illness question. A rather different picture may be obtained if all respondents are asked about current conditions, rather than only those who have self-selected by reporting chronic illness. Both eleven year olds and their parents (as proxy reporters) within the ‘11 to 16’ Study were asked about the presence of a number of conditions. Of the most common, allergies were reported by 24% (children) and 11% (parents), migraines or frequent headaches by 20% and 8%, skin problems by 16% and 11%; wheezy chest or bronchitis by 14% and 6% and asthma by 13% and 11%. Gender differences occurred in respect of skin problems (more likely among females), wheeze and bronchitis (more likely among males). Child-parent agreement was highest for conditions such as asthma, diabetes and skin problems that are common, visible or diagnosed (Sweeting and West, 1998b).

**Asthma**

As demonstrated above, asthma is the commonest childhood disease in Britain (Kaur et al, 1998), and we therefore highlight it here. Asthma, (11% of the total ‘11 to 16’ age 15 and 4% of the total ‘Twenty-07’ age 18 samples) dominated conditions named by the respondents with long-standing illness in these studies. Within the SHS, doctor-diagnosed asthma was reported by around 18% of both 11-15 and 16-24 year olds (Primastesta et al, 2000). This is in line with a recent study which used a standardised methodology to compare the prevalence and severity of asthma both within and between countries, and where 21% of British (Scottish rates did not differ from those in England/Wales) 12-14 year olds reported ever having had a diagnosis of asthma (Kaur et al, 1998). This has obvious consequences for services; for example, in 1999, among 5-14 year old Scottish males, asthma was the second most common reason for consultation with a GP (after upper respiratory tract infections) (ISD Scotland, 2001a).

The consensus of the general epidemiological literature is that while among younger children asthma is more common in males, the rates converge by adolescence, and thereafter they may even be slightly higher amongst females (Speizer, 1978; O’Conner et al, 1986; Burney, 1992; Weeke, 1992). In respect of social class, there is evidence of no patterning, or a reverse gradient. In the NCDS cohort, the prevalence of asthma was higher among those from non-manual backgrounds at ages 7 (Kaplin and Mascie-Taylor, 1985), 11 (Peckham and Butler, 1978) and 16 (Anderson et al, 1986; 1987). In a more recent case-control study of 11-16 year olds, severe asthma was not related to either housing tenure or damp/mould in bedrooms (an indicator of deprivation) (Strachan and Carey, 1995). Similarly, there was no class gradient for self-report asthma symptoms among 15 year old ‘Twenty-07’ participants of either gender (West et al, 1990), and
within the HSE no clear patterning of doctor-diagnosed asthma among either male or female 2-16 or 16-24 year olds (Primatsea et al, 1998) (no comparable analyses were conducted on SHS data).

There is widespread belief, stemming from the results of epidemiological studies, that the prevalence of asthma is increasing in industrialised societies, particularly among children. This has been demonstrated in a number of Scottish studies (Ninan and Russell, 1992; Rona et al, 1995; Omran and Russell, 1996). However, a recent critical appraisal of repeated cross-sectional surveys (last results published 1983 or later) has suggested that while there has been an increase in the reporting of asthma and wheezing over time, degrees of increase differ between studies (even those from the same country, thus in the UK asthma increased comparatively more than wheezing) and may be explained by increased professional or public awareness (Magnus and Jaakkola, 1997).

**Symptoms**

Although not covered in the national health surveys, a number of individual studies include symptom lists and ask young people to mark which they have suffered within a certain time frame. Unfortunately because these differ (past year for ‘Twenty-07’ at age 15, past 6 months for HBSC and past month for ‘Twenty-07’ at 18, ‘11 to 16’ and ‘Rural Youth’), comparisons across all studies are impossible. Although each of these lists includes physical and malaise symptoms, in this section the focus is physical, while acknowledging that such a distinction is necessarily somewhat arbitrary; for example those who are depressed or anxious might report more ‘physical’ symptoms (Macintyre et al, 1996).

The rates which emerge run counter to any assumption of youthful healthiness. For example, among those studies which focus on the past month, stomach aches or sickness were consistently reported by around two-thirds, colds or flu by six-in-ten and asthma by a fifth of ‘11 to 16’ respondents at each age. Reporting of other physical symptoms rose with age; rates of migraine or headache from half the sample at age 11 to three-quarters at 15, aches from one-third to half, spots or rashes from a quarter to half, and fainting or dizziness from a fifth to a third of the sample (Sweeting and West, in press). Broadly similar rates of symptoms in the past month are reported by 12-14 year olds in rural areas: colds by two-thirds, migraine/headache by six-in-ten, aches and stomach problems by just over, and spots or skin problems by just under half the sample, asthma by a quarter and fainting or dizziness by a fifth (Glendinning, personal communication). Given that ‘11 to 16’ showed significant increases with age in several of the physical symptoms (Sweeting and West, in press), it is interesting that rates among 18 year olds in ‘Twenty-07’, again in the past month, were all markedly lower: around half reported colds or flu, one third headaches, a fifth stomach and skin problems and one-in-ten faints or dizziness (West and Sweeting, 1996b). This suggests that the mid teenage years may represent a peak in symptom reporting among young people.

Evidence of changes in symptom reporting over time is scanty, however (previously unpublished) HBSC data suggests an increase. Table 2 (below), which presents data from the 1994 and 1998 HBSC surveys shows rates of head, stomach and back aches increased for males and females at all ages over this four year period.
Table 2. Scottish HBSC self-report symptoms (about every month in the last 6 months) by age and gender, 1994 and 1998.

<table>
<thead>
<tr>
<th></th>
<th>age 11 m</th>
<th>age 11 f</th>
<th>age 13 m</th>
<th>age 13 f</th>
<th>age 15 m</th>
<th>age 15 f</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>headache</td>
<td>47</td>
<td>51</td>
<td>54</td>
<td>62</td>
<td>49</td>
<td>74</td>
</tr>
<tr>
<td>stomach ache</td>
<td>44</td>
<td>54</td>
<td>45</td>
<td>69</td>
<td>32</td>
<td>78</td>
</tr>
<tr>
<td>back ache</td>
<td>19</td>
<td>17</td>
<td>27</td>
<td>30</td>
<td>30</td>
<td>44</td>
</tr>
<tr>
<td>bad temper</td>
<td>70</td>
<td>70</td>
<td>73</td>
<td>80</td>
<td>74</td>
<td>84</td>
</tr>
<tr>
<td>feeling low</td>
<td>39</td>
<td>43</td>
<td>40</td>
<td>54</td>
<td>44</td>
<td>69</td>
</tr>
<tr>
<td>feeling nervous</td>
<td>54</td>
<td>59</td>
<td>56</td>
<td>60</td>
<td>57</td>
<td>59</td>
</tr>
<tr>
<td>sleep problems</td>
<td>51</td>
<td>51</td>
<td>57</td>
<td>48</td>
<td>46</td>
<td>56</td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>headache</td>
<td>51</td>
<td>56</td>
<td>56</td>
<td>66</td>
<td>56</td>
<td>72</td>
</tr>
<tr>
<td>stomach ache</td>
<td>49</td>
<td>60</td>
<td>47</td>
<td>74</td>
<td>38</td>
<td>81</td>
</tr>
<tr>
<td>back ache</td>
<td>24</td>
<td>23</td>
<td>27</td>
<td>37</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>bad temper</td>
<td>67</td>
<td>66</td>
<td>68</td>
<td>76</td>
<td>62</td>
<td>82</td>
</tr>
<tr>
<td>feeling low</td>
<td>32</td>
<td>39</td>
<td>30</td>
<td>52</td>
<td>28</td>
<td>60</td>
</tr>
<tr>
<td>feeling nervous</td>
<td>57</td>
<td>58</td>
<td>52</td>
<td>58</td>
<td>45</td>
<td>58</td>
</tr>
<tr>
<td>sleep problems</td>
<td>50</td>
<td>53</td>
<td>55</td>
<td>50</td>
<td>45</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: Todd and Currie (personal communication.)

Analyses by gender within the ‘11 to 16’ Study suggest that the overall increases in symptom reporting in early to mid adolescence largely arise from increases among females, which result in an emerging or increasing female excess in physical symptoms over this period. Between the ages of 11 and 15, only colds/flu and skin problems showed a reducing female excess. For headaches and stomach problems an existing female excess increased and for fainting/dizziness an excess emerged. For none of the physical symptoms did a male excess either increase or emerge, however those in respect of aches and asthma disappeared (Sweeting and West, in press). Exactly the same results can be seen within the HBSC data shown in Table 1; in both 1994 and 1998, gender differences in physical symptoms were much smaller at age 11 than at 15.

An analysis of rates of the most prevalent symptoms and/or illnesses according to class using the age 15 ‘Twenty-07’ data shows few differences. There was no variation for headaches/migraine, skin conditions or asthma, reverse gradients for colds (males only) and allergies (females), and a U-shaped pattern for sickness and diarrhoea (males only). Only faints (although not significant) and dysmenorrhea showed expected class gradients (West et al, 1990). Similarly, within the 1998 HBSC, daily symptoms were not differentiated according to a scale of family affluence (Mullan and Currie, 2000).

HBSC (1997-8) data can be used to compare rates of symptom reporting across countries. For headache, stomach ache and back ache, the Scottish rates (symptom at least weekly in the past 6 months) are higher than those in England at each age (11, 13 and 15). The differences are greatest for 15 year old girls in respect of headaches (48% in Scotland, 42% in England) and stomach aches (29% in Scotland, 19% in England). HBSC also includes data on medication use for these symptoms which shows Scotland to be consistently higher in the medication league table (of 28 countries included) than in the symptom league table. For example, Scotland is 2\textsuperscript{nd} at ages 11 and 13 and 3\textsuperscript{rd} at age 15 in respect of medication for headache (reportedly used at least monthly by 73% of females and 53% of males), but 16\textsuperscript{th} at age 11, 11\textsuperscript{th} at 13 and 7\textsuperscript{th} at 15 in respect of reporting headaches as a symptom (Wyatt and Aszmann, 2000).
Height, Weight and Body Mass Index

Prevalences of overweight and obesity, known to be associated with conditions such as coronary heart disease, diabetes, hypertension and osteoarthritis, are rising dramatically among both adults and children in Western societies (Mantovani et al, 2002), attributable to a combination of increasingly high fat diets and decreasing physical activity levels (Prentice and Jebb, 1995). Using new internationally based cut-off points to define overweight (Cole et al, 2000), little change was found in its prevalence among 9-11 year olds between 1974-84, but from 1984-94 overweight increased from 6.9% to 13.4% in Scottish males and from 10.6% to 19.6% in females; the prevalence of obesity increasing correspondingly (Chinn and Rona, 2001). A study which examined the associations of social and biological variables with obesity in primary school children found the only factor that was highly associated was parental fatness (Duran-Tauleria et al, 1995). Because childhood body mass index (BMI) tracks strongly with adult BMI it has generally been assumed that obesity has its origins in childhood. However a recent British study has questioned this, suggesting that it is build, not necessarily adiposity that tracks throughout life, and that being thin in childhood offers no protection against adult fatness. This is a controversial finding (Gibson et al, 2002; Wright et al, 2001; Wright and Parker, 2002).

Measures of height and weight were included in the SHS and HSE, and the ‘Twenty-07’ and ‘11 to 16’ Studies. Mean height is fairly equal for males and females (females slightly taller) until around age 13 when males begin to grow rapidly and continue growing after females who have generally reached their achieved height by around age 16. Thus heights within the SHS were 144cm for both males and females at age 11, 169cm (M) and 162cm (F) at 15, and 177cm (M) and 163cm (F) at ages 16-24. Weights increase with age throughout childhood, but do not differ significantly according to gender until after age 15. Weights within the SHS were 39kg for both males and females at age 11, 60kg (M) and 58kg (F) at 15, and 74kg (M) and 63kg (F) at ages 16-24. Comparison with the equivalent English figures shows Scottish young people to be around 4cm shorter and 2kg lighter at 11, but the same height and around 1kg heavier at 16-24 years (Hirani et al, 2000). Comparison of the ‘Twenty-07’ youth cohort at age 18 with an OPCS study of heights and weights of British adults and the Health and Lifestyles Survey dataset produced similar results. There were no significant differences in height, but the weight of the ‘Twenty-07’ respondents was significantly greater than the 18/19 year olds in the OPCS study and very similar to the HALS 18-22 year olds (West et al, 1994).

Presentation of mean BMIs are not particularly meaningful unless they are used to demonstrate differences between groups. Analyses of ‘11 to 16’ data using the new international age and gender-specific cut-off points (which track to the widely used cut-off point of 25kg/m² for adult overweight – Cole et al, 2000) identified 14.5% (M) and 18.1% (F) of the sample as overweight at age 11, 15.7% (M) and 17.5% (F) at 13, and 16.0% (M), 18.0% (F) at age 15. The gender difference in BMI was only significant at age 11, although that for weight worries and dieting increased massively between 11 and 15 (Sweeting and West, 2002).

Studies consistently find socio-economic gradients in height (Macintyre, 1988). Neither the SHS (Hirani et al, 2000) nor HSE (Bost et al, 1998) report height or weight by social class. However the Scottish survey reports no significant class-based differences in children’s BMI in any age-gender group. The same was true for adult male (age 16-44) BMI, but females in manual social classes were more likely to be obese than their non-manual counterparts. Among 15 year olds in the ‘Twenty-07’ Study, the difference in height between non-manual and manual (male and female) respondents was around 2cm, in respect of weight there were no differences for females but non-manual males
were heavier, with the result that BMI was not differentiated according to class (West et al, 1990).

In line with the literature on increasing overweight, comparison of the heights, weights and BMIs of 15 year old respondents in the ‘Twenty-07’ and ‘11 to 16’ Studies (surveys in 1987 and 1999 respectively) shows no change in average height, but increases in average weights (from 59.9kg to 61.4kg in males and 55.3kg to 57.0 kg in females) and so also in BMIs (20.3kg/m$^2$ to 20.8 kg/m$^2$ [M] and 21.1 kg/m$^2$ to 21.6 kg/m$^2$ [F]) (Sweeting and West, 2000a). The significance of this trend is underlined by a study which links the increasing incidence of childhood obesity with the first obese cases of Type 2 Diabetes among white (as opposed to certain higher risk ethnic groups) in the UK (Drake et al, 2002). Corresponding with this, a Scottish study of healthy 11-14 year olds has shown that although insulin resistance was not related to birthweight or infant feeding it was strongly linked to markers of body composition such as BMI, skinfold resistance and percent body fat (Greene et al, 2002). A relationship between higher levels of energy intake in childhood and subsequent adult development of cancer has also been demonstrated (Frankel et al, 1998)

**Dental Health**

The Scottish Health Boards’ Dental Epidemiological Programme surveys of 12- (in 1996-7) and 14-year olds (in 1998-9) demonstrated mean numbers of decayed, missing or filled teeth (D3MFT) of 1.75 and 2.75 respectively. Although these figures represent an improvement on those of surveys conducted 5 years earlier, they are accompanied by a warning of curtailed improvement among 5-year olds, suggesting that the downward trend may not continue. The figures are also poor compared with those for England (mean D3MFT of 1.27 among 12- and 1.67 among 14-year olds) (Pitts et al, 1997; Pitts et al, 1999).

Dental decay has a skewed distribution: 6-7% of 12-14 year olds have half the decayed surfaces. Decay varies by Health Board (highest in GGHB) and by socio-economic status, with mean D3MFT among Glaswegian 12-year olds of 1.05 and 3.1 for those resident in DEPCAT 1 and 7 areas respectively (Sweeney et al, 1998). Children from most deprived areas are also most likely to have plaque (a measure of oral cleanliness) and least likely to have received sealant/sealant restoration, which has been proven to reduce decay (Dental Health Services Research Unit, 2002).

The oral health of adults has been surveyed decennially since 1968. Data on Scottish 16-24 year olds from the 1998 survey indicated 37% had two or more teeth with visible and/or cavitated caries, 18% one and 45% none, and that while 50% had regular and 15% occasional dental check-ups, 35% attended only when in trouble. These figures are patterned by gender and class (better dental health and more regular attendances among females and those with non-manual occupations), and worse than those for England (Kelly et al, 2000). Differences between the dental health status of Scotland compared with England cannot be wholly explained by social class, suggesting other more complex socio-behavioural factors such as variations in dental practice and dietary factors (Treasure et al, 2001). Consistent with the known relationship between dental service utilisation and class (Attwood et al, 1990), analyses of data from 15 year olds in ‘Twenty-07’ showed a social class gradient in ‘regular’ (as opposed to occasional or only when troubled) visiting, particularly among males (the rates for those from social class I compared with V were 82% and 38% for males, 84% and 71% for females). This was largely explained (statistically) by parental dental visiting habits and respondent smoking,
the latter assumed to represent a lifestyle which involves short-term concerns and low salience of health issues (Attwood et al, 1993).

Daily tooth brushing is a key dental health education message. Gender differences in this habit are clear, and appear to increase with age in early adolescence. Thus within the Scottish HBSC (1998), tooth brushing more than once a day was reported by 57%, 56% and 56% males and 66%, 73% and 78% females at ages 11, 13 and 15 respectively. At each age, these figures are lower than those for England (for example, 64% [M] and 84% [F] English 15 year olds report brushing their teeth more than daily). Within the ‘11 to 16’ Study, a dental visit in the past 6 months was reported by 73%, 77% and 72% at ages 11, 13 and 15. The comparable figure within the ‘Twenty-07’ Study was remarkably similar at age 15 (71%) but only 53% at 18, suggesting that dental visiting may remain fairly stable in earlier adolescence, but reduces later. This is consistent with findings from the 1998 UK Adult Dental Health Survey where the (adult) age group with least frequent attendance was 16-24 year olds, suggesting that regular check-ups may be abandoned in early adulthood, perhaps because they seem to have no clear value, but their benefits become recognised with age. This survey also showed that the increase in regular check-ups among adults over time was least for 16-24 year olds (44% in 1978 compared with 48% in 1998) (Nuttall et al, 2001).

**Summary**

Evidence in respect of the physical health of young people is mixed, which means that it is possible to come to almost opposing conclusions about the degree of concern which it should engender. On the one hand, death in young people is rare, and generally due to accidents (rates of which are decreasing) or injuries, rather than having been preceded by poor health. The majority of young people also describe their health in positive terms, although this tends to decrease slightly with age. On the other hand, around one-in-five report a longstanding illness, and half this group describe it as limiting their activities, asthma is reported by large numbers and there are high rates of self-report symptoms. The data also suggests that rates of longstanding illness, asthma, symptom reporting and obesity are increasing. During early-mid adolescence, a female excess emerges or markedly increases in respect of longstanding illness and the majority of physical symptoms. Finally, with the exception of fatal accidents, severe chronic illness and height, there is little evidence of social class patterning of physical health in young people.
Mental Health

There is currently considerable concern about the mental health of young people and the possibility that their mental health has deteriorated over time (Rutter and Smith, 1995). However, the terms 'mental health', and by implication 'mental ill-health' or 'mental health problems', are often used loosely such that there is considerable scope for misunderstanding in this area. It is therefore important to be clear what we mean by 'mental health problems' in order to make a sensible assessment of the prevalence figures found in contemporary surveys. For reasons outlined earlier, this review excludes behavioural problems (e.g. delinquency) other than those meeting psychiatric criteria for 'behaviour disorder'.

One approach, which has informed subsequent documents both in the UK (Mental Health Foundation, 1999) and Scotland (SNAP, 2000), is that developed by the NHS Health Advisory Service (HAS, 1995) who made a clear distinction between general 'mental health problems' which refer to 'a very broad range of emotional (or behavioural difficulties) which may cause concern or distress' and 'mental disorders' which they encompass but which are more severe and/or persistent' (p.15). While the distinction between 'problems' and 'disorder' is of central importance, the HAS document did not offer any further elaboration of the category 'mental health problems' except in very broad terms (e.g. the presence or absence of distress). A related distinction, made with reference to childhood depression (Kolvin and Sadowski, 1999), is that between symptoms, syndromes (a cluster of symptoms) and disorder. This classification, which elaborates that of HAS, is useful because it allows the widest possible definition of mental health problems, while at the same time fully recognising the gradation of severity involved.

This distinction informs consideration of the evidence presented here, which divides into three levels of mental health problems reflecting progressively increasing severity:

- **Level 1 - Symptoms (of malaise);**
- **Level 2 - Syndromes, comprising clusters of symptoms;**
- **Level 3 - Disorders, comprising clusters of symptoms of a severe or persisting nature and which cause impairment of function.**

**Level 1 - Symptoms**

Several studies have collected data on specific aspects of emotional or psychological health that we refer to as malaise symptoms. In combination, these provide some evidence on age and gender patterning, time trends and international comparisons, though (as with physical symptoms) the potential of these data are limited by the absence of exactly comparable symptom and response categories.

Evidence from ‘11 to 16’ reveals high levels of malaise symptoms. At age 11, a significant proportion reported being nervous (42%), irritable (41%), sad (35%) or having sleep problems (37%) within the past month, females having significantly higher rates for each except the latter (Sweeting and West, 1998b). By age 13, excepting sleep problems (33%) rates for nerves (51%), irritability (48%) and sadness (40%) had all increased, the gender difference having widened. By age 15, rates for nerves (60%), irritability (55%), sadness (54%) and sleep problems (51%) had increased again, the gender difference widening even further (Sweeting and West, in press). The percentage reporting any of these malaise symptoms at this age is extremely high; 76% of males...
and 88% of females. Among females the prevalence of all malaise symptoms exhibits a highly significant increase over this period, while for males this only occurs in respect of nerves. The dramatic change in levels of malaise symptoms between 11 and 15 is therefore predominantly a female phenomenon.

Three other studies testify to the high prevalence of malaise symptoms reported by young people throughout Scotland. In one of these (Hendry et al, 1998; Glendinning, personal communication), involving 13 (S2) and 15 (S4) year-olds in rural areas of Scotland, very similar rates were found as in the urban ‘11 to 16’ sample. Thus (using an identical symptom and response list), 50% reported being nervous, worried or anxious, 33% sad, unhappy or low, 51% irritable or bad tempered, and 41% difficulties getting to sleep. In the HBSC study (Currie et al, 1994; Currie et al, 1997: Currie et al, 2000), despite a different symptom list (nervous, low, irritability/bad tempered and sleeping difficulties) and response categories (about every month within the last 6 months) the results were much the same. For example, among 15 year-old females in 1998 (see Table 2), 55% reported sleeping difficulties, 58% feeling nervous, 60% low and 82% irritable or bad tempered, the comparable rates for males being 45%, 45%, 28% and 62%. As with ‘11 to 16’, the gender difference was greatest in mid adolescence (age 15) though interestingly in relation to morning tiredness (4+ times per week) there were no differences between males and females. Finally, in a study (Gordon and Grant, 1997) using a different approach, which involved presenting respondents with a ‘field of words’ (describing emotions), a significant minority of 13-14 year-olds described themselves as ‘depressed’ (19%), ‘stressed’ (19%) (in combination affecting 1 in 3), ‘tense’ (14%), ‘confused’ (12%) or useless (8%). As with other studies, females more frequently expressed these emotions.

In contrast to these studies of young people in early to mid adolescence, much less data on malaise symptoms is available on older adolescents, an exception being the ‘Twenty-07’ study. At age 18 (1990), the list included 6 such symptoms (difficulties sleeping, nerves, always tired, difficulties concentrating, worrying over every little thing and difficulties eating), of which only one (difficulties sleeping) was similar (though not identical) to the ‘11 to 16’ item (‘difficulty getting to sleep’). This may partly explain why its prevalence within the past month (22%) was lower than at age 15 in ‘11 to 16’, although in general rates of malaise symptoms were lower at age 18 than at any age in that study; viz, nerves (10%), always tired (29%), difficulties concentrating (14%), worrying (14%), eating difficulties (7%) (West and Sweeting, 1996b). However, with the exception of sleep and concentration difficulties, gender differences were similar (females having higher rates) (West and Sweeting, 1996b). It is possible that the (suggested) lower prevalence of malaise symptoms at this age indicates that such symptoms peak in mid-adolescence, thereafter beginning a decline which continues into adulthood (Macintyre et al, 1996).

In addition to providing data on age and gender trends, HBSC also permits some evaluation of comparisons over time and between countries. In respect of the former, a comparison of rates of malaise symptoms between 1994 and 98 (Table 2) reveals little evidence of change for females, but (against expectations) some improvement for males. With regard to international comparisons, young people in Scotland do not appear to have unduly high or low rates of malaise symptoms compared with those in other countries. Indeed for ‘feeling low’, at each age the rates for Scottish adolescents are in the best (lowest) quintile, consistently lower than those for England and Wales, and much lower than those for USA, Hungary, Israel and Greece. Within Scotland, on the evidence of an earlier HBSC (Currie et al, 1994), there do not appear to be regional variations in malaise symptoms, a pattern observed more recently in the comparison of ‘11 to 16’ (urban) and ‘Rural Youth’. Interestingly, there is also little or no variation by...
social class in later adolescence (West, 1997) while evidence from ‘11 to 16’ showed that
the highest rates occurred among middle-class 13 year-olds (Sweeting, 2000a). Higher
levels of malaise symptoms were also found among female (but not male) university
students at age 18 in the ‘Twenty-07’ study (West and Sweeting, 1996b)

Level 2 - Syndromes

While it is clear that the experience of malaise symptoms is a very common one for
young people in Scotland, and elsewhere, it is much less clear what its significance
might be either in terms of levels of distress or the extent to which it impacts on their
lives. One way of doing this involves the identification of clusters of symptoms, or
syndromes, which is typically achieved by counting the number of symptoms present
within a specified range. In combination with other measures of severity (e.g. frequency
of occurrence), this is the principle underlying psychiatric screening instruments which
utilise specific criteria to identify ‘caseness’; that is, a level of symptomatology of potential
clinical significance. These instruments are either of a general nature or refer to
particular syndromes such as anxiety or depression.

Psychological distress (the GHQ)

To date, by far the most widely used of the general screening instruments is the General
Health Questionnaire (GHQ) which has been validated for adolescents (Banks, 1983),
though it is not generally used with young people aged less than 15 years. The GHQ
focuses on recent emotional symptoms and is available in a number of versions,
including a 12 item (GHQ-12) version. Respondents are presented with 12 symptoms
such as ability to concentrate, feeling under strain, feeling depressed or losing sleep over
worries, to which they indicate whether each has been ‘better than usual’, ‘same as
usual’, ‘worse than usual’ or ‘much worse than usual’ over the past few weeks. A
recognised measure of caseness can be derived based on the presence (worse or much
worse than usual) of 3 or more of the 12 symptoms (Goldberg and Williams, 1988),
though some studies (including SHS and HSE) use a different cut-off point. We refer to
GHQ caseness as a level of ‘psychological distress’ of potential clinical significance.

There are now a number of studies in Scotland, and the UK, which have employed the
GHQ-12 and which give an indication of age related changes from mid-adolescence
onwards, together with gender and other social correlates. Of these, the ‘Twenty-07’
study provides the most comprehensive data on levels of psychological distress in young
people from mid-adolescence to early adulthood (West and Sweeting, 1996b). Among
females, who have consistently higher rates than males at all ages (and in all studies),
rates of GHQ caseness (3+) rose from 19% (age 15) through 33% (age 16) to 42% (age
18), thereafter falling slightly to 37% (age 21). The pattern for males followed a similar
course, the comparable rates being 11%, 17%, 33% and 31%. Although these are very
high rates of psychological distress at each age, and particularly so at age 18, they are
not out of line with the findings of other studies. Indeed, in YPLL (Hendry et al, 1993),
GHQ caseness rates for Scottish 15 year-olds (16% males, 28% females) were actually
higher than those in ‘Twenty-07’. At age 18, where more comparisons are possible,
‘Twenty-07’ rates for both genders were either similar to or somewhat higher than those
recorded by young people of similar age in Scotland or the UK (West et al, 1994). In all
studies, levels of psychological distress increased between mid and late adolescence.

More recent data on age related changes in psychological distress are available for
Scottish (Calderwood and Park, 1998) and English (McMunn et al, 1998) youth from the
SHS and HSE respectively, though each used a more stringent criterion (4+) to define
caseness, with a corresponding reduction in rates. Nonetheless, similar trends to those observed in ‘Twenty-07’ were found. Thus, in Scotland, caseness rates for males increased from 5% among 13-15 year-olds to 9% among those aged 16-24; among females from 8% to 17%. In the HSE, a fuller age breakdown is available which shows rates rising for both genders (consistently higher for females) throughout the teenage years, peaking at age 21 (16% males, 22% females), with a slight fall over the next two years. Interestingly, the peak is later than in the earlier ‘Twenty-07’ study which suggests changes in the youth-adult transition (e.g. delayed entry into the labour market) might be a factor. Although a formal comparison between caseness rates among English and Scottish youth appears to show the former have higher rates, it is likely this is an artefact of the cut-off point since the percentage scoring zero is higher among English males and females. On available evidence, both the levels of psychological distress, and age/gender trends, do not appear to differ between Scottish and English youth.

The SHS, but not HSE, has addressed the question of whether GHQ caseness rates have increased over time. Data are only available for two years (1995 and 98) and for ages 16-64. Over this short time period, there do not appear to be any overall changes though in some age groups, including 16-24 year-olds, there is evidence of a slight rise. Data over a longer time period are available from two other recent studies which allow comparison with the earlier ‘Twenty-07’ study. Each was conducted on 15 year-olds in the same geographical area, 8 (1995) and 12 (1999) years later respectively, and each utilised the same (3+) criterion for GHQ caseness. In the first of these, Harirchi (1996) reported caseness rates of 23% among males and 50% among females in a socially advantaged area and 24% and 54% in a disadvantaged area. These rates are higher, especially for females (in whom they more than doubled) than those recorded for 15 year-olds in the same ‘Twenty-07’ areas in 1987. The second (West and Sweeting, in press) involves the ‘11 to 16’ Study which included the GHQ at age 15. While the ‘11 to 16’ rate for males (13%) exhibited only a slight (non-significant) increase, that for females (33%) doubled over the 12 year period. While these results diverge from those in HBSC relating to malaise symptoms, they are consistent with evidence supporting an increase in psychosocial disorders in youth (Rutter and Smith, 1995), although in this case a trend confined to females.

The cumulative evidence from all of these studies is that psychological distress is experienced by a significant minority of adolescents (up to 1 in 3 males and 2 in 5 females at some point in this period). It appears to peak in late adolescence and is consistently higher among females, for whom it has become a more common experience. Studies are also consistent in finding little or no relationship with social class of background or other measures of SES (West et al, 1990, Glendinning et al, 1991; Macintyre and West, 1991; West, 1997; McMunn et al, 1998), in ‘11 to 16’ the highest rates (age 15) occurring in middle-class females (West and Sweeting, in press). A similar lack of difference appears to extend to (certain) ethnic groups, the only study known to us finding no significant difference in GHQ caseness between White Glaswegian 15 year-olds (both males and females) and those of South Asian origin (Shams and Williams, 1993). By contrast, in young people of working age the experience of unemployment is consistently associated with elevated rates (Lakey et al, 2001). For example, in the ‘Twenty-07’ study, at age 18, GHQ caseness was two and a half times more likely among those who were unemployed or ‘at home’ compared with those in work, a pattern also found in respect of expectation of unemployment among 21 year-olds (West and Sweeting, 1996b). There is also a suggestion of higher levels of psychological distress among students, a finding confirmed in a more recent study of students at two English universities (Roberts and Zelenyanszki, 2002). Among other factors associated with higher levels of psychological distress are living in a family
headed by a lone parent (McMunn et al, 1998; Ely et al, 2001) and for daughters (but not sons) having a mother with a high GHQ score (McMunn et al, 1998). Finally, there is recent evidence from both the ‘Twenty-07’ and ‘11 to 16’ studies linking worries about identity and performance with psychological distress, findings which point to causes associated with pressures to conform with idealised identities and pressure to succeed in the educational system respectively (West and Sweeting, in press).

**Depression and anxiety**

In addition to general instruments like the GHQ, there are several other screening instruments which refer to particular syndromes, notably depression and anxiety, and which on the basis of specific criteria are useful in identifying (more severe) cases of potential clinical significance. There are a few studies in Scotland which have used such instruments.

Evidence about syndromes of depression in adolescence is available from ‘11 to 16’ which at each age (11, 13 and 15) used a 6 item depression scale based on that of Kandel and Davies (1982), and from which a measure of caseness (‘severe depression’) can be derived (Sweeting and West, in press). Following the pattern observed in relation to malaise symptoms, rates for both males and females increased with age, for males doubling between age 11 (4%) and 15 (8%), while those for females exhibited a fourfold increase (4% to 18%). At age 15, no differences were found between young people from different social backgrounds, but those from lone- and step-families, whose parents ‘never understood their problems’, who were frequently lonely or bullied at school, or who thought they were not ‘good looking’ were significantly more likely to be ‘highly depressed’ (Sweeting and West, 2000a). Using the same measure, it was found that while there were no differences between young people in each of 5 rural areas, those who wanted to ‘move away’ from the area were more depressed (Hendry et al, 1998). Contrasting with the lack of difference between urban and rural youth, there is some evidence of differences between young people from different ethnic backgrounds. Using a 6 item depression scale (Zung, 1974), Shams and Williams (1993) found higher mean depression scores among 14-15 year-old males (but not females) of South Asian origin compared to their white counterparts in Glasgow. Female rates were higher than those of males in both ethnic groups.

With respect to older adolescents, as with most dimensions of health, there are less available data. One exception is the ‘Twenty-07’ study which, at age 18, incorporated the (14 item) Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983), from which a measure of depression (and anxiety) caseness can be derived. This produced considerably lower rates (4% males, 6% females) than other screening instruments, but since the items (and criteria for caseness) differ between instruments we cannot infer from this that levels of severe depression fall between mid and late adolescence. Using another instrument (the Brief Symptom Inventory [Derogatis, 1993]), much higher levels of depression (14%) were found in a student population at an English university, rates being higher among females and those from ethnic minorities (Grant, 2002).

Much less attention has been given to anxiety than depression generally, even though in terms of numbers it may be a more significant problem in adolescence. Some evidence is available on the early adolescent period from ‘11 to 16’ which at age 11 and 13 included a (6 item) state anxiety measure adapted from the STAIC (State-Trait Anxiety Inventory for Children) (Spielberger et al, 1970). Although a measure of caseness is not derivable from this inventory, mean scores for both males and females increased
considerably between age 11 and 13, those for females being higher than males (Sweeting and West, 1998a; Speed et al, 1998). Elevated rates among females were also apparent in both White and South Asian 14-15 year-olds, and among South Asian females (but not males) compared with their White counterparts (Shams and Williams, 1993). In late adolescence, one of the very few sources is the ‘Twenty-07 Study which found very high levels of anxiety at age 18 (34% of males, 46% of females) using a measure of caseness based on HADS (West and Sweeting, 1996b). High rates of anxiety (as well as depression) have also been reported in studies of students in higher education (Rana et al, 1999).

Level 3 - Mental (Psychiatric) Disorder

Contained within the population of young people with a syndrome of depression or anxiety is another (smaller) population whose problems are more persistent or severe. Severity is the major distinguishing characteristic of mental or psychiatric disorder as compared with more general mental health problems. Although the precise criteria vary, disorders are defined by reference to two main parameters; first, the occurrence of a number of (essential) symptoms which should have been present within a specified time period; second, the presence of significant distress and/or impairment of performance in relation to normal social roles or functioning. The second, so-called impairment, criterion is currently regarded as essential, not least because diagnosis on the basis of symptoms alone results in prevalence rates which are regarded as implausibly high by reference to clinical practice (Roberts et al, 1998).

Compared with the number of studies using screening instruments of one kind or another, there are still relatively few epidemiological studies of child and adolescent psychiatric disorder world-wide, let alone in the UK or Scotland. Indeed, it is only recently, with the publication of a study conducted by the ONS on 10,438 children aged 5-15 that comprehensive data on disorder in the UK child and adolescent population has become available (Meltzer et al, 2000). This study contained children and adolescents in Scotland, 412 of which were aged 11-15, whose data provide (unpublished) evidence on the prevalence of psychiatric disorder (ICD-10 classification with strict impairment criteria). Although the findings are very similar between Scotland, and England and Wales, prevalence rates are shown separately in Table 3 because of small numbers in the former.

Among Scottish 11-15 year-olds, 1 in 10 (9%) met ICD-10 criteria for any psychiatric diagnosis, half of whom (5%) experienced an emotional disorder and half (5%) a conduct disorder. Anxiety disorders (4%) predominated in the former group, with only 1.2% meeting the criteria for depressive disorder. Hyperkinetic disorders (1.2%) and, in particular, eating disorders (0.2%) were very uncommon. Females were more likely to have an emotional disorder, males to have a conduct disorder. These figures are very similar to those found for the same age group in England and Wales, the only discernible difference being a slightly lower prevalence of emotional disorders among Scottish males compared to those south of the border. These rates are also similar to those found in a study of psychiatric disorder among 15 year-olds in the West of Scotland as part of ‘11 to 16’ (West et al, 2000). However, in another survey of 1,246 Scottish adolescents (aged 12-15) in 8 Lothian schools, much higher rates of depressive disorder (2% males, 5% females) were found than in the ONS study, figures the authors regard as underestimates (Blair et al, 2001). By contrast, the very low rate of eating disorders was confirmed in another study of Lothian females followed up from age 12 to 14 (Wrate et al, 1998). Other disorders, like communication disorders or schizophrenia, which are particularly debilitating and make high demands on services, are equally uncommon.
Table 3. Prevalence of mental disorders among 11-15 year-olds in Scotland and England and Wales.

<table>
<thead>
<tr>
<th></th>
<th>Scotland</th>
<th>All</th>
<th>England and Wales</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>All</td>
<td>M</td>
</tr>
<tr>
<td><strong>Emotional disorders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>2.9</td>
<td>5.4</td>
<td>4.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Separation anxiety</td>
<td>1.4</td>
<td>1.0</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>0.5</td>
<td>1.5</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Social phobia</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Panic</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>PTSD</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>OCD</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>GAD</td>
<td>0.5</td>
<td>1.5</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Other anxiety</td>
<td>0.5</td>
<td>2.0</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive episode</td>
<td>1.0</td>
<td>1.5</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Other depressive episode</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Conduct disorders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional defiant disorder</td>
<td>1.4</td>
<td>0.5</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Conduct disorder (family)</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Unsocialised conduct disorder</td>
<td>1.0</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Socialised conduct disorder</td>
<td>0.5</td>
<td>1.5</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Other conduct disorder</td>
<td>4.3</td>
<td>0.5</td>
<td>2.4</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Hyperkinetic disorder</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperkinesis</td>
<td>2.4</td>
<td>0.0</td>
<td>1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Other hyperkinetic</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Less common</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pervasive developmental disorder</td>
<td>0.5</td>
<td>0.0</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Tic disorder</td>
<td>0.5</td>
<td>0.0</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Any disorder</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Base)</td>
<td>(210)</td>
<td>(202)</td>
<td>(412)</td>
<td>(2310)</td>
</tr>
</tbody>
</table>

Source: Mental Health of Children and Adolescents in Great Britain, 1999 (ESRC Data Archive Project No: PA 343). Reproduced by permission of the Controller of Her Majesty's Stationery Office.
Table 4. Prevalence of major mental disorders by social class in Scotland and England and Wales – ages 11-15.

<table>
<thead>
<tr>
<th>Social Class</th>
<th>I</th>
<th>II</th>
<th>IIln</th>
<th>IIIm</th>
<th>IV</th>
<th>V</th>
<th>Never Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scotland</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>3.0</td>
<td>3.1</td>
<td>9.1</td>
<td>4.1</td>
<td>8.6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Conduct</td>
<td>3.0</td>
<td>3.1</td>
<td>4.5</td>
<td>6.2</td>
<td>8.7</td>
<td>4.3</td>
<td>25.0**</td>
</tr>
<tr>
<td>Hyperkinetic</td>
<td>3.0</td>
<td>0.8</td>
<td>0.0</td>
<td>2.1</td>
<td>1.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Less common</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0*</td>
</tr>
<tr>
<td>Any</td>
<td>6.1</td>
<td>6.2</td>
<td>9.1</td>
<td>8.3</td>
<td>14.5</td>
<td>4.3</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>England and Wales</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>1.3</td>
<td>4.6</td>
<td>5.8</td>
<td>6.5</td>
<td>7.5</td>
<td>8.2</td>
<td>10.7***</td>
</tr>
<tr>
<td>Conduct</td>
<td>3.2</td>
<td>4.0</td>
<td>7.2</td>
<td>4.6</td>
<td>8.0</td>
<td>9.5</td>
<td>21.1***</td>
</tr>
<tr>
<td>Hyperkinetic</td>
<td>1.0</td>
<td>0.9</td>
<td>1.4</td>
<td>1.1</td>
<td>2.7</td>
<td>1.4</td>
<td>0.0*</td>
</tr>
<tr>
<td>Less common</td>
<td>1.3</td>
<td>0.7</td>
<td>0.2</td>
<td>0.1</td>
<td>0.9</td>
<td>0.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Any</td>
<td>5.4</td>
<td>8.3</td>
<td>12.0</td>
<td>10.6</td>
<td>14.7</td>
<td>16.0</td>
<td>26.3***</td>
</tr>
</tbody>
</table>

*= significance of results of chi-square tests, p<.05; **= p<.01; ***= p<.001.
Source: Mental Health of Children and Adolescents in Great Britain, 1999 (ESRC Data Archive Project No: PA 343). Reproduced by permission of the Controller of Her Majesty's Stationery Office.

The ONS study also reported marked differences in the prevalence of psychiatric disorder in UK children and adolescents by social class and other measures of SES (household income, housing tenure and parental educational level). Rates of conduct and emotional disorders (but not hyperkinetic disorder) increased progressively with falling social class, with particularly high rates in adolescents whose parents had never worked. Table 4 shows this pattern holds for conduct disorder among Scottish 11-15 year-olds, though that for emotional disorders (possibly due to low numbers) is less clear. Among other factors examined in the ONS study (though not separately for Scotland) were parental employment status (higher rates of emotional and conduct disorders in families with unemployed parent(s)), family structure (higher rates of both in lone parent families, higher rates of conduct disorder, and for females, higher rates of emotional disorder in step families), ethnicity (lower rates among Indians, higher emotional disorder among Pakistani and Bangladeshis, higher conduct disorder among Black Caribbeans). The most significant independent factors were the employment status of parents and residential area (ACORN classification) in which adolescents in ‘striving’ communities were most at risk. These ONS SES findings are consistent with the literature on conduct disorder (Hill and Maughan, 2001) but less so with that on emotional disorder (Maughan, 1995). In the Lothian study, for example, rates of depressive disorder did not vary by deprivation.

Comparable evidence on the epidemiology of psychiatric disorder in older adolescents in Scotland is not available in published form. The best evidence comes from the OPCS Survey of Psychiatric Morbidity in Great Britain (Meltzer et al, 1995), a national study of some 10,000 adults aged 16-64. Information was collected via the Clinical Interview
Schedule (CIS-R), the principal focus being on emotional symptoms (‘neurotic psychopathology’) and (neurotic) disorder with additional information obtained via a screening instrument (SCAN) on psychoses. Disorders were defined by reference to ICD-10 and refer to symptoms (without impairment criteria) occurring in the previous week. No differences (in the total sample) were found between Scotland compared with England and Wales. In the 16-19 age group, the overall prevalence of neurotic disorder was 13% (7% males, 19% females) rising to 17% (12% males, 21% females) among those aged 20-24. Among 16-19 year-olds, mixed anxiety and depressive disorder were the most prevalent (3% males, 9% females) with females also having higher rates for phobias (5%) and depressive episode (3%). Among 20-24 year-olds, mixed anxiety and depressive disorder (5% males, 11% females) was again the most prevalent, with OCD (1% males, 3% females) and depressive episode (2% males, 3% females) also featuring in the picture. Rates of functional psychoses (previous year) were <1% for both males and females. These gender differences are similar to those observed in early to mid-adolescence; however, because rates of disorder are not based on impairment criteria (as in the ONS study) it is not possible to make comparisons of the prevalence of emotional disorders over the whole of adolescence into early adulthood (age 11-24). Neurotic disorders (and psychoses) were slightly more prevalent in the lower social classes but much more so among the unemployed, although this is not broken down by age.

Self-harm, suicidal ideation, parasuicide and suicide

In addition to prevalence estimates of depressive disorder, the Lothian study (Blair et al, 2001) also provided information on the extent of self-harm in a secondary school population. The results showed that about 1 in 10 of 12-15 year-olds had self-harmed in the previous 12 months, principally comprising scratches or cuts and/or burns to the body, the rate among those with depressive disorder being much higher than among those without. However, rates for suicidal ideation (suicidal thoughts) in the past year were generally low in the whole sample (3%) though again much higher among those who were depressed.

In general, very little evidence on rates of suicidal ideation in adolescence is available anywhere in the world, making the Lothian study something of an exception. What estimates there are, are very approximate (15-53%) and refer to lifetime suicidal ideation, but they do imply that suicidal thoughts are a common feature of adolescence (Diekstra et al, 1995). Evidence on parasuicide is also very limited, data from patient records substantially under-estimating the scale of the phenomenon. However, estimates derived by Diekstra et al. (1995) from the few community surveys world-wide (none in the UK) suggest that between 2% and 20% of adolescents have at some time attempted suicide, and that (as with suicidal ideation) rates are higher among females than males. Evidence from the ‘Twenty-07’ study is consistent with these estimates (West and Sweeting, 1996b). At age 18, around 1 in 5 (17% males, 25% females) reported having some suicidal thoughts in their lifetime, 1 in 12 (7% males, 10% females) reported ‘serious’ suicidal ideation, and 2% of males and 4% of females said they had ‘ever taken an overdose or injured self deliberately’. Controlling for prior mental health (GHQ caseness) neither suicidal ideation nor parasuicide were related to social class but suicidal thoughts (twice as likely) and parasuicide (six times as likely) were much more likely among the unemployed, the latter extending to those (predominantly female) at home (over 10 times more likely).
Figure 1. Suicide rates (per 100,000) by age group, Scotland versus England and Wales

Suicide itself is a rare event, though it accounts for around 1 in 5 deaths in males aged 15-24. In Scotland, in 2000, there were just 6 recorded deaths from ‘intentional self harm’ in adolescents aged under 15. In the age group 15-24, there were 109 such deaths, 91 occurring to males and 18 to females, representing rates of 28 per 100,000 and 6 per 100,000 respectively (Registrar General for Scotland, 2001). The rate for males continues the upward trend observed over time in this (and other young adult) age groups between 1971-3 and 1996-8, during which period it more than doubled (from 8 to 18 per 100,000) (Platt, 2000). Among females, the rate remains the same as in 1996-8, but this too represents a threefold increase since the early 70s. This secular trend among young people is consistent with that found in almost all countries over the last half of the 20th Century (Rutter and Smith, 1995). Finally, though Scotland does not have a particularly high suicide rate compared with several other countries (Platt, 2000), it is much higher (in virtually all age groups) than in England and Wales (Figure 1), for reasons which are not well understood.

Among the social correlates of suicide, gender is the major factor, the much higher rates among males being the reverse of the pattern for suicidal ideation and parasuicide. Among Scottish 15-24 year-olds, no relationship with social class is observed, though in adults (25-64) there is an inverse relationship, the rate in social class V males being particularly high (Kreitman, 1991; Platt, 2000). Among the unemployed, the risk of suicide is estimated to be between 2-3 times higher than those in work (Platt and Hawton, 2000). Among individual factors, the single most important predictor of suicide is prior emotional disorder (particularly depressive disorder) and a previous suicide attempt.

Summary
Providing an overall assessment of the mental health of young people in Scotland is difficult precisely because the phenomena concerned are so broad. However, at the most general level (Level 1), the evidence shows that almost all young people experience symptoms of malaise at some time, and even suicidal thoughts are quite common. Of these, a significant minority meet the criteria for a syndrome of symptoms (Level 2), in the case of psychological distress (GHQ caseness) involving up to 1 in 3 males and 2 in 5 females (rates for whom may have increased over time). While for most of them, this may be relatively minor psychological morbidity, 1 in 10 meet the criteria for psychiatric disorder (Level 3), about half of whom have emotional disorders and half conduct disorders. With the exception of conduct disorder (and suicide), females consistently have more mental health problems at every level. Again excepting conduct disorder, social class appears to be largely unrelated to mental health problems, some evidence suggesting that middle-class females may have particularly high rates of malaise symptoms and psychological distress. Paradoxically the experience of unemployment is consistently related to poorer mental health, though higher rates of mental health problems have also been found among students. There appear to be few differences between young people in urban and rural areas, some differences between ethnic groups, and a big (and unexplained) difference in the suicide rate between young people in Scotland compared with England and Wales.
Behaviours

Smoking
Evidence of the adverse effects of smoking on health is incontrovertible, a succession of studies attesting to a causal connection between smoking and increased morbidity and mortality, including many cancers, chronic obstructive airways disease, coronary heart disease and stroke (BMJ, 1994). Although the major impact of smoking occurs later on in life, even after a relatively short smoking career young smokers have poorer respiratory health (Townsend et al, 1991). Given its public health significance, it is not surprising that a great deal of attention has been given to monitoring levels of smoking in the population, particularly among young people since most (but by no means all) smokers begin smoking in adolescence. In consequence, targets for the reduction of smoking among young people continue to be set (Stationery Office, 1998) following their introduction in Scotland in 1992 (Scottish Office, 1992). Currently, the target is to reduce smoking among 11-15 year-olds to 11% by the year 2005, and to 9% or less by 2010.

The major source of information on smoking in early adolescence comes from the OPCS/ONS time series of surveys of secondary schoolchildren (age 12-15) in Scotland (and England and Wales) which, excepting one year (1988), have been conducted biennially since 1982. Henceforth we will refer to these surveys of smoking, drinking and drug use as SDD-S (Scotland – Boreham and Shaw, 2001a) and SDD-E (England and Wales - Boreham and Shaw, 2001b). The evidence from these studies shows a reduction in the prevalence of regular (1+ cigarettes per week) smoking from 15% in 1982 to 10% in 2000 which, however, is almost entirely attributable to a decrease among males, notably in the period 1996-2000, the corresponding rate for females remaining much more stable over time (see Figure 2). This pattern is discernible in each single age group, but is particularly apparent among 15 year-old males. Despite some cause for optimism in these figures (for males at least), caution is warranted in concluding that this is concrete evidence of a downward trend, especially as previous suggestions that rates of smoking were falling in the late 80s proved unfounded. The evidence is also not consistent with findings from the HBSC studies which show an increase in ‘daily smoking’ from 1990, through 1994 to 1998 in each age group (11, 13 and 15) and for both males and females (Griesbach and Currie, 2001). Data are currently being collected for the 2002 study which should prove more conclusive.

Figure 2. Prevalence of cigarette smoking among 12-15 year olds in Scotland 1982-2000

Reproduced from Boreham and Shaw, 2001a, Fig 3.2.

Crown copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland.
The SDD series is also a major source of information about the patterning of smoking by age in early adolescence. In the most recent SDD-S survey (Boreham and Shaw, 2001a), involving 4,774 Scottish pupils, among the youngest group (age 12), the great majority (70%) had never smoked, 19% had tried smoking, 5% reported having smoked in the past, and 4% and 2% respectively described themselves as an occasional (<1 cigarette a week) or regular smoker. As in all previous surveys, rates of smoking increased with age such that by age 15, only a minority (36%) reported never smoking, 20% reported trying it, 13% described themselves as ex-smokers, while nearly 1 in 3 met the criteria for an occasional (11%) or regular (19%) smoker. These overall figures disguise important gender differences in smoking in adolescence which emerge at age 13 (there is no difference at age 12) and involve higher rates of smoking among females than males. In 2000, by age 15, 70% of females compared to 64% of males had some experience of smoking, while 37% of females were either occasional (13%) or regular (24%) smokers compared to 24% of males (9% occasional, 15% regular). However, in this (and all previous surveys), the mean (and median) number of cigarettes consumed by smokers (occasional and regular) is higher among males than females, an important qualification to the widely publicised excess of females among teenage smokers. There is also related evidence that males experiment with smoking at an earlier age than females, and interestingly, in the SDD-S study there is no gender difference in perceived dependence (difficulty giving up) on smoking.

The evidence from other studies of Scottish adolescents is consistent with these findings. In ‘11 to 16’, at age 11 (before entry into secondary school), only a small minority (13%) had ever smoked (Sweeting and West, 1998a), there being little or no difference between males and females. This figure rose to 47% at age 13 (Speed et al, 1998) and 67% at 15 (Young et al, 2000). At age 15, a slightly lower prevalence (26%) for regular and occasional smoking was found than in the SDD-S national sample, but gender differences (22% males, 29% females) were equally pronounced (Sweeting and West, 2000b). Similar age and gender trends have been reported in each of the three HBSC surveys (Griesbach and Currie, 2001), the figures for ‘daily smoking’ among 15 year-olds (19% males, 24% females) in 1998 being very similar to those in ‘11 to 16’ in 1999. In the ‘Rural Youth’ survey (Glendinning, personal communication), of 11-15 year-olds in rural towns, villages and the countryside, smoking also increased predictably with age, rates of daily smoking among 15 year-old males (21%) and females (24%) being almost identical to HBSC. Interestingly, among males (but not females) living in more remote areas (countryside) smoking rates were lower than elsewhere (e.g. 15% of 15 year-old males). In a recent (2001) survey of S3 and S4 pupils in the Western Isles, rates of ‘regular’ (weekly) smoking among 15 year-old males (17%) and females (15%) also appear to be lower than in Scotland as a whole, in this case there being no difference between males and females (Grant and Jilks, 2002). The relatively low figure for ‘daily’ smoking (14%) among 14-15 year-olds (S3/S4) in a similar survey conducted in the same year in Orkney (Leven, 2001) is consistent with this pattern. However, although there was some suggestion of lower rates of smoking in the Highlands and Islands (and the Borders) in an earlier (1990) HBSC (Currie and Todd, 1991), the results were inconclusive, and on present evidence there appears to be more similarity between Scottish regions than there are differences with the possible exception of the more remote rural areas and islands, where access to tobacco might be more difficult.

Precise comparison between countries is difficult in early to mid adolescence because of different policies in relation to the age at which young people enter secondary school. Thus, the slightly higher rates of smoking among Scottish secondary schoolchildren compared to those in England and Wales, observed in successive SDD surveys (Boreham and Shaw, 2001a), may simply be an artefact of the different age structures of the school populations, the former being on average (6 months) older at entry to
secondary school (West, 1994a). The (1998) HBSC study also revealed little or no difference in either weekly or daily smoking between 11, 13 and 15 year-olds north and south of the border, Scottish (and English and Welsh) rates tending to be at the higher end of the international table (Gabhainn and Francois; Griesbach and Currie, 2001). In every country, very similar age trends are observed. By contrast, there is considerable variation in gender patterning between the 28 HBSC countries although a female excess is the predominant pattern. The authors observe that there appears to be no relationship between the prevalence of smoking and smoking regulation policies in the countries included in HBSC.

In contrast to the considerable number of studies of smoking in early adolescence, much less research has been conducted on the period after the end of statutory education, in large part because of the assumption that almost all smokers have started smoking by that time (West et al, 1999). The evidence, however, from studies of adults suggests the assumption is mistaken, a significant number of smokers starting smoking in late adolescence and early adulthood. Thus, in the SHS (Boreham, 2000), rates of current smoking (‘smoking nowadays’) in the 16-24 year age group (39% males, 34% females) were higher than comparable figures in secondary schoolchildren (age 15). The 1998 GHS (Bridgewood et al, 2000), which permits a more detailed age breakdown, found a similar pattern. Among 16-19 year-olds 30% of males and 31% of females were current (‘nowadays’) smokers, rising to 42% and 39% respectively in the age group 20-24. These rates were higher than those recorded 10 years earlier in the GHS of 1988, a pattern only observed in the 16-19 and 20-24 year age groups, all others showing a fall (Bridgewood et al, 2000). Further evidence on the importance of the post-school period for the uptake of smoking is available from the ‘Twenty-07’ study. In this sample, the prevalence of daily smoking more than doubled between age 15 (14%) and 18 (31%) and continued to rise to age 23 when 42% of males and 32% of females reported ‘daily smoking’, remarkably similar figures to the SSH and GHS (West et al, 1999). An important (and under-reported) finding from all three studies is that by early adulthood (age 20-24), the gender difference observed in mid adolescence reverses to reveal a male excess of smoking, a pattern continuing throughout adult life. This is probably attributable to more females giving up smoking than males taking it up, possibly in consequence of health risks associated with oral contraception and pregnancy.

Contrasting with the wealth of information about age, gender and time trends, much less evidence exists about the relationship between social class and smoking in adolescence, most reviews reporting only a weak association (Conrad et al, 1992; Lloyd and Lucas, 1998). Among Scottish studies, YPLL found no relationship between current (‘weekly’) smoking and social class among 16/18 year-olds (Glendinning et al, 1994), a finding replicated in the more recent (1998) HBSC for 15 year-olds using both father’s social class and a family affluence scale (Mullan and Currie (2001). By contrast, in the earlier ‘Twenty-07’ study, a strong relationship was found between ‘daily’ smoking and social class in the same age group (Green et al, 1990). The explanation for these inconsistent findings appears to reside in the definitions of smoking used. Thus, in ‘11 to 16’ (again at age 15), while there was no relationship between social class and current (occasional + regular) smoking, a significant trend was found for ‘daily’ smoking (higher in lower classes), which strengthened with the number of cigarettes smoked per day (Sweeting and West, 2001a). Interestingly, evidence from ‘Twenty-07’ showed that beyond age 15 young people from different class backgrounds are equally likely to become regular smokers (West et al, 1999). This strongly suggests that the well documented class gradient in smoking among Scottish adults (SHS, 1998), which on the evidence of the HSE (Hedges and Jarvis, 1998) is established by early adulthood (rates of current smoking more than double between Class I and V in both males and females), is largely the result of the earlier onset and heavier smoking among working class youth. Further
evidence from the HSE on natural quit rates among 16-24 year-olds also shows higher levels of quitting among middle-class youth, particularly those who previously smoked occasionally rather than regularly (Hedges and Jarvis, 1998). There is also evidence that, independently of class of background, smoking in mid-adolescence is predictive of future labour market position (particularly unemployment), which may contribute to the excess of working-class smokers in adulthood (Glendinning et al, 1994; West and Sweeting, 1996c).

Although social class is linked to smoking in youth in quite complex ways, by comparison with other factors it is not an important predictor. A considerable body of international evidence now exists testifying to the importance of family structure and family processes for smoking in adolescence (Goddard, 1992; Hetherington and Clingempeel, 1992; Rodgers and Pryor, 1998), Scottish studies being no exception to this rule. In the Twenty-07 study, current smoking was over twice as likely among 15 year-olds in lone parent families and one and half times more likely among those in reconstituted families compared with those living with two birth parents even after controlling for household income (Sweeting et al, 1998), a result replicated in ‘11 to 16’ 12 years later in the same area (Sweeting and West, 2000a). There is also evidence from both studies showing the importance of family time, parental monitoring and positive relationships with parents for (reduced) smoking (Glendinning et al, 1997; Sweeting et al, 1998). The significance of family life, in addition to culture, is also suggested by the much lower rates of smoking found in both males and females among 14 year-olds of South Asian origin compared with their White Glaswegian counterparts (Shams and Williams, 1993). There are also a huge number of studies, including several from Scotland, attesting to a more direct set of family influences stemming from family member’s smoking behaviour and attitudes. Smoking rates among adolescents are consistently higher among young people whose parent(s) and/or siblings smoke (Green et al, 1990; West et al, 1999; Griesbach and Currie, 2001) and they are also higher among those who perceive their parents as more approving of the behaviour (Boreham and Shaw, 2001a; 2001b; Griesbach and Currie, 2001).

There is also accumulating evidence from studies in Scotland (Sweeting and West, 2000a) and elsewhere (Aveyard et al, in press) that rates of smoking vary between schools, but at the present time it is not clear to what extent this might reflect school policies (e.g. enforcement of a smoking ban), as suggested by others (Griesbach and Currie, 2001; Griesbach et al, 2002) or some other set of influences associated with the school setting. Chief among these is the peer group which, though still poorly understood, has received a good deal of research attention, a huge number of studies demonstrating an association between young people’s own smoking behaviour and that of their friends, the strength of which far outweighs that of family member’s smoking (West and Michell, 1998). For example, in the ‘Twenty-07’ study, among those with ‘most’ friends smoking at age 15, the likelihood of becoming a regular smoker over the following year was 10 times higher than among those with no smoking friends, a difference also found among older adolescents (age 18) though at a reduced level (West et al, 1999). The importance of the peer group for smoking has also been highlighted by one study of friendship groups in a Glasgow school, which not only confirmed the existence of distinct (non) smoking groups but also found that pupils peripheral to those groups at time 1 tended to adopt their smoking behaviour at time 2 either via processes of selection or influence (Pearson and Michell, 2000). In a related (qualitative) study, it was apparent that smokers occupy particular positions in the hierarchy of school peer groups, a finding particularly well illustrated by a group of highly attractive ‘top girl’ smokers (Michell and Amos, 1997). This finding, along with others (West and Sweeting, 1997; Glendinning et al, 1999) challenges the assumption that smoking is associated (at least in any simple way) with low self-esteem. There is also consistent evidence from
Scotland (Glendinning, 1995; Sweeting and West, 2000a; Griesbach and Currie, 2001) and elsewhere (Nutbeam and Aaro, 1991) that smokers are more likely to hold negative attitudes to school and education generally compared with non-smokers. Paradoxically (in view of the lack of association with social class), young smokers also have a higher disposable income than non-smokers (Griesbach and Currie, 2001).

The importance of the peer group (and associated attitudes) for smoking strongly suggests it is related to particular youth lifestyles. The evidence on this issue is fairly unequivocal. In ‘11 to 16’ (age 15), young people engaged in commercialised leisure were more likely to smoke, those who were ‘street-oriented’ were much more likely to smoke, while those involved with sports/games were much less likely to smoke (Karvonen et al, 2001). Similar results were found among 13-14 year-olds in both a national (YPLL) and the ‘Rural Youth’ samples, rates of regular smoking being higher among ‘peer oriented’ and ‘disaffected’ youth compared with ‘conventional’ and ‘isolated’ youth (Glendinning and Inglis, 1999). Interestingly, these investigators also found the highest rates among peer oriented youth with low self-esteem and disaffected youth with high self-esteem, testifying again to the complexity of the relationship between smoking and self-esteem, and suggesting that smoking is intimately tied up with both the attainment and display of a particular youth identity perceived to be attractive, rebellious and cool (Hastings, 1994). There is ample evidence attesting to the fact that young people associate particular images with particular brands of cigarettes and actively participate in tobacco industry marketing such as the purchase of branded products (MacFadyen et al, 2001). There is also ample evidence that the great majority of young smokers (under 16) have little or no difficulty purchasing cigarettes from a variety of retail outlets (Boreham and Shaw, 2001).

In sum, smoking among young people continues to be a major health priority even though there is some evidence of progress towards the target. Most young people have tried smoking by age 15, when about 1 in 5 are smoking regularly, and rates continue to rise into early adulthood. There is an excess of female smokers in mid-adolescence that reverses to a male excess by early adulthood. Social class is not a strong correlate of smoking generally but is linked to heavier smoking with greater risk to health later on. Growing up in a lone parent or reconstituted family, and spending less time with parents, increase the likelihood of smoking as does a parent or sibling who smokes. Of greatest importance is the peer group, and associated lifestyles, which for some young people shapes both their identity and smoking behaviour.

Drinking

Although moderate consumption may not be harmful, and indeed even beneficial for certain population groups, alcohol contributes to physical and psychological health problems such as cirrhosis, high blood pressure and amnesic syndrome, together with accidents, social and family problems, crime and violence. The total annual societal cost of alcohol misuse in Scotland at 2001/02 prices has been estimated at £1071 million (Catalyst, 2001).

Against this background, there has been increasing concern over rising levels of drinking (and other substance use) among young people, backed up by several (mainly) school-based surveys reporting high levels of alcohol consumption, particularly ‘binge’ drinking and drunkenness (Forsyth and Barnard, 2000). Drinking and intoxication are now perceived as normative among young people (MacAskill et al, 2001). The appeal of contemporary ‘designer drinks’, ‘alcopops’ and strong white ciders have been the focus of particular interest (McKeganey et al, 1996; Hughes et al, 1997; Forsyth and Barnard, 2000; Forsyth, 2001). It is interesting that in the interwar period, 18-24 year olds were
the lightest drinkers in the adult population, and even after this, the youth cultures of the
1950s were more likely to involve the coffee bar than the pub. It was not until the 1960s
that drinking became part of the youth scene; by the 1980s, 18-24 year olds had become
the heaviest drinkers in the population, a change that was accompanied by a decline in
the age of onset of regular drinking (Institute of Alcohol Studies, 2000).

Although all surveys demonstrate recent increases in the amount of drinking among
young people (although little or none in respect of ‘ever’ drinking), obtained rates differ
between surveys. The most recent SDD-S survey (Boreham and Shaw, 2001a)
represents a continuation of the two-yearly OPCS ‘smoking, drinking and drug use’
series (e.g. Goddard and Higgins, 1999), and includes data for the past decade, so
highlighting trends. Overall rates of drinking last week among Scottish 12-15 year olds
rose from 14% in 1990 to a high of 23% in 1996, dropping slightly to 21% in 2000. Older
teenagers are largely responsible for these increases: among 12 year olds, drinking in
the past week was reported by 5% in 1990 and 6% in 2000, but among 15 year olds by
28% in 1990 and 39% in 2000. Most studies include frequency of drinking, so it is
possible to compare across studies (and ages) as well as over time in respect of this
item. Rates of drinking at least weekly were 4% at age 12, rising to 30% at 15 (2000
SDD-S); 8% (age 12) and 45% (age 15) (1998 HBSC - Todd et al, 1999a); 1% at 11 (in
1994) and 25% at 15 (in 1999) (‘11 to 16’); and finally 9% (12-13) and 22% (14-15) in a
survey of all Orkney secondary pupils (Leven, 2001). Although each is school-based,
rates are highest in HBSC, lowest in ‘11 to 16’, with the SDD-S and Orkney Surveys
falling mid-way. Comparison over time again identifies recent rapid increases: only 28%
of HBSC (1990) and 5% of ‘Twenty-07’ (1987) 15-year olds drank this frequently (Todd
et al, 2000; Sweeting and West, 2000b). (Rates of drinking weekly or more often within
the SHS are remarkably low in comparison – around 8% at age 15. The reason for this
is probably methodological, since the survey was home-based rather than school-based –
Erens, 2000.)

In addition to increased drinking frequency, concern has also been expressed at
amounts drunk, and the tendency for ‘binge’ drinking. Here, there is rather more
consistency in the figures from the different surveys. Of the 39% of 12-15 year olds in
the SDD-S who drank in the past week, mean units increased (the report does not break
these down by age) from 10 (M) and 6 (F) in 1990 to 13 (M) and 9 (F) in 2000, and at the
later date 32% (M) and 22% (F) had consumed over 14 units in the past week. Among
the 40% of ‘11 to 16’ 15-year olds who had drunk in the past week, mean units were 11
(M) and 8 (F), while 33% (M) and 15% (F) had consumed over 14 units. Rates of having
been drunk (self-defined) four or more times among HBSC 15-year olds increased from
21% in 1990 to 34% in 1998, again, remarkably similar to the rate of 31% among ‘11 to
16’ 15-year olds (1999). A definitional problem is that safe drinking advice tends to focus
on adults and units (21 [M] and 14 [F] weekly; 3-4 [M] and 2-3 [F] daily – Department of
Health, 1995). In contrast, no safe limits have been set for younger people, and in
addition the range of alcohol products now available complicates traditional benchmarks
such as 1 pint of beer = 2 units (MacAskill et al, 2001).

As with smoking, research on alcohol among young people has tended to neglect older
teenagers and those in their early twenties, despite the fact that surveys have shown 16-
24 year olds as most likely to be drinking in excess of the government’s weekly limits
(HEBS, 2000). The main data source is the SHS. Among 16-24 year old respondents,
5% had never had a proper drink, 73% (M) and 53% (F) drank weekly, and 43% (M) and
24% (F) usually consumed over the recommended number of weekly units (21 and 14
respectively). Among drinkers, 45% (M) and 24% (F) said they were drunk at least once
a week, 16% (M) and 8% (F) were defined as ‘problem drinkers’ using a validated
questionnaire, and of those who drank in the past week, 62% (M) and 49% (F)
consumed over 8 and 6 units on their heaviest drinking day (taken as an indicator of ‘binge’ drinking). Alcohol consumption and problem drinking decreased in subsequent age groups (Erens, 2000).

An additional indicator of drinking problems can be found in the Scottish hospital admission statistics. In the year up to March 1999, 211 (M) and 200 (F) under 15s and 1,674 (M) and 681 (F) 15-24 year olds were discharged from hospital with a diagnosis of alcohol non-dependence (which includes acute intoxication and harmful use). The figures for the under 15s represent 2% (M) and 5% (F), and those for 15-24 year olds 14% (M) and 16% (F) of the overall discharges with this diagnosis for all males and females. The ratio of males to females increases from 1.0 in the under 15s to 2.5 in 15-24 year olds. Among 15-24 year olds, 104 males (9% of all males) and 28 females (3% of all females) had a psychiatric admission with alcohol-related problems (male:female ratio of 3.7) (ISD Scotland, 2001a).

Overall rates can obscure different types of drinking among young people. For example, among 824 12-17 year olds within the Argyll & Clyde Health Board area, designer drinks and strong white ciders were most popular among 13-16 year olds. In contrast, more conventional drinks such as spirits or beer increased in popularity with age. Strong white cider and fortified wines were most likely to be drunk in the open and were also associated with heavier alcohol consumption and greater loss of control (Hughes et al, 1997). Similarly, a study of 758 12-15 year olds in Dundee, found that consumers of white ciders and fortified fruit wines were most, and those of wine least likely to report drunkenness (McKeganey et al, 1996). It has been suggested that among young people, at one extreme there is a large group of ‘safe’ (often wine) drinkers, supervised in the parental home, while at the other is a smaller group who drink large volumes of high alcohol beverages (e.g. white cider in hidden outdoor locations, vodka in friends houses and, among slightly older drinkers, spirits or beer in licensed premises), associated with intoxication and risky behaviours (Forsyth and Barnard, 2000). Although popular with underage drinkers, initial ‘scare stories’ about the dangers of marketing alcopops to children and adolescents, have not been supported by results of studies which show they are not associated with drunkenness among this age group (Barnard and Forsyth, 1998; Forsyth, 2001).

Gender differences in drinking and drunkenness, a traditionally masculine activity (Willis, 1990), are disappearing, at least among teenagers. In the SDD-S survey, 16% of 12-15 year old males drank in the last week compared with 12% of females in 1990, by 2000 the equivalent rates were 21% (M) and 20% (F). Comparison of data from ‘Twenty-07’ and ‘11 to 16’ 15-year olds (1987 and 1999) showed rates of ever drinking did not differ by gender, while both monthly and weekly drinking were more likely among males at the earlier date; 12 years later rates of ever and monthly drinking were significantly higher among females, and although the preponderance of males remained at the heaviest levels, the ratio of males:females in this (weekly) drinking category dropped from 2.0 to 1.2 (Sweeting and West, 2000b). Significant gender differences among 15-year old HBSC respondents in respect of drinking at least weekly and drunkenness in 1990 and 1994 had also disappeared by 1998 (Todd et al, 1999a). SHS comparisons of 1995 and 1998 data show increased consumption for both males and females in the 16-24 year old age group (Erens, 2000).

In respect of social class, the conclusion from most surveys relates to its ubiquitousness. Analyses of 15-16 year olds surveyed in 1987 in the national YPLL study found no significant effects for social class (non-manual Vs manual) in respect of weekly drinking or alcohol being the first/second item of expenditure (Glendinning et al, 1995). Among ‘11 to 16’ 15-year olds there is some evidence that, as with smoking, only heavier or
riskier drinking (higher consumption in the past week and levels of self-report drunkenness) is class-patterned, being most likely among those from working class homes (Sweeting and West, 2001b). In contrast, analyses of HBSC and ‘Twenty-07’ 15-year olds, which used ‘lighter’ definitions (current and weekly) showed drinking was more likely among non-manual households (Currie et al, 1993; Greene et al, 1991). However, all studies agree that there is stronger differentiation in respect of own future economic position (tertiary education, work/training or un/non-employment) and current lifestyle (Glendinning et al, 1995; West and Sweeting, 1996c; Sweeting, 2000a; Karvonen et al, 2001). The SHS does not analyse the social class patterning of drinking for 16-24 year olds separate from older adults, but in the HSE there were no clear patterns among 16-24 year olds (males or females) in alcohol consumption levels, although young women from higher social classes were more frequent drinkers (Erens and Hedges, 1998).

Despite its alcoholic reputation, rates of drinking among young people in Scotland are similar to, or indeed slightly lower than those in England. Within the SDD surveys of 12-15 year olds (Boreham and Shaw, 2001a; 2001b), Scottish pupils were slightly less likely to report drinking in the past week (24% compared with 27%), but Scottish drinkers were more likely to have consumed 14 or more units (28% compared with 23%). Within HBSC at all ages (11, 13 and 15), English rates of drinking beer, wine or spirits were higher than those in Scotland, while rates of having been drunk twice or more were slightly higher in Scotland at ages 13 and 15 (53% [M] and 56% [F] in Scotland, 51% [M] and 52% [F] in England at age 15). Finally, SHS and HSE comparisons also showed considerably lower levels of drinking among Scottish compared with English children up to age 15, and very slightly lower levels for 16-24 year olds (mean weekly units of 23.4 [Scotland] and 23.9 [England] for males, and of 10.0 [Scotland] and 10.8 [England] for females) (Erens, 2000).

Illicit Drugs

Levels of drug misuse are a keen area of interest for Government policy, the media and the public. Like alcohol it is a complex issue, impacting not just directly on health, but also indirectly, for example via violence (McKeganey and Norrie, 2000) or accidents, and on social and family problems, crime and violence (Galbraith, 1999). However drugs are now a ubiquitous feature in the lives of young people: over 5 years ago, among a sample of Scottish pupils with an average age of 13, 58% had been in situations where drugs were taken, 52% had been offered drugs and 57% had friends with experience of drugs (Barnard et al, 1996). More recently, among Orkney pupils, 13% of 12-13, 40% of 14-15 and 48% of 16-17 year olds had been offered drugs (Leven, 2001).

With the exception of SDD-S, where they are somewhat lower, drug rates from school-based surveys (HBSC [Todd et al, 1999a], ‘11 to 16’ [Young et al, 2000] and ‘Rural Youth’ [Glendinning, personal communication]) seem fairly consistent (drugs were not included in the Health Surveys). Thus when comparing ‘ever’ use of different drugs as reported by 15-year olds in the SDD-S and 1998 HBSC surveys, the former has lower rates for all drugs apart from ecstasy, cocaine and heroin where they are similar. For example, rates of the most popular drugs in the two studies were 32% (SDD-S) and 40% (HBSC) for cannabis, 5% (SDD-S) and 15% (HBSC) for glues or solvents, 6% (SDD-S) and 10% (HBSC) for magic mushrooms, 4% (SDD-S) and 11% (HBSC) for amphetamines and 5% (SDD-S) and 3% (HBSC) for ecstasy. When the comparison is made between HBSC and ‘11 to 16’ 15-year olds, almost identical rates are found in respect of cannabis, amphetamines, ecstasy, cocaine and heroin. In HBSC there were somewhat higher rates of glues and solvents (15% [HBSC] and 7% ['11 to 16']) and magic mushrooms (10% [HBSC] and 4% ['11 to 16']), and somewhat lower rates of LSD (4% [HBSC] and 7% ['11 to 16']). Cannabis is clearly by far the most popular drug, and it
is very unusual for young people with some experience of drugs not to have used it; for example, among 15-year olds in SDD-S 17% had ever used cannabis only, 15% cannabis plus other drugs and only 1% other drugs only.

Taken together, the ‘ball park’ figures seem to indicate that by 15, at least a third of Scottish young people have some experience of cannabis, and around one-in-ten of the three next most popular drugs, glues/solvents, magic mushrooms and amphetamine. Only one-in-twenty have tried ecstasy, and a tiny minority heroin and cocaine. Having tried a drug ‘ever’ can by no means be taken as ‘regular’ use. Again, taking the figures for 15 year olds in respect of cannabis: while rates of ‘ever’ use were 32%, 40% and 40% in SDD-S, HBSC and ‘11 to 16’ respectively, rates of past month use were 19% and 17% in the SDD-S and HBSC studies, and of weekly use 11% in ‘11 to 16’.

It is difficult to compare rates among school pupils with those among 16-25 year olds, because there is much less information on current post-school drug use. National prevalence figures are only available via the 2001 Scottish Crime Survey (which includes a self-complete drugs questionnaire). ‘Ever’ use of drugs was reported by 30% of males and 27% of females at 16-19, rising to 48% (M) and 39% (F) at 20-24. Use by over 5% in these age groups was reported in respect of the following drugs: cannabis (25% at 16-19, 40% at 20-24); amphetamine (8% at 16-19, 15% at 20-24); LSD (7% at 16-19, 10% at 20-24), psilocybin (magic mushrooms – 8% at 16-19, 6% at 20-24); ecstasy (8% at 16-19, 11% at 20-24); and cocaine (5% at 16-19, 7% at 20-24). Temazepam and valium ever were each reported by around 5% of 16-19 year old females, but were much less common among males (ISD Scotland, 2002).

All studies indicate increases in experience of drugs with age in adolescence. Among the ‘11 to 16’ cohort, 5% reported having been offered drugs at age 11, 28% at 13, and 59% at 15; 19% had ever tried drugs at 13, 40% at 15; among HBSC respondents (1998), 15% had used cannabis at 13, 40% at 15; finally, in SDD-S 22% of 12-year olds and 70% of 15-year olds had been offered drugs, while 4% (age 12) and 33% (age 15) had ever used them. It is possible to compare rates of past year use (a better indicator of current use than ‘ever’) among school pupils (SDD-S) and adults (Crime Survey). The percentages reporting any drug in the past year rose from 3% at 12 to 30% at 15, 28% at 16-19 and 44% at 20-24, thereafter falling (35% at 25-29, 20% at 30-39). Paralleling these age-based rates in respect of rates last year are those for new problem drug users seen at Scottish drug services. In the year up to March 2000, the most common age group was 20-24 (accounting for 29%), followed by 24-29 year olds (28%), while those aged under 20 made up about 13% of all new problem users (ISD Scotland, 2001a).

In respect of time trends, while studies which compare rates over the past 10-15 years show increases in drug use among young people, more recent comparisons show a slight decrease, suggesting that use may have peaked in the mid-late 1990s. Thus, in 1987, 9% of ‘Twenty-07’ 15 year olds reported ever having used drugs, compared with 40% of the ‘11 to 16’ cohort in 1999 (Sweeting and West, 2000b). However, among 12-15 year olds in SDD-S there were slight falls in ‘ever’ use of cannabis (16% to 15%), stimulants (6% to 4%), psychedelics (4% to 3%) and no change in experience of opiates (1%) between 1998 and 2000. HBSC comparisons for 13-15 year olds between 1994 and 1998 show decreases in almost all categories, except for an increase in cannabis among 15 year old females (32% to 39% compared with 44% to 42% among males. A further indicator that rates were higher in the mid 1990s is very high figures (of around 54% of Scottish 15-16 year olds who had ever used cannabis) in a UK-wide study conducted in 1995 (Miller and Plant, 1996). Finally, although the overall levels are lower, Scottish Crime Survey figures suggest a peak in the mid 1990s among the older age group as well; use of any drug was reported by 20%, 23% and 18% of 16-19 and 25%,

As with drinking, there is evidence that gender differences in drug use are reducing, particularly among teenagers. Ten years ago, the existence of a male: female ratio of around 2:1 was widely accepted (Barnard and McKeganey, 1994). Among the ‘Twenty-07’ 15-year olds (in 1987) 11% of males and 6% of females reported some experience of drugs, but twelve years later the rates among ‘11 to 16’ 15-year olds were 42% (male) and 38% (female) (Sweeting and West, 2000b). Among HBSC 13-15-year olds in 1998 compared with 1994, there were significant decreases in the male ‘ever’ rates of 6 drugs (glues/solvents, amphetamines, magic mushrooms, tranquillisers, LSD and ecstasy), and no change in the rates of 3 (cannabis, cocaine and heroin). Among females, in contrast, there were significant increases in rates of cannabis, a decrease in LSD only and no change in the rates of any other drug. The result was that between 1994 and 1998, while a male excess in LSD and magic mushrooms remained, that for cannabis and amphetamines disappeared, and a female excess emerged in respect of glues/solvents and non-prescription tranquillisers. Scottish Crime Survey statistics for 16-24 year olds show use of any drug in the last year was reported by 28% of males and 19% of females in 1993, but by 18% of males and 19% of females in 1990. Indeed, among 16-19-year olds in 2000, the last year rate was higher for females (21%) than males (15%), while among 20-24 year olds there was almost no gender difference (ISD Scotland, 2002); in England there was a male excess in both age groups (Ramsay et al, 2001).

Findings such as higher incidence rates for general acute drug misuse admissions among people from more deprived areas (ISD Scotland, 2001a) may have led to a tacit assumption in the past that drug use is mainly a problematic urban deprivation phenomenon (Forsyth and Barnard, 1999). While this may once have been the case, and may continue to be so for problematic drug use, there is much less evidence of social or geographical patterning of lighter levels of use. A 1997-8 study found 14-15 year olds in an affluent rural area (Perth and Kinross) were as likely to have tried drugs as those in a deprived urban one (Dundee) (Forsyth and Barnard, 1999). Similarly, when HBSC figures are compared with those from the ‘Rural Youth’ sample, rates among 13-15 year olds of the most popular drugs in each study were 27% (HBSC) and 25% (Rural) for cannabis, 13% in each for solvents, 7% (HBSC) and 12% (Rural) for magic mushrooms and 7% (HBSC) and 9% (Rural) for amphetamine. Experience of cannabis was also reported by 25% of both Highland and Island (Erskine and McIvor, 2000) and Orkney (Leven, 2001) 15-year olds, and by 53% of Orkney 16-29 year olds (Leven et al 2002). In line with this, more than a quarter of pupils (mean age 14) from the Scottish independent school sector reported having used drugs (Forsyth et al, 1998), while among ‘11 to 16’ 15-year olds, analyses by class show only a very slight gradient in use of cannabis ever (34% compared with 40% among those from classes I and V respectively). There were, however more significant gradients for heavier use, for example cannabis weekly (7% compared with 13%) or any other drug ever (12% and 21%) (Sweeting and West, 2001b). Finally, and as with smoking and drinking, studies suggest less differentiation in respect of parental class than own future economic position (tertiary education, work/training or un/non-employment – West and Sweeting, 1996c) and current lifestyle (Sweeting, 2000a; Karvonen et al, 2001). Drug use is part of a young person’s identity, as indicated by associations with music preference (Forsyth et al, 1997; Forsyth and Barnard, 1998). Among Scottish 16-29 year olds, the highest rates of past year drug use were found in the unemployed (33%), followed by students (24%) and the disabled (19%), with lowest rates among home-makers (13%) and those in work (12%) (ISD Scotland, 2002).
In respect of regional differences, it has recently been suggested that Scotland should be thought of as having a series of local, but different drug problems rather than a single drug problem. Thus areas with the longest standing problems (Dundee, Edinburgh and Glasgow) have the highest proportions of older users, whereas those whose drug problem is of more recent origin (Aberdeen, West Dunbartonshire, North Ayrshire, Renfrewshire and Inverclyde) have greater proportions of young problem drug users (Hay et al, 2001). Comparisons with England can be made for the SDD surveys of 12-15 year olds, and the Crime Surveys (Ramsay et al, 2001). Among 12-15 year olds, those in Scotland were marginally more likely to report having been offered drugs (40% compared with 38%), but there were no differences between the countries for any of the measures of drug use (Boreham and Shaw, 2001a; 2001b). However, Crime Survey (2000) data shows post-school drug use is considerably higher in England than Scotland; for example, past year drug rates were 15% (M) and 21% (F) in Scotland, compared with 31% (M) and 24% (F) in England for 16-19 year olds, while for 20-24 year olds they were 19% (M) and 17% (F) in Scotland compared with 34% (M) and 26% (F) in England.

Diet
Poor diet predisposes people to illnesses such as diabetes, coronary heart disease and some cancers. At all ages, diet is patterned by socio-economic status, those from lower SEGs more likely to have diets which provide cheap energy from foods such as meat, full fat milk, fats, sugars, preserves, potatoes and cereals, but little intake of vegetables, fruit and wholewheat bread (James et al, 1997). The Scottish diet (particularly that of children), which contains an excess of saturated fat, refined sugar and salt, and is short of certain vitamins and fibre is notoriously unhealthy, and worse than that of almost any other Western country. After smoking it is the most significant reason for Scotland’s record of poor health (Scottish Office, 1996).

In addition to the National Diet and Nutrition Survey (Gregory and Lowe, 2000), which used 7-day recording, the SHS and HSE, along with a number of individual studies (HBSC, ‘Twenty-07’, ‘11 to 16’) have included questions on dietary habits, generally asking how often certain foods are eaten.

All surveys demonstrate the poor diets of young people, highlighted by the press release accompanying the publication of the National Diet and Nutrition Survey of Young People Aged 4-18 which noted that: ‘whereas 33% of 15-18 year old girls smoke, only 20% eat citrus fruit; they drink two-thirds more fizzy drinks than milk; boys eat, by weight, nearly four times as many biscuits as leafy green vegetables; girls eat, by weight, more than four times as much sweets and chocolate than leafy green vegetables’ (Food Standards Agency, 2000). Within the SHS, there was daily consumption of chocolates, crisps or biscuits by over eight-in-ten 10-11 and 14-15 year olds and two-thirds of 16-24 year olds, and of soft drinks (excluding diet or lo-cal) by around two-thirds in each age group, but of fresh fruit by only six-in-ten of 10-11 year olds and fewer than half 14-15 or 16-24 year olds. Only around 5% at each age ate wholemeal bread, and breakfast cereal consumption reduced considerably with age (6% never ate cereal at 10-11 compared with 30% at 16-24) (Deepchand et al, 2000). Thus, although consumption of confectionery, crisps and biscuits decreases between the ages of 11 and 25, so also does that of cereals and fruit. Interestingly, among a sample of around 1,000 S4 pupils in the Highlands and Islands, 89% reported daily fruit eating, which is considerably higher than SHS 14-15 year olds (Erskine and McIvor, 2000). Surveys of young people tend to find few gender differences in the consumption of sweets and chocolate, but that males report eating chips, pies, burgers, red meat and puddings, and females fruit, salads and vegetables more frequently.
It is possible to summarise the dietary data used in the ‘Twenty-07’ and ‘11 to 16’ studies into an index of ‘healthy eating’, originally used by Greater Glasgow Health Board and based on the consumption of fatty foods relative to ‘fibre-rich carbohydrates’ such as cereals, potatoes, fruit and vegetables (GGHB, 1987). While this undoubtedly oversimplifies the complex relationship between diet and health, it does give some indication of the proportion not consuming a diet consistent with local health promotion recommendations (Anderson and Hunt, 1992; Anderson et al, 1994). Among the ‘11 to 16’ sample this method categorised 56% as ‘less healthy eaters’ at age 11, increasing to 61% at 15. Consistent with all other studies of diet, males and those from more deprived areas were more likely to be ‘less healthy eaters’, as were those who said they weren’t worried about putting on weight nor dieting. ‘Less healthy eating’ was also more likely among breakfast skippers, pupils who got lunch from shops, vans or the school canteen (as opposed to packed meals or going home), current smokers and those who did little or no sports outside school (Sweeting and West, 2000a). Within ‘Twenty-07’ ‘less healthy eating’ among 15 year olds (more likely at this age than at 35) was also found to be associated with parental class and income, and own smoking (Anderson et al, 1994). Interestingly, it was also related to own labour market position (most likely among the un/non-employed, least likely among those in tertiary education, with those in work/training occupying the middle position), both contemporaneously (i.e. at 18 years in respect of current position) and, at 15 (while still at school), in respect of future position, even after controlling for parental class (Sweeting et al, 1994).

Higher amounts of bread, milk and vegetables were consumed by British children in the 1950’s than the 1990s, meaning that diets were healthier during that time of austerity and food rationing than today (Prynne et al, 1999). Comparison of HBSC surveys conducted in 1990, 1994 and 1998 show a mixed picture with respect to changes in the dietary habits of Scottish teenagers during the 1990s. While daily intakes of fruit, raw vegetables and salads, cooked vegetables and rice/pasta increased (among most age and gender groups), so did those of sweets, chips and hamburgers, meat pies or sausages. Similarly, while the proportion consuming low fat milk increased, that for any kind of milk on a daily basis decreased (Todd et al, 2000; Inchley et al, 2001). A recent Scottish study in 4 schools has shown that despite healthy eating messages, a quarter of 11-15 year olds say they don’t know enough about how to eat healthily, and around one-in-eight that healthy eating is boring (Inchley, 2000). Concern has also been expressed that young people are increasingly taking a ‘grazing’ approach to eating rather than consuming ‘proper meals’, and that this might have undesirable nutritional and social consequences. Although snacks and snack-type foods were common among ‘Twenty-07’ 15 year olds (in 1987), a daily breakfast was also consumed by 68%, lunch by 79% and evening meal by 94%, suggesting that the cohort had not abandoned ‘proper meals’ (Anderson et al, 1993). However, between 1990-8, the proportion of HBSC teenagers eating meals with their parents decreased (Todd et al, 2000). Consistent with this, among 15 year olds in 1999 (‘11 to 16’ Study), main meals were less commonly reported than they had been 12 years earlier: a daily breakfast was only consumed by 44%, lunch by 58% and evening meal by 81%, with females less likely to eat each. This has implications for overall nutrient intake (snacks are generally high in fat, sugars and salt, but low in other nutrients) as well as other aspects of life, for example behaviour and ability to learn (Grantham-McGregor, 1999). Just as overall eating patterns are socially differentiated, so is snacking: among ‘11 to 16’ 11 year olds, snacking on ‘junk’ (fizzy drinks, sweets, crisps and biscuits) was more likely among males, children from more deprived areas, those who never ate a family meal, had more spending money, purchased lunch from a shop or van, smoked, and hung around the
street. ‘Junk’ snackers were also less likely to think daily chips were harmful, or that what a child eats will affect their health in adulthood (Sweeting, 1997).

All studies of young people show large increases in reported dieting among females in adolescence; for example, 3% (M) vs 7% (F) at 11-14 and 2% (M) vs 16% (F) at 15-18 years who were dieting to lose weight (National Diet and Nutrition Survey of Young People), 23% (M) vs 34% (F) at 11 and 22% (M) vs 51% (F) at 15 who were on, or felt they should be on a diet (1998 Scottish HBSC), 8% (M) vs 11% (F) at 11 and 5% (M) vs 26% (F) at 15 on a slimming diet (‘11 to 16’ Study, Sweeting and West, 2002). Since the physical changes of puberty are differentiated by gender, with males experiencing increased skeletal and muscle mass but females a gain in fat, this life-stage has been seen as key for the development of female body dissatisfaction and associated problems such as lowered self-esteem and eating disorders (Williams and Currie, 2000). The paradox of current concerns about the diet of young people coupled with evidence for increasing BMIs, occurring within a culture which values thinness, has received comment in both academic literature and the media, and might be expected to have translated into increased concerns with weight and dieting over time (Emslie et al, 2001). HBSC 1990-98 comparisons show increases among both males and females in the proportions reporting ever having been on a diet and perceiving themselves as too fat, but, interestingly, among males only in currently dieting (Todd et al, 2000).

The Scottish diet is notoriously poor: of the 27 countries included in the 1998 HBSC surveys, Scotland was 1st in the league table at age 11 and 2nd at 13 and 15 in respect of the proportion eating chips/fried potatoes daily, 2nd (11) and 3rd (13 and 15) for sweets/chocolates daily, and 3rd (11) and 4th (13 and 15) for soft drinks daily. However, interestingly, Scottish pupils were more likely than English ones to report daily fruit eating (Vereecken and Maes, 2000), a finding in line with the results of a comparison between the SHS and HSE in respect of daily fruit eating at 10-11, 14-15 and 16-24 years (Deepchand et al, 2000). It seems that this is really the only good news for Scotland, since the National Diet and Nutrition Survey of Young People regional comparisons showed, in addition, significantly less salad, raw and cooked vegetable consumption in Scotland (Gregory and Lowe, 2000).

Unlike England (Caroline Walker Trust, 1992; Department of Education and Employment, 1997), there are currently no legal nutritional standards for school meals in Scotland (Wrieden and Anderson, 2002). A study of the food and nutrition content of meals chosen by secondary pupils in Dundee found that in neither snack nor full meal provision were the Caroline Walker Trust guidelines met (lower minerals and higher fat than recommended in both, with snack provision low in carbohydrate and energy in addition) (Wreiden et al, 2001). The take-up of school meals varies widely and in some areas is very low (from 89% in Shetland to 37% in Edinburgh), with research showing the main reason for low take-up being that children feel stigmatised (Marsh, 2002). In response to this, the School Meals (Scotland) Bill, which was rejected by the Scottish Parliament in June 2002, aimed to provide universally free school meals for all school pupils, to establish legal nutritional standards and to increase meal take-up (Dailly, 2002).

Physical Activity

There is considerable concern in all developed nations about low levels of physical activity in the population, which among adults is associated with greater cardiovascular morbidity and mortality as well as higher rates of obesity, non-insulin dependent diabetes and osteoporosis (Bouchard et al, Pate et al, 1995). The health benefits for young people are not so immediately evident though small beneficial effects of physical activity
have been demonstrated in relation to weight loss, fatness and obesity, skeletal health and growth, and possibly mental health as well (Biddle et al, 1998). Physical activity in youth also tracks for activity in adulthood, the only (obvious) negative aspect being a greater risk of musculo-skeletal injury, most commonly associated with over-exercise (Prior, 1998).

In the light of these health concerns, the Scottish Executive set targets for adequate levels of activity for children and young people and adults respectively (Pitson, 2000). For young people (age 5-15), following HEA recommendations (Biddle et al, 1998) the target is (a) to participate in physical activity of at least moderate intensity for one hour a day (5+ days per week) and (b) (for those currently doing little activity) to participate in physical activity of at least moderate intensity for at least half an hour per day. For adults (16+), following a revision of the earlier WHO recommendation (vigorous activity at least 3 times a week for 20 minutes at a time), which was regarded as unrealistic, the current emphasis is on regular activity of a moderate kind (e.g. brisk walking), specifically at least 30 minutes of moderate activity accumulated over the course of a day, on at least 5 days per week.

Measuring physical activity is notoriously difficult since in addition to organised sports it covers less organised activities (e.g. cycling, running about), walking, and physical effort expended at work, at home or in other settings (e.g. leisure pursuits like dance), and it also involves consideration of the frequency, duration and intensity with which an activity is done (Armstrong and Van Mechelen, 1998). Until recently, almost all relevant data has been sports focussed, which in the case of young people occupies a major component of all physical activity (for those in school including statutory PE lessons, PE Studies and other school-based activities). The evidence on levels of participation in sports will be considered first.

By far the most comprehensive source of information on sports participation is that produced by sportscotland who commission bi-monthly surveys of representative samples of young people (age 8-18) and adults (16+) in Scotland (sportscotland, 2001). Respondents are presented with a card containing 37 sports and asked to indicate whether they have taken part (however informally) in any of them over the past 4 weeks (‘in Scotland’). In the most recent digest (involving data for 1998-2000), 96% of 12-18 year-olds indicated they had done some sport (including PE) in the past month, the most popular for males being football (77%), swimming (36%), cycling (33%) and snooker/pool (33%); for females, swimming (42%), netball/volleyball (31%), running/jogging (30%) and dancing (29%). Although there was no overall gender difference at this age for any sport, males exhibited higher levels of participation outwith school (PE lessons excluded). The corresponding picture for young adults (16-24) still shows that a large majority (84%) participated in some sport in the past month, though the well documented gender difference (higher male participation throughout adulthood) is already evident in this age group. Among all adults (16-64), there is very little variation in sports participation between the Scottish regions.

These results are very similar to those found in the ‘Twenty-07’ study 10 years earlier, which showed that in secondary school (age 15), PE made a much more important contribution to overall levels of participation among females than males, and that after leaving school, levels of participation fell for all young people but particularly females, in whom at age 18 around 1 in 3 reported doing no sports or exercise at all (West et al, 2001). The lower level of female participation in sports at all ages and reduction in levels of activity, especially among females, was also found in YPLL (Hendry et al, 1991), and is a common finding in the UK (Kremer et al, 1997; Rowe and Champion, 2000) and elsewhere (Dovey et al, 1998). Interestingly, despite the widespread view that sports
participation has declined; among adults (of all ages), in Scotland the percentage reporting taking part in any sport in the previous month increased between 1987/89 and 1998/00 (from 76% to 84% in the age group 16-24) (sportscotland, 2001). No comparable data exists for time trends in sports participation among young people of school age, but evidence (Allison et al, 1999) of a decline in the range of sports offered in schools (particularly outdoor activities and swimming) between 1988 and 1997, attributed by teachers equally to curriculum pressures and poor facilities, amply justifies the concerns expressed about current levels of sports provision in schools (Scottish Sports Council, 1998).

Apart from information on frequency of participation, the sportscotland surveys do not include data on intensity of participation. Adopting a different approach (based on the WHO definition of vigorous exercise), the HBSC since its inception has asked young people about the frequency with which they exercise (in their free time) to a level which makes them out of breath or sweaty (Currie and Todd, 1991). On this definition (which explicitly excludes school-based exercise) among Scottish 15 year-olds in 1998 85% of males and 61% of females reported ‘vigorous’ exercise at least twice a week (Hickman et al, 2000), and 54% and 25% respectively 4 times a week (Todd et al, 2000). These figures confirm the gender difference found in other studies and reveal a particularly marked decline in physical activity among females between age 13 and 15, the male rates changing much less between 11 and 15. This pattern is observed in almost all of the 27 countries surveyed, the rates for vigorous exercise among young people (11, 13 and 15) in Scotland being higher than most, and slightly higher then England or Wales. Recent figures for Scottish regions are not available but in a previous HBSC (Currie and Todd, 1991), little variation was found except at age 15 when young people in Lothian recorded less vigorous exercise than those in Strathclyde or Grampian. Overall, between 1990 and 1998, there is evidence of an increase in vigorous exercise (outwith school) among Scottish 11 and 13 year-olds (both males and females), but not among those aged 15 (Todd et al, 2000).

An alternative approach to measuring physical activity, which is explicitly tied to the assessment of targets for moderate levels of activity, was adopted by the SHS (Whitfield, 2000) for children and young people, following the earlier HSE (Prestcott-Clarke and Primatesta, 1998). Information on activities undertaken in the previous week (days and hours) was obtained in four areas - sports/exercise (organised activities), active play (unorganised activities), walking (continuous for 15 minutes) and housework/gardening (15 minutes at a time) - school curriculum activities (regarded as standard) being explicitly excluded. Among young people (age 14-15), overall levels of participation were high, 81% of both males and females engaging in active play, 78% of males and 60% of females doing sports/exercise, 79% and 66% walking, while fewer of them (39% males, 43% females) did housework/gardening. Gender differences in the number of days (and total time spent) on these activities in the previous week were much more marked, males having higher levels than females in all areas except gardening. From these data, a classification of activity levels was derived, identified as 'high' (active for 60 minutes or more on at least 5 days in the previous week), 'medium' (active for 30-59 minutes on at least five days in the last week) and 'low' (active at a lower level or not active at all). Among 14-15 year-olds, 65% of males compared with 36% of females attained high levels of activity; 16% and 39% respectively were in the 'low' group, these levels being remarkably consistent for males throughout childhood and adolescence, those for females declining from age 12. On this definition of moderate physical activity, some two-thirds of 14-15 year-old males are meeting the current target compared with just over a third of females, similar rates to those found in England. Figures for the 16-24 year-age group, based on similar criteria (see above), show that 55% of males were achieving the target for moderate physical activity compared to 33% of females (Pitson, 2000). On the older
(WHO) criteria for vigorous physical activity (3 times per week for 20 minutes at a time), these figures drop to 31% and 8% respectively.

In contrast to diet, levels of physical activity in early to mid adolescence do not appear to be associated with social class, while by early adulthood (predominantly through work) levels are higher among working-class youth. Thus, in the ‘Twenty-07’ study, although some sports (e.g. tennis, golf) were played more often by middle-class 15 year-olds, overall there was no difference between classes in sports participation (West et al, 2001). Similar findings are reported in the 1998 HBSC (Hickman et al, 2000) for vigorous exercise among 11, 13 and 15 year-olds, and in each of the components of moderate activity in the SHS except that males (but not females) from class IV-V backgrounds had somewhat lower levels of involvement in sports but walked more. Among adults (all ages), sports participation declines with social class (Coalter and MacGregor, 1998), but the effect of manual work is such that a higher proportion of working-class males (less so for females) achieve the current target for moderate level of physical activity (Pitson, 2000; Phillips et al, 2001).

Thus, despite a widespread belief that levels of physical activity in youth have declined, the evidence suggests this may not be so although the picture in relation to school provision (excluded in most studies) is unclear and makes any overall conclusion highly tentative. Even if it were true, it is still the case that one third of males and two thirds of females are not achieving the current target of moderate levels of physical activity. By far the most important issue is the decline in levels of participation among females which is apparent from age 12 onwards and involves a particularly dramatic fall after school-leaving.

Sexual Health

Much of the concern expressed about young people and sex appears to be fuelled as much by moral and religious beliefs, and economic and legal concerns, as by matters related to health. It is important, therefore, to be clear about the scope of the relevant health issues in order to make a sensible assessment of the sexual health of young people in Scotland.

At its simplest, stripped of all moral and legal considerations, for any one individual sexual health is only compromised when sex is forced or unwanted and/or it has undesirable health or reproductive consequences. From this perspective, ‘under-age’ sex (same or opposite gender) is not necessarily a problem except insofar as it is unwanted or pressured (and perhaps later regretted) or, through the practice of ‘unsafe sex’ (without a condom), it elevates the risk of sexually transmitted infections (STIs) and/or, through unprotected sex, results in an unwanted pregnancy. Similarly, we should not assume that ‘teenage pregnancy’ is necessarily a problem, particularly in the light of evidence that biologically it is probably the optimal age to bear children. However, although the experience of early motherhood (and fatherhood) may be very positive, it is important to bear in mind that for some there are longer term negative consequences for maternal and child health, to say nothing of the restrictions this may impose on the future life chances of both (together with the costs of dependency on the state). It is within this broader public health perspective that concerns about increasing levels of STIs (ISD, 2000) and the high level of teenage pregnancies in Scotland (and England and Wales) compared with other countries in Europe (Social Exclusion Unit, 1999) should be understood. All of these considerations inform the assessment of the evidence presented here. We first focus on heterosexual health.
A major source of evidence about sexual health (and time trends) among young people in Scotland derives from the HBSC which since 1990 has questioned 15 year-olds about personal relationships, sexual behaviour and attitudes. In the first survey (Currie and Todd, 1993), at a time of considerable concern about the HIV/AIDS epidemic, although most 15 year-olds were found to have some sexual experience (e.g. 49% of males and 53% of females heavy petting below the waist), a smaller percentage (26% males, 31% females) reported having had sexual intercourse, most of which probably occurred in the context of a steady relationship (18% males and 25% females reporting being in one). By 1994 (Currie et al., 1997b), the figures for sexual intercourse had risen to 26% of males and 37% of females, although a similar percentage as before (19% males, 27% females) reported being in a steady relationship. In the 1998 survey (Todd et al., 1999b), the rise in the figures for intercourse continued for males (33%) but remained stable for females (38%), the percentage in a steady relationship also remaining unchanged. For females, this level of sexual experience is higher than in all other countries surveyed except for the USA, while for males it is similar to most others but actually lower than Hungary, Israel and the USA. In general, throughout the period 1990-98, the majority of 15 year-olds were found to be knowledgeable about HIV/AIDS and increasingly so in relation to the use of condoms to prevent infection.

While the HBSC is particularly useful in documenting time trends, it is limited in scope, only containing more details of sexual experience (e.g. condom use) in the last survey. A much fuller picture can be obtained from the SHARE project, a randomised controlled trial of an innovative school-based sex education programme involving 7616 13/14 year-olds (S3) first surveyed in 1996/7 and followed up two years later (Wight, 1996; Wight et al., in press; Henderson et al., in press). In this (intervention plus control school) sample, like HBSC, many more 13/14 year-olds had some sexual experience (e.g. 41% males, 38% females touching partner’s genitals) than had had sexual intercourse (18% males, 15% females), most of whom (69%) described it as occurring with a boyfriend or girlfriend, half (52%) saying they had only had one sexual partner. Most (60% of both males and females) reported using a condom both at first and last intercourse, although around 1 in 5 used no contraception at all. Most (80%) reported no pressure either way, but about 1 in 3 (27% males, 32% females) thought it had happened too early and 5% of males and 13% females thought it should not have happened at all, evidence of regret among a significant minority of males and (more so) females (Wight et al., 2000). By age 15/16, 31% males and 41% of females had experienced sexual intercourse, the major form of contraception at last intercourse again being the condom (around 60%) supplemented by oral contraception (29% females), very similar figures to those reported in the 1998 HBSC. Levels of regret were much lower than two years previously, and overall there were high levels of reported enjoyment of the most recent sexual intercourse (Wight et al., in press). These findings receive support from another Scottish (intervention) study focussing on young people’s (S5) attitudes (not behaviour) which found a generally high level of knowledge about, and positive intentions towards, sexual activity (e.g. intended condom use) (Lowden et al., 2002).

The evidence from both these surveys reveals that among young people as a whole there is considerable diversity in sexual experience, and that for most of those who have had sexual intercourse it has involved enjoyable ‘safe-sex’ with one person, often as part of a steady relationship. This generally favourable picture is consistent with the findings of the second National Survey of Sexual Attitudes and Lifestyles (NATSAL) conducted on a national (British) sample of over 11,000 people age 16-44 in 1999/2001 (Wellsing et al., 2001). The results of the survey showed that while the median age at first intercourse had decreased over time (currently age 16 in the age group 16-19), the percentage using condoms on a first occasion was markedly higher among 16-19 (80%) and 20-24 year-olds (75%) than in older age groups even though the use of other contraceptives
remained similar over time. However, in common with other studies, around 1 in 10 reported no contraception at first intercourse, and a significant minority of 18-24 year-olds (8% males, 19% females) expressed regret about their first experience, figures which increased with earlier age of intercourse. Combining data on regrets and circumstances of first intercourse (e.g. pressured, drunk) with condom use to create a measure of the quality of that experience (termed ‘sexual competence’), only 56% of males and 43% of females aged 16-19 were assessed as sexually competent. Thus, although the overall conclusion of the study is optimistic, these findings reveal that the quality of sexual relationships is not optimal for many young people, and that while for most of the females who had become mothers (5% by age 18) or who had an abortion (5%), the outcomes were probably wanted or unproblematic, for some they probably were not.

In assessing negative features of sexual health, and their social correlates, most of the evidence relates to conventional measures (sexual intercourse under 16 years, number of partners and condom use at first/last intercourse), only recent studies like SHARE and NATSAL paying some attention to the quality of sexual relationships. However, each of these measures tells a rather similar story. In an earlier Scottish (‘Twenty-07’ study (West et al, 1993), when much lower condom use was reported than in contemporary studies, social class had very little impact on sexual or contraceptive behaviour apart from the fact that a higher proportion of 18 year-olds from working-class backgrounds were in ‘settled’ (married/cohabiting) relationships. By contrast, among males early sexual experience and multiple partners were much more common among 4th year school-leavers than those who stayed on, and in both sexes the earlier leavers were much less likely to have used condoms or any form of contraception at first intercourse. Early sexual experience also predicted future unemployment, independently of social class (West, 1994b). Very similar results have been found in SHARE and NATSAL. In the former, while social class differences were found for early intercourse (but not condom use), much higher rates of sexual experience and risky sex were found among the S4 school-leavers. This study also showed higher rates of sexual experience and unsafe sex among 13/14 year-olds who had more weekly spending money and (paradoxically) who were from lone parent families, and much higher rates among those with low parental protectiveness (e.g. not knowing whereabouts in the evening) (Wight et al, in press; Henderson et al, in press). In NATSAL (age 16-24), compared with young people who stayed on in school, rates of early sex were elevated fourfold among males, and twofold among females, who left without any qualifications, the corresponding differences for condom use being even greater. The study also found higher rates of early sex (but not unsafe sex) among young people in lone parent families. Interestingly, educational level proved to be the only discriminator for sexual competence, those with no qualifications having a poorer quality experience (Wellings et al, 2001).

Together, these findings highlight a relatively small group of young people with low educational qualifications whose heterosexual experience is neither personally very satisfactory, nor satisfactory from a broader public health perspective. They are much more likely to have sex early, to have more sexual partners and engage in unsafe sex, and as such put themselves (and others) at greater risk of STIs. The females are also much more likely to figure in the teenage pregnancy statistics. There is also evidence that more risky sexual experience is associated with other adverse health behaviours like smoking, drinking and illicit drug use, and that they configure as part of a disaffected lifestyle associated with negative attitudes to school, low family involvement and (street based) peer-oriented activity (Glendinning et al, 1997) which in turn has consequences for future labour market participation (West, 1994b; West and Sweeting, 1996c). This lifestyle bears a striking similarity to the ‘problem behaviours’ identified in the USA by Jessor and Jessor (1977). The experience of this minority of young people, however,
presents a marked contrast to the great majority whose sexual health, on most of the
evidence, appears to be pretty good.

In the population as a whole, 6% of males and 3% of females describe themselves as
homosexual (Johnson et al, 1994). In Scotland, apart from one small (but informative)
study in Glasgow (Coia et al, 2002), there is no evidence about the sexual behaviour of
lesbians based on representative samples of young females. In respect of male
homosexuals, only one study with some claim to be representative, has been conducted,
which contains data on young gay men. This (intervention) study (Hart et al, 1999;
Williamson et al, 2001; Hart et al, in press), based on 2,276 males (median age 30)
recruited from gay bars in Glasgow and Edinburgh, found that (at baseline) most (77%)
had had two or more partners in the previous year, most (75%) had had anal intercourse,
and a significant minority (42%) had had anal intercourse with more than one partner.
More importantly, although the majority of those having unprotected anal intercourse
(UAI) said this occurred only with a regular partner, 38% reported UAI with one or more
casual partners. Younger males (16-25) reported more sexual partners, more anal sex
partners and UAI, and in addition were less likely to have had an HIV test and to have
been inconsistent in divulging their HIV status (which they often do not know). While
there was little or no relationship with social class or (DEPCAT) area, lower educational
level strongly predicted UAI, a result which parallels that for risky heterosexual sex.
Males reporting higher levels of UAI were also more likely to have had an STI in the
previous year. As with other studies in the UK (Nardone et al, 1997; Elford et al, 1999;
Dodds et al, 2000), this study shows that while most gay men report consistent safe sex,
a significant minority do not, a pattern especially marked among young male
homosexuals who are at particularly high risk of STIs generally and HIV in particular, the
prevalence of which continues to rise (CDSC, 2000).
Influences

Gender

In contrast to the bulky literature on gender differences in adult health, children and teenagers have received relatively little attention in this respect. This is surprising, given that things look different for children (Verbrugge and Wingard, 1987); in fact, the female excess in morbidity is smallest or even reversed prior to entry into adolescence, with a gradual emergence of excess morbidity in females over this life stage (Sweeting, 1995). Although this has been well recognised in respect of psychological disorders, it also appears to be the case for a number of indices of physical morbidity. Thus, as noted earlier, in respect of overall levels of (limiting) longstanding illness, higher male rates are replaced by higher female rates which emerge in early adolescence, and this pattern also occurs for a number of physical, in addition to malaise, symptoms (Sweeting and West, in press).

Gender differences in health among adults have been explained in terms of the different roles, stresses, expectations, reporting behaviours, lifestyles and health practices, as well as biology, of males and females (e.g. Miles, 1991). The emergence of a female excess of psychological disorders (particularly depression) during adolescence has been accounted for in similar terms, the suggestion being that females may be challenged by expectations of traditional female roles in combination with more recent increases in educational expectations, while at the same time adopting a less instrumental coping style (Nolen-Hoeksema and Girgus, 1994; Cyranowski et al, 2000). In addition, there is the role of puberty. For males this brings physical and maturational changes which are generally regarded as positive (Kraemer, 2000), but for females menstruation is associated, for many, with physical and psychological symptoms and dissatisfaction with body image (Rierdan and Koff, 1997; Williams and Currie, 2000).

One of the traditional explanations for gender differences in adult health is male-female differences in acquired risks, via factors such as diet, physical activity and substance use (Verbrugge, 1989). Despite evidence of increasing concerns about weight in all young people, regardless of gender (Todd et al, 2000), dietary data continues to demonstrate less healthy eating (for example, less salads and vegetables, more meat, pies and puddings) among males (Anderson et al, 1994; Food Gregory and Lowe, 2000; Sweeting and West, 2000a). In respect of physical activity, studies consistently find higher rates among males, with school PE making a much greater contribution to female activity, such that the gender difference in activity levels widens markedly post-school (Hendry et al, 1991; Kremer et al, 1997; Rowe and Champion, 2000; West et al, 2000; sportscotland 2001). This would suggest that recent reductions in the range of sports offered in schools (Allison et al, 1999) may have had more of an impact on the overall activity levels of school-age females.

Evidence presented in this review comparing the 1990 and 1998 HBSC surveys and 15 year olds in the West of Scotland in 1987 (‘Twenty-07’) with those of 1999 (‘11 to 16’) has suggested a reduction or even elimination in the gender gap in substance use among teenagers over the past 10-15 years. As highlighted earlier, however, in respect of smoking, the traditional male excess currently persists in early adulthood, meaning that future investigations of gender differences in substance use of today’s teenagers as young adults in order to untangle the degree to which this is an age, period or cohort effect will be particularly interesting. Further ‘Twenty-07’ and ‘11 to 16’ comparisons
have shown a relative increase in street-based leisure among females, suggesting that a lifting of the constraints of respectability on young women over the recent past has allowed them the freedom to choose lifestyles and behaviours which may once have been unacceptable for young women (McRobbie, 2000; Sweeting and West, 2000b).

**Social Class, Deprivation and Poverty**

Since the publication of the ‘Black Report’ (Townsend and Davidson, 1982), an enormous amount of evidence has accumulated about the persistence of ‘health inequalities’ in Scotland and the UK generally (Macintyre, 1997; Acheson, 1998). In the population as a whole, social class differences in mortality from a wide range of causes continue to be demonstrated (Drever and Whitehead, 1997), and there is also evidence from numerous sources of increasing levels of morbidity with falling social class (Bridgwood et al, 2000). These differences are apparent both in childhood with respect to infant and childhood mortality, low birthweight, respiratory and developmental health (Law, 1999), and in adulthood for premature mortality (including suicide) and a range of health problems including longstanding illness (Bridgwood et al, 2000), self-rated health and mental health (Meltzer et al, 1995). Understandably, this volume of evidence has given rise to the assumption that health inequalities are a persistent feature of the life-course, including youth, and are observable for all major dimensions of health. Until relatively recently, however, the picture in youth (12-24) has been obscured by the wide age bands used, and it is only with the emergence of studies specifically focussing on young people that a closer look has been possible. The evidence from these studies presents a challenge to the assumption and suggests that youth is a time of relative equality in health (West, 1997; West, 1999).

With respect to mortality (which as earlier indicated is not a good indicator of health in youth), there is little evidence of health inequalities with the important exception of fatal accidents and possibly suicide, though increased suicide rates among class IV-V males only really become evident in the age group 25-34 (Platt, 2000). For non-fatal accidents, there is much less evidence of class differences (West, 1997; Sweeting and West, 2000a) though a class gradient was found for 11-15 year-olds in the SHS (Laiho and Purdon, 2000). With respect to chronic conditions (longstanding illness), there is no evidence either from Scottish studies (West et al, 1990; Glendinning et al, 1992; Sweeting and West, 2000a) or elsewhere (Foster, 1990) that rates vary by social class, but among the more severely impaired rates are higher among young people from lower class backgrounds, especially those living in the poorest circumstances (West, 1997). Findings in relation to general measures of health (e.g. self rated health) have shown little (West et al, 1990) or no (Glendinning et al, 1992; Mullan and Currie, 2000) relationship with social class, a pattern also extending to physical symptoms (West et al. 1990; Mullan and Currie, 2000). With respect to mental health, with the notable exception of conduct disorder, there is also little evidence of inequalities, rates of malaise symptoms, psychological well-being and emotional disorders being either similar between classes (West, 1997) or (on recent GHQ evidence) higher among middle-class females (West and Sweeting, in press). Conduct disorder, by contrast, exhibits a steady increase with falling social class, with particularly high rates among young people from the poorest backgrounds (Meltzer et al, 2000). Finally, throughout youth (as at all points in the life-course), height (but not BMI) is associated with social class, a potential indicator (as with dental health) of future health inequalities not yet apparent in youth.

The picture in respect of health behaviours is also indicative of relative equality in youth with one major exception, diet. The evidence from Scottish studies consistently demonstrates that young people from lower social classes have poorer diets both in terms of foods consumed overall (Anderson et al, 1994; Mullan and Currie, 2000;
Sweeting and West, 2000a) and as snacks (Sweeting, 1997), the importance of which lies in the legacy it bestows for future health. By contrast, there is no evidence (apart from a few sports) that exercise levels vary between social classes in youth. There is also little variation in smoking or drinking (e.g. Glendinning et al, 1995) or illicit drug use (e.g. Forsyth and Barnard, 1999) between young people from different class backgrounds, the general conclusion being that each is ubiquitous. There is, however, an important caveat to this, which is that heavier smoking (Sweeting and West, 2001a), heavier drinking and potentially more problematic drug use (Sweeting and West, 2001b) are all more pronounced among working-class youth, another pointer to future health problems. A similar situation characterises sexual health, which for the great majority of young people appears relatively good. For a small minority from particularly deprived backgrounds, with few educational qualifications, there are undoubtedly increased risks of STIs and unwanted pregnancy (Wellings et al, 2001). Thus, while there is remarkable homogeneity in youth in relation to health behaviours, there is also evidence of a longer term legacy for health, most notably in the poorer diet of working-class youth generally, but also in higher levels of substance use and risky sexual behaviour of a minority who are concentrated in areas of highest deprivation.

This pattern is even more evident among a very small (estimated <1%), but highly significant, group of young people who, often by virtue of extreme poverty, are removed from their families and placed in foster or residential care under the supervision of local authority social work departments. There is very little good survey evidence on looked after and accommodated children (LAC) in Scotland, but what there is fully justifies the concern for their health and welfare (e.g. Argyle & Clyde Health Board, 2002). For example, among 33 young people (age 13-16) in residential care in the Edinburgh area, 87% were current smokers, 76% had used marijuana, 30% amphetamines and 21% solvents within the previous month (Robinson et al., 1999). There was also a much higher level of social and functional impairment in this group, and in particular higher rates of depression. Similar results were found in a study of 134 LAC (age 13-17) in Oxfordshire, two thirds of whom were diagnosed as having psychiatric disorder (28% conduct disorder, 25% depressive disorder) (McCann et al., 1996). In a more recent study of 100 young people leaving the care system in Glasgow (Scottish Health Feedback, 2001), similarly high levels of depression and self-harm (45%) were found, together with high rates of smoking, problem drinking and drug use, poor diet and a chronic lack of physical activity. It is not known exactly what proportion of this population subsequently become homeless, but in a study of 145 homeless young people in Edinburgh (Wrate et al., 1997), around a half had previously been in care. Both the physical and mental health of this group were extremely poor, and high levels of smoking, drug use and risky sexual behaviour were documented. Thus, although small in numbers, all the evidence shows that young people with these particularly extreme experiences are in very poor health.

This group aside, the overall conclusion from this assessment of the relationship of health to social class in youth is that by comparison both with earlier and later stages in the life-course, it is characterised by relative health equality. However, this is not true of fatal accidents, severe chronic illness and conduct disorders, all of which appear to be concentrated in the poorest areas. One of the key questions, therefore, is explaining how a pattern of relative equality transforms into the more familiar one of health inequalities in adulthood. In part, as suggested by the findings for height (as a marker of health potential), diet and heavier substance use, this may simply be because it is too early in the life-course to observe the effects of social class, deprivation or poverty on health except in extreme circumstances (West et al, 1990; West, 1997; Starfield et al, 2002). In part, the health inequalities observed in adulthood may also arise because of the connection between young people’s lifestyles and both future health and labour
market position. Evidence that, irrespective of social class, 15 year-olds who smoke, drink, have experience of drugs and early sex, and who have poorer diets, are less likely to enter tertiary education, and more likely to become unemployed, is compatible with this explanation (West, 1994b; Sweeting et al, 1994; Glendinning et al, 1995; West and Sweeting, 1996b). Thus it is that after school-leaving, greater variation in health is found by reference to economic position than social class of background, particularly highlighting the poorer health of the unemployed (West and Sweeting, 1996b). These findings suggest that within any class, the role of the family in relation to lifestyle, education and future labour market success is of crucial concern. Finally, and related, it is possible that part of the explanation for the lack of class differences in youth is because this is a time when homogenising influences associated with the school, peer group and youth culture are at their maximum, the combined effects of which are to reduce, remove or even reverse class differences in health observed earlier in childhood and later on in adulthood (West, 1997).

Ethnicity and Religion

Within Scotland the two main ethnic communities of interest are those of Irish descent, who have had a massive presence in Glasgow and urban areas in the West of Scotland generally for around 150 years, and those from the Indian subcontinent (India, Pakistan and Bangladesh - henceforth referred to as ‘Asians’), most of whom began migrating to Scotland in the 1950s. Today’s young Scottish Asians are mainly second or third generation (Williams, 1996).

In respect of mortality, among adults in England and Wales, all cause mortality is markedly higher than the average for both males and females born in Scotland and Ireland (Marmot et al, 1984), while in the West of Scotland, mortality is elevated for males of patrilineal Irish descent in respect of heart disease, accidental and violent death (Abbotts et al, 1999a). Asians tend to experience raised levels of mortality attributable to heart disease and stroke, but reduced levels in respect of lung and other cancers, accidents and injuries and suicide. Information on ethnic differences in mortality among children or young people is scanty. There is also little data on ethnic differences in morbidity in the UK, and this is complicated by cultural differences in reporting and illness behaviour. There is, however, evidence of raised prevalences of heart disease and diabetes and lower risk of accidents among adult Asians compared with the general population. (Davey Smith et al, 2000).

Although there is generally even less data on ethnic differences in the health of young people, studies of young people of both Irish and Asian descent have been conducted in the West of Scotland. In this geographical area there is a low level of Irish ethnic identification, however the high degree of overlap between Catholic religion and Irish ancestry means that the former is able to inform on, and act as a proxy for the latter (Williams, 1993). Within the ‘Twenty-07’ Study a small excess of morbidity observed in 39 and 58 year olds of Catholic background was virtually absent among 18 year olds (Abbotts et al, 1997), and among the ‘11 to 16’ cohort there was no evidence of systematic health inequality among Catholics compared with non-Catholics at age 11 (Abbotts et al, 2001). Interestingly, at age 11 there was, however, evidence of an interaction such that among Catholics (where the norm is weekly church attendance), non attendance was associated with poorer mental health, while among non-Catholics (where the norm is no attendance), attendance was associated with poorer mental health. This suggests that at this age at least, associations between mental health and church attendance may be contingent on whether attendance is normative within the peer group (Abbotts et al, 2002).
Although the Irish are often portrayed as a hard-drinking, hard-living group (Mullen et al., 1996), no significant Catholic differences were found in smoking or drinking (in respect of any, age started or heaviness) or sport (doing none) among 18, 39 or 58-year old ‘Twenty-07’ respondents, with the exception that the oldest cohort were more likely to be smokers (Abbotts et al., 1999b). Finally, traditional Catholic socio-economic disadvantage (Payne and Ford, 1977) may be reducing in Scotland (Paterson 2000, Williams and Walls, 2000), but in 1990 was still evident among 18 year old ‘Twenty-07’ respondents in respect of social class (Abbotts et al., 1997) and, in 1994-5, among 11 year old ‘11 to 16’ respondents in respect of class, parental education and affluence (Abbotts et al., 2001).

A 1992 study of 14-15 year olds in the West of Scotland found no differences between Asian (N=334) and other (N=490) teenagers in self-rated health or longstanding illness, while (mirroring the adult mortality and morbidity data above) Asian males were less likely to have had recent accidents or injuries, and their dental health was better (Shams and Williams, 1993). Asian females, but not males, were significantly shorter, but Asian BMIs did not differ from those of other ethnic backgrounds. Since older Asians are considerably shorter than their non-Asian counterparts (Williams et al, 1993), the height finding has been attributed to the improved environment of younger Asians, including nutrition and public health measures, and as pointing to the possibility of corresponding improvements in coronary and diabetic risk (Shams and Williams, 1997). There were some suggestions of poorer psychological wellbeing among Asians; males were marginally more likely to report psychosomatic symptoms and negative self-esteem, and females more anxiety, but there were no differences in respect of GHQ or self-esteem (Shams and Williams, 1993). In relation to this, it was also found that Asians perceived more parental protection (protection was positively associated with distress in this cohort) and Asian females lower parental care (care was inversely associated with distress) than non-Asians (Shams and Williams, 1995).

In a follow-up survey when the cohort were aged 18-20, Asians (again) reported fewer accidents or assaults than non-Asians, and Asian females reported less (limiting) longstanding illness. However, once again, the picture was reversed in respect of mental health, with Asians reporting more depression and anxiety (Bradby and Williams, 1998).

Among this cohort there were strong ethnic differences in health behaviours, some of which may be due to reporting differences reflecting religious prohibitions. At both ages, all Asians were considerably less likely to report drinking and experience of drugs, and females to smoke. However the male excess in smoking which was present at 14-15 had disappeared by 18-20. Asian males at 14-15 and females at both ages reported significantly less exercise than non-Asians (Shams and Williams, 1993; Bradby and Williams, 1998). At 18-20 there was a higher level of sexual abstinence among Asians, particularly unmarried females; for example, reporting of heterosexual intercourse by 44% (M), 25% (all F) and 11% (unmarried F) Asians compared with 77% (M) and 83% (all and unmarried F) non-Asians. Asian females who had had intercourse were likely to have been older and with an older partner than non-Asians. In addition, use of the pill (among females) and condoms (among males) was less likely among Asians, suggesting a failure of the existing sexual health education and health services to reach minority ethnic young people (Bradby and Williams, 1999).

Overall, the evidence suggests that with the possible exception of poorer mental health among Asians, there are few differences in the health of young people from the two main ethnic communities of interest in Scotland (Asian and Irish) when compared with the rest of the population. While there is nothing to distinguish the health behaviours of
Irish/Catholic young people, levels of substance use and sexual experience are lower among Asians, particularly females.

**Family**

Over the past 30-40 years a great deal of work has been conducted on the relationship between family life and teenage development, well-being and behaviour. These studies have tended to characterise family life in two qualitatively different but related ways (Epps, 1983); firstly family structure (what it looks like from the outside) and secondly family dynamics (what it is like on the inside). The majority of quantitative studies in this area have been conducted in the USA, and a wide range of 'outcomes' (note that we use this term to indicate dependent variables, rather than as an assumption of direction of causality) have been included in respect of studies focusing on family structure (Amato, 1993; Burghes, 1994; Richards, 1995), dynamics (Baumrind, 1978; Gecas and Schwalbe, 1986; Dornbusch et al, 1987), or both (Acock and Demo, 1994; McFarlane et al, 1995; Simons and Associates, 1996; Demo and Acock, 1998).

With respect to **family structure**, relationships have been demonstrated with various dimensions of psychological wellbeing (e.g. McMunn et al, 1998; Sweeting and West, 2000a; Sweeting, 2001; Ely et al 2001) and psychiatric disorders (effects which appear more pronounced when disruption of the family occurs in adolescence), as well as substance use, sexual activity and behavioural problems. However the area is beset with complications and inconsistencies: differences in respect of family structure (generally defined by researchers according to a narrow range of pre-determined categories) tend to be small or statistically insignificant (the variability within usually being greater than that between structures), accounted for by differences in socio-economic or family dynamics variables and with questionable direction of causality (McFarlane et al, 1995; Demo and Acock, 1998; Rodgers and Pryor, 1998; Sweeting et al, 1998).

Studies of **family dynamics** have suggested that the type of parenting style which has been termed ‘authoritative’ (that is, directing a child’s activities in a rational, issue-oriented manner, exerting firm control when required but not hemming them in with restrictions – Baumrind, 1978) tends to foster social competence, whereas the combination of low care with high protection (‘affectionless control’ – Parker, 1983) has been associated with elevated risks for a number of ‘neurotic’ disorders. A number of studies have found a relationship between family cohesiveness, parental support and affection and self-esteem among children and adolescents. Family conflict is increasingly a major reason for leaving the family home (Jones, 1995). Parenting styles have also been linked with teenage lifestyles, for instance positive associations between substance use and authoritarian or neglectful parenting (Foxcroft and Lowe, 1995) and between sexual activity and rejecting, critical and negative parenting (Feldman and Brown, 1993), but inverse relationships between substance use and/or sexual behaviour and dimensions of family life representing parental restrictiveness or monitoring (Small and Luster, 1994).

Several analyses of the relationships between family life (structure and dynamics) and the health, behaviours and lifechances (for example, as indicated by educational achievement or attitudes) of young people have been conducted in Scotland. At the youngest end of the age spectrum, analyses of the relationship between family structure and dynamics among the ‘11 to 16’ cohort at age 11 showed differences in psychological adjustment (self-, parent- and teacher-report) according to family structure, however the variance explained was extremely small and further reduced after accounting for gender, deprivation and both child and parental reports of family dynamics. Children living with
both-birth parents were rated by all informants as having the best adjustment, those in one-parent households tended to receive the poorest ratings from both children and teachers, but those in step-households received poorer ratings from parents. In respect of family dynamics, the strongest relationships with the 11 year old's health/adjustment occurred for reports from the same informant, although there were some cross-informant relationships, a result which suggests the need for caution when interpreting studies of family life and well-being which rely on single informants (Sweeting, 2001).

Analyses based on ‘Twenty-07’ data in respect of family structure and dynamics obtained at 15 and ‘outcomes’ at both 15 and 18 years found that despite a strong association between family structure and material deprivation, those from intact (living with both birth parents), reconstituted (living with one birth parent plus their new partner) and one parent families were largely undifferentiated in terms of health. In contrast, self-report family dynamics, particularly poorer relationships and conflict with parents were associated with lower self-esteem, poorer psychological well-being and (among females) more physical symptoms. In respect of behaviours, smoking, experience of drugs and sexual experience was more likely among young people who were not living with both birth parents, particularly those in reconstituted households and/or who had experienced parental separation. Those from homes where more time was spent in joint family activities were less likely to smoke, to drink, to have experience of drugs, to have engaged in delinquency or to have early sexual experience, and more likely to achieve academically and enter tertiary education. Lower conflict with parents was also associated with a greater likelihood of entering tertiary education and reduced likelihood of smoking. Importantly, these results remained significant after accounting for gender, household deprivation and family structure (Sweeting and West, 1995b; 1995c; Sweeting et al., 1998). Finally, analyses of the relationships that family structure had with educational achievement, smoking, drinking, psychological well-being and physical symptoms after accounting for gender, socio-economic factors and family dynamics in the ‘Twenty-07’ youth cohort compared with the 1970 British Cohort Study showed no significant differences between the studies. This suggests that there is nothing ‘special’ about the impact of family disruption in the West of Scotland compared with Britain as a whole (Ely et al., 2000).

A number of studies have also been conducted in respect of family life among respondents in the YPLL study. An analysis of 15-16 year olds identified three clusters, described as ‘conventional, family and school-oriented’, ‘peer oriented’ (but with positive attitudes towards school) and ‘disaffected peer oriented’ (negative attitudes towards school) young people. ‘Conventional’ young people were more likely to come from intact, non-manual households with more educated parents. This group reported greater sports club, and less club or pub attendance. They were also less likely to smoke and drink, and more anxious about experimentation with drugs, even after accounting for class. These relationships continued at follow-up 2 years later, at which stage self-rated health could also be included in the analyses; interestingly it was best among those who had previously been identified as ‘peer-oriented’ (Glendinning et al., 1995). Analyses of data from 13-16 year old YPLL respondents using similar techniques, but focusing more specifically on parenting identified four clusters, which largely replicated those of previous researchers, and were described as: ‘permissive’, ‘problem parent-adolescent relationships’, ‘authoritative’, and ‘authoritarian’. There was little association between parenting style and family structure or socio-economic background, apart from some evidence of a link between ‘problem relationships’ and reconstituted or one-parent households and socio-economic disadvantage. An independent effect for family structure was found in respect of disaffection with school, least likely among those from intact households and with ‘authoritative’ parents, but (corresponding with ‘Twenty-07’) not for psychological well-being. Independent effects for parenting were found for both
disaffection and well-being, those describing their parents in ‘authoritative’ terms most likely to have low disaffection and better well-being, those describing ‘problem relationships’ least likely (Shucksmith et al, 1995). Further analyses showed raised levels of smoking among YPLL members from ‘disrupted’ home backgrounds (reconstituted or one parent households), and those who perceived their parents as less supportive and least controlling (‘neglectful’ parenting), the relationships between smoking and family structure and dynamics being largely independent of each other (Glendinning et al, 1997). Similar results emerged in respect of analyses of drinking, except that here, parental support and control largely accounted for the effects of family structure (Shucksmith et al, 1997).

In the 1990 HBSC, those with poorer communication with parents reported more psychosomatic symptoms, difficulties with peer relationships, smoking and drinking, and less time spent in regular exercise (Currie et al, 1993). Recent analyses of HBSC data from 15 year olds in seven European countries (Scotland, Wales, Austria, Denmark, Finland, Germany and Norway) found that in all except Wales, family structure was independently associated with daily smoking after accounting for gender, family affluence, the 15 year old’s own income (pocket and earned money), parental smoking and the presence of another smoker in the home (measures of family dynamics were not included in the model). Those in reconstituted (but, in Scotland not lone parent) households were more likely to smoke when compared to intact families (Griesbach et al, in press).

Analyses have also been conducted using the ‘Rural Youth’ data, in order to determine whether there are similar associations with family life to those found in the national YPLL and urban ‘Twenty-07’ cohorts. None of several measures of health were differentiated according to family structure, but they were according to perceived parental support and criticism-control, and there were stronger associations between health and family dynamics than had been found in ‘Twenty-07’, suggesting greater importance of family life for teenagers in rural areas of Scotland. Supportive parenting emerged as a particularly important aspect of family dynamics in respect of its relationship with reduced levels of substance use (Glendinning and Hendry, 1997; Glendinning, 1998; Glendinning et al, 2000).

Conclusions from these results at the most general level would seem to be that although there may be some differences between young people from different family structures in respect of mental health, there are much clearer differences in respect of behaviours or life chances, with the best ‘outcomes’ generally seen among those from intact households. In respect of family dynamics (and with the caveat in respect of reliance on a single informant), conflict, problem relationships and lack of parental support appear to be related to poorer health (particularly mental health), increased smoking and reduced educational achievement, while family time, authoritative and supportive parenting are related to reduced levels of substance use, sexual experience and greater likelihood of educational success. Crucially, however, it is important to consider the effects of both family structure and dynamics jointly, since dynamics may be more important than structure in any consideration of the impact of family life on young people.

Finally, for a significant minority of young people, acting as a carer is an important aspect of family life. Although there is increasing awareness of, and support available to young carers, research on this group is scanty. It is estimated that around 51,000 young people in the UK are involved in various kinds of caring roles (ONS, 1996). A study of young carers found 60% cared for someone with physical and 29% for someone with mental health problems, 6% for someone with learning difficulties and 4% for someone with sensory difficulties. The most frequently carried out tasks included domestic duties
(65%), general care such as lifting and giving medicines (61%), intimate care (23%) and childcare (11%). One-in-ten provided care for more than one person (Harvey and Russell, 2001). Their lives are often very complex; caring can take up vast amounts of time and as well as influencing family dynamics, can impact on educational performance, leisure and recreational opportunities. While for some, caring provides the opportunity to learn skills and develop a sense of maturity, for others it can be lonely, demoralising and isolating, impacting on self-esteem, image and confidence (Frank et al, 1999), or increasing vulnerability to victimisation from peers (Crabtree and Warner, 1999).

School

In the educational field, a considerable research effort has been directed to answering the question as to whether (secondary) schools ‘add value’ to pupils’ achievement over and above the levels expected on the basis of their intake (e.g. prior ability, social class), and if so, what aspects of school life might account for this. The results of this research, in both Scotland and England and Wales, suggest that although there is some evidence of what has become known as ‘school effects’, the effect is small in magnitude by comparison with other factors such as prior attainment (Croxford and Cowie, 1996) and might be attributable to earlier influences arising in primary school, or even before (Goldstein et al; 1997). However, among factors found to improve school effectiveness in relation to educational achievement are an academic ethos, low staff turnover, strong leadership by head-teachers, and a high involvement in school life by pupils and parents (Reynolds et al, 1996).

By contrast with educational outcomes, much less research has been conducted into the parallel question about the extent to which schools influence pupils’ physical and mental health, or health behaviours like diet or smoking. What evidence exists is often partial or inconclusive, making it very difficult to draw firm conclusions. The relevant evidence derives from two different sources: the first from intervention studies (with related evaluations) of either specific health education programmes or whole school policies, epitomised by the health promoting school (HPS) concept (Parsons et al, 1996; WHO, 1997); the second from studies which have observed (natural) variation between schools in health or health behaviours, and which is suggestive of school influences.

In respect of the former, while there are examples of successful school-based health education programmes (Young, 1993), the general consensus is that although there may be some positive effects on knowledge and attitudes there is much less evidence of behavioural change, for example in relation to smoking (Nutbeam et al, 1993; Michell, 1994) or sexual health (Lowden et al, 2001). Developing from this tradition, the HPS is based on a holistic model of health in which specific health education programmes are reinforced by school-wide policies to promote health (e.g. healthy school meals) and a culture (ethos) which promotes self respect (self-esteem) and mutual respect among and between pupils and staff. Evaluation of the HPS is notoriously difficult (Inchley et al, 2000), very few studies meeting strict scientific criteria (e.g. with a control group or before/after design) and focussing on outcomes rather than just process measures (Lister-Sharp et al, 1999). Among those that do, the results are equivocal, again providing more support for improvements in knowledge than behaviour. Overall, there appears to be more evidence of change in relation to mental health, exercise and diet (including one Scottish study [Young, 1993]) than in respect of substance use or high risk sexual behaviours (Lister-Sharp et al, 1999). Thus, the evidence from these studies, though far from conclusive, does suggest the potential for schools to influence behaviour.

The second source of data on schools refers to a small number of studies which have reported differences between schools in health or health behaviours, some of which have
begun to link this to features of school life. For example, variations in smoking rates between schools have been documented for some time now (Swan et al, 1991; Penny et al, 1988; Aveyard and Markham, in press). Similarly, within educational research, there is some evidence of ‘school effects’ in relation to outcomes like truancy or delinquency which are known to be associated with health behaviours like smoking, drinking or drugs (Rutter et al, 1979). More recently, following the tradition of research into educational outcomes, studies from Ireland (Smyth, 1998) and Finland (Konu et al, 2002) have shown that school differences in pupils well-being remained even after pupil characteristics were taken into account, the latter linking this to ‘school conditions’ (e.g. facilities, time pressures) and relationships (e.g. bullying). Finally, there is also some evidence that school differences in smoking may be related to school policies, one study finding that schools with a written policy on smoking had lower smoking rates (Moore et al, 2001), another (one of the very few Scottish studies) that pupils' perceptions of smoking levels in schools were related to the extent to which smoking bans were enforced in school (Griesbach et al, 2002). Each of these studies provides evidence in support of the view that schools can, and do, influence health and health behaviours.

However, although this is of great potential interest, there remain many conceptual and methodological problems to overcome before we can draw firm conclusions about the role of the school in influencing health and health behaviours. In Scotland, although there is ongoing work on school effects on health and health behaviours (West and Sweeting, 1996a), there is as yet no published evidence on the matter. It is known from ‘11 to 16’ that among secondary pupils, schools vary in rates of smoking, drinking and ('unhealthy') diet (Sweeting and West, 2000a), results which complement other studies. However, it is not yet established whether these differences really are associated with schools as compared with neighbourhoods, nor is it known whether potential ‘school effects’ can be attributed to influences arising from the school or the peer group, or both. Until these issues are resolved, the jury is out on the extent to which schools really can have an independent (added value) effect on young people’s health and how the influences involved compare with those in the HPS concept.

**Peer Group and Lifestyles**

As many authors have noted, the influence of the peer group increases over the teenage years (Coleman and Hendry, 1990). Scottish (1990) HBSC respondents reported decreased ease of talking to parents, and corresponding increased ease in talking to friends about problems with age (Currie et al, 1993). These age-based relationship transitions have been linked to a shift in focus in leisure styles as a young person moves from the stage of adult-organised clubs and activities, through casual peer-oriented leisure pursuits to commercial leisure contexts (Hendry et al, 1993). At the most general level, it has been suggested that reliance on the peer group rather than the family for support may increase vulnerability to peer pressure to engage in substance use (Noller and Callan, 1991). For young people who reject school and adult supervision, behavioural experimentation in the absence of adult influence has been seen as increasing the likelihood of health-risk behaviours (Cotterell, 1996).

As noted earlier, associations between young people’s own behaviours (such as smoking) and those of their peers are very strong, and much stronger than those of young people’s family members (West and Michell, 1998). Although it might be tempting to conclude from such findings that friends ‘cause’ smoking, analyses of smoking uptake among the ‘Twenty-07’ youth cohort suggest that in some part young people select their friends on the basis of their smoking characteristics (West et al, 1999). This is consistent with the view that children and young people choose the influences they experience (Hill, 1990; Eiser et al, 1991), and with sociometric studies both in Scotland (Pearson and
Michell, 2000) and elsewhere (Ennett and Baumann, 1994) which have shown a role for friendship selection on the basis of smoking.

As suggested by the general literature, peer-based lifestyles (in contrast to high family time) tend to be related to substance use in Scottish young people. Among 11-15 year old respondents in the Scottish 1990 HBSC survey, smoking, drinking, drunkenness (but also frequent exercise) were most likely among the most socially integrated (a measure which included ability to talk to family/friends, time spent with friends outside school and ease of making friends) (Currie et al, 1993). Similarly, cross-national (1987-8) HBSC analyses, found increased smoking and drinking among 13 and 15 (but not 11) year olds who spent more time with friends after school and in the evenings (Nic Gabhainn and Francois, 2000). Substance use was common among ‘peer oriented’, but commoner still among ‘disaffected peer oriented’ 15-16 year olds in the YPLL study, who were also much less likely than the former group to attend sports and youth clubs (Glendinning et al, 1995). Analyses of ‘Twenty-07’ and ‘11 to 16’ respondents have shown the highest levels of substance use among 13 and 15-year olds with the strongest street-based leisure orientation (Sweeting, 2000a; Karvonen et al, 2001), a marker of a group of young people who can probably be likened to Glendinning et al’s ‘disaffected peer oriented’ cluster.

Although Scottish, along with other, studies of young people’s peer-based leisure tend to focus on behaviours rather than health, there are some exceptions. Socially integrated 11-15 year olds were less likely to report psychosomatic symptoms or to feel like outsiders (Currie et al, 1993), and rather similarly, an analysis of YPLL data found that self-rated general health at age 17/18 was significantly related to earlier social integration, best amongst those categorised as ‘peer-oriented’, worst among the ‘disaffected’ group (Glendinning et al, 1995). Analyses of self-esteem among ‘Twenty-07’ 15 year olds and ‘11 to 16’ 11 year olds have suggested a complex relationship between peers, lifestyle and this measure of well-being. While success in the conventional arena of school may be a good way of enhancing the self-esteem of many, for those who fail, another way of raising self-esteem and gaining a sense of identity may be via ‘rebelling’ and adopting a street-based leisure (West and Sweeting, 1997).

So far, the emphasis has been on those with positive peer relationships, but there is another group; the ‘lost souls’ who are involved with neither school nor street-based leisure (West and Sweeting, 1997). Among this least socially integrated group are those who experience victimisation from peers in the form of teasing and bullying (Currie et al, 1993). Bullied children tend to be rejected (Schuster, 1997) with few friends and more time spent alone (Dawkins, 1996). Estimates of the numbers of children and young people who experience bullying obviously depend on the method of data collection and the definition of bullying used (Olweus, 1990), but a number of studies suggest 9-10% of school pupils may be fairly regular victims, with general agreement that it is more prevalent among younger pupils (Rigby and Slee, 1991; Smith and Sharp, 1994; Olweus, 1997; Mellor, 1999).

As the above figures demonstrate, victimisation is not uncommon among young people. Nor is it limited to ‘traditional’ methods such as pushing, stealing or cold-shouldering: a recent National Children’s Home survey of 11-19 year olds found that 16% had received threatening text messages on their mobiles, a further 7% had been harassed in internet chat rooms and 4% via e-mail (Carvel, 2001). In the year to March 2001, bullying was the most common reason for calls to Childline (17% of calls). Sixty percent of both males and females among the 11-15 year old Scottish 1990 HBSC respondents reported having been picked on at one time or another and 14% ‘several times’; 14% of males and 9% of females also said they had picked on others several times (Currie et al, 1993).
The ‘11 to 16’ cohort have been asked about the experience of teasing and bullying at each age. At both 11 and 13 around 10% reported being teased and/or bullied most or every day (equivalent to 3 in the average class of 30 pupils), a further 5% on a weekly basis and 30% less often. This amounts to almost half with some experience of victimisation (Sweeting, 2000b). In line with other studies, victimisation dropped considerably by age 15, reported by 5% as happening most or every day and by 11% as weekly or more often (Young et al, 2000). Clear and consistent gender differences in amount or type of victimisation were not apparent, although previous studies have associated males with physical and females with verbal and indirect bullying (Whitney and Smith, 1993). At age 15, ‘11 to 16’ respondents were also asked about being a bully. Around 5% agreed with the statement ‘I am a bit of a bully’; this did not differ according to material circumstances, but was more likely among males (7%) than females (3%), and those who were themselves victimised (Sweeting and West, 2000a).

Victims of bullying can be differentiated from other children, but since some of the factors exist prior to victimisation and some result from it (Bernstein and Watson, 1997), they may be hard to disentangle. Attributes which predispose children to be the victims of bullying include learning difficulties, physical disability and family problems (Leff, 1999), as well as temperamental characteristics (Olweus, 1990) such as introversion (Mynard and Joseph, 1997). Among the ‘11 to 16’ cohort at age 11, experience of teasing/bullying did not differ according to race, physical maturity or height, but was more likely among children who were less physically attractive, overweight, had a disability such as a sight, hearing or speech problem, and performed poorly at school. These factors were not only significant regardless of gender and social class, but also independent and thus additive in their effects. These results suggest that characteristics of appearance, disability or ability which in themselves may be difficult to deal with also increase the likelihood that a child will experience the additional burden of being bullied (Sweeting and West, 2000c).

There is now a large body of evidence to show psychological distress among children and young people who are victims of bullying, whether this occurs via physical, verbal, or less direct forms such as isolation. Victimisation has been associated with low self-esteem, loneliness, unhappiness, general or specific school-related fear and anxiety or avoidance, depression, suicidal ideation, para-suicide and suicide. Higher rates of physical or psychosomatic symptoms have also been found among bullied children. In addition, there is evidence that experience of earlier bullying may have continued health effects in later school years and into adulthood (for example, Olweus, 1990; 1993; Williams et al, 1996; Kumpulainen et al, 1998; Davies and Cunningham, 1999; Rigby, 1999). However, almost all studies are cross-sectional, so they cannot rule out the possibility that distress and symptomatology are the cause rather than consequence of victimisation. This can only be tested using longitudinal data. A large recent Australian study of 13 year olds, followed up a year later found that a history of victimisation was a strong predictor of the onset of self-report anxiety and depression. In contrast, the hypothesis that having poor mental health invites victimisation or is just part of a vicious circle was not supported (Bond et al, 2001). Similarly, analyses of the ‘11 to 16’ cohort at the ages of 11 and 13 found significant cross-sectional relationships between victimisation and depression, self-esteem, malaise and physical symptoms. Crucially however, there were few differences in health among the 11 year old non-victims in respect of future (age 13) teasing or bullying, providing support for the hypothesis that bullying is a cause rather than consequence of psychological distress and physical symptomatology (Sweeting, 2000b).

It is quite clear that individual lifestyles are integrally bound up with peer group activities and experiences. In ‘11 to 16’ (age 15), from a list of leisure activities four major
lifestyles were identified: conventional (hobbies, Scouts etc), sports/games (watching sport, computer games as well as own physical activity) commercialised (shopping, listening to music, clubbing), and street-based (hanging about the street) (Karvonen et al, 2001). Each of these lifestyles was linked to health behaviours in a very similar way to that found in both the YPLL and ‘Rural Youth’ studies (Glendinning et al, 1995; Glendinning and Inglis, 1999). Thus, among those pursuing conventional lifestyles, rates of smoking drinking and drug use were slightly reduced; among those involved with sports/games, smoking and drug use (but not drinking) were much more reduced. Conversely, among those into commercialised leisure, rates of smoking were higher and drinking and illicit drug use much higher, while for those involved in street-based leisure rates of all three behaviours were much higher. In examining the relationship of these lifestyles to social class, it became clear that while two of them were class associated (conventional more middle-class, street-oriented more working-class), the two others (sports/games and commercialised leisure) were not. Furthermore, when the relative importance of social class and lifestyles for health behaviours was examined, it was evident that the role of lifestyles was much more important than social class. In general, a sports/games lifestyle was protective for all health behaviours, a result found in other studies (Pate et al, 1996), while commercialised leisure elevated risks for drinking and drugs, and street-orientation the risks for all three behaviours, irrespective of the social background of young people.

These findings are of major importance for an assessment of the causes of health problems in young people, for not only do they demonstrate (once again) that social class is relatively unimportant for health and (most) health behaviours at this age, but they also direct attention to a range of alternative influences which in very large measure cut across class boundaries. These influences include the media (TV, magazines etc), advertising, and the music and clothing industries, each of which provide the ingredients for particular identities and lifestyles and which are expressed in particular youth cultures and styles. There is not a large body of survey evidence to draw on here to demonstrate the connections, but from both theoretically informed literature on contemporary youth lifestyles (Miles, 2000), and various empirical observations, we can be fairly sure of the importance of these influences. For example, we know that young people are particularly exposed to media images via the large amount of time spent watching TV (Livingstone and Bovill, 1999; Currie et al, 2000), and there is considerable evidence relating to expenditure patterns on desirable consumer goods (clothes, music etc). There is also evidence in relation to smoking that young people associate particular images with particular brands of cigarette and display awareness of branded products (MacFadyen et al, 2001). Finally, there is some evidence that music preferences are associated both with mental health (Roberts et al, 1998) and health behaviours (Forsyth and Barnard, 1998), though the direction of causality remains unclear. Each of these studies, therefore, testifies to the potential power of such influences which, as found in more qualitative studies (Redhead, 1993) appear to affect young people from all social classes.
Conclusion

It is difficult to make an overall assessment of the health of young people in Scotland, for while it is clear that the evidence certainly challenges the assumption of youthful healthiness, it is equally clear that the portrait so often painted by the media over-exaggerates the problems to such an extent that we are left with a caricature. Thus, while the evidence does suggest that a very high proportion of young people at any one time report a range of physical symptoms, it is also the case that the majority rate their health as ‘good’. Similarly, even though a significant minority exhibit psychological distress at a level of potential clinical significance, and 1 in 10 have a psychiatric disorder, it is equally true to say that a majority have neither. Any evaluation of the state of young people’s health must, therefore, involve a considerable measure of judgement. It is not clear, for example, what level of malaise constitutes a ‘normal’ adaptation to stress (e.g. in relation to exams) as opposed to a potentially serious symptom of disorder. Neither is it clear precisely what level of alcohol consumption is harmful or beneficial to health (though we have some guidelines), nor whether smoking marijuana on a recreational basis is something that we should be worried about.

First, there are some grounds for optimism. Although we must be cautious in our interpretation of the figures, it is possible that (among males at least) smoking really is on the decline. Similarly, contrasting with the furor that often surrounds the question of young people and sex, the evidence clearly shows that the great majority are having reasonably good (and safe) sex lives, which could probably be made better with a sensible societal response. However, against these optimistic signs, there are several areas that should concern us. Levels of obesity are rising. The evidence in relation to mental health is compelling in its consistency, and suggests that at every level (from relatively minor symptoms to severe disorder and suicide) there are significant numbers of young people whose problems need addressing. With respect to health behaviours, there is overwhelming evidence that the diet of Scottish youth (as with the adult population) falls well short of what is regarded as good for health, and there is also substantial evidence that the majority of males, and the great majority of females, are not meeting national targets for physical activity levels. There is also evidence that among a minority of young people, there are unacceptably high levels of smoking, alcohol and drug abuse and engagement in high risk sexual activity.

In considering the evidence, we have also tried to address the question as to who in the population of young people is most at risk. What is perhaps most surprising is the degree to which physical and mental health problems, together with most health behaviours, are shared by young people from different social backgrounds, and geographical areas. It is important not to over-exaggerate this because it is clear that the most severe chronic health problems, the poorest diets, heaviest smoking, drinking and drug use, and conduct problems are concentrated among young people in the poorest circumstances (and even more so among those who are ‘looked after’), but apart from this particularly deprived group it is remarkable how little variation there is according to social class. In an important sense, the assumption that deprivation is a (perhaps the) major factor, may blind us to the importance of some other (less visible) groups, students being one example. In our judgement the more important influences arise from the family and peer group, and possibly the school. The evidence in relation to the former is particularly strong, not only identifying young people from disrupted or lone parent households as at greater risk of mental health problems, but in particular identifying conflictual relationships, and lack of parental support as more important than family structure in terms of their associations with health. There is also an impressive body of
evidence showing the importance of the peer group. Although this can clearly have positive effects (e.g. support), it often doesn't, its health damaging consequences being expressed in various ways, including connections with particular lifestyles (e.g. street-based) and bullying. The peer group is the microcosm within which what is and is not an acceptable identity is played out against a background of broader societal influences, such as that of advertising. These influences have not yet received the attention they deserve.


British Medical Journal (1994, October 8) A 44 year campaign, but the epidemic is growing (Editorial), vol. 309 (first page, but no page number.


Carvel J. One in four teens is victim of text message bullying. The Guardian, 15th April.


Sweeting H, West P. (2000b) Push off lads, this is our street corner: secular changes in the gender patterning of teenage lifestyles and health behaviours. Presented at BSA Medical Sociology Group and European Society of Health & Medical Sociology Conference, York, September.


